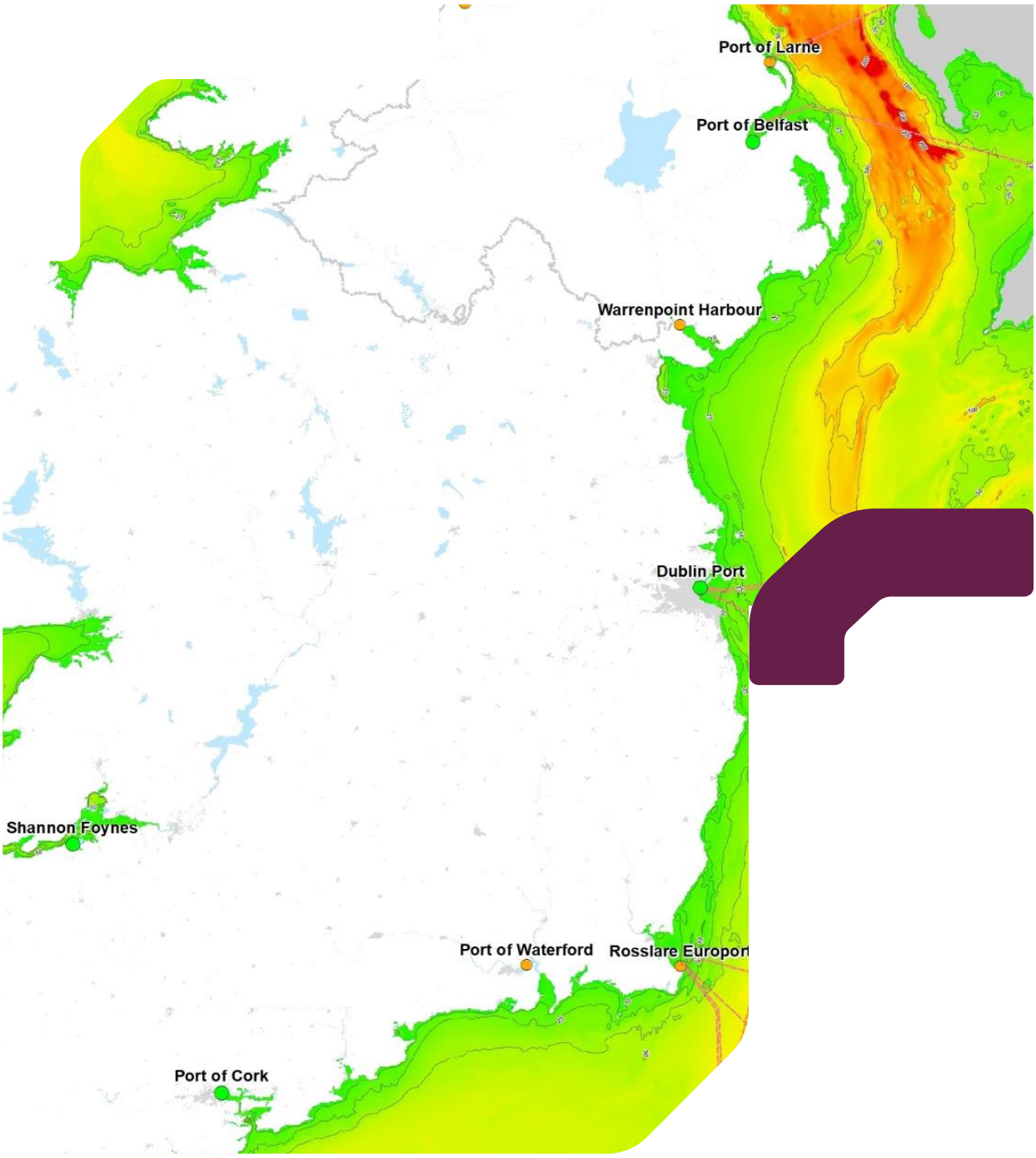
COMHLACHT CHALAFORT ÁTHA CLIATH
DUBLIN PORT COMPANY

MAKING COMPLEX EASY

DP2 PROJECT

HIGH LEVEL ENVIRONMENTAL APPRAISAL

(September 2020)



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1 INTRODUCTION

Dublin Port Company (DPC) is a State-owned commercial company responsible for operating and developing Dublin Port.

Dublin Port is the largest freight and passenger port in Ireland with all cargo handling activities being carried out by private sector companies operating in intensely competitive markets within the Port.

Dublin Port is one of five major ports classified as Tier 1 / Tier 2 ports in National Port Policy and categorised as core / comprehensive ports in the EU's TEN-T network.

Dublin Port's large share of national port volumes, particularly in the Ro-Ro and Lo-Lo modes, arises due to a combination of two factors, location and depth of water. Dublin Port is a key part of the national port system and DPC seeks to ensure that it plays its role in providing national port capacity. For all of our major national ports it is essential that capacity constraints do not emerge which could lead to supply chain inefficiencies. DPC undertook a review of the Dublin Port Masterplan 2040 between 2017 and 2018 to ensure that no capacity constraints emerge in Dublin Port between now and 2040.

This review has led to a number of fundamental conclusions.

Firstly, where the Masterplan had originally envisaged a return to an eastern expansion of Dublin Port into Dublin Bay, DPC is no longer pursuing this as an option.

Secondly, to meet anticipated capacity requirements Dublin Port needs to be developed on the basis of an average annual volume growth (AAGR) of 3.3% over the 30 years from 2010 to 2040 rather than the 2.5% originally assumed in 2012. This will result in a cargo throughput of 77.2 million tonnes per annum by 2040.

Taken together, these conclusions create a high degree of certainty on the ultimate scale and impact of Dublin Port on the city, the environment and on local and national transport networks.

Between now and 2040, major development projects are envisaged on both the north side of the Port and on the Poolbeg Peninsula. All of these major projects will be subject to detailed scrutiny in terms of their environmental impact and, particularly, their potential impact on Natura 2000 sites in Dublin Bay.

Given the high growth rates projected and the need to cater for this growth without further expansion into Dublin Bay, DPC will only bring forward development projects which are consistent with the principles of proper planning and sustainable development and which can be objectively demonstrated not to adversely affect the environment in all its facets.

DPC is challenged to complete major construction projects without disruption to the Port's large and increasing throughput of both cargo and passengers.

Planning horizons for port infrastructure are long and development decisions taken today must be carefully considered. The Dublin Port Masterplan 2040, reviewed 2018, therefore, envisages the continued development of Dublin Port by way of a series of discrete projects.

The great unknown in the long-term planning of Dublin Port is the level of future growth. If the projected 27 fold increase in port volumes over the 90 years to 2040 were to repeat itself thereafter, then port volumes would rise

to an implausible two billion gross tonnes. DPC's development plans are framed against the inevitability that there will, at some point, be a decoupling of port volume growth from economic growth. Whether this happens before 2040 or after, we do not know. Hence there is a focus in the Masterplan 2040 on discrete projects which can continue to allow Dublin Port to accommodate growth to at least 2040.

Against this backdrop DPC is now considering options for Dublin Port, post 2040, when Dublin Port will have achieved its maximum throughput at its current site through full implementation of the Masterplan.

The options under consideration are:

Firstly, to continue to operate Dublin Port at its current location, supplemented by one or more satellite Ports located on the eastern coastline of Ireland, or

Secondly, to relocate all port related activities, with the exception of the cruise business, to a new location located on the eastern coastline of Ireland (DP2 Project).

The objective of this report is to prepare a high level environmental appraisal of the second option under consideration by DPC, that is, to relocate the port from Dublin to a new location on the eastern coastline of Ireland based on ultimately providing a port with an annual cargo throughput of 134 million tonnes. To achieve this level of throughput, a landside area of circa 400 ha will be required.

Schematic drawings have been prepared by DPC for a new port with a throughput of 134 million tonnes per annum, derived from a port master-planning and coastal engineering perspective. This has provided an appreciation of the scale and mass of such a project which has enabled the high level environmental appraisal to be undertaken.

2 OPTION DEVELOPMENT AND SITE SELECTION

2.1 Introduction

DPC is considering alternatives to provide Port Capacity through a timeframe to 2080. This extends beyond their current masterplan (reviewed in 2018), which relates to the period until 2040, in line with the timelines in the current National Planning Framework – Ireland 2040.

This chapter sets out the process of: considering alternatives; developing strategic options; establishing masterplan objectives and using these to short list strategic options; selecting suitable sites for added facilities; and developing reasonable strategic options/sub-options. These options are then subjected to further appraisal.

The overall process is summarised in Figure 2.1.

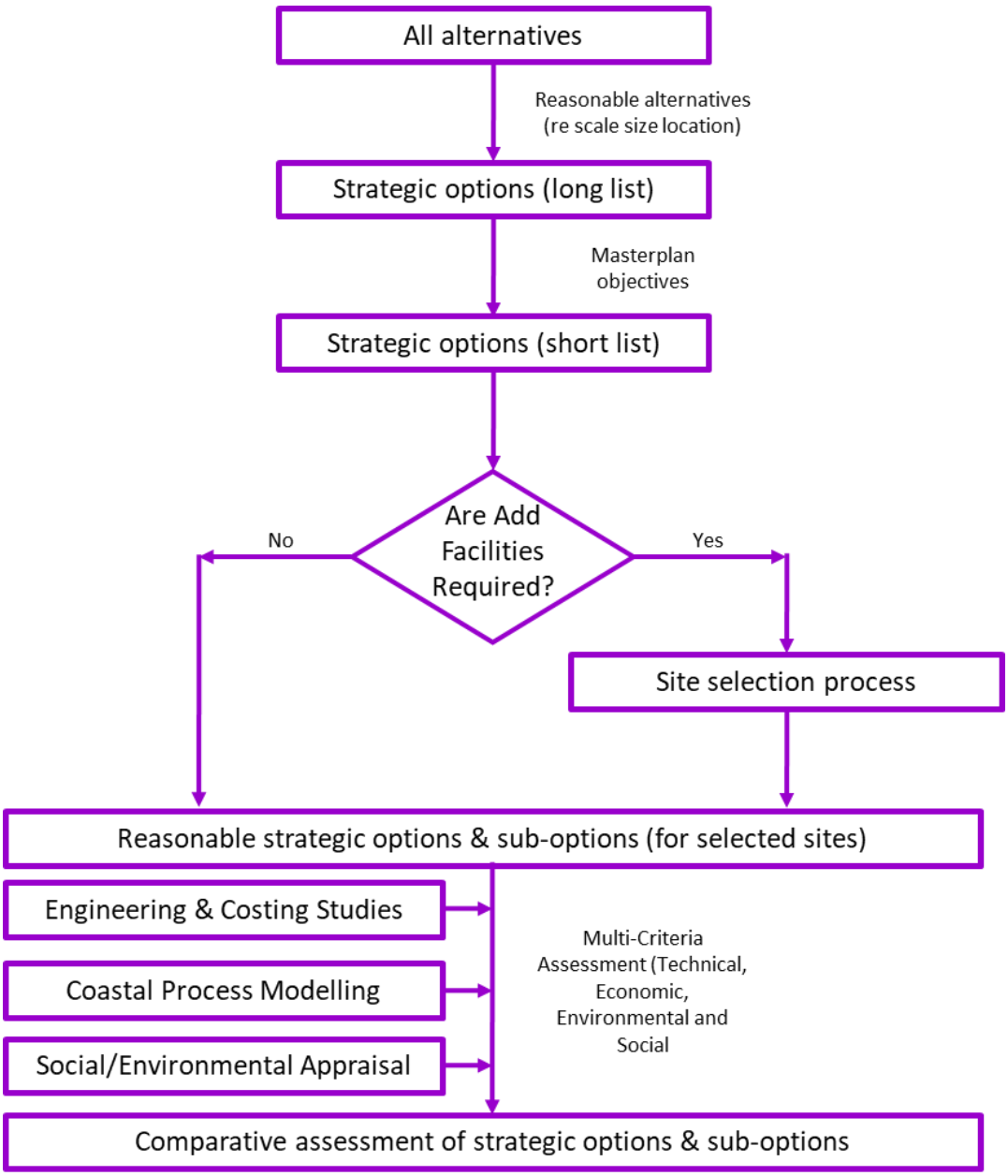


Figure 2-1 Option Development and Assessment Process

This chapter (Chapter 2) deals with the option development and site selection processes.

The resulting reasonable strategic options/sub-options are taken forward through a series of technical and sustainability studies for further appraisal which is a more detailed comparison against assessment criteria (as presented in Chapter 3).

2.2 Option Development

2.2.1 Alternatives

Environmental legislation and guidance, supported by recent case law, requires that the site selection process gives mandatory consideration to reasonable alternatives.

Within the EIA process the types of alternatives are listed as:

- Design;
- Technology;
- Location;
- Size; and
- Scale.

Whilst all aspects can be refined at project level, to further avoid/reduce and minimise environmental impact, at masterplan level the consideration of strategic options primarily focuses on the alternatives in relation to location, size and scale, with high level consideration of design and technology to be further refined at project level.

2.2.2 Strategic Options

The consideration of reasonable alternatives assesses a range of strategic options, these have a baseline of do-nothing (business as usual with port facilities as delivered by the current masterplan to 2040), extending through a range of do-something alternatives (encompassing a spectrum of do-minimum to a completely new port facility).

The strategic options considered for Dublin Port's 2080 Masterplan are presented In Figure 2.2 (and further described in Table 2.1).

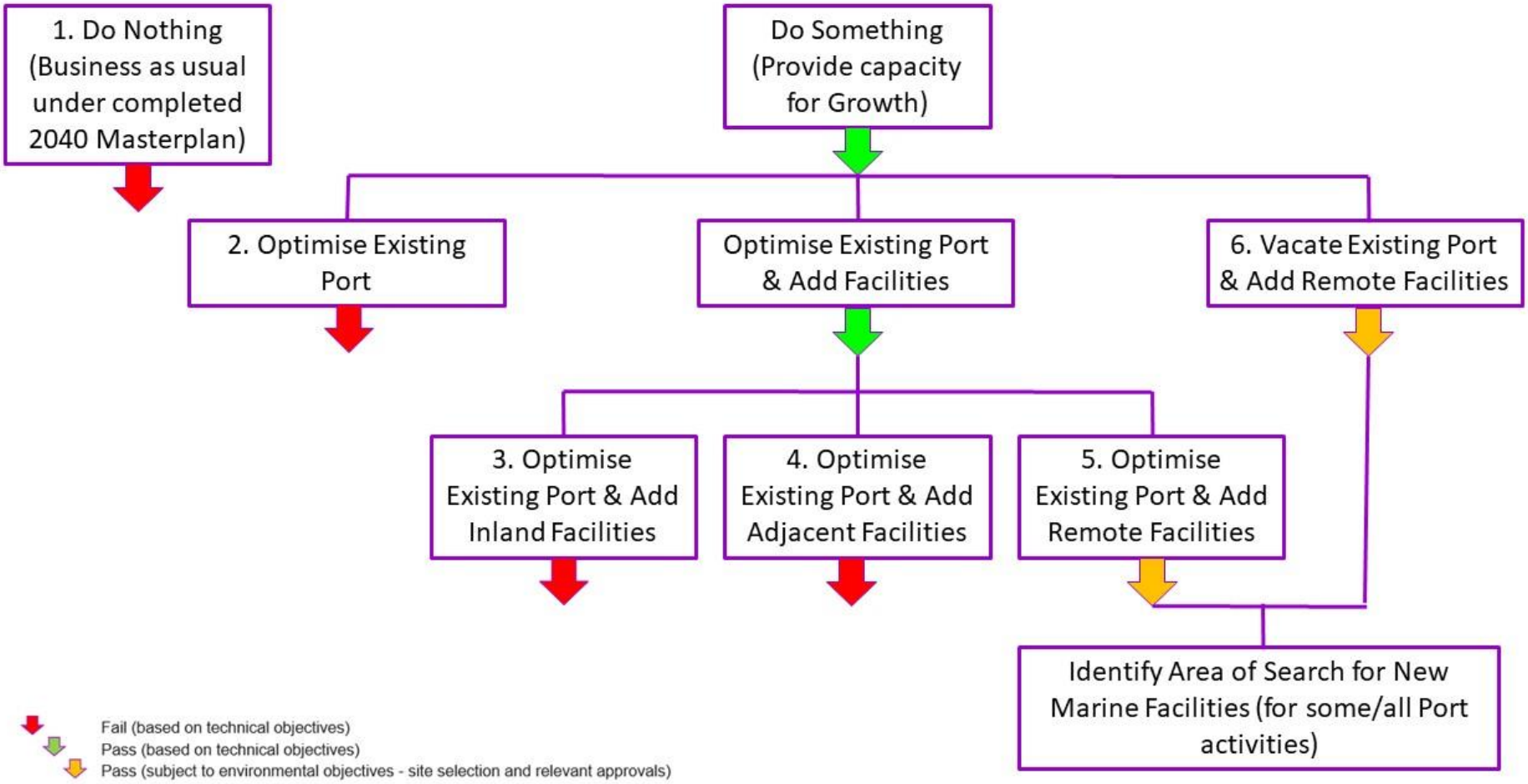


Figure 2-2 Strategic Options – Dublin Port Masterplan 2080

2.2.3 Masterplan 2080 Objectives

Having considered, national planning and port policy, conservative estimates of growth in demand for this masterplan period, and, likely changes in the vessel requirements for future port facilities, the following masterplan 2080 objectives have been developed to enable assessment of the technical feasibility and environmental suitability of alternatives:

- In line with the National Planning Framework and the National Ports Policy, growth in port demand should be delivered via the existing network of Tier 1 ports; (with Ireland's eastern hinterland served by Dublin Port, alongside Cork and Shannon Foynes for the south and western seaboards).
- The projected port throughput for 2080 for the eastern hinterland, which Dublin Port should plan to accommodate as a Tier 1 port, equates to 134 m tonnes of cargo based on conservative estimates of population growth and supported by observed growth trends.
- The future vessel operational requirements are, a minimum water depth of 13m CD at the approaches to the port (capable of accommodating larger modern vessels shipping directly from the EU and international ports), together with safely maintaining critical cargo freight operation throughout the year (i.e. no operational port down time/navigation closures).
- Siting of any additional/new facilities should avoid direct impact on sites environmentally designated as part of the Natura 2000 network, given that alternative undesignated sites will most likely exist. This environmental screening objective was also adopted during the review of the Port's Masterplan 2040).

Assessment of the strategic options (long list), against these Masterplan 2080 technical and environmental objectives, results in pass/fail screening of options, thus enabling the shortlisting of reasonable strategic options for further assessment.

Table 2.1 presents the results of the screening of the long list of strategic options.

The technical feasibly criteria identify that only options with some degree of additional marine, and associated land based, facilities can provide for the required increase in capacity.

The environmental criteria requires that these additional facilities avoid the locations adjacent to the existing port, due to the Natura 2000 designations surrounding this location.

Consequently, strategic options which add facilities remote from the existing port (either working in tandem or as a full replacement of the current port) satisfy the objectives and are shortlisted.

These strategic options can then be taken forward to more detailed comparative appraisal, subject to site selection for the added facilities.

Table 2-1 Assessment of Strategic Options against Masterplan Objectives

Long List of Options	Achieve throughput of 134 m Tonnes (Technical Screening – Pass/Fail)	Achieve throughput of 134 m Tonnes (Technical Screening – Reasoning)	Short list of Reasonable Options	Short Description
No Port Expansion				
STRATEGIC OPTION 1: Do-Nothing - No port expansion (beyond implementation of Masterplan 2040)	Fail	Does not provide adequate expansion	No further Port Expansion once projects within the Masterplan 2040 are completed	The existing port lands (including the inland port) continue the present day/*status quo* operations and facility use; the ABR, MP2 and MP3 developments, and supporting projects such as the DPC internal roads project and Ro-Ro/ Lo-Lo yard upgrades form part of this regime.
Optimise Existing Port Lands				
STRATEGIC OPTION 2: Optimise throughput of existing facilities	Fail	Does not provide adequate expansion	Not Applicable	Further increased capacity (beyond Masterplan 2040) is provided by relatively minor improvements to existing operations and facilities, towards maximising efficiencies and capacity use of brownfield sites. The majority of these efficiencies have already been adopted in conjunction with the Masterplan 2040, for example the policy with regard to minimising residence time.
Optimise Existing Port Lands & Add Facilities				
STRATEGIC OPTION 3: Optimise throughput of existing facilities and add inland facilities	Fail	Does not provide adequate expansion	Not Applicable	Further increased capacity (beyond Masterplan 2040) is provided by an additional inland Port area alongside relatively minor improvements to the existing operations and facilities, towards maximising efficiencies and capacity use of brownfield sites. The majority of these efficiencies have already been adopted in conjunction with the Masterplan 2040. Inland facilities are increased, however marine facilities require expansion for increased capacity.
STRATEGIC OPTION 4: Optimise throughput of existing facilities and add facilities adjacent to the existing Port	Fail	Provides adequate expansion, however, the Art 6(4) process of the Habitats Directive (IROPI) would require no better alternative to exist (regardless of cost)	Not Applicable	Further increased capacity (beyond Masterplan 2040) is provided by additional marine facilities, adjacent to the existing Port, alongside relatively minor improvements to the existing operations and facilities, towards maximising efficiencies and capacity use of brownfield sites. The majority of these efficiencies have already been adopted in conjunction with the Masterplan 2040. Increased marine facilities, north or south of the navigation channel would directly impact on European designated

Long List of Options	Achieve throughput of 134 m Tonnes (Technical Screening – Pass/Fail)	Achieve throughput of 134 m Tonnes (Technical Screening – Reasoning)	Short list of Reasonable Options	Short Description
				sites where alternatives may exist which do not introduce such direct impacts.
STRATEGIC OPTION 5: Optimise throughput of existing facilities and add facilities remote from the existing Port	Pass	Provides adequate expansion, within 2080 timescale (subject to site selection and relevant approvals)	Rationalise existing facilities and increase facilities in a remote location identified by a site selection process	Further increased capacity (beyond Masterplan 2040) is provided by additional marine and associated land based facilities, remote from the existing Port, alongside relatively minor improvements to the existing operations and facilities, towards maximising efficiencies and capacity use of brownfield sites. The majority of these efficiencies have already been adopted in conjunction with the Masterplan 2040. Remote additional facilities would be sited to avoid direct impact on European designated sites and in appropriately zoned locations.
Vacate Existing Port & Add Remote Facilities				
STRATEGIC OPTION 6: Vacate existing facilities and add facilities remote from the existing Port	Pass	Provides adequate expansion, within 2080 timescale (subject to site selection and relevant approvals)	Vacate the existing site and add facilities in a remote location identified by a site selection process	The full increased capacity needs, envisaged for 2080, are provided by additional marine and associated land based facilities, sited remote from the existing Port. The Remote facilities would be sited to avoid direct impact on European designated sites and also in appropriately zoned locations.

2.3 Site Selection

2.3.1 Identification of Potential Sites

Having established that the port requires additional facilities to provide for future growth in demand, this section describes a process for identifying potential sites so that these can be compared and assessed in more detail.

A stepwise approach is applied to ensure alternative sites are considered in a systematic and transparent manner.

The process is piloted on potential areas to demonstrate its application.

Step 1 Area of Search: the site must be located on the coastline of the island of Ireland in order to permit access for goods and passengers to their import/export markets.

Step 2 Region: Dublin Port is a Tier 1 facility servicing Ireland's eastern region hinterland. In this region the highest national concentration of customers, exporters and passengers are located, with the centre of gravity for these services focussed within the M50 corridor/Greater Dublin Area. By considering the distance of travel to other Tier 1 (and Tier 2 ports) the region can be considered as the coastline of the eastern Tier 1 port hinterland, extending from approximately Carlingford Lough to Rosslare. Figure 2-3 shows this target region in relation to the existing port hinterlands.

Step 3 Corridor: The consideration of strategic alternatives has confirmed that the port requires additional marine and associated land based facilities to deliver increased growth which focusses the site selection on the eastern hinterland coastline. This region is further refined by considering high level logistical constraints.

Important factors are a site's accessibility to existing internal cargo and passenger routes and also existing marine routes. There is a trend that cargo movements to and from the eastern region are increasingly entering directly from the EU on larger vessels.

For the purposes of this study, it is assumed that a water depth of -13.0m CD is required at the entrance to the new port facility to allow safe passage for all vessels likely to operate to and from the port. Whilst construction of offshore facilities can provide this depth throughout the coastal corridor it is considered desirable that this water depth exists near the existing coastline. This criteria de-selects shallow bays and estuaries with many alternative locations offering access to deeper water near the existing coastline. Further consideration is also given to any facility's operation with regard to coastal processes and potential risk of downtime at the more detailed site assessment stage.

In terms of access to existing marine traffic, locations to the south of the current Port represent net reduced cargo sea miles relative to sites north of the existing Port, but this may be partially offset by increased road miles along the M1/M50 and N11/M11 road corridor. Sea miles and land miles are therefore considered in combination, with the centre of gravity for the goods and passenger markets lying within the M50 corridor, and in the context of the overall distance of travel from overseas markets/ports

Figure 2-4 shows this target corridor with areas excluded due to physical conditions which would impinge on the logistical operation of the added facilities.

Step 4 Site Selection Zones: A mapping exercise was undertaken to identify further environmental and social constraints within this corridor to support the selection of zones where potential sites might be located.

In addition to marine technical constraints (water depth and coastal processes), the site selection process must allow for locating appropriate areas of associated land based facilities. In order that these may be accommodated, areas of continuous urban fabric were also excluded from the search constraints thus minimising social disruption associated with relocation of existing communities. However, development alongside/adjacent to exiting communities (as is the case with the current port) is appropriate (with mitigation and community gain initiatives) to allow for employment opportunities.

There is a need to future proof the new port facility by providing rail connectivity, albeit major intermodal rail facilities tend to operate in ports with either larger geographical hinterlands, or those with a better spatial distribution of population served by the port.

As per the existing Masterplan to 2040 appraisal of alternatives, the port has avoided direct impact on EU designated environmental sites within the site selection process. Any indirect effects on these sites would also be assessed within the more detailed comparative environmental assessment process (Chapter 3).

The draft national marine spatial strategy was reviewed as a valuable database of marine constraints and spatial planning datasets. The following baseline maps (and their supporting datasets) were considered:

Biodiversity, Flora and Fauna

- Designated Sites (Natura 2000 Network / National Designations)
- Benthic Habitats

Population and Human Health

- Tourism Trends and Features
- Coastal Built Heritage Sites; Historic Coastal Towns

Material Assets

- Inshore Fisheries (Commercial Fishing Vessel Distribution; Trawl & Dredge Fishing; Pot Fishing & Periwinkle harvesting; Line & Net Fishing)
- Distribution of Commercial Offshore Fishing Effort, All Nationalities (>12m)
- Fisheries Species Spawning & Nursery Grounds
- Location of Marine Danger and Restricted Areas
- Petroleum (Oil and Gas) Activity and Authorisations
- Marine Renewable Energy and Infrastructure
- High Potential Marine Aggregate Resource
- Locations of Fisheries Centres and Harbours
- Passenger Ferry and Cargo Vessel Ports, Routes and Activity

- Coastal Bathing Water Quality and Locations of Raw Sewage Discharge Around the Irish Coast
- Sport and Recreation Trends and Features
- Shipwrecks in Irish Waters

Many of these datasets show a relatively uniform distribution of activities along the corridor and thus do not afford distinction between sites.

The Locations of Marine Danger and Restricted Areas identifies a particular area around Gormanston of potential concern (firing range) which would require further discussion to understand the nature of the area's use and degree of restriction (see appendix D – Location of Marine Danger and Restricted Areas Map). In addition, the Marine Renewable Energy and Infrastructure dataset identifies extensive wind farm areas which again would warrant more detailed consideration with regard to the siting and future navigation into the port facilities. Similarly, the locations of Petroleum (Oil and Gas) Activity and Authorisations delineates particular areas which might impinge on future navigation thus requiring more detailed consideration. None of the above identified areas have been precluded from the pilot analysis pending further discussions.

The key social and environmental site selection constraints which exclude areas and therefore strongly influence the identification of site selection zones, were identified as the existing urban fabric/development plan zonings and the sites of EU environmental designation.

Figure 2-5 shows the identified target site selection zones encompassing stretches of suitable coastline. Areas have been excluded due to environmental and social constraints in addition to the exclusions which would impinge on the logistical operation of the added facilities.

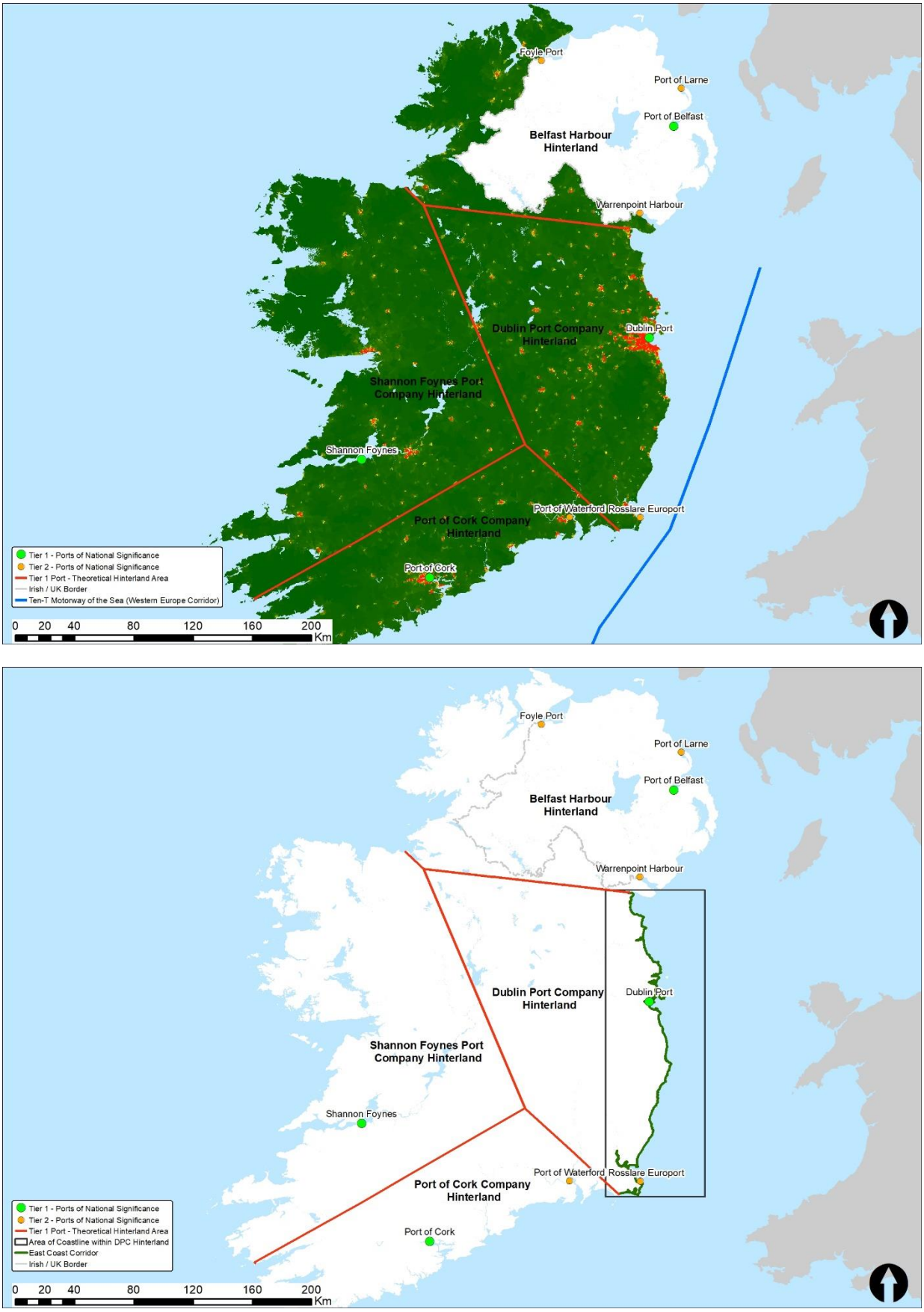


Figure 2-3 Target region in relation to the existing port hinterlands (Top - Population Density, Bottom – East Coast Corridor)

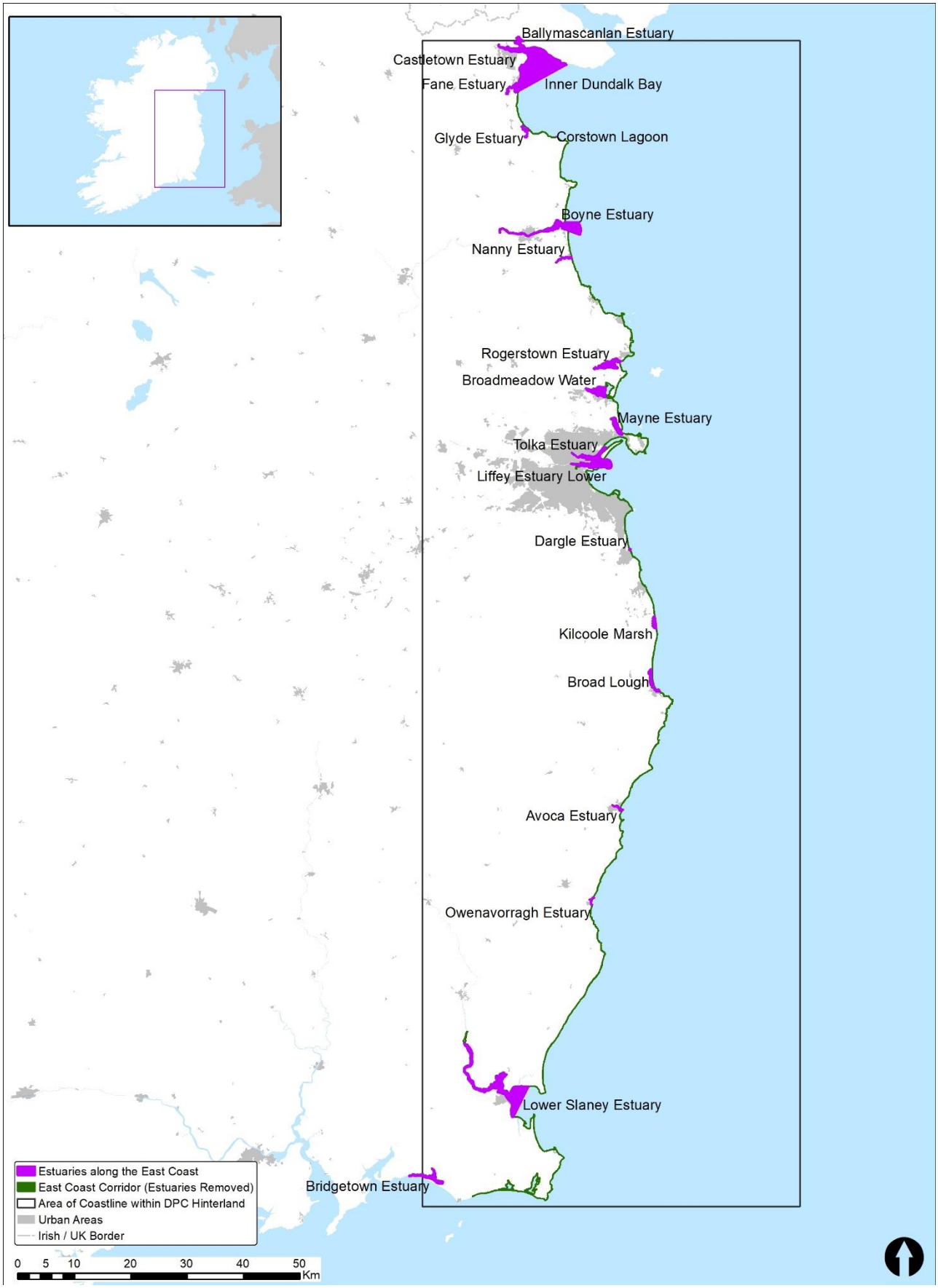


Figure 2-4 Target corridor with areas excluded due to physical conditions which would impinge on the logistical operation of the added facilities

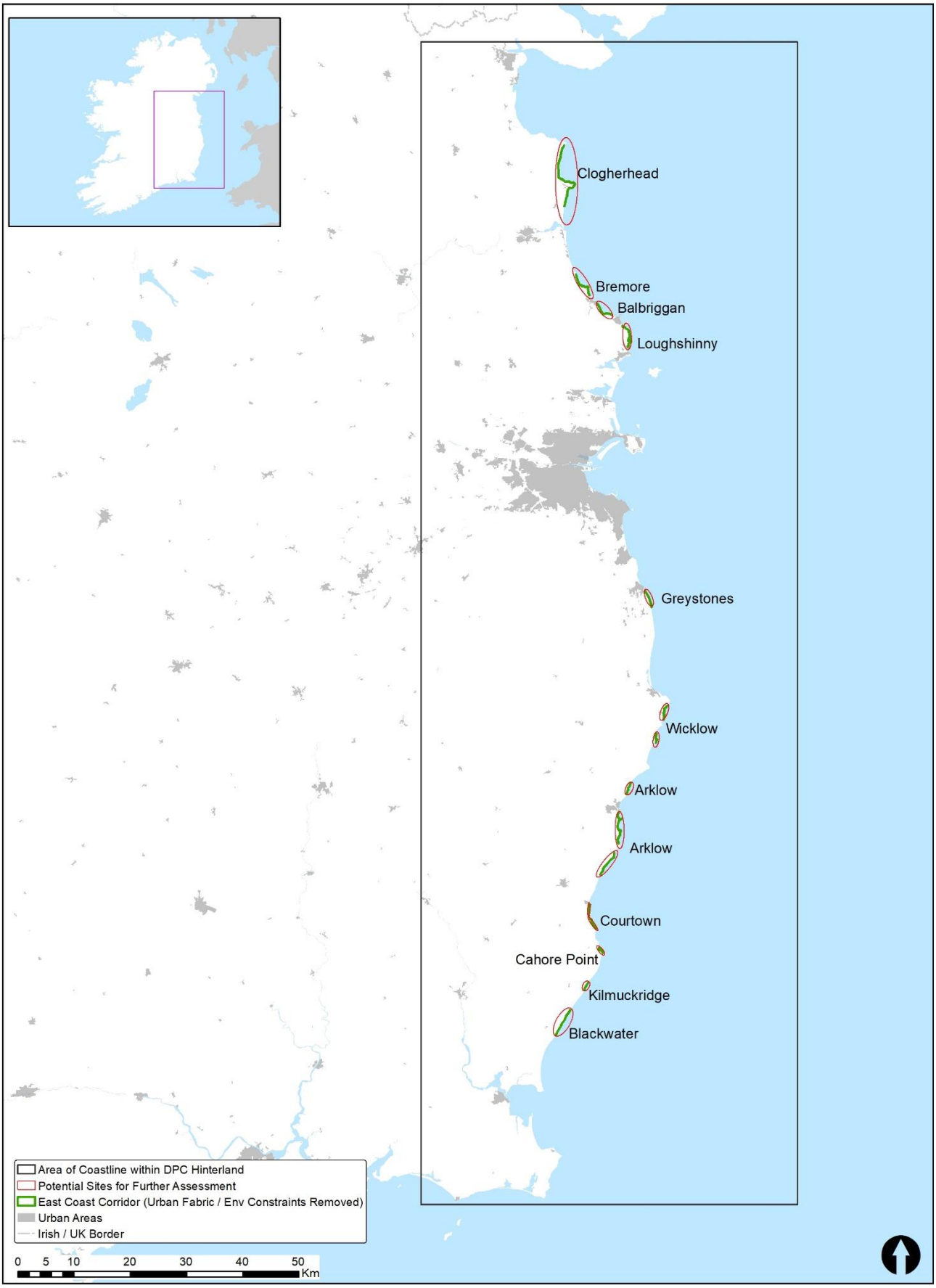


Figure 2-5 Target site selection zones encompassing stretches of suitable coastline

2.4 Preliminary sites for more detailed assessment

Application of the option development process and site selection step-wise approach has successfully identified a number of potentially suitable zones for further assessment.

In order to pilot the more detailed assessment process three strategic sites within these zones were initially proposed based on their connectivity to the M1/M50/N11/M11 road network, reasonable proximity to the M50, and potential future rail connectivity:

- Bremore Site,
- Arklow Site, and
- Newcastle Site.

However the site at Newcastle adjoins designated habitat along the coastline (see Appendix B for more detail). Application of the site selection process has determined that the land based facilities should not be further considered at this location due to direct impact on an EU designated site (where alternatives exist). Consequently two sites were progressed to more detailed analysis (one north of and the other south of the existing Dublin Port).

The scale of these sites has been determined by engineering and coastal processes analysis in order to provide sufficient detail to undertake the assessment. In order to pilot the assessment the added facilities have been taken as “new ports” i.e. sub-options of strategic option 6 “Vacate Existing Port & Add Remote Facilities”. This is to provide a conservative assessment of the scale of entirely new facilities as a worst case scenario.

It is recommended that the same sites should be reconsidered as partial facility replacements under strategic option 5 working alongside the existing port. In addition the final assessment would also incorporate the strategic assessment of retaining or vacating the existing port and all of its associated social and environmental consequences.

Two high level options for “new ports” are taken forward to pilot the assessment process for comparing these options to test this process (Figure 2-6). Further alternatives of location, site and scale should be populated in subsequent assessments once the process has been successfully piloted as presented in Chapter 3.

For the purposes of the pilot we have assumed a port built along the existing coastline however further options might also be considered adjacent to the coastline, that is, a port island with a bridge link to the mainland. This option may prove more challenging in terms of construction and operation and therefore most costly, however, it may have environmental positives and should be further assessed once the framework/process has been piloted.

Given that the remit of the site identification was to select possible sites for a complete relocation of Dublin Port, Rosslare was not considered a suitable candidate due to its distance from the country’s strategic radial road network (162Km to the M50 ‘Red Cow Roundabout’). The DP2 design port size of 134m Tonnes p.a. is 17 times the current capacity of Rosslare. That port is in proximity to a major cluster of European designated Natura 2000 sites which are likely to be impacted by a development of this scale – Carnsore Point SAC, Slaney River Valley SAC, Long Bank SAC, Blackwater Bank SAC, Wexford Harbour & Slobs SPA and the Raven SPA.

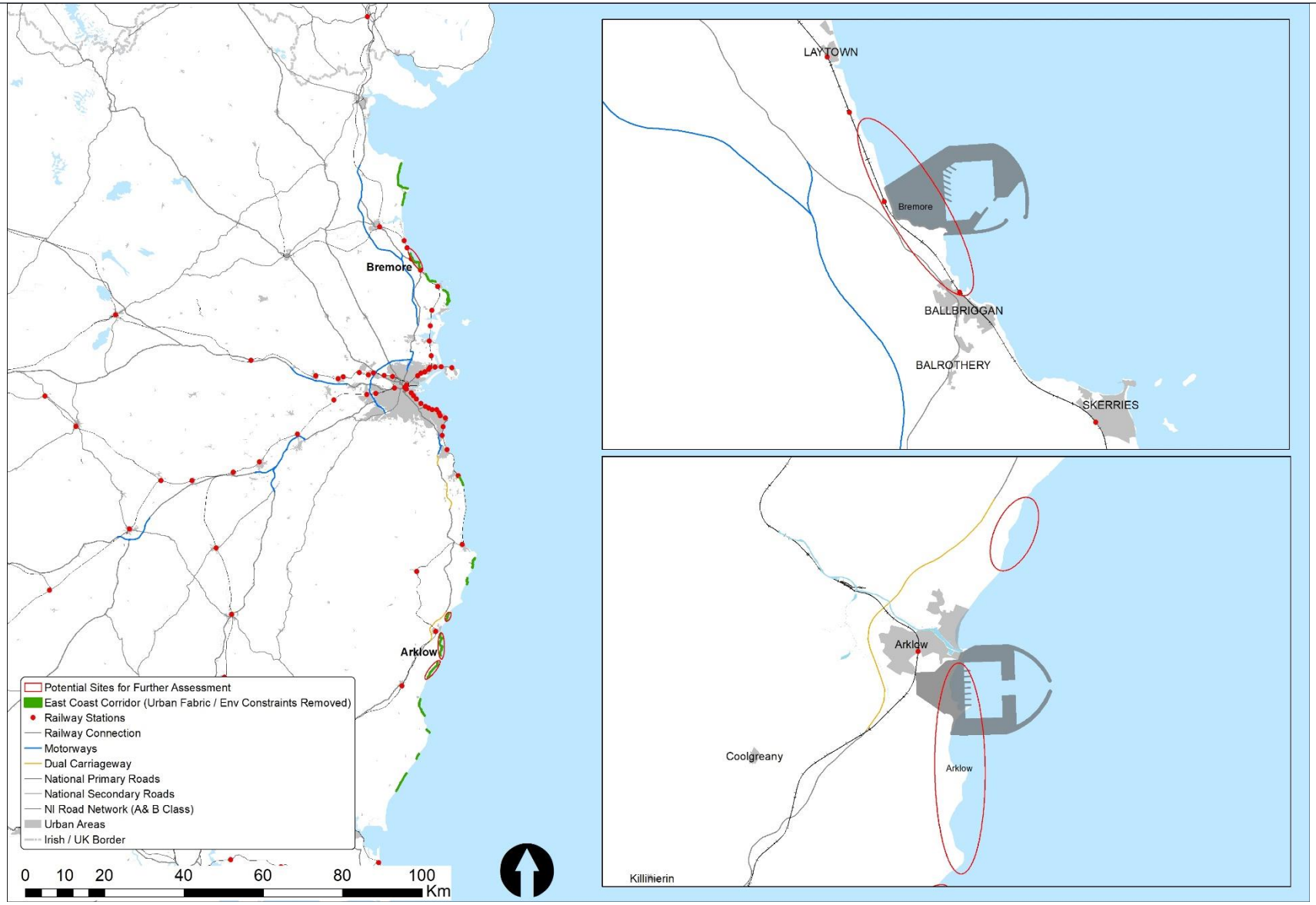


Figure 2-6 Pilot sites for further social and environmental appraisal

3 HIGH LEVEL SOCIAL AND ENVIRONMENTAL APPRAISAL OF POTENTIAL SITES

A number of technically feasible sites are being considered by DPC. Two potential site locations have been brought forward to the Environmental Assessment for the purposes of demonstrating the site comparison and piloting the assessment process. They are:

- Bremore Site, and
- Arklow Site.

The relevant assessment headings to evaluate environmental and social appraisal, at strategic plan level, are considered to be those identified in the Strategic Environmental Assessment (SEA) Directive. At project level the environmental and social considerations would be assessed in further detail in accordance with the Environmental Impact Assessment (EIA) Directive headings.

3.1 Assessment Process

The Dublin Port Masterplan 2040 was prepared to meet a number of strategic objectives identified by Dublin Port Company (DPC) as necessary to facilitate the effective operation of the Port in the period to 2040. For continuity, the examination of the likely significant environmental impacts of the development of a port in Bremore or Arklow have been assessed against those same strategic objectives. These are referred to as Strategic Environmental Objectives (SEOs) and are listed in Table 3-2.

The impacts of a port development on the SEOs are assessed in terms of their potential positive and negative impacts, and the significance of these impacts on the environment against the site selection objectives. The purpose of this process is to predict and evaluate, as far as possible, the environmental effects of the proposed developments, highlighting any significant environmental problems and / or benefits that are likely to arise from their implementation. Where possible, this assessment is quantitative with a graphical output to aid in the appreciation and understanding of the implications of the proposed developments.

The technically feasible options for a port development at Bremore and Arklow are assessed via a baseline led assessment. This method involves the assessment of the proposed developments which make up the options against each of the following topics:

- Biodiversity, Flora & Fauna (BFF).
- Population & Human Health (PHH).
- Geology, Soils and Land use (S).
- Water (W).
- Air, Noise & Vibration (ANV).
- Climatic Factors (C).
- Material Assets & Infrastructure (MA).

- Cultural, Architectural & Archaeological Heritage (H).
- Landscape & Visual Amenity (L).

The proposed developments are assessed for both the short term (construction) and the long term (operation). All potential positive and negative impacts are presented individually, with a text description, and then in a summary graphic. In addition, a summary of the overall balanced potential effect is presented for each environmental topic.

The scores assigned to impacts range from +3 to -3, as shown in Table 3-1. The purpose of adding numerical scores is to assist in the ranking of the options and for potential incorporation of the environmental and social criteria into an overall decision making framework based on a multi-criteria analysis of options (see Chapter 6). Like the assessment, the scores demonstrate both the positives and the negatives, and are not conveyed in terms of net benefit or net loss, which can sometimes be misleading.

Table 3-1 Description of Environmental Impact Scores

Score	Description
+ 3	Significant positive environmental impacts
+ 2	Moderate positive environmental impacts
+ 1	Slight positive environmental impacts
0	No environmental impacts
- 1	Slight negative environmental impacts
- 2	Moderate negative environmental impacts
- 3	Significant negative environmental impacts

This assessment is relatively strategic, with the aim of reporting likely impacts at the regional level to reflect the scale at which the options are being planned. The SEOs, Sub-Objectives, Indicators and Targets shown in Table 3-2 have been adapted from the Dublin Port Masterplan 2040 (as reviewed 2018).

Table 3-2 Strategic Environmental Objectives

Environmental Topic	Objectives		Sub-Objectives		Indicators	Targets
Biodiversity, Flora and Fauna	1	Avoid damage to, and where possible enhance, the biodiversity, flora and fauna within and in the vicinity of new port development.	A	Preserve, protect, maintain and where possible enhance Natura 2000 network, protected species and their key habitats.	Status, condition, area and number of European sites and species.	To maintain or enhance European sites and species, in line with conservation objectives.
			B	Preserve, protect, maintain and where possible enhance nature conservation sites/biospheres and protected species or other known species of conservation concern.	Status, condition, area and number of international, national and local conservation designations and their species.	To maintain or enhance sites of international, national or local importance, in line with conservation objectives.
			C	Preserve, protect, maintain and where possible enhance undesignated fauna, flora and habitats.	Status and condition of undesignated known fauna, flora and habitats.	To maintain or enhance the status and condition of undesignated known fauna, flora and habitats.
Population & Human Health	2	Minimise the risk to and provide benefit for the community and human health.	A	Minimise risk to human health and risk to life within the local community.	Perceived health/disturbance to the local community and number of port-related accidents.	No negative impacts on the health of the community from port-related activities.
			B	Provide social infrastructure and amenity facilities for the local community.	Numbers and quality of social infrastructure and amenity facilities in the area.	Greater numbers of and improved social infrastructure and amenity facilities in the area.
			C	Provide employment for the local community.	Direct and indirect employment created by DPC.	Long-term increase in employment opportunities associated with the port development.
Geology, Soils & Landuse	3	Protect the coastline and seabed	A	Protect the coastline from erosion.	Areas and rates of coastal erosion rates in the vicinity of the port development	Protection of the coastline from erosion, with no wider impacts on coastal processes.
			B	Protect the soil and sediment from contamination.	There is the potential contamination and sterilisation of soils and sediments.	No contamination or sterilisation of soils and sediments in port lands and the vicinity of the Port.
Water	4	Minimise impacts on water quality, water resource and flood risk.	A	No negative impacts on the status of coastal waters, surface waters and groundwater, and to provide no impediment to the achievement of water body	Surface, groundwater and coastal water body status.	Contribute to achieving the WFD objectives.

Environmental Topic	Objectives		Sub-Objectives		Indicators	Targets
				objectives under the Water Framework (WFD) Directive.		
			B	Reduce water usage and wastewater generated at the port development per unit of freight and passenger throughput.	Water usage and wastewater generated at the port development per unit of freight and passenger throughput.	Reduced water consumption and waste water generation from port activities.
			C	No negative impacts on flood risk management activity, and to provide no impediment to the implementation of the Floods Directive.	Flood risk in the area of port activities.	No flood risk at port facilities, with no transferred flood risk to the local area.
Air, Noise and Vibration	**5**	Minimise impacts on air quality, noise and vibration.	**A**	Minimise impacts on air quality in the area.	Predicted emissions and air quality from port activities.	No breaches of legislative standards or limits resulting from port development and activity.
			B	Minimise noise impacts in the area.	Predicted noise levels from port activities.	No breaches of legislative standards or limits resulting from port development and activity.
			C	Minimise vibration impacts in the area.	Predicted vibration levels from port activities.	No breaches of legislative standards or limits resulting from port development and activity.
Climatic Factors	**6**	Minimise emissions of greenhouse gases and port carbon footprint	**A**	Minimise emissions of greenhouse gases and port carbon footprint from development and activity	Predicted greenhouse gas emissions. Carbon emissions	No increase in GHG emissions and carbon footprint from port development and activity per unit of freight and passenger throughput.
			B	Adaptation to potential climatic change.	Climate change influenced flood risk in the area of port activities.	No risk from climate change influenced flooding at port facilities with no transferred risk to the local area.
Material Assets & Infrastructure	**7**	Protect existing and develop new material assets and infrastructure.	**A**	Protect existing and develop new material assets and infrastructure.	Area of DPC facilities. Energy and transport infrastructure.	Development of new port infrastructure with minimal disruption to existing material assets and infrastructure.

Environmental Topic	Objectives		Sub-Objectives		Indicators	Targets
					Freight and passenger throughput.	
Cultural, Architectural & Archaeological	**8**	Avoid loss of or damage to heritage features and where possible incorporate heritage features into the port development	**A**	Avoid loss of or damage to heritage features and where possible incorporate heritage features into the port development, with particular regard to local maritime and industrial heritage.	There is the potential loss of or damage to identified heritage sites and features, or their setting. Heritage features incorporated into the port development.	No loss of or damage to identified heritage sites and features, or their setting, from port development and activity. Incorporation of heritage features into the port development.
Landscape & Visual Amenity	**9**	Protect, and where possible enhance, the landscape / seascape character and visual amenity in the vicinity of the port development	**A**	Protect, and where possible enhance, landscape / seascape character and visual amenity in the vicinity of the port development	Landscape / seascape quality, designated views, and scenic amenity.	No negative impacts on the local landscape / seascape, views and visual amenity designations.

3.2 Assessment

The following section provides a summary of the qualitative assessments of two technically feasible sites available for the potential development of a new port with a throughput of 134 million tonnes per annum.

The proposed sites have been assessed and scored against the Strategic Environmental Objectives (SEOs) given previously in Table 3-2. The scoring guidelines used for this assessment can be found in Appendix C. Following scoring of the port developments against the SEOs a wider commentary on potential impacts by environmental topic area has been undertaken, which is summarised below.

The purpose of this assessment is to compare the potential environmental impacts of two potential sites during the construction and operational phases at a strategic level. A series of national and site specific constraints maps have been prepared as part of this strategic assessment, presented in Appendix D.

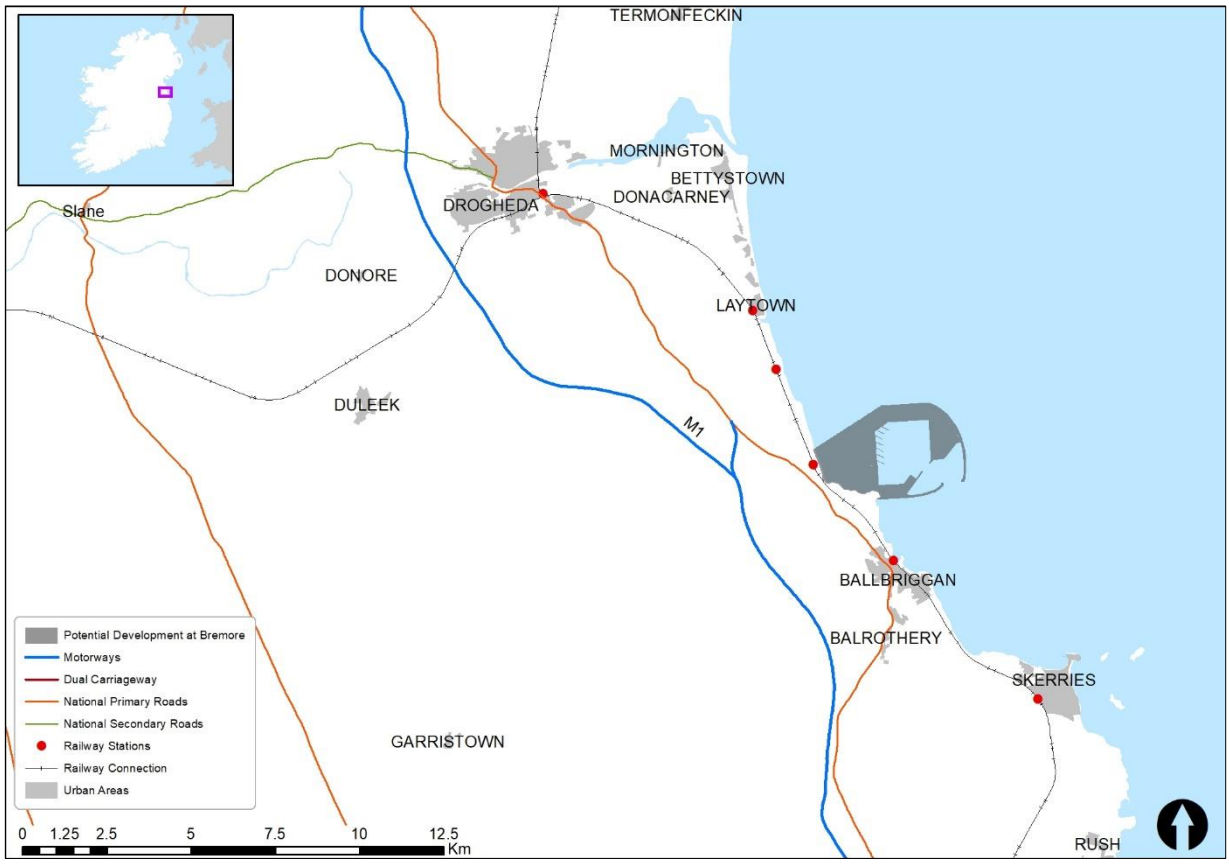
3.2.1 Bremore Site

Location

The proposed site for the DP2 Project at Bremore is located between Laytown and Balbriggan.

It has been identified as a potential site using the site selection process described in Chapter 2: It is located on the east coast of Ireland within the Dublin Port Hinterland Area; in an area with sufficient water depth; adjacent to an urbanised area; in close proximity to the landside national infrastructure network (Road, Rail, Gas Network, Electricity Network) and lies outside the Natura 2000 network.

The concept port arrangement at Bremore has been designed to facilitate a throughput of 134m tonnes per annum and to minimise its impacts on coastal processes.



Receiving Environment

A series of environmental constraint maps have been prepared showing the concept port arrangement at Bremore in relation to a series of environmental receptors. The environmental constraint maps are presented in Appendix D.

The constraints maps have been used to support the high level environmental appraisal of the proposed port development.

A summary of the main environmental receptors at Bremore are listed below.

- Biodiversity Flora & Fauna
  - Natura 2000 Network within 10km of the proposed port development:
    - River Nanny Estuary and Shore SPA (004158);
    - Rockabill to Dalkey Island SAC (003000);
    - Rockabill SPA (004014);
    - Skerries Islands SPA (004122);
    - Boyne Coast and Estuary SAC (001957); and
    - Boyne Estuary SPA (004080).

    Details of each European Designated site and consideration of the effects of the proposed development at Bremore on their qualifying interests is described in Appendix B.
  - Natural Heritage Areas within 10km of the proposed port development
    - Skerries Islands NHA;
    - Rockabill Island pNHA;
    - Lochshinny Coast pNHA;
    - Knock Lake pNHA;
    - Bog of the Ring pNHA;
    - Laytown Dunes/Nanny Estuary pNHA;
    - Boyne Coast & Estuary pNHA;
    - Rogerstown Estuary pNHA; and
    - Cromwells Bush Fen pNHA.
- Population & Human Health
  - 8 Towns located in close proximity to the port development at Bremore including: Balbriggan, Balrothery, Bettystown, Donacarney, Drogheda, Laytown, Mornington and Skerries
  - There is a population of approximately 67,451 within 10km of the port development at Bremore. This was calculated using 2016 Census Data at an Electoral District resolution.
  - 26 Primary Schools / 6 Post Primary Schools/4 Health Centres
- Geology, Soils and Landuse
  - Landuse zoning in the adjacent areas was obtained from the Fingal Development Plan 2017 – 2023 and the Meath County Development Plan 2013-2019 (Gormanston). According to the Fingal Development Plan, the area adjacent to the proposed port development site at Bremore are zoned for Green Belt (GB) and open space (OS). The areas within Gormanston were zoned for the following objective during the 2013-2019 period: To provide for necessary community, social and education facilities (G1), to provide for new residential communities with ancillary community facilities, neighbourhood facilities and employment facilities for the

status of the centre in the settlement Hierarchy (A2) and; to provide for and improve open spaces for active and passive recreational amenities (F1).

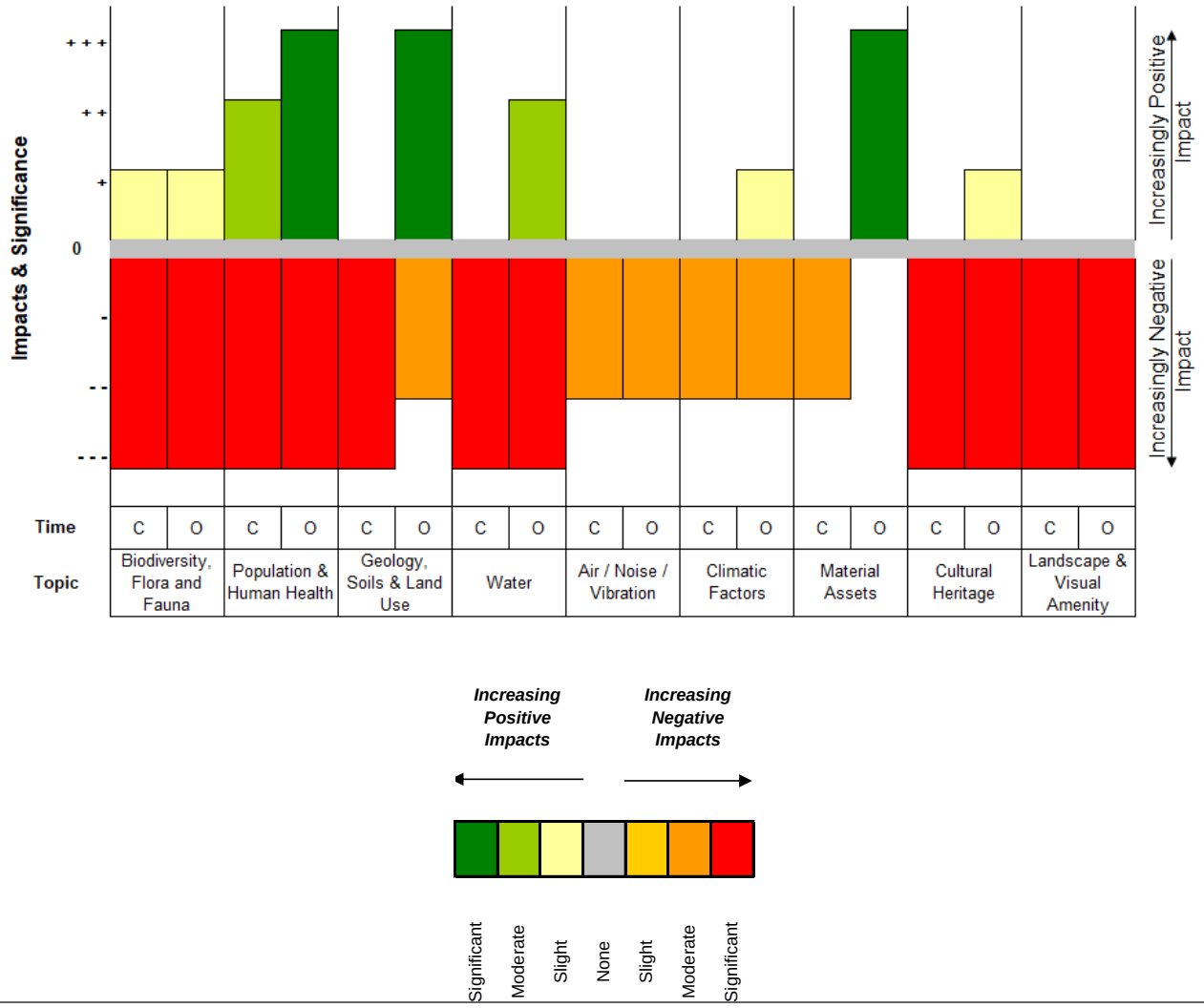
  - The area to the north of the port development site at Bremore is located within the designated NOTAM (Notice to Airmen) Zone around Gormanston military Camp. The Gormanston Military Camp has been in existence since the early 1900s. More recently this area has been used extensively as a live Air to Ground Firing range and local army activities.

- Water
  - The proposed port development at Bremore is located in North Western Irish Sea Coastal Waterbody (HA08). This waterbody has a Water Framework Directive Classification of High status between 2013 and 2018
  - There are 3 WFD Bathing Water areas in close proximity to the proposed port development at Bremore. They are Laytown/Bettystown Beach located to the north of the site and Balbriggan Front Strand and Skerries South Beach located to the south of the site.
  - The Delvin River enters the sea at Knocknagin Viaduct which is located immediately west of the Bremore development site.
- Air, Noise and Vibration
  - The proposed port development at Bremore is located within Zone C (Drogheda and Balbriggan) and Zone D Rural Ireland of the EPA Air Quality Zones.
- Climatic Factors.
  - The proposed development is located on the East Coast of Ireland and within an area of Coastal Flood Risk.
- Material Assets and Infrastructure.
  - The proposed site is located in close proximity to the Dublin Belfast rail network.
  - There is close access to the National Primary Road Network (N1) and M1 Motorway linking Belfast to Dublin. The site is located approximately 46Km from the Red Cow Roundabout (via M1 and M50 Southbound).
  - There is access to the national High Voltage Electricity infrastructure (38kV and 110kV) and access to the Gas Network Infrastructure.
  - The Gas interconnector from Wales comes ashore at Gormonstown.
- Cultural, Architectural & Archaeological Heritage.
  - The area surrounding the port development site at Bremore is rich with Archaeological and Architectural Heritage. As illustrated in appendix D, a number of Megalithic tomb sites and sites evident of early settlement (i.e Fulacht fia, settlement cluster, barrow) fall within or in close proximity to the proposed development site. The megalithic tombs belong to a wider group known as the Bremore/Gormanston group that extends long the coast on either side of the mouth of the river Delvin. This is in itself significant as it indicates they were a 'landing point' and the start of the western expansion of tombs inland. The Bremore tombs, as monuments of national importance, are protected by a Preservation Order (No. 22/76) which means no works can take place on or in the vicinity of the monuments without the consent of the Minister of the Environment.
  - There are also a number of maritime sites of significance located in close proximity to the port development site at Bremore including a number of ship wrecks and other features of Maritime Heritage
- Landscape and Visual Amenities surrounding Balbriggan.

Environmental Assessment

Environmental Topic	Short Term Timescale Impacts (Construction)	Long Term Timescale Impacts (Operation)
Biodiversity, Flora & Fauna (BFF)	-3/+1	-3 /+1
Population & Human Health (PHH)	-3/+2	-3/+3
Geology, Soils and Landuse (S)	-3	-2/+3
Water (W)	-3	-3/+2
Air, Noise & Vibration (ANV)	-2	-2
Climatic Factors (C)	-2	-2/+1
Material Assets & Infrastructure (MA)	-2	+3
Cultural, Architectural & Archaeological Heritage (H)	-3	-3 +1
Landscape & Visual Amenity (L)	-3	-3

Summary Chart of Impacts



Receiving Environment / Discussion of Impacts

Biodiversity, Flora & Fauna

- *Objective 1A - Preserve, protect, maintain and where possible enhance Natura 2000 network, protected species and their key habitats.*
- *Objective 1B - Preserve, protect, maintain and where possible enhance nature conservation sites/biospheres and protected species or other known species of conservation concern.*
- *Objective 1C - Preserve, protect, maintain and where possible enhance undesignated fauna, flora and habitats.*

As described in Chapter 2, the site selection process has considered the Natura 2000 network in that all designated sites that fall along the east coast have been discounted on the basis of direct impact. As shown in Appendix D, the potential site at Bremore has been selected as a potential site as its location will not result in a direct impact on the Natura 2000 Network during construction and operation. The potential port arrangement at Bremore has been designed to facilitate the required throughput of 134m tonnes per annum and also to minimise the impacts to the coastal processes that are currently experienced along the east coast of Ireland. However, due to the scale and mass of the proposed port development it is likely that its construction and operation will result in *significant negative* impacts on the a number of Natura 2000 sites, their protected species and habitats through hydromorphological changes and interruption of localised and regional sediment supply.

European designated sites likely to be impacted by the development include: River Nanny Estuary and Shore SPA (004158), Rockabill to Dalkey Island SAC (003000), Rockabill SPA (004014), Skerries Islands SPA (004122), Boyne Coast and Estuary SAC (001957), Boyne Estuary SPA (004080). An assessment of the proposed port development at Bremore on sites designated under the Habitats Directive has been undertaken as part of this study as set out in Appendix B.

There is also potential for *slight positive* impacts on the Natura 2000 network through increased awareness of Natura 2000 sites, information on their habitats, species and conservation objectives during construction and operation.

Population & Human Health

- *Objective 2A - Minimise risk to human health and risk to life within the local community.*

As illustrated in Appendix D, there are a number of towns and villages in the vicinity of the proposed port development site at Bremore, the closest being Balbriggan/Balrothery. During construction, a port development at Bremore has the potential to create temporary and indirect disturbance impacts on the local urban and rural communities through construction activities. Construction activities that have the potential to cause *moderate negative impacts* on Human Health and wellbeing include: piling, infilling, increased traffic volumes, increase construction emissions and the potential increase in noise and vibration levels.

During operation, a port development at Bremore also has the potential for *moderate negative impacts* on the local communities through an increase in operational traffic and associated noise, vibration and air emissions which could impact on the human health of the local population.

- *Objective 2B - Provide social infrastructure and amenity facilities for the local community.*

The area adjacent to the potential site at Bremore has being zoned as a green belt and open space. The objectives of the Fingal Development plan 2017-2023 aim to protect and provide for a green belt area and preserve and provide for open space and recreational activities. During construction and operation, a new port development in this area has the potential for *significant negative* impacts as a result of a significant reduction in number of green space, social

infrastructure and amenity facilities available to the local community. There is also potential for *moderate negative impacts* to the local beaches at Balbriggan, Front Strand Beach and Laytown/Bettystown Beach through the potential alteration of natural coastal processes and sediment transport caused by the new port structure.

During operation of a new port development at Bremore, there is also potential for *moderate positive impacts* on social infrastructure and amenity facilities through the development, improvement and enhancement of new or improved facilities similar to those that currently exist or are planned within Dublin Port (greenways, connections between the port and local communities, heritage zone etc).

- *Objective 2C - Provide employment for the local community.*

During construction, a port development at Bremore has the potential for *moderate positive impacts* on employment within the local community through the direct and indirect creation of construction phase employment. During operation, a port development at Bremore has the potential to have a *significant positive* impact on employment within the local community through the creation of permanent direct and indirect employment opportunities. Employment opportunities during construction and operation include: construction workers onsite, engineers designing infrastructure and construction supply companies supplying materials, and then indirect increases in local employment from provision of services to construction staff.

Geology, Soils & Land use / Physical Environment

- *Objective 3A - Protect the coastline from erosion.*

During construction, a port development at Bremore will result in *significant negative* impacts with regards to erosion of the local coastline through the unavoidable loss of seabed due to reclamation and infilling operations that are necessary to create the port berthing and hardstand areas.

During operation, a port development at Bremore has the potential for positive and negative impacts on the local coastline: The creation of a new land resource that is protected from coastal erosion will have a s*ignificant positive* impacts on the shoreline; The port development at Bremore also has the potential to result in *moderate negative* impacts on the local shoreline through the potential alteration of natural coastal processes and sediment transport with increased risk of coastal erosion and land resource. However, given the dynamic nature of the existing sediment transport regime along the east coast of Ireland, it is likely that any development which includes hard engineering of the shoreline has the potential to negatively impact coastal processes and the stability of adjacent shorelines. This is particularly relevant when considered in context of future climate change which is expected to result in an increase in the frequency and magnitude of extreme storm events.

- *Objective 3B - Protect the soil and sediment from contamination.*

As illustrated in Appendix D, the area to the north of the port development site at Bremore is located within the designated NOTAM (Notice to Airmen) Zone around Gormanston Military Camp. The Gormanston Military Camp has been in existence since the early 1900s. More recently this area has been used extensively as a live Air to Ground Firing range and for local army activities. It is likely that the marine soils and sediments in vicinity of the port development site at Bremore are contaminated with hazardous and dangerous sediments including hydrocarbons, lead and other heavy metals.

During construction of a port development at Bremore, there is potential to have a *significant negative* impacts on soil and sediment contamination through the disturbance and mobilisation of contaminated soils during the reclamation and infilling works.

During operation of a new port development at Bremore, there is the potential for both moderate positive and negative impacts to soils and sediments. The *moderate negative* impacts arise through the increase in ship traffic passing through

the port has the potential to give rise to an increase in anti-fouling contaminates/or other contaminating substances from larger vessels being released into marine soils and sediment. The *moderate positive* impacts arise through the potential opportunities to incorporate the containment and management of contaminating substances into the ports design so that accidental releases through landside port operations are avoided and also the potential for remediation and clean-up of some of the potentially contaminated marine soils and sediments.

Water

- *Objective 4A - No negative impacts on the status of coastal waters, surface waters and groundwater, and to provide no impediment to the achievement of water body objectives under the WFD.*

The port development at Bremore is located in North Western Irish Sea Coastal Waterbody (HA08) and has a Water Framework Directive (WFD) classification of High status between 2013 and 2018. There are also 3 WFD Bathing Water areas in the vicinity, they are: Laytown/Bettystown Beach located to the North of the development and Balbriggan Front Strand and Skerries South Beach located to the south.

The construction of a port development at Bremore has the potential to have *moderate negative* impacts on water quality particularly during infilling and reclamation operations that necessary to create the port berthing and hardstand area. During reclamation works, every effort will be made to ensure that the infilling operations will not give rise to an increase in suspended sediments in the locality and all infill materials will be clean and free of contaminates.

The operation of a port development at Bremore has the potential to have *moderate negativ*e impacts on water quality through the accidental releases of pollutants from vessels, runoff from hardstand areas and/or discharges from overloaded treatment waste water treatment facilities. As this will be a new purpose built port facility, it will be designed to fully incorporate the drainage and waste water requirements of a commercial shipping port to ensure that port operation will have not result in a deterioration of WFD status in the local waterbodies. There is also potential for *moderate negative impacts* due to the potential morphological change to the local WFD Bathing Waters at Laytown / Bettystown and Balbriggan caused by the alteration of natural coastal processes and sediment transport.

- *Objective 4B - Reduce water usage and wastewater generated at the Port per unit of freight and passenger throughput.*

As a port development at Bremore will be new, there will be an unavoidable *significant negative impacts* on water consumption and waste water generation during the construction phase and operation phase.

- *Objective 4C - No negative impacts on flood risk management activity, and to provide no impediment to the implementation of the Floods Directive.*

The Delvin River enters the sea at Knocknagin Viaduct which is located immediately west of the Bremore development site. The construction and operation of a new port structure has the potential to a have *moderate negative* impact on fluvial flood risk in surrounding towns and villages located along the Delvin River. The creation of a new port at Bremore has the potential to cause an obstruction during peak river flows resulting in potential localised fluvial flooding in the upstream town of Gormanston.

The development site is also located on the east coast of Ireland and therefore likely to be at risk of future coastal flooding as a result of climate change. As this is a new development there are opportunities to have *moderate positive impacts* on flood risk management particularly through the development and incorporation of coastal flood defences into the ports design. Any future development at this site will require further flood risk assessment at the detailed level.

Air Quality / Noise / Vibration

- *Objective 5A - Minimise impacts on air quality in the area.*

- *Objective 5B - Minimise noise impacts in the area.*
- *Objective 5C - Minimise vibration impacts in the area*

The port development at Bremore is located within Zone C (Drogheda and Balbriggan) and Zone D Rural Ireland of the EPA Air Quality Zones. During the construction and operation of a port development at Bremore, there is the potential for *moderate negative impacts* to the local community as a result of breaches of air quality thresholds. There is also the potential for *moderate negative impacts* on to the local community as a result of higher noise and vibration levels.

Climatic Factors

- *Objective 6A - Minimise emissions of greenhouse gases and port carbon footprint from development and activity.*

Greenhouse gases (GHG) in the atmosphere are rising as a result of human activity in particular the burning of fossil fuels for heating, energy and transport in addition to other activities (Waste, Agriculture). Shipping is the key activity responsible for GHG emissions in the maritime environment. The existing Dublin Port inherently has a high carbon footprint which ties into its industrial nature. DPC are active in their efforts to reduce GHG emissions which are contributing to climate change through their reduction in energy consumption. DPC should ensure a continuation in its efforts to minimise its carbon footprint from any future port development and activity per unit of freight and passenger throughput.

Due to the nature of the port industry, a port development at Bremore has the potential to have negative impacts on GHG emissions and carbon footprint during construction and operation. During construction there is potential for *moderate negative impacts* on GHG emissions and carbon footprint through the use of large volumes of concrete to construct the berthing and hardstand area, the increased traffic movement and associated construction emissions.

During operation there is also the potential for *slight negative impacts* in GHG emissions and carbon footprint due to increases in port activity including greater traffic (marine and road) to and from the Port.

- Objective 6B - Adaptation to potential climatic change.

The predicted impacts of climate change are likely to include increases in the frequency and intensity of rainfall, the increases in peak flows in rivers, a rise in sea levels and increased storminess. These effects of climate change are likely to increase pluvial, fluvial and coastal flooding and will require all future development to be adaptable or resilient to future climatic changes and its associated impacts. Any future development should be developed with climate change in mind to ensure future drainage and flood risk requirements are taken into account. A port development at Bremore will have a *slight positive* impact as it will be designed to provide the port receptors with coastal flood protection and be adaptable to flood risk influenced by climatic change.

Material Assets

- *Objective 7A - Protect existing and develop new material assets and infrastructure.*

As illustrated in Appendix D, there are a number of national material assets located in close proximity to Bremore including: the national road network (N1 / M1), proximity to Dublin (46Km to Red Cow Roundabout), rail network and the high voltage electricity infrastructure (38kV), as well as access to the gas network infrastructure. The gas interconnector between Ireland and England is located close to the proposed site at Gormanston.

During construction, a port development at Bremore has the potential to have a *moderate negative impact* on the existing national material assets and infrastructure through short term disruption caused by construction and/or upgrading of existing material assets (national road, rail, electricity and gas network).

During operation, in addition to the creation of a new Tier 1 Port infrastructure, the port development at Bremore has also the potential to have *significant positive impacts* on the existing national material assets and infrastructure network.

Cultural, Architectural and Archaeological Heritage

- *Objective 8A - Avoid loss of or damage to heritage features and where possible incorporate heritage features into the Port Estate*

Any development activity has the potential to result in impacts (positive and negative) on heritage features and their setting, especially those in areas rich in maritime heritage. As illustrated in Appendix D, the area surrounding the port development site at Bremore are rich with sites of archaeological significance including early settlement sites (Megalithic Tombs, Fulacht Fia, Ardgillan Castle, Skerries Mills as well as a number of ship wrecks site.

During construction and operation, the proposed development at Bremore has the potential to result in *significant negative impacts* to the historic environment through; the permanent loss or damage to known and unidentified heritage features due to the construction and infilling operations that are necessary to construct berthing and hardstand facilities; potential damage to local heritage features particularly early settlement sites located within the site area. however, the majority of the port would be reclaimed land, so impacts will be lessened.

During operation there is the potential for *slight positive impacts* through implementation of a Built Heritage Conservation Strategy aimed at increasing awareness of the cluster of adjacent Megalithic sites and port heritage features discovered and conserved during construction works, including the development of an interpretative public realm heritage zone.

Landscape & Visual

- Objective 9A - Protect, and where possible enhance, the landscape / seascape character and visual amenity in the vicinity of the Port.

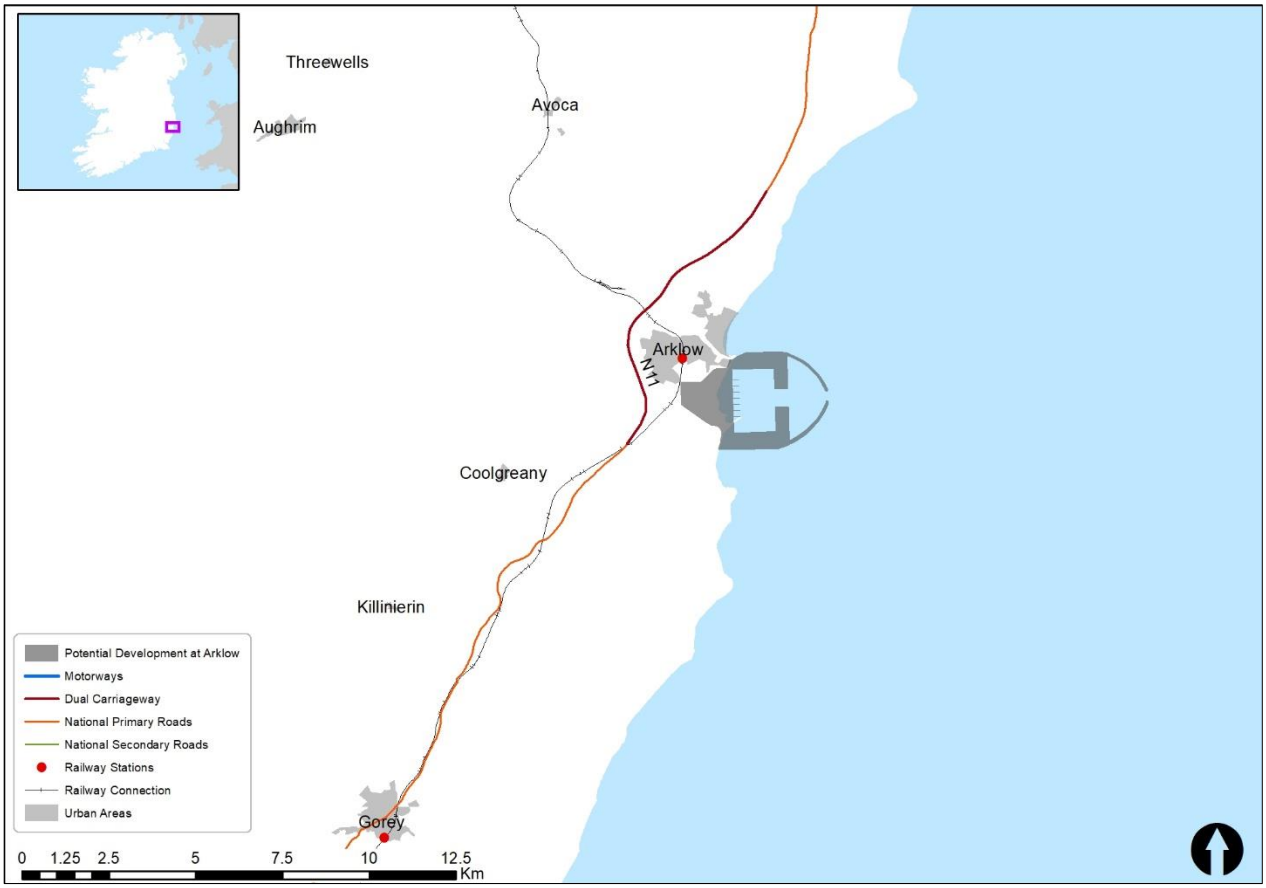
Due to the scale and size of the land requirements necessary to create a new commercial port, it is likely that the port development at Bremore will have a *significant negative* impact on sensitive landscapes and seascapes for many receptors during its construction and operation.

3.2.2 Arklow Site

Location

The proposed site for the DP2 Project at Arklow is located is located to south-east of Arklow and to the south of the River Avoca. It has been identified as a potential site using the site selection process described in Chapter 2: It is located on the east coast of Ireland within the Dublin Port Hinterland Area; in an area with sufficient water depth; adjacent to an urbanised area; in close proximity to the landside national infrastructure network (Road, Rail, Gas Network, Electricity Network) and lies outside the Natura 2000 network.

The concept port arrangement at Arklow has been designed to facilitate a throughput of 134m tonnes per annum and to minimise its impacts on coastal processes.



Receiving Environment

A series of environmental constraint maps have been prepared showing the concept port arrangement at Arklow in relation to a series of environmental receptors. The environmental constraint maps are presented in Appendix D.

The constraints maps have been used to support the high level environmental appraisal of the proposed port development.

A summary of the main environmental receptors at Arklow are listed below.

- Biodiversity Flora & Fauna
  - Natura 2000 Network within 10km of the proposed port development
    - Kilpatrick Sandhills SAC (001742);
    - Buckroney-Brittas Dunes and Fen SAC (000729); and

- Magherabeg Dunes SAC (001766).

Details of each European Designated site and consideration of the effects of the proposed development at Arklow on their qualifying interests is described in Appendix B.

– Natural Heritage Areas within 10km of the proposed port development

- Arklow Rock-Askintinny
- Arklow Sand Dunes;
- Arklow Town Marsh;
- Avoca River Valley;
- Kilpatrick Sandhills;
- Buckroney-Brittas Dune and Fen; and
- Kilgorman River Marsh and Ballymoney Strand.

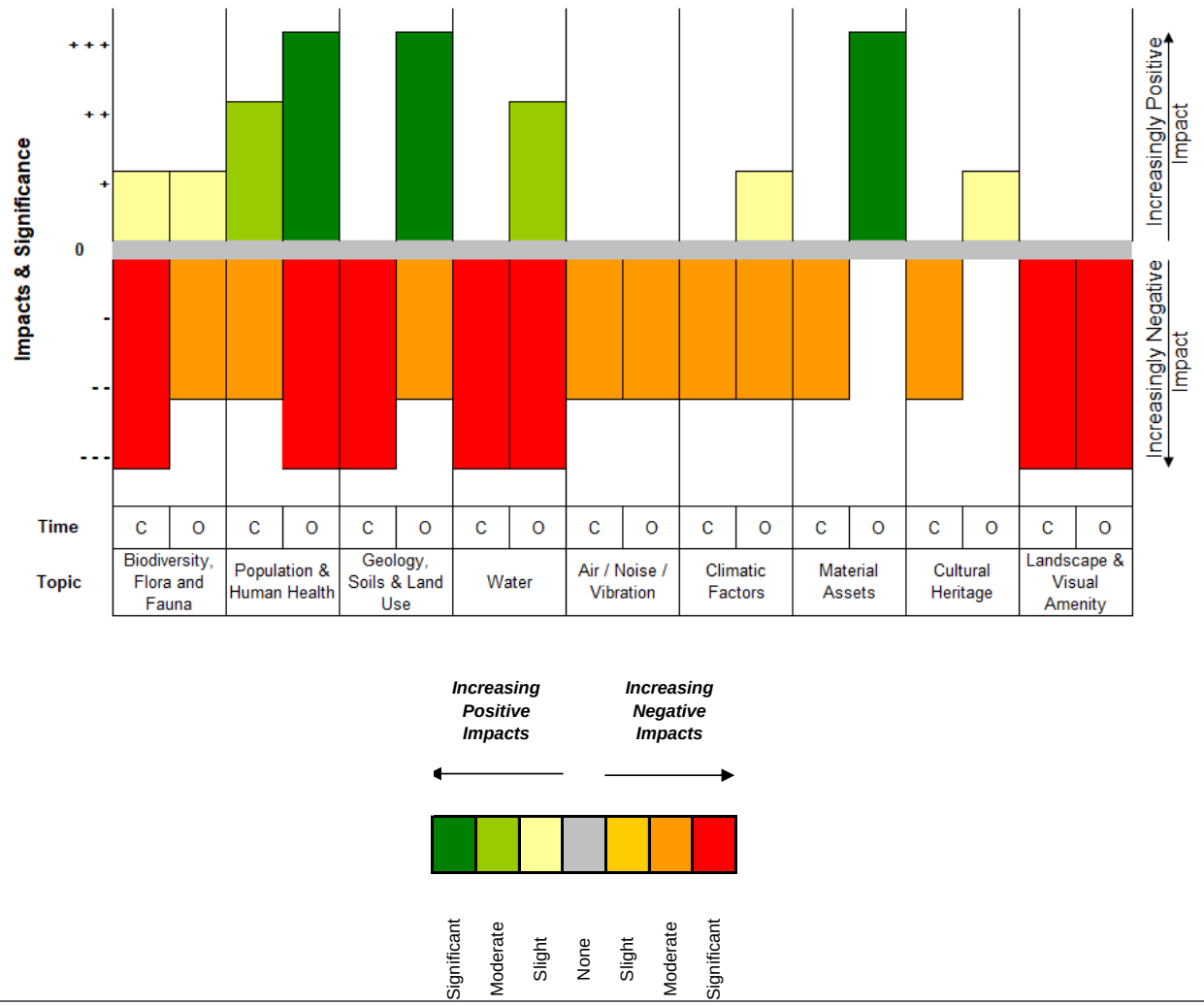
– The proposed port development site at Arklow lies adjacent to the Arklow Rock Askintinny proposed Natural Heritage Area. The area has been designated for both geological and botanical interests including the exposures of volcanic crater pipes in the pale, acidic Rhyolite and the occurrence of a rare plant species. The scientific interests that occur at this site should be considered in detail if this option is to proceed.

- Population & Human Health
  – 3 Towns are located in closed proximity to the proposed port development at Arklow; Arklow Town, Avoca and Coolgreany. Other towns in the region include Gorey, and Aughrim
  – There is a population of approximately 22,727 within 10km of the port development at Arklow. This was calculated using 2016 Census Data at an Electoral District resolution.
  – There are 9 Primary Schools, 4 Post Primary Schools and 3 Health Centres located within 10km of the port development site at Arklow.
- Geology, Soils and Landuse
  – Landuse zoning in the adjacent areas was obtained from the Arklow Town and Environs 2018 – 2024 Development Plan: The sites adjacent to the development site are zoned for Extractive Industry (quarrying) and Active Open Space (18 hole golf course).
- Water
  – The port development site at Arklow is located in the South Western Irish Sea – Brittas Bay waterbody (HA10). This waterbody has a Water Framework Directive Classification of ‘unassigned’ between 2013 and 2018.
  – Directly north of the port development site lies the Avoca Estuary WFD transitional waterbody. This waterbody has received and maintained a WFD Moderate status between 2013 and 2018.
  – There are 3 WFD Bathing Water areas in close proximity to the port development at Arklow. They are Clogga Beach which is located immediately south of development site and Brittas Bay North and South Beach to the North of Arklow.
  – The Avoca River enters the sea at Arklow immediately north of the development site. Low-lying parts of Arklow Town already experience extensive fluvial flooding during prolonged wet periods. The Wicklow County Council and OPW are in the process of preparing the Avoca River (Arklow) Flood Defence Scheme. The scheme in Arklow has not yet been finalised but is likely to include the construction of comprehensive flood defences (Flood Walls/Embankments) and extensive dredging within the Avoca River within Arklow Town.

- Air, Noise and Vibration
  - The port development at Arklow is located within Zone D Rural Ireland of the EPA Air Quality Zones.
- Climatic Factors.
  - Low-lying parts of Arklow experience fluvial flooding during prolonged wet periods.
  - The port development site at Arklow is located on the east coast of Ireland and is therefore likely to be at risk of future coastal flooding as a result of climate change.
- Material Assets and Infrastructure.
  - The proposed site is located in close proximity to the Dublin/Rosslare rail network.
  - There is close access to the National Primary Road Network (N11) and M11 Motorway linking Wexford to Dublin. The site is located approximately 78Km from the Red Cow Roundabout (via M11 and M50 Northbound).
  - There is access to the national High Voltage Electricity infrastructure (38kV, 110kV and 220kV) and access to the Gas Network Infrastructure.
  - Arklow is served by the Arklow Water Treatment Plant in Ballyduff which has an ultimate capacity of 6.1 million litres per day (MLD), which equated to c.18,000pe (population equivalent) and is currently operating between 2.7 – 3.2MDL (2017 figures).
  - There is currently no wastewater treatment plant in Arklow. There is an existing piped wastewater system which was installed in the 1930s and was designed as a combined sewer (foul and surface water), which discharges untreated wastewater directly into the River Avoca. In August 2019, An Bord Pleanála granted Irish Water planning permission for the Arklow Wastewater Treatment Plant (WwTP). The WwTP with a 36,000 population equivalent will best meet the current needs of Arklow, and allow for future expansion of the town.
- Cultural, Architectural & Archaeological Heritage. As illustrated in Appendix D, there are a number of archaeological features located in the vicinity of the development site including: Ritual Sites, Graveyards as well as sites of maritime sites of significance (ship wrecks, Arklow Walled Town and Arklow Harbour)
- Landscape and Visual Amenities surrounding Arklow

Environmental Assessment		
Environmental Topic	**Short Term Timescale Impacts (Construction)**	**Long Term Timescale Impacts (Operation)**
Biodiversity, Flora & Fauna (BFF)	-3/+1	-2 /+1
Population & Human Health (PHH)	-2/+2	-3/+3
Geology, Soils and Landuse (S)	-3	-2/+3
Water (W)	-3	-3/+2
Air, Noise & Vibration (ANV)	-2	-2
Climatic Factors (C)	-2	-2/+1
Material Assets & Infrastructure (MA)	-2	+3
Cultural, Architectural & Archaeological Heritage (H)	-2	+1
Landscape & Visual Amenity (L)	-3	-3

Summary Chart of Impacts



Receiving Environment / Discussion of Impacts
Biodiversity, Flora & Fauna • *Objective 1A - Preserve, protect, maintain and where possible enhance Natura 2000 network, protected species and their key habitats.* • *Objective 1B - Preserve, protect, maintain and where possible enhance nature conservation sites/biospheres and protected species or other known species of conservation concern.* • *Objective 1C - Preserve, protect, maintain and where possible enhance undesignated fauna, flora and habitats.* As described in Section 2, the site selection process has considered the Natura 2000 network in that all designated sites that fall along the east coast have been discounted on the basis on direct impact. The potential site at Arklow has been selected as a potential site as it construction will not result in a direct impact on the Natura 2000 Network during construction and operation (see appendix D). The potential port arrangement at Arklow has been designed to facilitate the requirements of a Tier 1 port but also to minimise the impacts to the coastal processes that are currently experienced along the east coast of Ireland. Due to the size of the proposed arrangement it is likely that the construction and operation of a port development will result in *moderate* to *significant negative* impacts on the a number of Natura 2000 sites, their protected species and habitats through hydromorphological changes and interruption of localised sediment supply. Sites likely to be impacted by the development include: Kilpatrick Sandhills SAC (001742), Buckroney-Brittas Dunes and Fen SAC (000729) and Magherabeg Dunes SAC (001766). An assessment of a port development at Bremore on sites designated under the Habitats Directive has been undertaken as part of this study (Refer to Appendix B to this report). During the construction and operation there is also potential for *slight positive* impacts on the Natura 2000 network through increased awareness of Natura 2000 sites, information on their habitats, species and conservation objectives. The areas adjacent to the proposed Arklow site of regional significance (Arklow Rock Askintinny proposed Natural Heritage Area). The area has been designated for Geological and Botanical interests including the exposures of volcanic crater pipes in the pale, acidic Rhyolite and the occurrence of a rare plant species. The scientific interests that occur at this site should be considered in detail if this option is to proceed.
Population & Human Health • *Objective 2A - Minimise risk to human health and risk to life within the local community.* There are 3 towns and villages within 10km of the potential site at Arklow, the closest being Arklow Town which is located adjacent to the port development site. During construction, a port development at Arklow has the potential to create temporary, indirect disturbance impacts on the local urban and rural communities. Construction activities that have the potential to cause *moderate negative* impacts on Human Health and wellbeing include: piling, infilling, increased traffic volumes, increase construction emissions and the potential increase in noise and vibration levels. During operation, a port development at Arklow also has the potential for *moderate negative* impacts on the local communities through an increase in operational traffic and associated vibration levels, noise and air emissions which could impact on the human health of the local population. • *Objective 2B - Provide social infrastructure and amenity facilities for the local community.* Arklow Town and Environs 2018-2024 has classified the area adjacent to the potential development site at Arklow as being zoned for Extractive Industry (Quarry) and Active Open Space (Golf Course). During construction and operation

of a new port development at Arklow, there is the potential to have *moderate negative* impacts on social infrastructure and amenity facilities in the locality through the reduction in social facilities and active green space available to the local community, including Arklow Golf Links. There is also potential for *significant negative impacts* to the local beaches at Clogga Beach through the alteration of natural coastal processes and sediment transport caused by the new port structure

During the operation of a new port development at Arklow, there is also the potential for *moderate positive impacts* on social infrastructure and amenity facilities through the development, improvement and enhancement of new or improved facilities similar to those that currently exist or are planned within Dublin Port (greenways, connections between the port and local communities, heritage zone etc).

- *Objective 2C - Provide employment for the local community.*

During construction, a port development at Arklow has the potential for *moderate positive impacts* on employment within the local community through the direct and indirect creation of construction phase employment. During operation, a port development at Arklow has the potential to have a *significant positive* impact on employment within the local community through the creation of permanent direct and indirect employment opportunities. Employment opportunities during construction and operation include: construction workers onsite, engineers designing infrastructure and construction supply companies supplying materials, and then indirect increases in local employment from provision of services to construction staff.

Geology, Soils & Land use / Physical Environment

- *Objective 3A - Protect the coastline from erosion.*

During construction, a port development at Arklow will result in *significant negative* impacts with regards to erosion of the local coastline through the unavoidable loss of seabed due to reclamation and infilling operations that are necessary to create the port berthing and hardstand areas.

During operation, a port development at Arklow has the potential for positive and negative impacts on the local coastline: The creation of a new land resource that is protected from coastal erosion will have a s*ignificant positive* impacts on the shoreline; The port development at Arklow also has the potential to result in *moderate negative* impacts on the local shoreline through the potential alteration of natural coastal processes and sediment transport with increased risk of coastal erosion and land resource. However, given the dynamic nature of the existing sediment transport regime along the east coast of Ireland, it is likely that any development which includes hard engineering of the shoreline has the potential to negatively impact coastal processes and the stability of adjacent shorelines. This is particularly relevant when considered in context of future climate change which is expected to result in an increase in the frequency and magnitude of extreme storm events.

Objective 3B - Protect the soil and sediment from contamination.

During the construction of a port development at Arklow, there is potential to have a *moderate negative* impacts on soil and sediment contamination through the disturbance of soils during the reclamation and infilling works and the mobilisation of potentially contaminated sediment. During construction, every effort will be made to ensure that all materials used to reclaim areas of the seabed will be clean and free of contaminates to minimise the release of contaminates to the marine sediments.

During operation of a new port development at Arklow, there is the potential for both positive and negative impacts to soils and sediments. The *moderate negative* impacts will arise through the increase in ship traffic passing through the port has the potential to give rise to an increase in anti-fouling contaminates/or other contaminating substances from larger vessels being released into marine soils and sediment. The *moderate positive* impacts will arise through the

potential opportunities to incorporate the containment and management of contaminating substances into the ports design so that accidental releases through landside port operations are avoided.

Water

- *Objective 4A - No negative impacts on the status of coastal waters, surface waters and groundwater, and to provide no impediment to the achievement of water body objectives under the WFD.*

The receiving water body at Arklow is the south western Irish sea waterbody has been reported a WFD status as unassigned between 2013 and 2018. The Avoca Estuary located immediately north of the port development was classified as being Moderate Status between 2013 and 2018. There are 3 WFD Bathing Water areas in close proximity to the port development at Arklow. They are Clogga Beach located immediately south of the port development and Brittas Bay North and South Beach to the North of Arklow.

The construction of a port development at Arklow has the potential to have *moderate negative impacts* on water quality particularly during infilling and reclamation operations that necessary to create the port berthing and hardstand area. During reclamation works, every effort will be made to ensure that the infilling operations will not give rise to an increase in suspended sediments in the locality and all infill materials will be clean and free of contaminates.

During operation, a port development at Arklow also has the potential to result in *significant negative* impacts on the WFD status of Avoca Estuary and Clogga Beach through the direct alteration of natural coastal processes and sediment transport resulting in a morphological change. *Moderate negative* impacts can also arise as a result of accidental releases of pollutants from vessels, runoff from hardstand areas and/or discharges from overloaded treatment waste water treatment facilities. As this will be a new purpose built port facility, it will be designed to fully incorporate the drainage and waste water requirements of a commercial shipping port to ensure that port operation will have not result in a deterioration of WFD status in the local waterbodies and bathing waters.

- *Objective 4B - Reduce water usage and wastewater generated at the Port per unit of freight and passenger throughput.*

As a port development at Arklow will be new, there will be unavoidable *significant negative* impacts on water consumption and waste water generation during the construction phase and operation phase.

- *Objective 4C - No negative impacts on flood risk management activity, and to provide no impediment to the implementation of the Floods Directive.*

The Avoca River enters the sea at Arklow immediately north of the development site. Low-lying parts of Arklow Town current experience extensive fluvial flooding during prolonged wet periods. The Wicklow County Council and OPW are in the process of preparing the Avoca River (Arklow) Flood Defence Scheme. The scheme in Arklow has not yet been finalised but is likely to include the construction of comprehensive flood defences (Flood Walls/Embankments) and extensive dredging within the Avoca River within Arklow Town.

The construction and operation of a new port structure has the potential to have a *significant negative* impact on fluvial flood risk in Arklow town.

The development site is also located on the east coast of Ireland and therefore likely to be at risk of future coastal flooding as a result of climate change. As this is a new development there are opportunities to have *moderate positive impacts* on flood risk management particularly through the development and incorporation of coastal flood defences into the ports design. Any future development at this site will require further flood risk assessment at the detailed level.

Air Quality / Noise / Vibration

- *Objective 5A - Minimise impacts on air quality in the area.*
- *Objective 5B - Minimise noise impacts in the area.*
- *Objective 5C - Minimise vibration impacts in the area*

The port development at Arklow is located within Zone D Rural Ireland of the EPA Air Quality Zones. During the construction and operation of a port development at Arklow, there is the potential for *moderate negative impacts* to the local community as a result of breaches of air quality thresholds. There is also the potential for moderate negative impacts on to the local community as a result of higher noise and vibration levels.

Climatic Factors

- *Objective 6A - Minimise emissions of greenhouse gases and port carbon footprint from development and activity.*

Greenhouse gases (GHG) in the atmosphere are rising as a result of human activity in particular the burning of fossil fuels for heating, energy and transport in addition to other activities (Waste, Agriculture). Shipping is the key activity responsible for GHG emissions in the maritime environment. The existing Dublin Port inherently has a high carbon footprint which ties into its industrial nature. DPC are active in their efforts to reduce GHG emissions which are contributing to climate change through their reduction in energy consumption. DPC should ensure a continuation in its efforts to minimise its carbon footprint from any future port development and activity per unit of freight and passenger throughput.

Due to the nature of the port industry, a port development at Arklow has the potential to have negative impacts on GHG emissions and carbon footprint during construction and operation. During construction there is potential for *moderate negative impacts* on GHG emissions and carbon footprint through the use of large volumes of concrete to construct the berthing and hardstand area, the increased traffic movement and associated construction emissions.

During operation there is also the potential for *slight negative impacts* in GHG emissions and carbon footprint due to increases in port activity including greater traffic (marine and road) to and from the new Port facility.

Objective 6B - Adaptation to potential climatic change.

The predicted impacts of climate change are likely to include increases in the frequency and intensity of rainfall, the increases in peak flows in rivers, a rise in sea levels and increased storminess. These effects of climate change are likely to increase pluvial, fluvial and coastal flooding and will require all future development to be adaptable or resilient to future climatic changes and its associated impacts. Any future Dublin Port development should be developed with climate change in mind to ensure future drainage and flood risk requirements are taken into account. A port development at Arklow will have a *slight positive* impact as it will be designed to provide the port receptors with coastal flood protection and be adaptable to flood risk influenced by climatic change.

Material Assets

- *Objective 7A - Protect existing and develop new material assets and infrastructure.*

As illustrated in Appendix D, there are a number of national material assets located in close proximity to Arklow including: the national road network (N11, M11 (J20 and J21), rail network, access to the national gas network infrastructure. Arklow has a key role in electricity transmission and distribution with a number of high voltage electricity lines crossing the plan area. Energy from the off-shore wind bank is brought ashore in Arklow.

During construction, a port development at Arklow has the potential to have a *moderate negative* impact on the existing national material assets and infrastructure through short term disruption caused by construction and/or upgrading of existing material assets (national road, rail, electricity and gas network).

During operation, in addition to the *significant positive impacts* of the creation of a new Tier 1 Port, the port development at Arklow has also the potential to have *significant positive* impacts on the existing national material assets and infrastructure network.

Cultural, Architectural and Archaeological Heritage

- *Objective 8A - Avoid loss of or damage to heritage features and where possible incorporate heritage features into the Port Estate*

Arklow town centre is the location of a number of structures / features listed for preservation. The ruins of the original Anglo-Norman Ormonde Castle is located close to the main street, at the rear of the former Town Hall. There are a number of known features of archaeological significance including a number of ship wrecks and Arklow Harbour (as illustrated in Appendix D).

Any development activity in the maritime environment has the potential to result in impacts (positive and negative) on heritage features and their setting, especially those in areas rich in maritime heritage. During construction, there will be no loss or damage to known archaeological features. However, there is the potential for *moderate negative* impacts through; the permanent loss or damage to unidentified marine heritage features due to the infilling operations necessary to construct berthing and hardstand facilities; potential damage to local heritage features, particularly shipwrecks.

During operation, there will be no loss or damage to known archaeological features. In addition, there is the potential for *slight positive* impacts through increased awareness of port heritage features being discovered and conserved during construction works (i.e) ship wrecks, heritage zone within the port etc.

Landscape & Visual

- *Objective 9A - Protect, and where possible enhance, the landscape / seascape character and visual amenity in the vicinity of the Port.*

Due to the scale and size of the land requirements necessary to create a new commercial port, it is likely that the port development at Arklow will have a *significant negative* impact on sensitive landscapes and seascapes for many receptors during its construction and operation.

4 PROGRAMME FOR OBTAINING PERMISSIONS

There are two key factors influencing the programme for obtaining planning permission and other relevant consents to enable construction of the DP2 Project to begin. These are:

1. Policy Support
2. Habitat Directive Considerations

An overview of these factors is presented below with supporting information provided in Appendices A and B.

4.1 Policy Support

The continued development of Dublin Port at its current location is embedded in European, National, Regional and Local Policy. This policy support is a key factor in reducing risk with respect to planning consent. An overview of the key policies is presented in Appendix A

The expansion of Dublin Port at a new location outside Dublin is however not currently recognised in current policy. It is therefore imperative to initiate a programme of gaining policy support for the proposed DP2 Project at a national, regional and local scale to establish the need for such a development and to ensure that policy and the proposed development are aligned.

Planning policy in Ireland is top down. An overview of Ireland's Planning Policy Hierarchy is presented in Figure 4.1. Key policy documents at the national level are influenced by European policies such as spatial, marine, environment and transport.

The National Planning Framework, which is an expression of the national spatial development strategy over the medium term, is influenced by policies from other departments including transport, marine, health, communications, heritage, environment etc.

Policies from the National Planning Framework are translated into the regional economic and spatial strategies (RSES) and Metropolitan Area Strategic Plans (MASP). The RSES and MASP must be consistent with the National Planning Framework. The RSES and MASP are in turn translated into the County/City Development Plans. The core strategy of the Development Plans must be consistent with RSES and MASP.

The current national planning framework has a horizon to 2040. However this can be reviewed from time to time to reflect necessary changes. The precursor to the National Planning Framework was the National Spatial Strategy. It had a horizon for 2002-2020. It remained mostly unaltered however revised population projections were published. Regional Planning Guidelines were also aligned with the National Spatial Strategy, reflecting population projection changes, which in turn enabled Councils to update the core strategy within their Development Plans and hence the levels of land zoned for development. Development Plans have a 6-year cycle. There is a statutory procedure enabling Development Plans to be varied outside of the full review.

In terms of the most recent policy cycle:

- The National Planning Framework 2040 commenced pre-draft consultations in February 2017 and was finalised in February 2018. Extensive roadshows took place in advance of February 2017.
- The RSES 2031 commenced pre-draft consultations in November 2017 and was made in June 2019.

- County/City Plans will now vary their plans to ensure consistency with the new RSES 2031, however some plans are at the end of a 6-year cycle and full reviews are taking place. A full review will take 2 years, while a variation will take 14 weeks.

4.2 Programme for gaining policy support

The following key actions are required to establish the need for the DP2 Project and to ensure that policy and the proposed development are aligned.

- Complete a full option development and site selection appraisal and gain political / departmental support [timescale 1.5 years].
- Initiate a review of the Project Ireland 2040 National Planning Framework (NPF) and National Ports Policy. This will include public consultation on the assessment of alternatives [timescale 2.0 years].
- The review of the NPF will instigate a review of the Regional Spatial and Economic Strategies (RSES) including further public consultation [timescale 1.0 year].
- The review of the RSES will instigate a review of the County Development Plans including further public consultation (Meath & Fingal in the case of Bremore and Wicklow in the case of Arklow) [timescale 1.0 year].
- The review of the County Development Plans will instigate a review of the Local Area Plans [timescale 0.5 years].

The estimated time to establish political / departmental support for the DP2 Project and put in place policy support is therefore circa 6.0 years.

It is important to note that the above policy support is required before any SID planning application or IROPI case can be made.

4.3 Habitat Directive Considerations

The development of a new Tier 1 Port (DP2 Project) at any location along the east coast seaboard of Ireland, is likely to give rise to significant effects and potentially adverse effects on the integrity of a European site protected under the Birds Directive and Habitats Directive and domestic legislation transposing the obligations of the Directives, such the Planning and Development Act 2000, as amended (“the PDA”) (for development consent applications in a planning context) and the European Communities (Birds and Natural Habitats) Regulations 2011 to 2015 (for development consent applications in a foreshore or dumping at sea context).

As required under relevant legislation such as that outlined above, all proposals with potential to give rise to likely significant effects upon any European site would be subject to appropriate assessment of the proposed port development, in view of the conservation objectives of the sites concerned.

Where a screening for appropriate assessment cannot exclude such effects in the absence of mitigation measures, an appropriate assessment of the implications of the proposed port development is required.

A summary of the key Habitat Directive Considerations is presented below. Further detail, including site specific appraisals, are presented in Appendix B.

4.3.1 Appropriate Assessment

According to European Commission guidance documents '*Assessment of plans and projects significantly affecting Natura 2000 sites'* (EC, 2001) and the '*Managing Natura 2000 sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC'* (EC, 2019), the obligations arising under Article 6 establish a step-wise procedure as follows, and as illustrated in Figure 4.2:

- The first part of this procedure consists of a pre-assessment stage ('screening') to determine whether, firstly, the plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site; it is governed by Article 6(3), first sentence.
- The second part of the procedure, governed by Article 6(3), second sentence, relates to the appropriate assessment and the decision of the competent national authorities.
- A third part of the procedure (governed by Article 6(4)) comes into play if, despite a negative assessment, it is proposed not to reject a plan or project but to give it further consideration. In this case Article 6(4) allows for derogations from Article 6(3) under certain conditions.

The applicability of the procedure, and the extent to which it applies, depend on several factors, and in the sequence of steps, each step is influenced by the previous step. The order in which the steps are followed is therefore essential for the correct application of Article 6(3).

Each step determines whether a further step in the process is required. If, for example, the conclusion at the end of Stage 1 is that significant effects on European sites can be excluded, there is no requirement to proceed further. If a Stage 2 appropriate assessment is required, this is conducted under Article 6(3) and in accordance with European Commission and national guidelines.

Only if the implications of the proposed development will adversely affect the integrity of a European site, is the third part of the procedure triggered. This is the Article 6(4) derogation process noted above.

4.3.1.1 Site Appraisals and the requirement for an Article 6(4) derogation

Site specific appraisals of potential sites for the DP2 Project are presented in Appendix B. The appraisals concluded that it is highly likely that Article 6(4) would be triggered in respect of the proposed DP2 Project at Arklow, Bremore, or Newcastle in respect of the potential of the DP2 Project to result in conflict with one or more of the conservation objectives set for the qualifying habitats or species present, including priority habitat (grey dunes and Atlantic decalcified fixed dunes). This outcome would result in adverse effects upon the integrity of a Natura 2000 site through the alteration of coastal processes leading to loss or degradation of habitat within those European Sites in proximity to the proposals.

In the Planning Consent process, such effects generated by the project will trigger consideration of provisions of Section 177AA of the PDA.

Unlike Environmental Impact Assessment, the Article 6(3) appropriate assessment is a determinative factor, in the consenting process. However, despite a negative outcome of the Article 6(3) assessment, and in acknowledgment that there may be circumstances where a development that may be damaging to a European site is needed for an imperative reason of overriding interest, the Habitats Directive provides a derogation of

Article 6(3) under Article 6(4) (the third part of the Appropriate Assessment procedure referred previously) which allows such plans or projects to be approved. Such derogation is provided for on strict application that all of the following three tests are met in sequential order;

1. There are no feasible **alternative solutions** to the plan or project which are less damaging;
2. There are "**imperative reasons of overriding public interest**" (IROPI) for the plan or project to proceed.
3. Compensatory measures are secured to ensure that the overall coherence of the network of European sites is maintained.

Whilst Article 6(4) is the exception to the rule, its application is not automatic. It will be the decision of the relevant Minister, upon request to him or her by the competent authority, and following input from the Minister of Arts Heritage and the Gaeltacht to notify the competent authority that consent can be granted. Therefore, it will ultimately be up to the national authorities to assess the efficacy of the compensatory measures proposed by the applicant to the competent authority to determine whether consent should be granted.

However, consideration of Article 6(4) IROPI provisions, can only be considered; once an absence of suitable alternative solutions to the project has been determined; and that compensatory measures proposed, are appropriate to ensure the protection of the overall coherence of the Natura 2000 network. It is thus necessary for the Consenting Strategy to understand from the outset, the practicalities of this requirement.

4.3.1.2 Programme for an Article 6(4) derogation under the Habitats Directive

The estimated timeframe from submission of the SID planning application and IROPI case is 4.0 years given that the IROPI application is likely to include Priority Habitats (Grey Dunes and Atlantic decalcified fixed dunes in the case of the Arklow site and Grey Dunes in the case of the Bremore site). In this case, approval is required nationally and by the European Commission.

The preparation of the IROPI case can be undertaken in parallel to the preparation of the planning application to An Bord Pleanala under the Strategic Infrastructure Development (SID) Act.

4.4 Programme for additional consents required

Following grant of planning permission the following additional consents will be required

- Foreshore Consent
- Dumping at Sea Consent, including beach re-nourishment

These consents can run in parallel with each other but can normally only commence upon completion of the planning / IROPI process. Separate consultation processes are however required for each consent. The estimated timeframe to obtain Foreshore and Dumping at Sea consent is circa 2.0 years.

4.5 Overall Programme and Planning Risk

The minimum overall programme for obtaining permissions for the DP2 Project is circa 12 years as set out in Figure 4.3. Following grant of all permissions, an additional period of 1.0 year should be allowed for the planning Authorities' approval of the Project Construction Environmental Management Plan (CEMP), notably the completion of likely pre-commencement conditions.

The greatest planning risk lies with the consideration of the Article 6(4) IROPI provisions in that an IROPI application can only be considered in the absence of suitable alternative solutions.

It is highly likely that a better alternative exists - the expansion of Dublin Port in accordance with the Dublin Port Masterplan 2040, reviewed 2018, followed by smaller port developments at alternative location(s) coming on line from 2040 would negate the need for the mass and scale of the proposed DP2 Project and therefore would likely be less damaging to Natura 2000 sites.

It is therefore highly probable that the proposed DP2 Project would fail the assessment of alternatives test under Article 6(4) IROPI as better environmental alternatives clearly exist.

It is important to note that there is a lack of precedent for IROPI cases in Ireland. To date, there has only been one successful IROPI case granted, related to a Water Treatment Plant abstraction from Lough Talt in Co. Sligo which is of significantly lesser scale compared to the proposed DP2 Project. The Lough Talt Project was submitted for planning in 2016 and was granted permission in May 2019, a period of circa 3 years. The IROPI case did not include priority habitat. The IROPI Statement of Case was approved by the Minister of DHPLG. The IROPI Compensation Measures were approved by the Minister of DCHG.

Given the risks described above, it would be prudent to understand the practicalities of the IRPOI tests from the outset.

The overall programme timeframe takes this on board by recommending that a detailed assessment of alternatives is undertaken at the outset and as a precursor to gaining policy support.

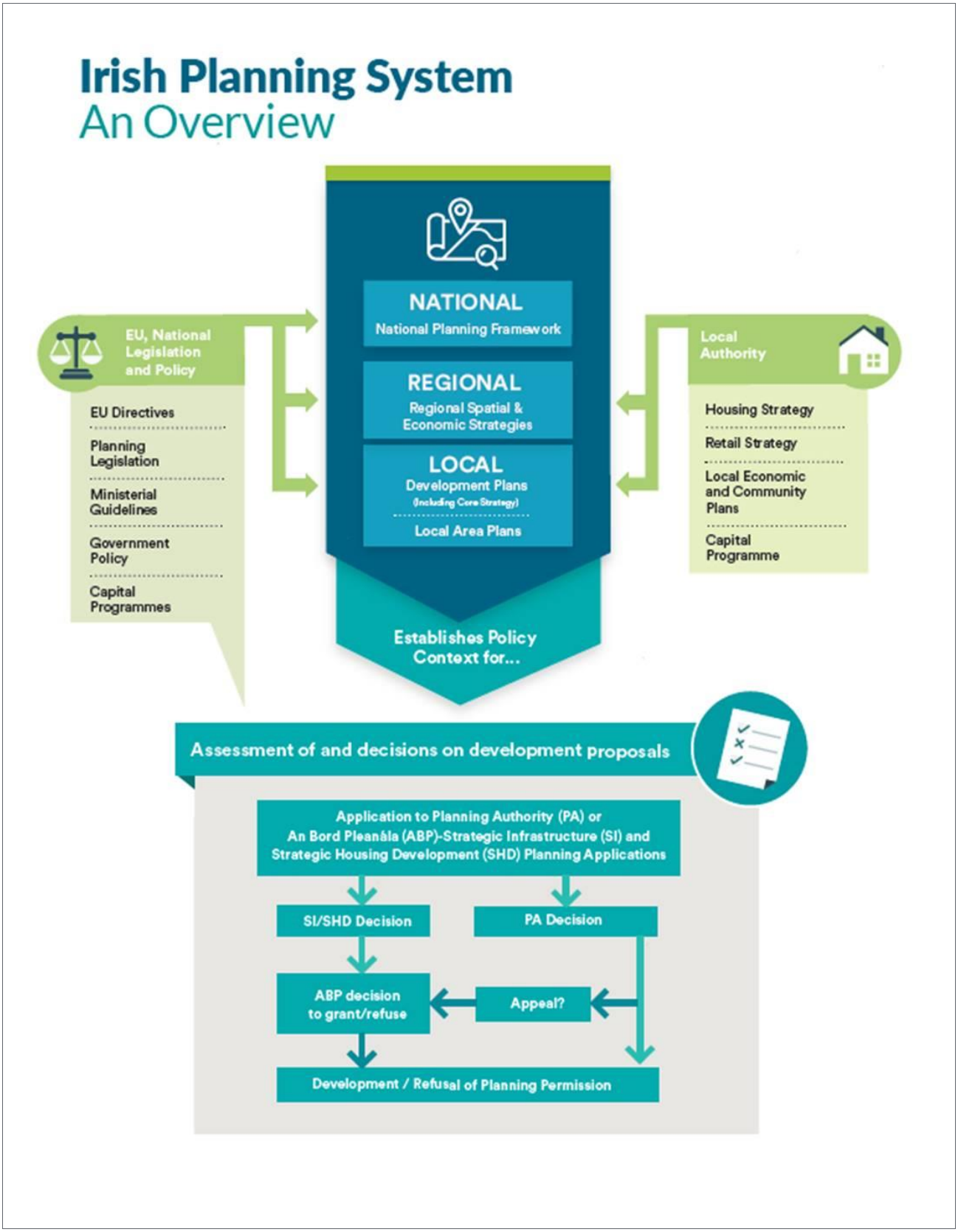


Figure 4-1 Planning Policy Hierarchy (Source: Project Ireland 2040 National Planning Framework, May 2018)

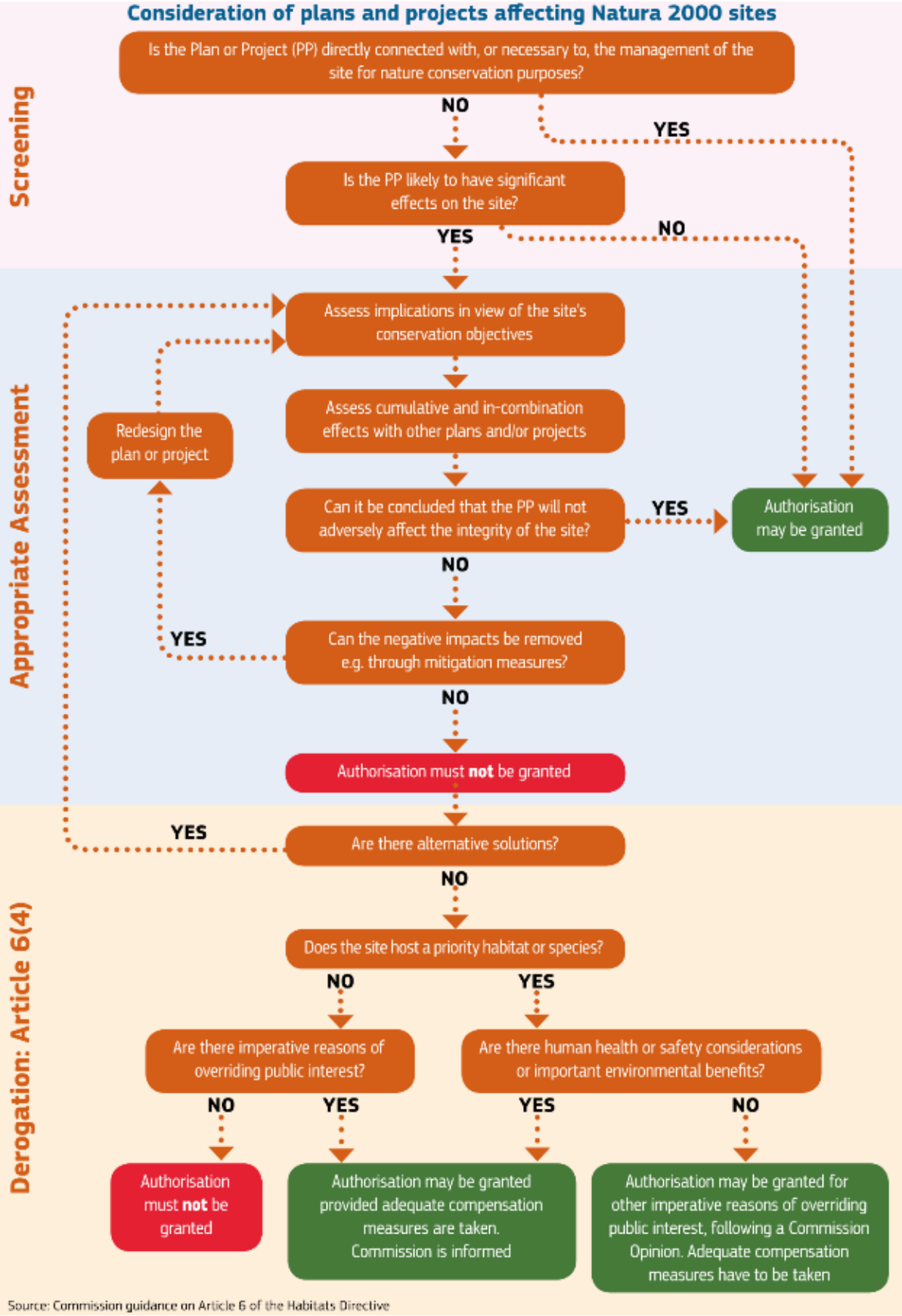


Figure 4-2 Step-wise procedure of Article 6 of the Habitats Directive (from EC, 2019)

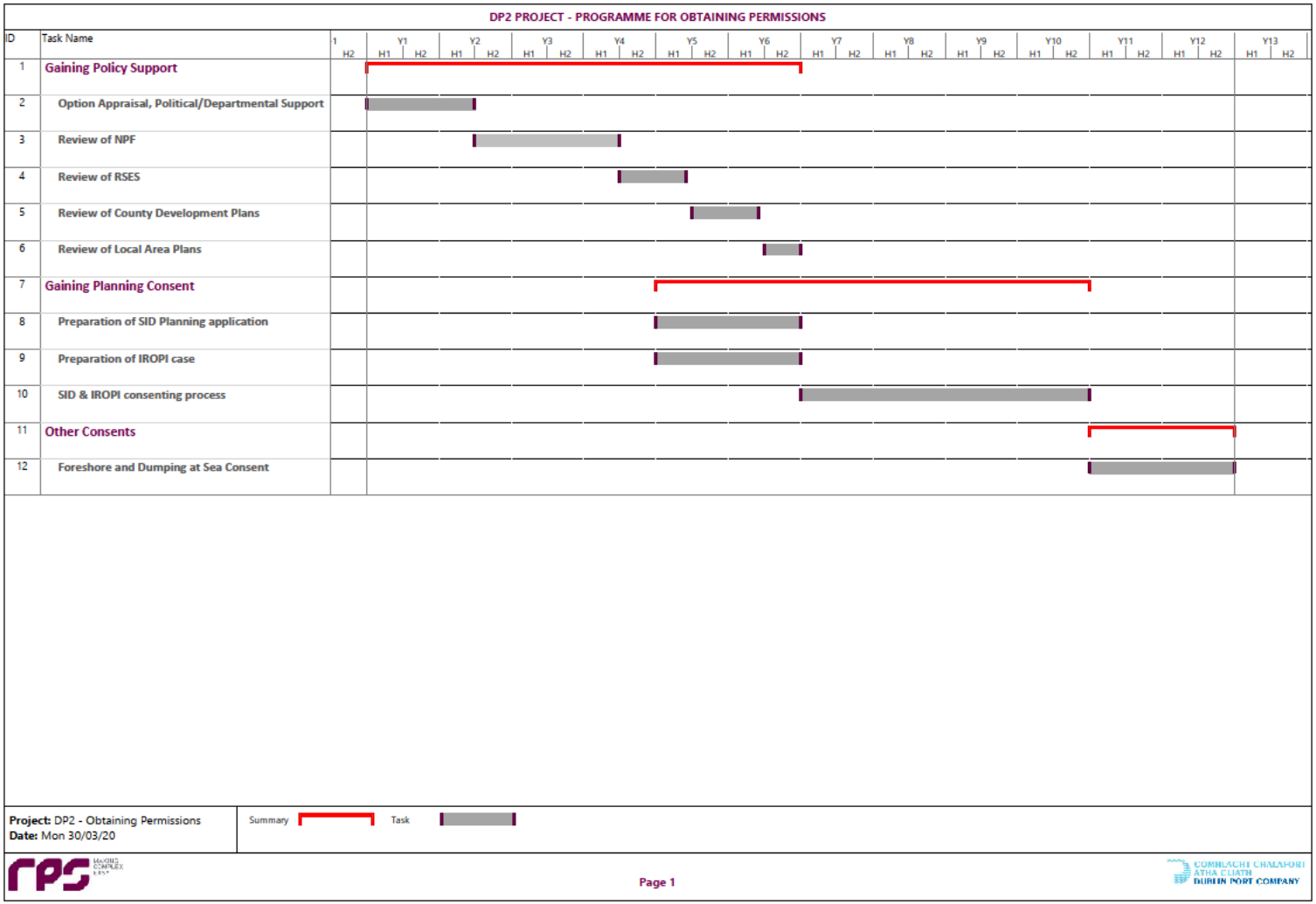


Figure 4-3 Overall Programme for obtaining Permission

5 HIGH LEVEL COSTING OF LIKELY ENVIRONMENTAL MITIGATION MEASURES

A high level costing is provided below to implement a suite of mitigation measures to avoid, prevent, reduce and, where possible, offset the identified significant adverse effects on the environment resulting from the construction and operation of the DP2 Project.

It is important to note that that it will not be possible to mitigate all potential significant adverse effects by the application of capitalised costs. Annual operational costs will be incurred to maintain the existing coastal sediment transport regime which will be disrupted as a result of the scale and mass of the proposed DP2 Project at either the Bremore site or Arklow site.

5.1 Bremore Site

Capitalised Costs of Environmental Measures

Mitigation Measure	High Level Costing (€)
Community Gain (1% of construction Cost)	€ 30,000,000
Environmental Monitoring Programmes during construction	€ 15,000,000
Compensate loss of local fishing grounds (potting)	€ 5,000,000
Landscaping, cycle and pedestrian pathways (including creating appropriate setting of archaeology sites)	€ 20,000,000
Enhancement works to nearby beaches (including Laytown)	€ 10,000,000
Total Capitalised Cost	**€ 80,000,000**

Annual Operational Costs of Environmental Measures

The hydraulic modelling study of the Bremore site (under separate cover) determined that the proposed DP2 Project had the potential to change the existing sediment transport regime along the stretch of coastline 6 km north and south of the site. It is also estimated that circa 175,000 cubic metres of sediment trapped by the proposed development would need to be bypassed using dredging techniques annually to maintain the current *status quo*.

The following annual operational costs are based on the requirement to undertake frequent maintenance dredging and beach re-nourishment works. The cost of dredging has been based on recent commercial dredging rates of circa €35,000 per day including the use of Marine Mammal Observers.

Mitigation Measure	High Level Costing (€)
Maintenance dredging of • entrance to Balbriggan Harbour to prevent flooding and maintain access during south-easterly storm events • keeping the approach channel open to the proposed harbour development • maintaining cover to the Gas interconnector from Wales which comes ashore at Gormonstown Dredger working for 56 days (8 weeks) @ €35,000 per day	€ 1,960,000
Monthly Beach Re-nourishment to maintain the natural sediment supply and seasonal variation required to protect the Natura 2000 sites (compensation measure) Dredger working for 112 days (16 weeks) @ €35,000 per day	€ 3,920,000
Total Annual Running Cost	**€ 5,880,000**

5.2 Arklow Site

Capitalised Costs of Environmental Measures

Mitigation Measure	High Level Costing (€)
Community Gain (1% of construction Cost)	€ 30,000,000
Environmental Monitoring Programmes during construction	€ 15,000,000
Compensate loss of local fishing grounds (potting)	€ 5,000,000
Landscaping, cycle and pedestrian pathways	€ 15,000,000
Additional treatment at Arklow WwTP to offset reduced dispersion at outfall	€ 15.000,000
Enhancement works to nearby designated Bathing Waters	€ 10,000,000
Total Capitalised Cost	**€ 90,000,000**

Annual Operational Costs of Environmental Measures

The hydraulic modelling study of the Arklow site (under separate cover) determined that the proposed DP2 Project had the potential to change the existing sediment transport regime along the stretch of coastline 6 km north and south of the site. It is also estimated that circa 50,000 cubic metres of sediment trapped by the

proposed development would need to be bypassed using dredging techniques annually to maintain the current *status quo*.

Mitigation Measure	High Level Costing (€)
Maintenance dredging of • entrance to Avoca River to prevent flooding and maintain access during north-easterly storm events • keeping the approach channel open to the proposed harbour development Dredger working for 28 days (4 weeks) @ €35,000 per day	€ 980,000
Monthly Beach Re-nourishment to maintain the natural sediment supply and seasonal variation required to protect the Natura 2000 sites (compensation measure) Dredger working for 56 days (8 weeks) @ €35,000 per day	€ 1,960,000
Total Annual Running Cost	**€ 2,940,000**

Appendix A – Key Spatial Planning Policies

Relevant European Planning and Development Policy

Trans European Network – Transport (TEN-T)

The EU has defined a Trans European Network-Transport (TEN-T) which connects the major European urban areas and includes the major European transport corridors and multimodal hubs. The TEN-T network provides integrated international long-distance high speed routes. The network involves the provision of guidance and investment.

Ports are a key part of the TEN-T and Dublin Port is a core port on the TEN-T network. Dublin Port is a designated node on the North Sea-Mediterranean Core Network Corridor as shown in Figure .A1.

Dublin Port capital projects, including the ongoing Alexandra Basin Redevelopment (Board Ref. PL 29N.PA0034), are grant funded under the TEN-T Programme and supported by finance from the European Investment Bank (EIB).

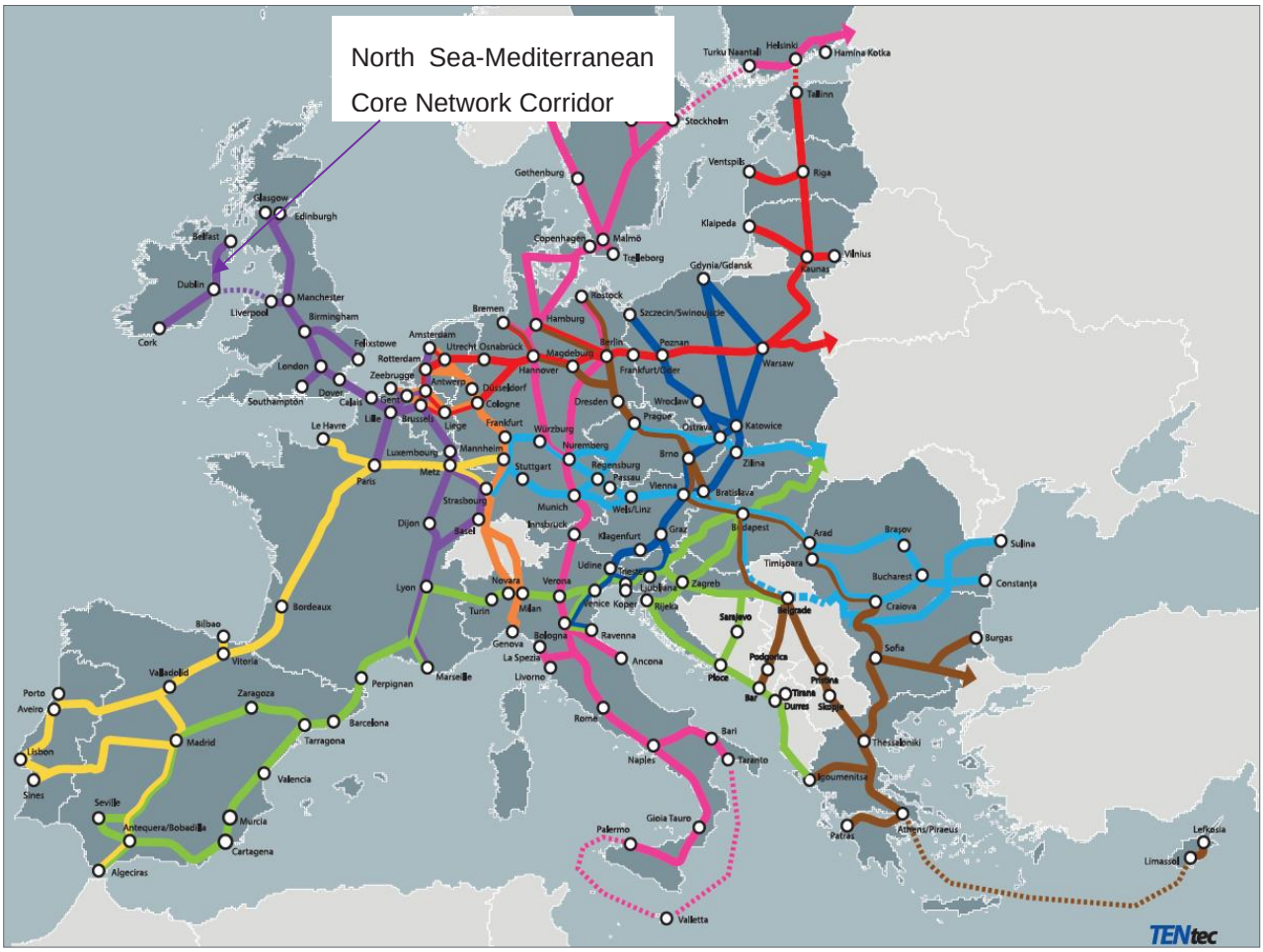


Figure A1 TEN-T Core Network Corridors

The programme envisages coordinated improvements to transport infrastructure thereby creating integrated and intermodal long-distance, high-speed corridors. Motorways of the Sea are considered the maritime pillar of the TEN-T and contribute towards the achievement of a European Maritime Transport Space without barriers, connecting Core Network Corridors by integrating the maritime leg and also facilitating maritime freight transport

with neighbouring countries. Dublin Port is a designated node on the North Sea-Mediterranean Core Network Corridor (shaded purple on Figure A1).

On 29th March 2017, the United Kingdom submitted the notification of its intention to withdraw from the EU pursuant to Article 50 of the Treaty on European Union, commonly referred to as Brexit. This process was completed on 31st January 2020. In view of the withdrawal of the United Kingdom from the EU, parts of the alignment of the North Sea – Mediterranean Core Network Corridor related to the United Kingdom has now become obsolete. Recognising this Regulation (EU) 2019/495 amending Regulation (EU) No 1316/2013 provides for a realignment of the corridor. This regulation also make provision for infrastructure for purposes of security and checks on external borders.

Marine Spatial Plan

In 2014 the adoption of Directive 2014/89/EU established an EU-wide framework for maritime spatial planning. The directive details the main goals and minimum requirements for Member States as follows:

- Balanced and sustainable territorial development of marine waters and coastal zones;
- Optimised development of maritime activities and business climate;
- Better adaptation to risks; and
- Resource-efficient and integrated coastal and maritime development.

Marine spatial planning may be defined as—

> "… *a process by which the relevant Member State's authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives"* (Directive 2014/89/EU).

Ireland transposed the Directive through the European Union (Framework for Maritime Spatial Planning) Regulations 2016, signed into law on 29th June 2016. A National Marine Spatial Plan must be in place by 31st March 2021.

Relevant National Planning and Development Policy

Project Ireland 2040 National Planning Framework

Project Ireland 2040 National Planning Framework, published in July 2018, is the primary articulation of spatial, planning and land use policy within Ireland. The framework recognises the role ports play in supporting the Irish economy stating:

> *"We depend on the quality and efficiency of our ports to a far greater extent than many of our trading partners. To maintain economic growth, we must be capable of delivering additional port capacity in a timely and predictable manner". (page 94)*

The framework recognises the National Ports Policy stating:

> *"National ports policy requires Tier 1 and Tier 2 ports, or ports of national and regional significance, to lead the response in meeting Ireland's future port capacity requirements. There*

are major redevelopment projects taking place at our Tier 1 ports (i.e. Dublin, Cork and Shannon-Foynes) at present. These developments will result in a greater concentration of traffic through these ports, with implications for shore-based and marine-based infrastructure.

The long-term international trend in ports and shipping is toward increased consolidation of resources in order to achieve optimum efficiencies of scale. This has knock-on effects in terms of vessel size, the depths of water required at ports and the type and scale of port hinterland transport connections.

Tier 1 ports are located within close proximity to Dublin, Cork and Limerick and the role of these ports will be considered and addressed in tandem with long-term infrastructural requirements as part of the relevant Regional Spatial and Economic Strategy and concurrent and subsequent metropolitan area or city/ county development plan processes". (pages 102-103)

National Policy Objective 40 states:

"Ensure that the strategic development requirements of Tier 1 and Tier 2 Ports, ports of regional significance and smaller harbours are addressed as part of Regional Spatial and Economic Strategies, metropolitan area and city/county development plans, to ensure the effective growth and sustainable development of the city regions and regional and rural areas". (page 103)

National Strategic Outcome 4 outlines "High-Quality International Connectivity". The framework notes that, nationally, infrastructure objectives have been identified to improve land transport connections to the major ports. Infrastructure requirements pertaining to Dublin Port are identified as:

"Facilitating the growth of Dublin Port through greater efficiency, limited expansion into Dublin Harbour and improved road access, particularly to/from the southern port area". (page 37 & 142)

National Development Plan

The implementation of the National Planning Framework will be fully supported by the Government's investment strategy for public capital investment. The *National Development Plan 2018-2027* identifies the strategic priorities for public capital investment in order to underpin the implementation of the National Planning Framework.

The National Development Plan strongly supports the continued development and improvement in Ireland's ports and strengthening access routes to ports.

The National *Development Plan 2018–2027* (NDP) identifies strategic priorities for public capital investment in order to underpin the implementation of the NPF.

National Strategic Outcome 6 *"High-Quality International Connectivity"* seeks to target continued investment in port and airport connections to the UK, the EU and the rest of the world. Given that Ireland is an island this is considered by the NDP to be integral to underpinning international competitiveness. It is also central to responding to the challenges as well as the opportunities arising from Brexit. Strategic Investment Priorities 2018–2027 allocate €4.8 billion to Airports and Ports.

It is envisaged by the NDP that this investment will strongly support the continued development and improvement in Ireland's ports and State airports by the relevant responsible commercial State Owned Enterprises (SOEs), consistent with sectoral priorities already defined through National Ports Policy and National Aviation Policy.

The NDP continues that significant investment in Ireland's airports and ports will play a major role in safeguarding and enhancing Ireland's international connectivity which is fundamental to Ireland's international competitiveness, trading performance in both goods and services and enhancing its attractiveness to foreign direct investment. The NDP clearly states that the importance of this objective cannot be understated in the context of the UK's exit from the EU.

National Ports Policy

The *National Ports Policy* is the statement of national policy underpinning the development and operation of Ireland's ports. Ports are divided into Ports of National Significance (Tier1), Ports of National Significance (Tier 2) and Ports of Regional Significance.

Within the Irish Ports Policy, Dublin Port is a Port of National Significance (Tier 1) where Tier 1 ports are responsible for 15% to 20% of overall tonnage through Irish ports (of which Dublin Port handles 44%), and have clear potential to lead the development of future port capacity in the medium and long term, when and as required.

Referring specifically to the *Dublin Port Masterplan* the *National Ports Policy* confirms that:

> *"The Government endorses the core principles underpinning the company's Masterplan and the continued commercial development of Dublin Port Company is a key strategic objective of National Ports Policy". (page 25)*

The *National Ports Policy* highlights that the relationship and interaction between the commercial ports sector and the planning and development system is extremely important in ensuring continued sustainable development of the ports sector. It continues that:

> *"The provision of adequate and efficient capacity into the future is a crucial Government strategic objective". (page 43)*

To this end the policy document states:

> *"Therefore, Government expects the Ports of National Significance (Tier 1) to lead the response of the State commercial ports sector to future national port capacity requirements……It is the Government's position that those ports considered to be of national significance must be capable of the type of port capacity required to ensure continued access to both regional and global markets for our trading economy". (page 44)*

With respect to the planning policy hierarchy the *National Ports Policy* confirms:

> *"National and Regional Planning Guidelines should also recognise the importance of the three categories of ports and allow for their continued development. To this end, the Department*

contributes as necessary to the development of Regional Planning Guidelines in order to ensure that the goals of National Ports Policy are recognised in the planning hierarchy". (page 45)

To this end, the Department contributes as necessary to the development of Regional Planning Guidelines in order to ensure that the goals of *National Ports Policy* are recognised in the planning hierarchy.

National Marine Spatial Plan

Marine Spatial Planning (MSP) in Ireland is underpinned at the highest level by the European Marine Spatial Planning Directive (Directive 2014/89/EU) (MSPD). This Directive sets out the date by which member states must have in place plans for their seas, 31st March 2021, as well as articulating a range of activities that must be included within the MSP process and plan. The MSPD is reflected in domestic law through the Planning and Development (Amendment) Act 2018. The Act describes MSP in Ireland as being made up of one marine spatial plan for the entire of the maritime area and/or different marine spatial plans for different parts of the maritime area with the singular plan or suit of plans.

Ireland's first marine spatial plan, National Marine Planning Framework (NMPF), will serve as a parallel to the NPF, will set out the Government's long-term planning objectives and priorities for the management of our seas over a 20-year time frame. It will create an overarching framework for marine decision-making that is consistent, evidence based and secures a sustainable future for Ireland's marine area.

A draft NMPF was published in Q3 2019 for a period of public engagement and consultation (this follows an earlier engagement phase on the development of the NMPF Baseline Report), with the final plan due before the end of 2020. Both the draft and final plan will set out specific objectives and marine planning policies for all of the activities taking place in Ireland's seas, from aquaculture through to waste water treatment.

Marine Planning Policy Statement (Consultation Draft)

The Department of Housing, Planning and Local Government is currently inviting submissions on the Marine Planning Policy Statement. The Marine Planning Policy Statement will apply to all facets of marine planning. It is being introduced initially on a non-statutory basis, pending the introduction of legislation in 2020 that will provide for the preparation, adoption and review of statutory marine planning policy statements on six-yearly cycles. It reflects the comprehensive updating and renewal now underway of Ireland's marine planning system, setting out core principles to inform evolving marine planning and development management process.

The draft Marine Planning Policy Statement is intended to do the following[1]:

"Describe the existing components of Ireland's marine planning system;

Outline a vision for the future development of our marine planning system;

Set out the overarching policies and principles the Government expects marine planning bodies and other public bodies that engage with the marine planning system to observe (in terms, for

[1] https://www.housing.gov.ie/planning/marine-spatial-planning/public-consultation-marine-planning-policy-statement

example, of public engagement, transparency, governance, environmental assessment, climate action, social and economic benefit);

Set out high-level priorities for the enhancement of the marine planning system in Ireland."

The provisions of national policy provide support for the development of, and investment in, Dublin Port in general as it is recognised as a key element of infrastructure necessary for economic growth. In particular, National Ports Policy explicitly endorses the planned development of Dublin Port.

Relevant Regional Planning and Development Policy

The Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region including the Metropolitan Area Spatial Plan (MASP) for Dublin was published in June 2019. The RSES is a strategic plan and investment framework to shape the future development of the region to 2031 and beyond. The RSES provides a:

Spatial Strategy – to manage future growth and ensure the creation of healthy and attractive places to live, work, study, visit and invest in.

Economic Strategy – that builds on our strengths to sustain a strong economy and support the creation of quality jobs that ensure a good living standard for all.

Metropolitan Plan – to ensure a supply of strategic development areas for the sustainable growth and continued success and competitiveness of the Dublin Metropolitan Area.

Investment Framework – to prioritise the delivery of key enabling infrastructure and services by government and state agencies.

Climate Action Strategy – to accelerate climate action, ensure a clean and healthy environment and to promote sustainable transport and strategic green infrastructure.

The RSES, prepared in accordance with the NPF, sets the context for each local authority within the Region to develop county and city development plans in a manner that will ensure national, regional and local plans align.

With respect to the profile of the region the RSES notes that the Dublin region is the main global gateway to Ireland, with Dublin Airport one of the fastest growing in Europe and continued growth both in the import and export of goods through Dublin Port. In this regard the RSES identifies three strategic connections in the region which include the Eastern Corridor, strategic connections to the Northern and Western Region, and strategic connections to the Southern Region.

The RSES defines the Dublin - Belfast Economic Corridor, which is contained within the Eastern Corridor, as the largest economic agglomeration on the island of Ireland with the cities and towns along the corridor home to a population of around 2 million. The corridor connects the large towns of Drogheda, Dundalk and Newry by high-capacity national road and rail links, major airports of Dublin Airport, Belfast International Airport and Belfast City Airport and Belfast and Dublin ports. The RSES supports the development of the Dublin - Belfast Economic Corridor through targeted investment in transport infrastructure and services complementing and maintaining its function as part of the EU TEN-T core network. Directly relevant to Dublin Port and its growth is

the identification of the M50 Dublin Port South Access Road as one of the Strategic Road Network projects (RPO 8.10) which will be appraised and delivered subject to the outcome of appropriate environmental assessment and the planning process (page 185).

The RSES states that the Dublin City and Metropolitan Area accounts for about half of the Region's population or a quarter of the national population, as well as being the largest economic contributor in the state. As Ireland's only international city of scale, Dublin acts as the global gateway to Ireland and its influence extends well beyond its administrative boundaries. Growth Enablers for Dublin City and Metropolitan Area include:

> *"Protect and improve access to the global gateways of Dublin Airport and Dublin Port for the Region and to serve the Nation, and safeguard and improve regional accessibility and service by rail, road and communication, with a key focus on the Dublin-Belfast Economic Corridor." (page 34)*

To achieve the vision the MASP identifies a number of Guiding Principles for the sustainable development of the Dublin Metropolitan Area. With respect to Dublin Port these include:

> *"Dublin as a Global Gateway – In recognition of the international role of Dublin, to support and facilitate the continued growth of Dublin Airport and Dublin Port, to protect and improve existing access and support related access improvements." (page 95)*

The NPF includes High-Quality International Connectivity as a National Strategic Outcome and recognises the crucial role that the provision of high-quality international connectivity has for overall international competitiveness and addressing opportunities and challenges from Brexit through investment in our ports and airports, in line with sectoral priorities already defined through *National Ports Policy* and *National Aviation Policy* and signature projects such as the second runway for Dublin Airport and major redevelopment at Dublin Port including proposals for a southern port access route.

The RSES recognises that Ireland's port and shipping services play an important role as enablers of economic growth, noting that the Region is home to the largest sea port in the country, Dublin Port. The RSES states that given the nature and function of ports, combined with the location interfacing with the marine environment, there is potential for environmental conflict with the existing ecosystem. It continues that this sensitivity is further increased by the proximity of most of the Region's ports to designated sites.

In order to minimise potential impacts on EU protected habitats, the RSES advocates, brownfield port developments which maximise the capacity of existing port sites should be prioritised over greenfield developments.

It continues that the approach to port development in the Region shall adhere to the European Commission guidelines on the Implementation of the Birds and Habitats Directives in Estuaries and Coastal Zones. As required by National Ports Policy (2013), a National Ports Capacity study has been commissioned which will assess the capacity of the national ports network.

In terms of port facilities, the RSES acknowledges that the *National Ports Policy* and the national hierarchy or tiering of ports recognises the long term international trend in ports and shipping towards increased consolidation of resources in order to achieve optimum efficiencies of scale. It notes that this has knock-on

effects in terms of vessel size, the depths of water required at ports and the type and scale of port hinterland transport connections. As set out under Section 3.3 *National Ports Policy* seeks to ensure that the strategic development requirements of Tier 1 Ports, ports of regional significance and smaller harbours are addressed to ensure their effective growth and sustainable development at a national and regional level, this is acknowledged in the RSES.

With specific regard to Dublin Port, the RSES states that it is the largest port in the Country handling almost 50% of all trade in Ireland and growth of 35.7% over the last five years. Dublin Port is recognised in this RSES as a critical national facility; a key economic driver for the Region and the nation and an integral part of Dublin City, in line with the Dublin Port Masterplan 2040, Reviewed 2018.

Regional Policy Objectives guiding the development of ports and specifically Dublin Port within the RSES which states:

> *"RPO 8.21: The EMRA will support the role of Dublin Port as a Port of National Significance (Tier 1 Port) and its continued commercial development, including limited expansion and improved road access, including the Southern Port Access Route.*
>
> *RPO 8.23: The EMRA supports the protection of the marine related functions of ports in the Region in order to ensure the future role of ports as strategic marine related assets is protected from inappropriate uses, whilst supporting complimentary economic uses including the potential for facilitating offshore renewable energy development at ports.*
>
> *RPO 8.24: The EMRA supports the undertaking of feasibility studies to determine the carrying capacity of ports in relation to potential for likely significant effects on associated European sites including SPAs and SACs." (Page 190)*

Strategic Greenways proposed and/or under development in the metropolitan area include:

> *"East Coast Route from Sutton to Sandymount with potential to link into a Dublin Port Greenway, to extend north to link into the Fingal Coastal Way and to develop a wider East Coast Trail from Rosslare to Northern Ireland." (page103)*

The RSES also supports the protection of the Dublin Bay Biosphere. RPO 7.20 states:

> *"Promote the development of improved visitor experiences, nature conservation and sustainable development activities within the Dublin Bay Biosphere in cooperation with the Dublin Bay UNESCO Biosphere Partnership." (Page 156)*

The Transport Strategy for the Greater Dublin Area, 2016 to 2035

The *Transport Strategy for the Greater Dublin Area, 2016 to 2035*, prepared by the National Transport Authority sets out how transport will be developed across the region, covering Dublin, Meath, Wicklow and Kildare up to 2035.

As such the strategy is largely concerned with transport within the GDA and Ireland. The strategy does however seek to protect and enhance the capacity of the TEN-T network including Dublin Port. The importance of Dublin

Port at a regional and national level is recognised within the strategy and the need for landside connectivity is prioritised.

> *"The need to facilitate the expansion of activity at Dublin Port into the future, as both a commercial and passenger port, must, therefore, be supported by the Strategy, through the clear identification and safeguarding of designated access routes". (page 36)*

The delivery of a link road connecting the southern end of the Dublin Port Tunnel to the South Port area is included as a National Road project to be delivered in the Transport Strategy.

The provisions of regional policy support the development of Dublin Port as it is recognised as a key element of infrastructure necessary for economic growth at the national level.

Relevant Local Planning and Development Policy

Dublin City Development Plan 2016-2022

The Dublin City Development Plan 2016-2022 (Development Plan) is the primary statutory land use planning policy document guiding development within Dublin City including Dublin Port.

Section 4.5.1.2 of the Development Plan recognises and outlines general support for the activities of Dublin Port:

> *"Dublin City Council fully supports and recognises the important national and regional role of Dublin Port in the economic life of the region and the consequent need in economic competitiveness and employment terms to facilitate port activities.*
>
> *Dublin Port will have a significant role to play in the future development and growth of the city and it is considered prudent to plan the structure of this part of the city, including the proposed public transport network, to fully integrate with the developing new city structure and character, while having regard to the Dublin Port Company Masterplan 2012 – 2040". (page 59)*

In addition to this high level support the Development Plan contains a number of policies and objectives facilitating Dublin Port operations and activities, including:

> *"SC9: To support and recognise the important national and regional role of Dublin Port in the economic life of the city and region and to facilitate port activities and development, having regard to the Dublin Port Masterplan 2012-2040. (page 46)*
>
> *CEE23 (iii): To recognise that Dublin Port is a key economic resource, including for cruise tourism, and to have regard to the policies and objectives of the Dublin Port Masterplan". (page 83)*

The protection of the Eastern By-Pass routes is also an objective of the Development Plan:

> *"MTO32: To protect the routes of the proposed eastern by-pass from existing Dublin Port tunnel to Poolbeg, also referred to as the Southern Port Access Route, and in the longer term to provide a route corridor between Poolbeg and the Southern Cross/ South Eastern Motorway (in accordance with the NTA Strategy for the Greater Dublin Area 2016 – 2035). The preferred route for DCC is by means of a bored tunnel, under Sandymount Strand and Merrion Strand and will*

be subject to full statutory Environmental Assessment, together with an Appropriate Assessment for the entire proposed routes, in accordance with the Habitats Directive, together with a full consultation process". (page 133)

Key strategic policies and objectives of Dublin City Council set out in the Development Plan endorse the improvement of port infrastructure in order to facilitate economic growth and policies relating to the protection of the natural and built environment.

Development Management Standards

The development management guidelines specific to Dublin Port recognise policy CEE 23(iii) and outlines a number of considerations with which the planning authority examine during the assessment of proposals within Dublin Port, which include:

"Recognition of the important role of Dublin Port in the economic life of the city and the region and the consequent need in economic and employment terms to facilitate port development

The periphery of the port area facing residential areas shall be designed and landscaped to minimise the impact of its industrial character

The impact on nature conservation, recreation and amenity use, and other environmental considerations, including having regard to the designation of Dublin Bay as a UNESCO biosphere and other environmental designations such as Special Area of Conservation (SAC) and Special Protection Area (SPA)

The protection of the amenities of residential and commercial uses in adjoining areas

Design criteria including landscaping, finishes, signage and site layout

Facilitating plans to make Dublin a 'home port' for cruise tourism, with complementary cruise tourism facilities in the port and wider city/region". (page 347)

Dublin Port Masterplan 2040

The Dublin Port Masterplan 2040 is a key document guiding future development within the port up to 2040. The Masterplan is a non-statutory plan which has nonetheless been framed within the context of EU, national, regional and local development plan policies and explicitly endorsed in the National Ports Policy, 2013. The Masterplan presents a vision for future operations at the Port and critically examines how the existing land use at Dublin Port can be optimised for merchandise trade and passenger (including cruise ships).

The Masterplan was prepared by DPC in order to:

"Plan for future sustainable growth and changes in seaborne trade in goods and passenger movements to and from Ireland and the Dublin Region in particular.

Provide an overall context for future investment decisions.

Reflect and provide for current National and Regional Guidelines and initiatives.

Ensure there is harmony and synergy between the plans for the Port and those for Dublin City, the Dublin Docklands Area and neighbouring counties within the Dublin Region.

Give some certainty to customers about how the Port will develop in the future to meet those requirements" (page 14)

Since the Masterplan was published in 2012 Dublin Port has experienced particularly high rates of economic growth and traffic growth with volumes of traffic increasing by 30.1% in the five years to 2017. In light of the high level of growth a review of the Masterplan took place in 2017-2018. The Review concluded:

An eastern expansion of Dublin Port into Dublin Bay is no longer a viable and is not being pursued as an option.

To meet anticipated capacity requirements Dublin Port needs to be developed on the basis of an average annual volume growth of 3.3% over the 30 years from 2010 to 2040 rather than the 2.5% originally assumed in 2012.

The *Dublin Port Masterplan 2040 Reviewed 2018,* published in July 2018, sets out options for the development of Dublin Port which will meet these requirements and objectives.

Appendix B – Habitat Directive Considerations

Habitats Directive Considerations

The development of a new Tier 1 Port (DP2 Project) at any location along the east coast seaboard of Ireland, is likely to give rise to significant effects and potentially adverse effects on the integrity of a European site protected under the Birds Directive and Habitats Directive and domestic legislation transposing the obligations of the Directives, such as the Planning and Development Act 2000, as amended ("the PDA") (for development consent applications in a planning context) and the European Communities (Birds and Natural Habitats) Regulations 2011 to 2015 (for development consent applications in a foreshore or dumping at sea context).

As required under relevant legislation such as that outlined above, all proposals with potential to give rise to likely significant effects upon any European site would be subject to appropriate assessment of the proposed port development, in view of the conservation objectives of the sites concerned.

Where a screening for appropriate assessment cannot exclude such effects in the absence of mitigation measures, an appropriate assessment of the implications of the proposed port development is required.

Appropriate Assessment

The requirements of Article 6 of the Habitats Directive are set out below

1. F*or special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.*
2. *Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.*
3. *Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.*
4. *If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.*

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.

According to European Commission guidance documents '*Assessment of plans and projects significantly affecting Natura 2000 sites'* (EC, 2001) and the '*Managing Natura 2000 sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC'* (EC, 2019), the obligations arising under Article 6 establish a step-wise procedure as follows:

- The first part of this procedure consists of a pre-assessment stage ('screening') to determine whether, firstly, the plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site; it is governed by Article 6(3), first sentence.
- The second part of the procedure, governed by Article 6(3), second sentence, relates to the appropriate assessment and the decision of the competent national authorities.
- A third part of the procedure (governed by Article 6(4)) comes into play if, despite a negative assessment, it is proposed not to reject a plan or project but to give it further consideration. In this case Article 6(4) allows for derogations from Article 6(3) under certain conditions.

The applicability of the procedure, and the extent to which it applies, depend on several factors, and in the sequence of steps, each step is influenced by the previous step. The order in which the steps are followed is therefore essential for the correct application of Article 6(3).

Each step determines whether a further step in the process is required. If, for example, the conclusion at the end of Stage 1 is that significant effects on European sites can be excluded, there is no requirement to proceed further. If a Stage 2 appropriate assessment is required, this is conducted under Article 6(3) and in accordance with European Commission and national guidelines.

Only if the implications of the proposed development will adversely affect the integrity of a European site, is the third part of the procedure triggered. This is the Article 6(4) derogation process noted above.

Site Appraisals

A high level appraisal of the potential for the DP2 Project to result in significant effects on relevant European sites at three potential locations along the eastern coastline of Ireland is set out below.

Arklow Site

The proposed site for the DP2 Project at Arklow, would be located at south-east Arklow, to the south of the River Avoca. This site lies in close proximity to a number of European sites, outlined below.

- Kilpatrick Sandhills SAC (001742)
- Buckroney-Brittas Dunes and Fen SAC (000729)
- Magherabeg Dunes SAC (001766)

Kilpatrick Sandhills SAC is located 4.2km from the location in which the DP2 Project is proposed to be constructed. Buckroney-Brittas Dunes and Fen SAC is located 4.5km from the proposed DP2 Project site and Magherabeg Dunes SAC is located 4.5km from the proposed DP2 Project site.

A description of qualifying interests of each of these European sites is listed in Table B1.

Table B1 European (Natura 2000) Sites in proximity to the Arklow Site

Designated Site/Feature	***Distance from Site (km)***	***Description - Designated on account of the following supported habitats***
Kilpatrick Sandhills SAC (001742)	4.2	: Annual vegetation of drift lines [1210] - Embryonic shifting dunes [2110] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]* - Atlantic decalcified fixed dunes (Calluno-Ulicetea)* [2150]
Buckroney-Brittas Dunes and Fen SAC (000729)	4.5	- Annual vegetation of drift lines [1210] - Perennial vegetation of stony banks [1220] - Mediterranean salt meadows (*Juncetalia maritimi*) [1410] - Embryonic shifting dunes [2110] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]*

Table B1 European (Natura 2000) Sites in proximity to the Arklow Site		
		- Atlantic decalcified fixed dunes (Calluno-Ulicetea)* [2150] - Dunes with Salix repens ssp. argentea (*Salicion arenariae*) [2170] - Humid dune slacks [2190] - Alkaline fens [7230]
Magherabeg Dunes SAC (001766)	14.0	- Annual vegetation of drift lines [1210] - Embryonic shifting dunes [2110] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]* - Atlantic decalcified fixed dunes (Calluno-Ulicetea)* [2150] - Petrifying springs with tufa formation (Cratoneurion) [7220]

Site Objectives

Kilpatrick Sandhills SAC (001742)

For the features Annual vegetation of drift lines, Embryonic Shifting Dune, Shifting dunes along the shoreline with Ammophila arenaria (white dunes), Fixed Coastal Dunes with herbaceous vegetation (grey dunes) and Atlantic decalcified fixed dunes (Calluno-Ulicetea): *To maintain/restore the favourable conservation condition of the habitats in the SAC*.

These objectives are defined by some or all of the following attributes and targets of relevance:

- habitat area, the target for which is a stable or increasing area, subject to natural processes;
- habitat distribution, the target for which is for no decline or change, subject to natural processes;
- physical structure: sediment supply, the target for which is to maintain or restore natural circulation of sediments, without physical obstructions;
- physical structure: creeks and pans, the target for which is to maintain a creek and pan structure subject to natural processes;
- physical structure: flooding regime, the target for which is to maintain the natural tidal regime;
- vegetation structure: zonation, the target for which is to maintain the range of coastal habitats subject to natural processes;

For the feature: **Petrifying springs with tufa formation (Cratoneurion)**: To restore the favourable conservation condition of the habitat within the SAC.

This objective is defined by the following attributes and targets of relevance:

- habitat area, the target for which is a stable or increasing area, subject to natural processes;
- habitat distribution, the target for which is for no decline, subject to natural processes;
- hydrological regime: height of water table; water flow, for which the target is to maintain appropriate hydrological regimes;

Of the habitats which form qualifying features of the SAC **fixed coastal dunes with herbaceous vegetation (grey dunes)** and **Atlantic decalcified fixed dunes (Calluno-Ulicetea)** are included within the Habitats Directive as Annex I priority habitats.

Buckroney-Brittas Dunes and Fen SAC (000729)

For the features Annual vegetation of drift lines, Perennial vegetation of stony banks, Mediterranean salt meadows (*Juncetalia* maitimi), Embryonic Shifting Dunes, Shifting dunes along the shoreline with Ammophila arenaria (white dunes), Fixed Coastal Dunes with herbaceous vegetation (grey dunes), Atlantic decalcified fixed dunes (Calluno-Ulicetea) and Dunes with Salix repens ssp. argentea (*Salicion arenariae*): *To maintain/restore the favourable conservation condition of the habitats in the SAC*.

These objectives are defined by some or all of the following attributes and targets of relevance:

- habitat area, the target for which is a stable or increasing area, subject to natural processes;
- habitat distribution, the target for which is for no decline or change, subject to natural processes;
- physical structure: sediment supply, the target for which is to maintain or restore natural circulation of sediments, without physical obstructions;
- physical structure: creeks and pans, the target for which is to maintain a creek and pan structure subject to natural processes;
- physical structure: flooding regime, the target for which is to maintain the natural tidal regime;
- vegetation structure: zonation, the target for which is to maintain the range of coastal habitats subject to natural processes;

For the feature: **Humid dune slacks**: To restore the favourable conservation condition of the habitat within the SAC.

This objective is defined by the following attributes and targets of relevance:

- habitat area, the target for which is a stable or increasing area, subject to natural processes;
- habitat distribution, the target for which is for no decline or change, subject to natural processes;
- physical structure: functionality and sediment supply, the target for which is to maintain the natural circulation of sediment and organic matter without physical obstructions;
- physical structure: hydrological and flooding regime, for which the target is to maintain the natural regime;
- vegetation structure: zonation, for which the target is to maintain the range of coastal habitats subject to natural processes.

The feature **Alkaline fens** is not considered relevant to any IROPI considerations associated with such a project, given its terrestrial nature.

Of the habitats which form qualifying features of the SAC **fixed coastal dunes with herbaceous vegetation (grey dunes)** and **Atlantic decalcified fixed dunes (Calluno-Ulicetea)** are included within the Habitats Directive as Annex I priority habitats.

Magherabeg Dunes SAC (001766)

For the features Annual vegetation of drift lines, Embryonic Shifting Dunes, Shifting dunes along the shoreline with Ammophila arenaria (white dunes), Fixed Coastal Dunes with herbaceous vegetation (grey dunes) and Atlantic decalcified fixed dunes (Calluno-Ulicetea): *To maintain/restore the favourable conservation condition of the habitats in the SAC*.

These objectives are defined by some or all of the following attributes and targets of relevance:

- habitat area, the target for which is a stable or increasing area, subject to natural processes;
- habitat distribution, the target for which is for no decline or change, subject to natural processes;
- physical structure: sediment supply, the target for which is to maintain or restore natural circulation of sediments, without physical obstructions;
- physical structure: creeks and pans, the target for which is to maintain a creek and pan structure subject to natural processes;
- physical structure: flooding regime, the target for which is to maintain the natural tidal regime;
- vegetation structure: zonation, the target for which is to maintain the range of coastal habitats subject to natural processes;

For the feature: **Petrifying springs with tufa formation (Cratoneurion)**: To restore the favourable conservation condition of the habitat within the SAC.

This objective is defined by the following attributes and targets of relevance:

- habitat area, the target for which is a stable or increasing area, subject to natural processes;
- habitat distribution, the target for which is for no decline, subject to natural processes;
- hydrological regime: height of water table; water flow, for which the target is to maintain appropriate hydrological regimes;

Of the habitats which form qualifying features of the SAC **fixed coastal dunes with herbaceous vegetation (grey dunes)** and **Atlantic decalcified fixed dunes (Calluno-Ulicetea)** are included within the Habitats Directive as Annex I priority habitats.

Circulation of Sediment Supply

These SACs includes a number of qualifying Annex 1 sand dune habitat types for which a conservation objective is met when sediment supply to the sand dune habitats is uninterrupted, maintaining natural circulation of sediments, without physical obstructions.

Due to the sheer scale of the proposed physical interventions in the inshore marine waters at Arklow, the possibility cannot be excluded that construction of the DP2 Project infrastructure will interrupt the natural circulation of sediment supply to these coastal dune systems, even though they are over 4km away.

To do so would conflict with the conservation objectives set for the site, and in accordance with recent case law of the Court of Justice of the European Union (CJEU) such an outcome would adversely affect the integrity of the site in the context of an Article 6(3) appropriate assessment.

Any measures designed to reinstate the natural circulation of sediment supply cannot be considered as mitigation measures in accordance with recent case law of the CJEU and must be considered as compensatory measures under a derogation procedure of Article 6(4) of the Habitats Directive.

Two of the qualifying features of these SACs (grey dunes and decalcified fixed dunes) are Annex I priority habitats.

Bremore Site

The proposed site for the DP2 Project at Bremore, would be located between Laytown and Balbriggan in proximity to the R132. This site lies in close proximity to a number of European sites, outlined below.

- River Nanny Estuary and Shore SPA (004158)
- Rockabill to Dalkey Island SAC (003000)
- Rockabill SPA (004014)
- Skerries Islands SPA (004122)
- Boyne Coast and Estuary SAC (001957)
- Boyne Estuary SPA (004080)

The location of the proposed DP2 Project is less than 1km from the River Nanny Estuary and Shore SPA, and more than 5km to all other European sites listed above.

A description of qualifying interests of each of these European sites is listed in Table B2.

Table B2 European (Natura 2000) Sites in proximity to the Bremore Site

Designated Site/Feature	***Distance from Site (km)***	***Description - Designated on account of the following supported habitats***
River Nanny Estuary and Shore SPA (004158)	0.9	Designated on account of the supported wetland and waterbirds including the following species and habitats: - Oystercatcher *Haematopus ostralegus* [A130] - Ringed Plover Charadrius hiaticula [A137] - Golden Plover *Pluvialis apricaria* [A140] - Knot Calidris canutus [A143] - Sanderling *Calidris alba* [A144] - Herring Gull *Larus argentatus* [A184] - Wetland and Waterbirds [A999]
Rockabill to Dalkey Island SAC (003000)	5.5	Designated on account of the following habitats and species: - Reefs [1170] - Harbour Porpoise *Phocoena phocoena* [1351]
Rockabill SPA (004014)	5.7	Designated on account of the supported populations of the following bird species: - Purple Sandpiper *Calidris maritima* [A148] - Roseate Tern *Sterna dougallii* [A192] - Common Tern *Sterna hirundo* [A193]

Table B2 European (Natura 2000) Sites in proximity to the Bremore Site

		- Arctic Tern *Sterna paradisaea* [A194]
Skerries Islands SPA 004122)	5.8	Designated on account of the supported populations of the following bird species: - Cormorant Phalacrocorax carbo [A017] - Shag Phalacrocorax aristotelis [A018] - Light-bellied Brent Goose *Branta bernicla hrota* [A046] - Purple Sandpiper *Calidris maritima* [A148] - Turnstone Arenaria interpres [A169] - Herring Gull *Larus argentatus* [A184]
Boyne Coast and Estuary SAC (001957)	6.8	Designated on account of the following supported habitats: - Estuaries [1130] - Mudflats and sandflats not covered by seawater at low tide [1140] - Annual vegetation of drift lines [1210] - Salicornia and other annuals colonising mud and sand [1330] - Atlantic salt meadows (Glauco-puccinellietalia maritimae) [1330] - Embryonic shifting dunes [2110] - Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) [2120] - Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]*
Boyne Estuary SPA (004080)	8.6	Designated on account of the supported wetland and waterbirds including the following species and habitats: - Shelduck Tadorna tadorna [A048] - Oystercatcher *Haematopus ostralegus* [A130] - Golden Plover *Pluvialis apricaria* [A140] - Grey Plover Pluvialis squatarola [A141] - Lapwing Vanellus vanellus [A142] - Knot Calidris canutus [A143] - Sanderling *Calidris alba* [A144] - Black-tailed Godwit *Limosa limosa* [A156] - Redshank *Tringa totanus* [A162] - Turnstone Arenaria interpres [A169]

Table B2 European (Natura 2000) Sites in proximity to the Bremore Site		
		- Little Tern *Sterna albifrons* [A195] - Wetland and Waterbirds [A999]

Site Objectives

River Nanny Estuary and Shore SPA

For the feature **Wetlands**: To maintain the favourable conservation condition of the wetland habitat in the River Nanny Estuary and Shore SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

It is noted that this objective is defined by the attribute: total area of wetland habitat, with the target being stable and not significantly less than 230ha other than occurring from natural patterns of variation.

Rockabill to Dalkey Island SAC

For the feature **Reefs**: To maintain the favourable conservation condition of the reefs in Rockabill to Dalkey Island SAC.

This objective is defined by three attributes, habitat area, habitat distribution and community structure. The targets for these attributes are for stable or increasing area (subject to natural processes), stable or increasing distribution and the conservation of a number of community complexes.

Reefs are not included within the Habitats Directive as an Annex I priority habitat.

Boyne Coast and Estuary SAC

For the feature **Mudflats and sandflats not covered by seawater at low tide**: To maintain the favourable conservation condition of mudflats and sandflats not covered by seawater at low tide in the SAC

This objective is defined by the attributes habitats area and community distribution for which the targets are stable and increasing area and conservation of a number of community complexes.

For the features Salicornia and other annuals colonizing mud and sand, Atlantic Salt Meadows, Embryonic Shifting Dune, Shifting dunes along the shoreline with Ammophila arenaria (white dunes) and Fixed Coastal Dunes with herbaceous vegetation (grey dunes): *To maintain/restore the favourable conservation condition of the habitats in the SAC*.

These objectives are defined by some or all of the following attributes and targets of relevance:

- habitat area, the target for which is a stable or increasing area, subject to natural processes;
- habitat distribution, the target for which is for no decline or change, subject to natural processes;
- physical structure: sediment supply, the target for which is to maintain or restore natural circulation of sediments, without physical obstructions;
- physical structure: creeks and pans, the target for which is to maintain a creek and pan structure subject to natural processes;
- physical structure: flooding regime, the target for which is to maintain the natural tidal regime;

- vegetation structure: zonation, the target for which is to maintain the range of coastal habitats subject to natural processes;

Of the habitats which form qualifying features of the SAC only **fixed coastal dunes with herbaceous vegetation (grey dunes)** is included within the Habitats Directive as an Annex I priority habitat.

Boyne Estuary SPA

For the feature **Wetlands**: To maintain the favourable conservation condition of the wetland habitat in the Boyne Estuary SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

It is noted that this objective is defined by the attribute: total area of wetland habitat, with the target being stable and not significantly less than 594ha other than occurring from natural patterns of variation.

Circulation of Sediment Supply

The Boyne Coast and Estuary SAC is almost 7km from the site of the proposed DP2 Project, and includes a number of qualifying Annex 1 sand dune habitat types for which a conservation objective is met when sediment supply to the sand dune habitats is uninterrupted, maintaining natural circulation of sediments, without physical obstructions. Due to the sheer scale of the proposed physical interventions in the inshore marine waters at Bremore, the possibility cannot be excluded that construction of DP2 Project infrastructure at Bremore will interrupt the natural circulation of sediment supply to these coastal dune systems, even though they are almost 7km away. It is our view that this cannot be determined until such time as a specific project has been proposed and assessed to the level of scientific certainty required in EIA and appropriate assessment.

Interruption of natural sediment supply would conflict with the conservation objectives set for the site, and in accordance with recent case law of the Court of Justice of the European Union (CJEU) such an outcome would adversely affect the integrity of the site in the context of an Article 6(3) appropriate assessment.

Any measures designed to reinstate the natural circulation of sediment supply cannot be considered as mitigation measures in accordance with recent case law of the CJEU and must be considered as compensatory measures under a derogation procedure of Article 6(4) of the Habitats Directive.

One of the qualifying features of this SAC (grey dunes) is an Annex I priority habitat.

Hydromorphological changes

The wetlands of the River Nanny Estuary and Shore SPA and the Boyne Estuary SPA are a qualifying feature of the sites, and they provide intertidal overwintering grounds for at least 10 species of waterbird. One of the conservation objectives of the sites is to ensure that the area covered by the intertidal wetland habitat remains stable and is not significantly reduced, other than occurring from natural patterns of variation.

It is possible that the construction of DP2 Project infrastructure at Bremore will potentially change the long term sediment transport regime in the area including the Nanny Estuary and Boyne Estuary. Physical infrastructure may disrupt the circulation patterns and sediment transport processes that may impact upon foraging areas within the Nanny or Boyne Estuaries during low tide, due to the changes in bathymetry as a result of construction of breakwaters or other infrastructure.

Any effect which results in changes to the area of wetland that overwintering birds may use in the River Nanny Estuary and Shore SPA or Boyne Estuary SPA could result in a decrease in the range, timing or intensity of use of this area by the non-breeding waterbird feature species that use it.

To do so would conflict with the conservation objectives set for the site, and in accordance with recent case law of the Court of Justice of the European Union (CJEU) such an outcome would adversely affect the integrity of the site in the context of an Article 6(3) appropriate assessment.

Any measures designed to re-balance the area of intertidal wetland habitat that overwintering birds use cannot be considered as mitigation measures in accordance with recent case law of the CJEU and must be considered as compensatory measures under a derogation procedure of Article 6(4) of the Habitats Directive.

It is less clear whether or not long term sedimentation effects might conflict with any conservation objectives set for Annex 1 reef habitat in the Rockabill to Dalkey Island SAC. It is our view that this cannot be determined until such time as a specific project has been proposed and assessed to the level of scientific certainty required in EIA and appropriate assessment.

Newcastle Site

The proposed site for the DP2 Project at Newcastle adjoins a number of European sites, with a further site described in proximity, as outlined below.

- The Murrough Wetlands SAC (002249)
- The Murrough SPA (004186)
- Wicklow Reef SAC (002274)

The location of the proposed DP2 Project overlaps with the coastal edge of the Murrough Wetlands SAC and the Murrough SPA. It is located 8.7km from Wicxklow Ref SAC.

A description of qualifying interests of each of these European sites is listed in Table B3.

Table B3 European (Natura 2000) Sites in proximity to the Newcastle Site

Designated Site/Feature	***Distance from Site (km)***	***Description - Designated on account of the following supported habitats***
The Murrough Wetlands SAC (002249)	Site will overlap SAC	Designated on account of the supported Annex I habitats: - Annual vegetation of drift lines [1210] - Perennial vegetation of stony banks [1220] - Atlantic salt meadows (Glauco-pucinellietalia maritimae) [1330]] - Mediterranean salt meadows (*Juncetalia maritimi*) [1410] - Calcareous fens with Cladium mariscus and species of the Caricion davallinae [7210] - Alkaline fens [7230]
The Murrough SPA 004186)	Site will overlap SPA	Designated on account of the supported wetland and waterbirds: - Red-throated Diver *Gavia stellata* [A001] - Greylag Goose *Anser anser* [A043] - Light-bellied Brent Goose *Branta bernicla hrota* [A046] - Wigeon Anas Penelope [A050] - Teal Anas crecca [A052] - Black-headed Gull Chroicocephalus ridibundus [A179] - Herring Gull *Larus argentatus* [A184] - Little Tern *Sterna albifrons* [A195]

Table B3 European (Natura 2000) Sites in proximity to the Newcastle Site		
		- Wetland and Waterbirds [A999]
Wicklow Reef SAC (002274)	8.7	- Reefs [1170]

Site Objectives

The Murrough Wetlands SAC

For the features Annual vegetation of drift lines, Perennial vegetation of stony banks, Atlantic salt meadows (Glauco-pucinellietalia maritimae) and Mediterranean salt meadows (Juncetalia maritime) the generic conservation objectives are: *To maintain or restore the favourable conservation condition of the habitats in the SAC*.

Proxy site-specific conservation objectives from Carlingford Shore SAC and North Dublin Bay SAC were reviewed to check what site specific conservation objectives would look like for these Annex 1 habitats in this site once published.

The Murrough SPA

For the feature **Wetlands**: To maintain and restore the favourable conservation condition of the wetland habitat in The Murrough SPA as a resource for the regularly occurring migratory waterbirds that utilise it.

No specific attributes or targets are set out in respect of this objective, however it is considered likely that impacts to the habitat and objectives would be assessed in a similar manner to habitats listed above within separate European sites, for which specific objectives have been detailed.

Wicklow Reef SAC

For the feature **Reefs**: To maintain the favourable conservation condition of the reefs in the SAC.

This objective is defined by three attributes, habitat area, habitat distribution and community structure. The targets for these attributes are for stable or increasing area (subject to natural processes), stable or increasing distribution and the conservation of a number of community complexes. All of which may be affected by altered coastal processes associated with the proposals.

Reefs are not included within the Habitats Directive as an Annex I priority habitat.

Habitat Loss

Direct habitat loss from lands within the European sites is inevitable and a necessary consequence of locating the DP2 Project at Newcastle. The conservation objectives set for each Annex 1 qualifying habitat of a European site requires the habitat area to be maintained. Any habitat loss in the context of coastal wetlands where hydrologically dependent functioning occurs throughout habitat mosaics is significant, and liable to adversely affect the integrity of the site. Permanent Annex 1 habitat loss would conflict with the conservation objectives set for the site, and in accordance with recent case law of the Court of Justice of the European Union

(CJEU) such an outcome would adversely affect the integrity of the site in the context of an Article 6(3) appropriate assessment.

Any measures designed to offset the habitat areas lost cannot be considered as mitigation measures in accordance with recent case law of the CJEU and must be considered as compensatory measures under a derogation procedure of Article 6(4) of the Habitats Directive.

Circulation of Sediment Supply

The Murrough Wetlands SAC and the Murrough SPA overlaps with the site of the proposed DP2 Project, and include a number of qualifying Annex 1 habitat types for which a conservation objective is met when sediment supply to the drift line, stony bank or salt meadow habitats is uninterrupted, maintaining natural circulation of sediments and organic matter without physical obstructions. Due to the sheer scale of the proposed physical interventions in the inshore marine waters at Newcastle, the possibility cannot be excluded that construction of DP2 Project infrastructure will interrupt the natural circulation of sediment and organic matter to this coastal wetland system.

Interruption of natural circulation of sediment and organic matter would conflict with the conservation objectives set for the site, and in accordance with recent case law of the Court of Justice of the European Union (CJEU) such an outcome would adversely affect the integrity of the site in the context of an Article 6(3) appropriate assessment.

Any measures designed to reinstate the natural circulation of sediment supply cannot be considered as mitigation measures in accordance with recent case law of the CJEU and must be considered as compensatory measures under a derogation procedure of Article 6(4) of the Habitats Directive.

Adverse Effects on Site integrity

This section considers the practical implications to a Consenting Strategy for the DP2 Project if, and where, as suggested above, that upon statutory evaluation by a competent authority under the provisions of Article 6(3) of the Habitats Directive, the proposed DP2 Project will give rise to adverse effect on the integrity of a European site.

In the Planning Consent process, such effects generated by the project will trigger consideration of provisions of Section 177AA. of the PDA.

Unlike Environmental Impact Assessment, the Article 6(3) appropriate assessment is a determinative factor, in the consenting process. However, despite a negative outcome of the Article 6(3) assessment, and in acknowledgment that there may be circumstances where a development that may be damaging to a European site is needed for an imperative reason of overriding interest, the Habitats Directive provides a derogation of Article 6(3) under Article 6(4) (the third part of the procedure referred to in Section 1 above) which allows such plans or projects to be approved. Such derogation is provided for on strict application that all of the following 3 tests are met in sequential order;

4. There are no feasible **alternative solutions** to the plan or project which are less damaging;
5. There are "**imperative reasons of overriding public interest**" (IROPI) for the plan or project to proceed.
6. Compensatory measures are secured to ensure that the overall coherence of the network of European sites is maintained.

Whilst Article 6(4) is the exception to the rule, its application is not automatic. It will be the decision of the relevant Minister, upon request to him or her by the competent authority, and following input from the Minister of Arts Heritage and the Gaeltacht to notify the competent authority that consent can be granted. Therefore, it will ultimately be up to the national authorities to assess the efficacy of the compensatory measures proposed by the applicant to the competent authority to determine whether consent should be granted.

However, consideration of Article 6(4) IROPI provisions, can only be considered; once an absence of suitable alternative solutions to the project has been determined; and that compensatory measures proposed, are appropriate to ensure the protection of the overall coherence of the Natura 2000 network. It is thus necessary for the Consenting Strategy to understand from the outset, the practicalities of this requirement.

Consideration of the Article 6(4) IROPI test

Test 1: Alternative Solutions

The objective is to determine whether there are any other feasible ways to deliver the overall objective of the project which will be less damaging to the integrity of the European site affected.

Consideration of 'alternatives' in the context of this project will require inclusion of options that could be delivered by someone other than the applicant, or at a different location, using different routes, scale, size, methods or timing; and through differing processes (within the existing Port) and the environmental effects of same. The Do-nothing '*zero option'* must also be considered as an *alternative* option. The parameters for comparison are based on aspects concerning the conservation and the maintenance of the integrity of the European Site and of its ecological functions. Other assessment criteria, such as economic criteria, cannot be seen as overruling ecological criteria.

Therefore, whilst there is considerable overlap between this test ('consideration of *alternatives'*) and consideration of 'demonstrable need' for the proposed development, the case for DP2 Project cannot be based solely on achievement of strategic economic objectives. Rather there needs to be balance with certain conclusion that the DP2 Project, under whichever development option and site location is advanced, would have the least harm on the European site.

Alternative solutions are however, limited to those which would deliver the same overall objective as the original proposal and must be credible. National policy will provide a context for considering the scope of alternative solutions and the competent authority must decide whether alternatives are feasible while also being less damaging. In taking this decision, the competent authority may decide that options are not feasible alternative solutions if, despite being less damaging, they do not deliver the overall objective of the original proposal. The project and alternatives can therefore also be considered in the context of their pursuit of legitimate goals of economic and social policy.

Full consideration of alternatives will require; comparative consideration between each of the sites currently under consideration, and then, comparative consideration with other (off-site) alternatives. This will facilitate understanding of the effects of each option. A conclusive consideration and assessment of alternatives, where it has been confirmed that the project is likely to affect the integrity of any European site, will be imperative to support any case for derogation of Article 6(3) and to request the competent authority to invoke IROPI provisions for the purpose of granting development consent.

Test 2: Imperative Reasons of Overriding Public Interest

The concept of 'imperative reason of overriding public interest' or IROPI is not defined though it must be both 'public' and 'overriding', which means that it must be of such an importance that it can be weighed up (by the competent authority) against the Directive's objective of the conservation of natural habitats and wild fauna and flora. Consent for a project is likely only if the imperative reasons for the project outweigh its impact on the conservation objectives of the European site it adversely affects.

It has been established that; such reasons can include those of social and economic nature' where plans or projects prove to be indispensable; and, if it is of long-term interest. *Short term economic interests or other*

interests yielding only short-term benefits for the society would not appear to be sufficient to outweigh the long-term conservation interests protected by the [Habitats] Directive. (EC, 2018). This can include consideration of the project within the *framework of fundamental policies for the State and the society*, and within the *framework of carrying out activities of an economic or social nature, fulfilling specific obligations of public service.*

With this in mind, and comparable with other instances to date, a case for 'IROPI' could be established on the basis of inter-alia; the relevance of the Project to National Economy and adherence to National Ports policy delivery of a project of [EC] 'Community' importance in the context of the 'Ten-T' network; and best advantageous use of available port land and space.

However, where the European sites hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to *human health* or *public safety*, to beneficial consequences of primary importance for the environment or, further to an opinion from the European Commission, to other imperative reasons of overriding public interest. Some of the European sites discussed in Section 2 do host a priority natural habitat type and a requirement to obtain an opinion of the Commission is a possibility that cannot be ruled out.

Test 3: Compensatory Measures

Compensatory measures constitute the 'last resort' under Article 6(4) to be considered only when a negative impact on the integrity of a Natura 2000 site is ascertained or it cannot be excluded, despite all other measures taken to avoid or reduce adverse effects on it, and once it is decided that the project should proceed for imperative reasons of overriding public interest and in absence of alternative solutions. Compensatory measures are specific to a project (EC, 2019).

Though the term '*compensatory measures'* are not defined, case evidence to date has established that compensation differs from 'mitigation' with the latter considered generally under the Article 6(3) test as a means to minimise, or even eliminate, the negative impacts likely to arise from the implementation of a project so that the site's integrity is not adversely affected. In contrast, *compensatory measures* are considered under Article 6(4) independent of the project (and its mitigation) intended to offset the residual negative effects of the project so that the overall coherence of the Natura 2000 network is maintained.

A coherent European ecological network is understood to enable 'the natural habitats types and the species' habitats concerned to be maintained or, where appropriate, restored at a favourable conservation status in their natural range'. Compensation is based on a no net loss strategy and should go beyond the normal/standard measures required for the designation, protection and management of Natura 2000 sites. A variety of compensatory measures can be used including 'Restoration or enhancement in existing sites: Habitat Recreation: and in association with other works, proposing a new site under the Habitats Directive. However compensation must involve only measures outside the boundary of existing Natura 2000 site.

In terms of the extent of compensation, it stands to reason that the more biodiverse and complex the characteristics of the affected area is, the greater the risk that no-net-loss cannot be achieved. Examination of

compensatory measures in four cases under Article 6(4)[2] found that multipliers, 3-10 times of the total area affected, were used to determine the extent of compensation resulting in provision of a greater net extent of habitat affected to guarantee no net loss. UK guidance suggests multipliers at a ratio of between 2 and 6 times the area lost depending upon the distinctiveness of the habitat concerned.

Of equal importance, is the implementation timeframe of such compensation in the context of the timeline of the project given that at certain times, certain species such as water birds might be displaced by the loss of habitat during the project development. Where it is established that compensatory measures are required, the planning and design strategy should give consideration to the following;

- Targeted features (habitats and species) and ecological processes/functions to be compensated including reasons, why such measures are suitable to compensate the negative effects;
- Extent of the compensatory measures including surface areas, species population numbers;
- Identification and location of compensation areas;
- Status and conditions in the compensation areas and expected results and explanation of how the proposed measures will compensate the adverse effects on the integrity of the site and will allow preserving the coherence of the Natura 2000 network;
- Time schedule for the implementation of the compensatory measures indicating when the expected results will be achieved;
- Methods and techniques proposed for the implementation of the compensatory measures, evaluation of their feasibility and possible effectiveness;
- Costs and financing of the proposed compensatory measures Responsibilities for implementation of compensatory measures; and
- Monitoring of the compensatory measures, where envisaged (e.g. if there are uncertainties concerning the effectiveness of the measures), assessment of results and follow-up.

The consideration of the type and nature of compensatory measures will; be based on sound scientific, ecological assessment and evaluation; and early consensus in the process with National Parks and Wildlife Service as the body responsible for designating European sites.

[2]Mirjam E.A. Broekmeyer, Roger K.A. Morris & Lawrence M. Jones- Walter (2016)

Conclusion

It is quite possible that IROPI would be triggered in respect of the proposed DP2 Project at Arklow, Bremore, or Newcastle in respect of the potential of the DP2 Project to result in conflict with one or more of the conservation objectives set for the qualifying habitats or species present. This outcome would result from the alteration of coastal processes leading to loss or degradation of habitat within those European Sites in proximity to the proposals.

It is not anticipated that the proposed DP2 Project would be able to adequately or practicably mitigate for these effects within the constrained framework of Article 6(3) of the Habitats Directive as shaped by recent CJEU case law.

The three tests of an Article 6(4) derogation procedure are stringent, but if the project is able to demonstrate compliance with the requirements of the IROPI route to consent, it provides a solution to compensating for loss of coastal habitats or their ecological structure and functioning.

The requirement to seek an opinion from the Commission as part of the consent procedure, rather than simply notifying the Commission of a decision that a competent authority has taken, is triggered by adverse effects on a priority habitat, and that possibility arises in each of the locations considered for a future DP2 Project.

Appendix C – Assessment Scoring Guidelines

No.	Topic	Objective	Score	Score Description	Example Of Impacts
1A	Biodiversity, Flora And Fauna	Preserve, protect, maintain and where possible enhance Natura 2000 network, protected species and their key habitats.	3	Significant Positive Impacts	Potential for enhancement of, restoration of, or increased protection to European sites, in line with conservation objectives.
			2	Moderate Positive Impacts	Potential for increased awareness / education and access to European sites, in line with conservation objectives. Habitat and species information can be made available throughout the Dublin Port estate.
			1	Slight Positive Impacts	Potential for increased public awareness of European sites. Habitat and species information can be made available throughout the Dublin Port estate.
			0	Neutral / No Impacts	No impacts on European sites and protected habitats / species.
			-1	Slight Negative Impacts	Potential for short term, indirect construction phase, disturbance impacts in the vicinity of European sites, and protected habitats and species. Slight potential for increased spread of invasive species.
			-2	Moderate Negative Impacts	Potential for short term, direct construction phase, or medium to long term indirect impacts to European sites, and protected habitats and species. Moderate potential for increased spread of invasive species.
			-3	Significant Negative Impacts	Potential for medium to long term direct impacts to European sites, and protected habitats and species. High potential for increased spread of invasive species.
1B	Biodiversity, Flora And Fauna	Preserve, protect, maintain and where possible enhance nature conservation sites/biospheres and protected species or other known species of conservation concern.	3	Significant Positive Impacts	Potential for enhancement of, restoration of, or increased protection to nationally designated sites and biospheres, in line with conservation objectives.
			2	Moderate Positive Impacts	Potential for increased awareness / education and access to nationally designated sites and biospheres, in line with conservation objectives. Habitat and species information can be made available throughout the proposed port development.
			1	Slight Positive Impacts	Potential for increased public awareness of nationally designated sites and biospheres. Habitat and species information can be made available throughout the proposed port development.
			0	Neutral / No Impacts	No impacts on nationally designated sites, biospheres and protected habitats / species.
			-1	Slight Negative Impacts	Potential for short term, indirect construction phase, disturbance impacts in the vicinity of nationally designated sites, biospheres, and protected habitats and species. Slight potential for increased spread of invasive species.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
			-2	Moderate Negative Impacts	Potential for short term, direct construction phase, or medium to long term indirect impacts to nationally designated sites, biospheres, and protected habitats and species. Moderate potential for increased spread of invasive species.
			-3	Significant Negative Impacts	Potential for medium to long term direct impacts to nationally designated sites, biospheres, and protected habitats and species. High potential for increased spread of invasive species.
1C	Biodiversity, Flora And Fauna	Preserve, protect, maintain and where possible enhance undesignated fauna, flora and habitats.	3	Significant Positive Impacts	Potential for an increase in the area of and abundance of undesignated natural fauna, flora and habitats.
			2	Moderate Positive Impacts	Potential for enhancement of, or restoration of, existing undesignated natural fauna, flora and habitats.
			1	Slight Positive Impacts	Potential for increased awareness / education and access to undesignated natural fauna, flora and habitats. Habitat and species information can be made available throughout Dublin Port's estate. Potential for the preservation of existing undesignated natural fauna, flora and habitats.
			0	Neutral / No Impacts	No impacts on designated and undesignated international, national and local sites and species.
			-1	Slight Negative Impacts	Potential for short term, indirect construction phase, disturbance impacts to undesignated natural fauna, flora and habitats. Slight potential for increased spread of invasive species. Temporary displacement of species and habitats that may re-establish in the medium term.
			-2	Moderate Negative Impacts	Potential for short term, direct construction phase, and medium to long term indirect impacts to undesignated natural fauna, flora and habitats. Moderate potential for increased spread of invasive species. Temporary loss of species and habitats that may re-establish in the long term.
			-3	Significant Negative Impacts	Potential for medium to long term direct impacts to undesignated natural fauna, flora and habitats. High potential for increased spread of invasive species. Permanent loss of species and habitats.
2A	Population and Human Health	Minimise risk to human health and risk to life within the local community.	3	Significant Positive Impacts	Improvement in human health and a reduction of risk to life within the local community from potentially significantly reduced number of accidents and incidents from port activities and significantly reduced number of disturbance complaints from the local community.
			2	Moderate Positive Impacts	Improvement in human health and a reduction of risk to life within the local community from potentially reduced number of accidents and incidents from port activities and reduced number of disturbance complaints from the local community.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
			1	Slight Positive Impacts	No change in the human health and risks to the local community, with increased port activity and throughput.
			0	Neutral / No Impacts	No change in the human health and risks to the local community, from no change in port activity.
			-1	Slight Negative Impacts	Potential for temporary disturbance and nuisance impacts to the local community including impacts on human health.
			-2	Moderate Negative Impacts	Potential for short to medium term disturbance and nuisance impacts to the local community including impacts on human health.
			-3	Significant Negative Impacts	Potential for permanent disturbance and nuisance impacts to the local community including impacts on human health. Potential for short, medium or long term increase in risk to life.
2B	Population and Human Health	Provide social infrastructure and amenity facilities for the local community.	3	Significant Positive Impacts	Potential for greater numbers of and significant improvements to social infrastructure and amenity facilities.
			2	Moderate Positive Impacts	Potential for improvements to / enhancement of existing social infrastructure and amenity facilities.
			1	Slight Positive Impacts	No change in social infrastructure and amenities facilities for the local community, with increased port activity and throughput.
			0	Neutral / No Impacts	No change in social infrastructure and amenities facilities for the local community, from no change in port activity.
			-1	Slight Negative Impacts	Potential for short term disturbance and nuisance impacts to social infrastructure and amenity facilities available to the local community.
			-2	Moderate Negative Impacts	Potential for medium to long term disturbance and nuisance impacts to social infrastructure and amenity facilities available to the local community. Slight reduction in number of social infrastructure and amenity facilities available to the local community.
			-3	Significant Negative Impacts	Potential for long term disturbance and nuisance impacts to social infrastructure and amenity facilities available to the local community. Significant reduction in number of social infrastructure and amenity facilities available to the local community
2C	Population and Human Health		3	Significant Positive Impacts	Potential for permanent increases in direct and indirect employment opportunities as a result of the proposed port development.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
		Provide employment for the local community.	2	Moderate Positive Impacts	Potential for permanent increases in indirect employment opportunities as a result of the proposed port development.
			1	Slight Positive Impacts	Potential for temporary increases in employment opportunities.
			0	Neutral / No Impacts	No change in employment opportunities for the local community.
			-1	Slight Negative Impacts	Potential for short term, disruption, disturbance and nuisance impacts on the local community workforce.
			-2	Moderate Negative Impacts	Potential for temporary reduction in employment opportunities.
			-3	Significant Negative Impacts	Potential for medium to long term reduction in employment opportunities.
3A	Geology, Soils and Landuse	Protect the coastline from erosion.	3	Significant Positive Impacts	Medium to long term increase of new soil or land resource that is protected from coastal erosion.
			2	Moderate Positive Impacts	Reduced area of soil or land resource at risk from coastal erosion.
			1	Slight Positive Impacts	No change in areas of existing functional soil and land resource, with increased port activity and throughput.
			0	Neutral / No Impacts	No change in areas of existing functional soil and land resource, from no change in port activity.
			-1	Slight Negative Impacts	Potential for slight alteration of natural coastal processes and sediment transport.
			-2	Moderate Negative Impacts	Potential for alteration of natural coastal processes and sediment transport, with increased risk of coastal erosion to soil and land resource.
			-3	Significant Negative Impacts	Potential for medium to long term loss of soil and land resource.
3B	Geology, Soils and Landuse		3	Significant Positive Impacts	Potential for remediation and clean-up of all contaminated soils and sediments in the vicinity of the Port.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
		Protect the soil and sediment from contamination.	2	Moderate Positive Impacts	Potential for containment and management of contaminated soils and sediments in the vicinity of the Port, with increased port activity and throughput. Potential for remediation and clean-up of some contaminated soils and sediments in the vicinity of the proposed port development.
			1	Slight Positive Impacts	No change in the potential for contamination and sterilisation of soils and sediments, with increased port activity and throughput.
			0	Neutral / No Impacts	No change in the potential for contamination and sterilisation of soils and sediments, from no change in port activity.
			-1	Slight Negative Impacts	Potential for short term, construction phase contamination of soils and sediments.
			-2	Moderate Negative Impacts	Medium to long term increased potential for contamination of soils and sediments from Port activities.
			-3	Significant Negative Impacts	Potential for long term contamination and sterilisation of soils and sediments from Port activities.
4A	Water	No negative impacts on the status of coastal waters, surface waters and groundwater, and to provide no impediment to the achievement of water body objectives under the WFD.	3	Significant Positive Impacts	Potential improvement of water body overall status.
			2	Moderate Positive Impacts	Potential for regional improvement of water quality with improved water quality discharges from the Port. Removal of man-made structures for more natural coastal morphology.
			1	Slight Positive Impacts	Potential for localised improvement of water quality. Reduced potential for spills and runoff.
			0	Neutral / No Impacts	No impacts on status of coastal waters, surface waters and groundwater, from no change in port activity.
			-1	Slight Negative Impacts	Potential for localised, short term or infrequent negative impacts on water quality.
			-2	Moderate Negative Impacts	Increased potential for permanent or frequent negative impacts on water quality discharges from the Port. Impacts on water body morphology with increased man-made structures.
			-3	Significant Negative Impacts	Potential deterioration of water body overall status.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
4B	Water	Reduce water usage and wastewater generated at the proposed port development per unit of freight and passenger throughput.	3	Significant Positive Impacts	Potential for significant reduction in water consumption and wastewater generation per unit of freight and passenger throughput.
			2	Moderate Positive Impacts	Potential moderate reduction in water consumption and wastewater generation per unit of freight and passenger throughput.
			1	Slight Positive Impacts	Potential for slight reduction in water consumption and wastewater generation per unit of freight and passenger throughput.
			0	Neutral / No Impacts	No change in water consumption and wastewater generation.
			-1	Slight Negative Impacts	Potential for slight increase in water consumption and/or wastewater generation per unit of freight and passenger throughput.
			-2	Moderate Negative Impacts	Potential for moderate increase in water consumption and/or wastewater generation per unit of freight and passenger throughput.
			-3	Significant Negative Impacts	Potential for significant increase in water consumption and/or wastewater generation per unit of freight and passenger throughput.
4C	Water	No negative impacts on flood risk management activity, and to provide no impediment to the implementation of the Floods Directive.	3	Significant Positive Impacts	Potential for development to contribute to flood risk management within and in the vicinity of the Port. Multi-benefit development.
			2	Moderate Positive Impacts	Potential for development to contribute to flood risk management in several locations in the Port. Multi-benefit development.
			1	Slight Positive Impacts	Potential for development to contribute to flood risk management in a localised area of the Port. Multi-benefit development.
			0	Neutral / No Impacts	No change in flood risk at the Port.
			-1	Slight Negative Impacts	Potential for increased flood risk to localised area of Dublin Port.
			-2	Moderate Negative Impacts	Potential for increased flood risk to several areas of Dublin Port.
			-3	Significant Negative Impacts	Potential for increase in flood risk regionally within and in the vicinity of the Port. Transferred flood risk to outside the Port.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
5A	Air, Noise and Vibration	Minimise impacts on air quality in the area.	3	Significant Positive Impacts	Potential for significant reductions in air pollution to the area.
			2	Moderated Positive Impacts	Potential for moderate reductions in air pollution to the area.
			1	Slight Positive Impacts	Potential for slight reductions in air pollution to the area.
			0	Neutral / No Impacts	No change in air quality in the area.
			-1	Slight Negative Impacts	Potential for temporary or infrequent breaches of air quality thresholds, not impacting the local community.
			-2	Moderate Negative Impacts	Potential for temporary or infrequent breaches of air quality thresholds, potentially impacting the local community.
			-3	Significant Negative Impacts	Potential for medium and long term, or frequent breaches of air quality thresholds.
5B	Air, Noise and Vibration	Minimise noise impacts in the area.	3	Significant Positive Impacts	Potential for significant reductions in noise impacts to the area.
			2	Moderated Positive Impacts	Potential for moderate reductions in noise impacts to the area.
			1	Slight Positive Impacts	Potential for slight reductions in noise impacts to the area.
			0	Neutral / No Impacts	No change in noise impacts in the area.
			-1	Slight Negative Impacts	Potential for temporary or infrequent breaches of noise thresholds, not impacting the local community.
			-2	Moderate Negative Impacts	Potential for temporary or infrequent breaches of noise thresholds, potentially impacting the local community.
			-3	Significant Negative Impacts	Potential for medium and long term, or frequent breaches of noise thresholds.

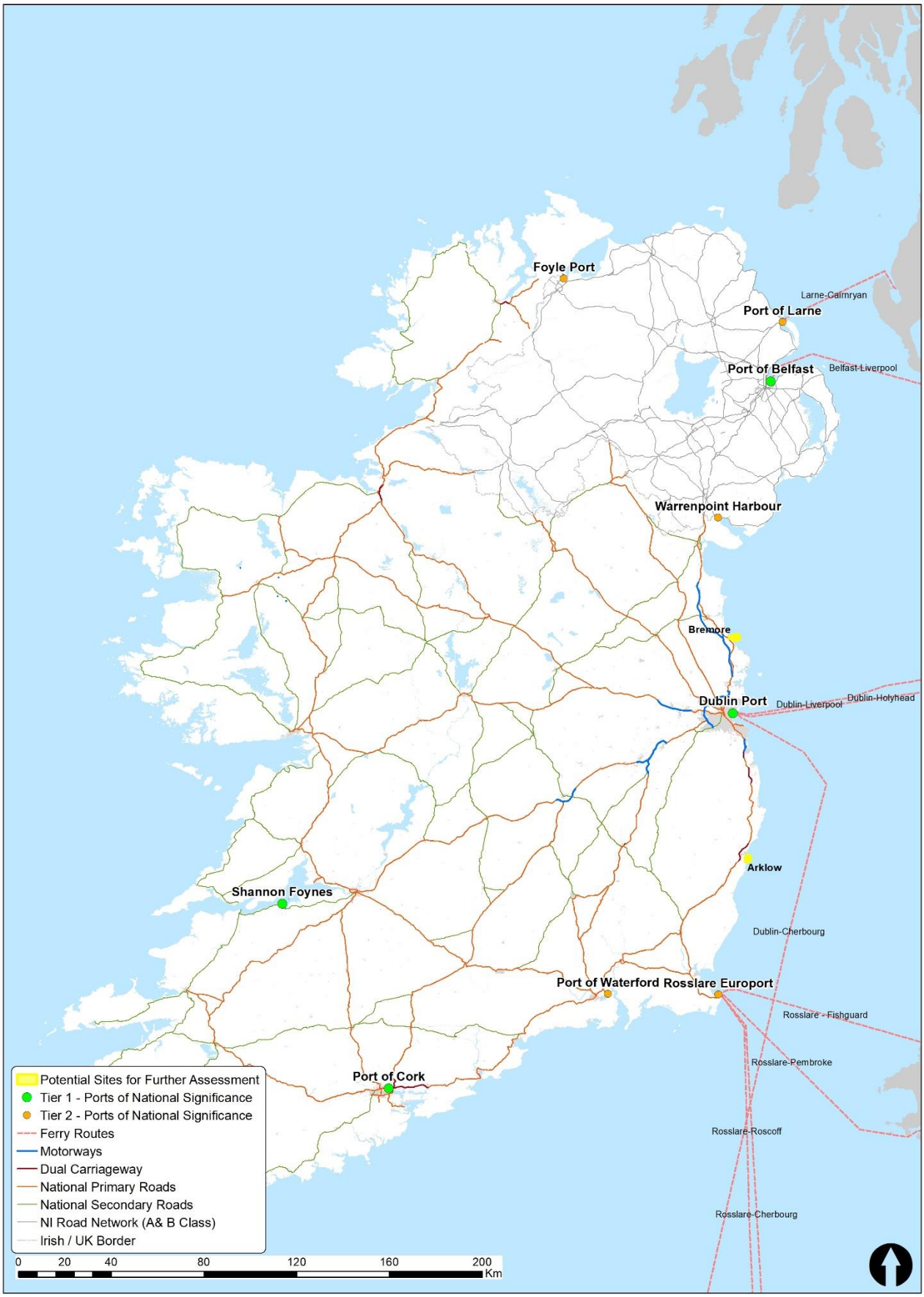
No.	Topic	Objective	Score	Score Description	Example Of Impacts
5C	Air, Noise and Vibration	Minimise vibration impacts in the area.	3	Significant Positive Impacts	Potential for significant reductions in vibration impacts to the area.
			2	Moderated Positive Impacts	Potential for moderate reductions in vibration impacts to the area.
			1	Slight Positive Impacts	Potential for slight reductions in vibration impacts to the area.
			0	Neutral / No Impacts	No change in vibration impacts in the area.
			-1	Slight Negative Impacts	Potential for temporary or infrequent breaches of vibration thresholds, not impacting the local community.
			-2	Moderate Negative Impacts	Potential for temporary or infrequent breaches of vibration thresholds, potentially impacting the local community.
			-3	Significant Negative Impacts	Potential for medium and long term, or frequent breaches of vibration thresholds.
6A	Climatic Factors	Minimise emissions of greenhouse gases and port carbon footprint from development and activity.	3	Significant Positive Impacts	Potential for a significant decrease in GHG emissions and carbon footprint.
			2	Moderated Positive Impacts	Potential for a moderate decrease in GHG emissions and carbon footprint.
			1	Slight Positive Impacts	Potential for a slight decrease in GHG emissions and carbon footprint. Enhanced natural GHG sequestering natural cover.
			0	Neutral / No Impacts	No change in GHG emissions and carbon footprint.
			-1	Slight Negative Impacts	Slight increase in GHG emissions and carbon footprint. Loss of GHG sequestering natural cover.
			-2	Moderate Negative Impacts	Moderate increase in GHG emissions and carbon footprint.
			-3	Significant Negative Impacts	Significant increase in GHG emissions and carbon footprint.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
6B	Climatic Factors	Adaptation to potential climatic change.	3	Significant Positive Impacts	All Port receptors protected from climate change influenced flood risk for the 0.5% AEP event. Developments adaptable to climatic change influenced flood risk.
			2	Moderated Positive Impacts	Some Port receptors protected from climate change influenced flood risk for the 0.5% AEP event. Developments adaptable to climatic change influenced flood risk.
			1	Slight Positive Impacts	Port developments are adaptable to climatic change influenced flood risk.
			0	Neutral / No Impacts	No change in risk at Port from climate change influenced flooding.
			-1	Slight Negative Impacts	Development not planned to be adaptable to climatic change.
			-2	Moderate Negative Impacts	Development not planned to be adaptable to climatic change. Increased risk of climate change influenced flooding to few receptors within the Port.
			-3	Significant Negative Impacts	Development not planned to be adaptable to climatic change. Increased risk of climate change influenced flooding to several receptors within and/or outside of the Port.
7A	Material Assets & Infrastructure	Protect existing and develop new material assets and infrastructure.	3	Significant Positive Impacts	Potential for significant development and operation of new port infrastructure with minimal disruption to existing material assets. Significantly increased port capacity and activity.
			2	Moderate Positive Impacts	Potential for development and operation of new port infrastructure with minimal disruption to existing material assets. Increased port capacity and activity.
			1	Slight Positive Impacts	Potential for development and operation of new port infrastructure with disruption to existing material assets. Slightly increased port capacity and activity.
			0	Neutral / No Impacts	No development of new port infrastructure. Current port capacity and activity maintained.
			-1	Slight Negative Impacts	Short term disturbance impacts during construction or maintenance works to existing material assets and infrastructure. Temporary disturbance to port capacity and activity.
			-2	Moderate Negative Impacts	No development of new port infrastructure with disruption to existing material assets and infrastructure. Potentially reduced Port capacity and activity. Hindrance to Port activity.
			-3	Significant Negative Impacts	Loss of existing material assets and infrastructure with no development of new port infrastructure. Potentially significantly reduced Port capacity and activity. Significant hindrance to Port activity.

No.	Topic	Objective	Score	Score Description	Example Of Impacts
8A	Cultural, Architectural & Archaeological Heritage	Avoid loss of or damage to heritage features and where possible incorporate heritage features into the proposed port development	3	Significant Positive Impacts	Potential for increased protection / preservation of several heritage features. Significant incorporation of heritage features into proposed port development. Creation of amenity value for a number of architectural / cultural features.
			2	Moderate Positive Impacts	Potential for improvement on the setting of several heritage features. Incorporation of heritage features into the proposed port development. Protection of the existing amenity for a number of architectural / cultural features.
			1	Slight Positive Impacts	Potential for slight incorporation of heritage features into the Port Estate. Potential for increased awareness of port heritage features. Heritage information can be made available throughout the proposed port development.
			0	Neutral / No Impacts	No loss or damage to heritage features. No negative impacts on heritage feature settings.
			-1	Slight Negative Impacts	Potential for impacts on the setting of locally designated heritage features. Slight reduction in the incorporation of heritage features into the proposed port development. Partial loss of access to heritage features.
			-2	Moderate Negative Impacts	Potential for impacts on the setting of international or nationally designated heritage features, or potential for loss of or damage to locally designated heritage features. Reduction in the incorporation of heritage features into the proposed port development. Loss of access to architectural features reducing amenity value of such features.
			-3	Significant Negative Impacts	Potential for the loss of or damage to international or nationally designated heritage features. Significant reduction in the incorporation of heritage features into the proposed port development
9A	Landscape & Visual Amenity	Protect, and where possible enhance, the landscape / seascape character and visual amenity in the vicinity of the proposed port development.	3	Significant Positive Impacts	Potential enhancement of designated landscapes and scenic views, the landscape / seascape and visual amenity. Many receptors.
			2	Moderate Positive Impacts	Potential localised improvement of landscape / seascape and visual amenity. Several receptors.
			1	Slight Positive Impacts	Potential permanent improvement of local views. Few receptors.
			0	Neutral / No Impacts	No impacts on the landscape / seascape quality and visual amenity.
			-1	Slight Negative Impacts	Potential short term / disturbance impacts on local views and the local landscape / seascape. Few receptors.

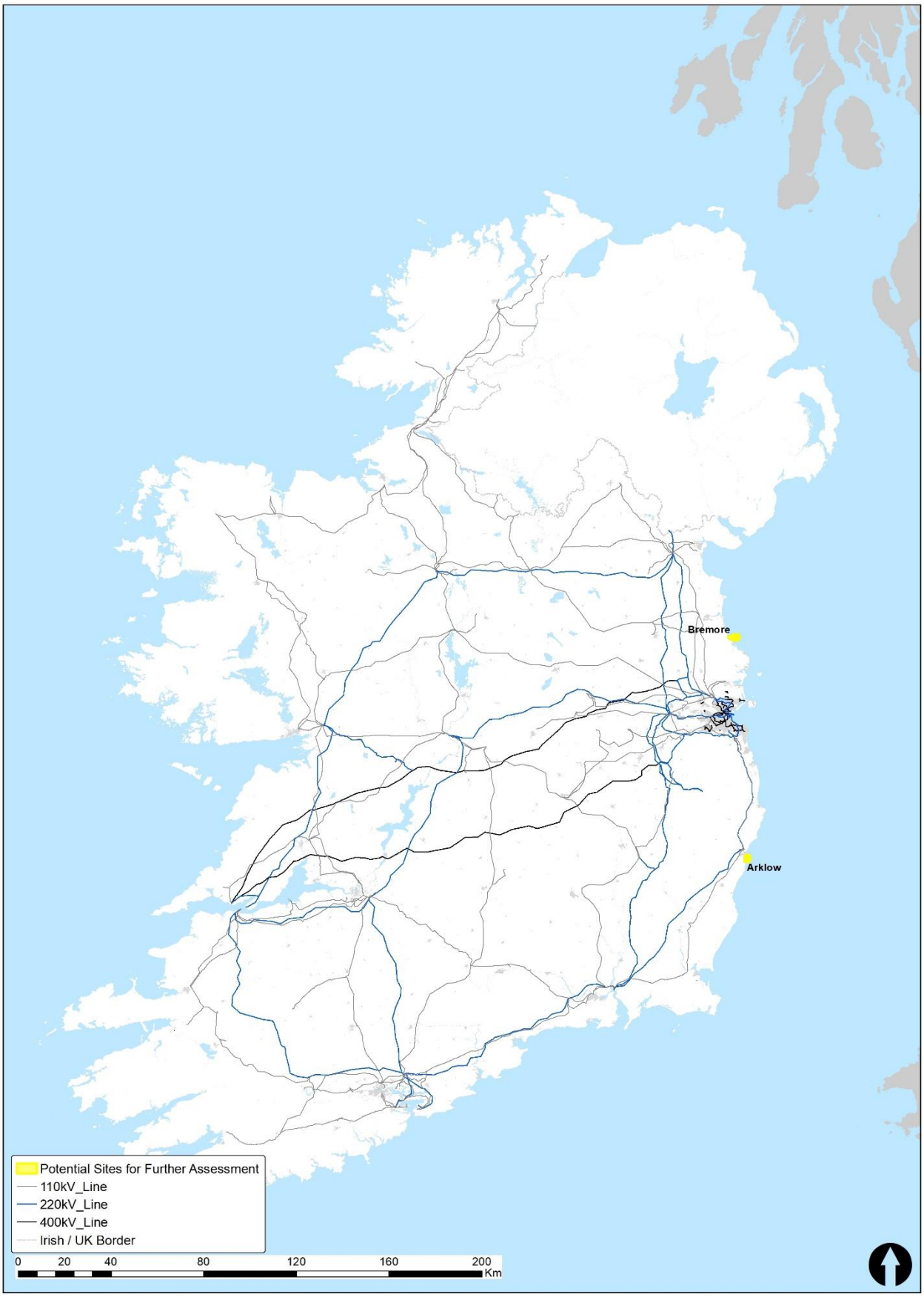
No.	Topic	Objective	Score	Score Description	Example Of Impacts
			-2	Moderate Negative Impacts	Potential localised negative impacts on and deterioration of the landscape / seascape and visual amenity. Several receptors.
			-3	Significant Negative Impacts	Potential negative impacts on and deterioration of designated landscapes and views, the landscape / seascape quality and visual amenity. Many receptors.

Appendix D – Environmental Constraints Maps

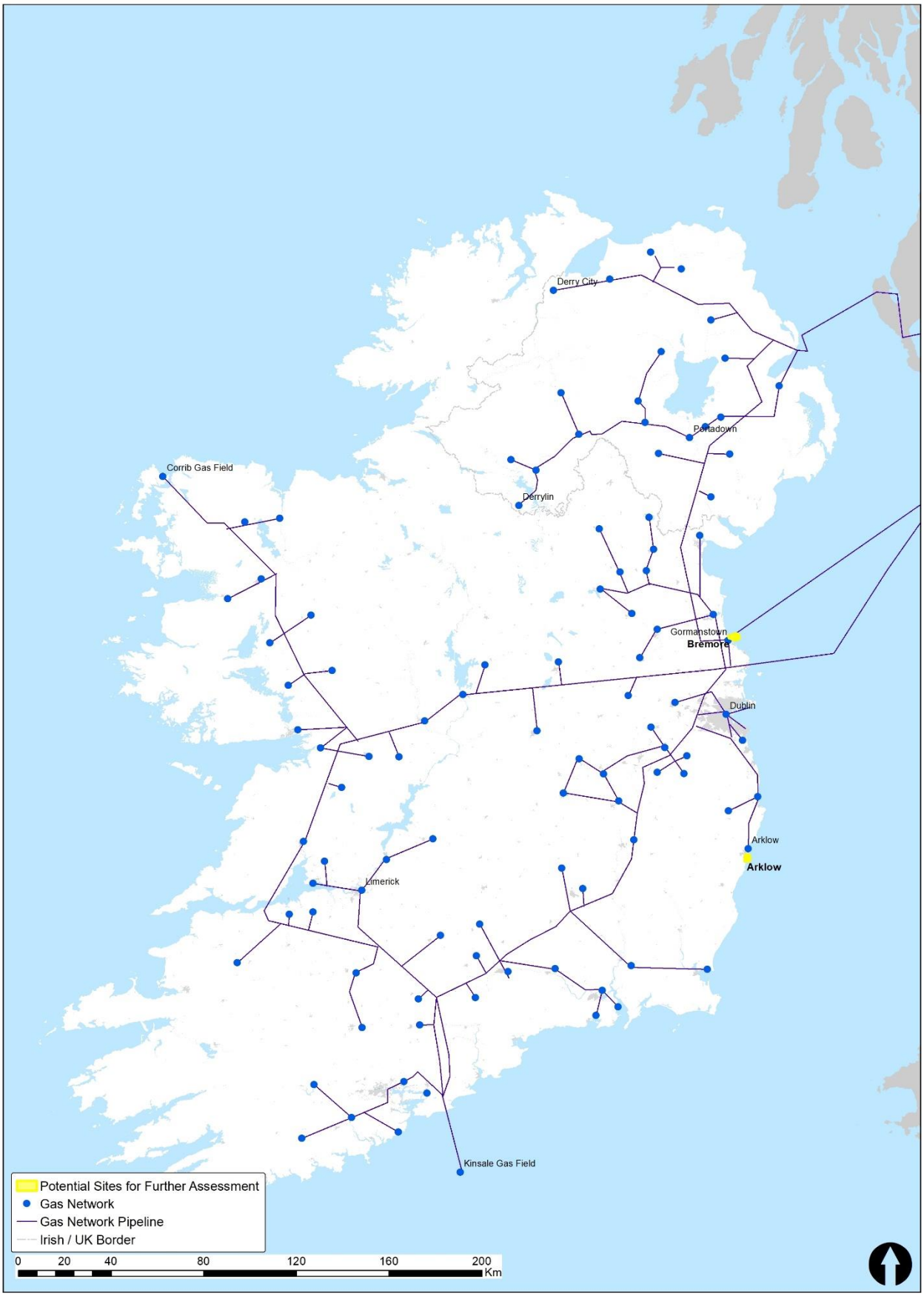


National Roads Network Map

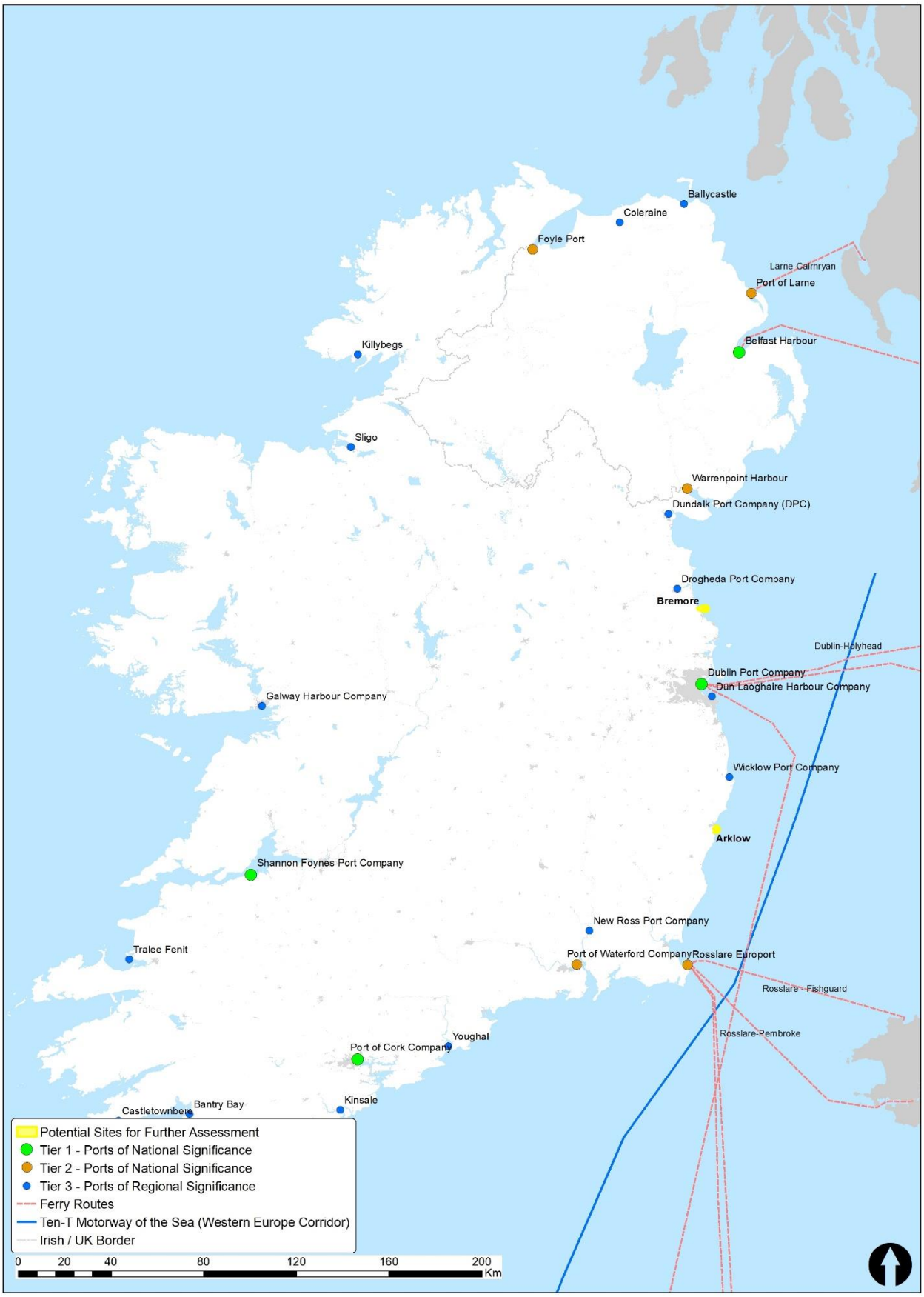
National Rail Network Map



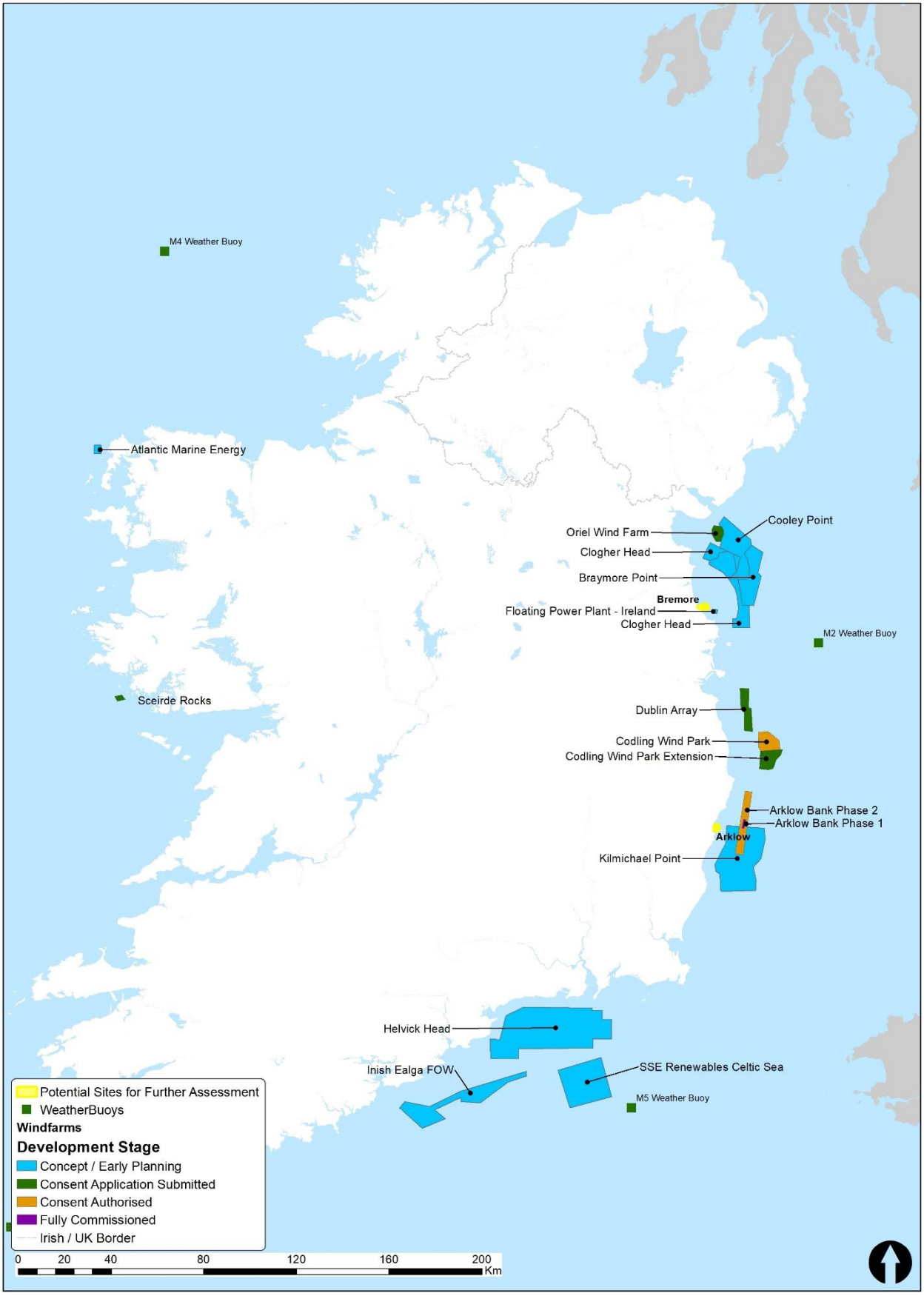
National Electricity Network Map



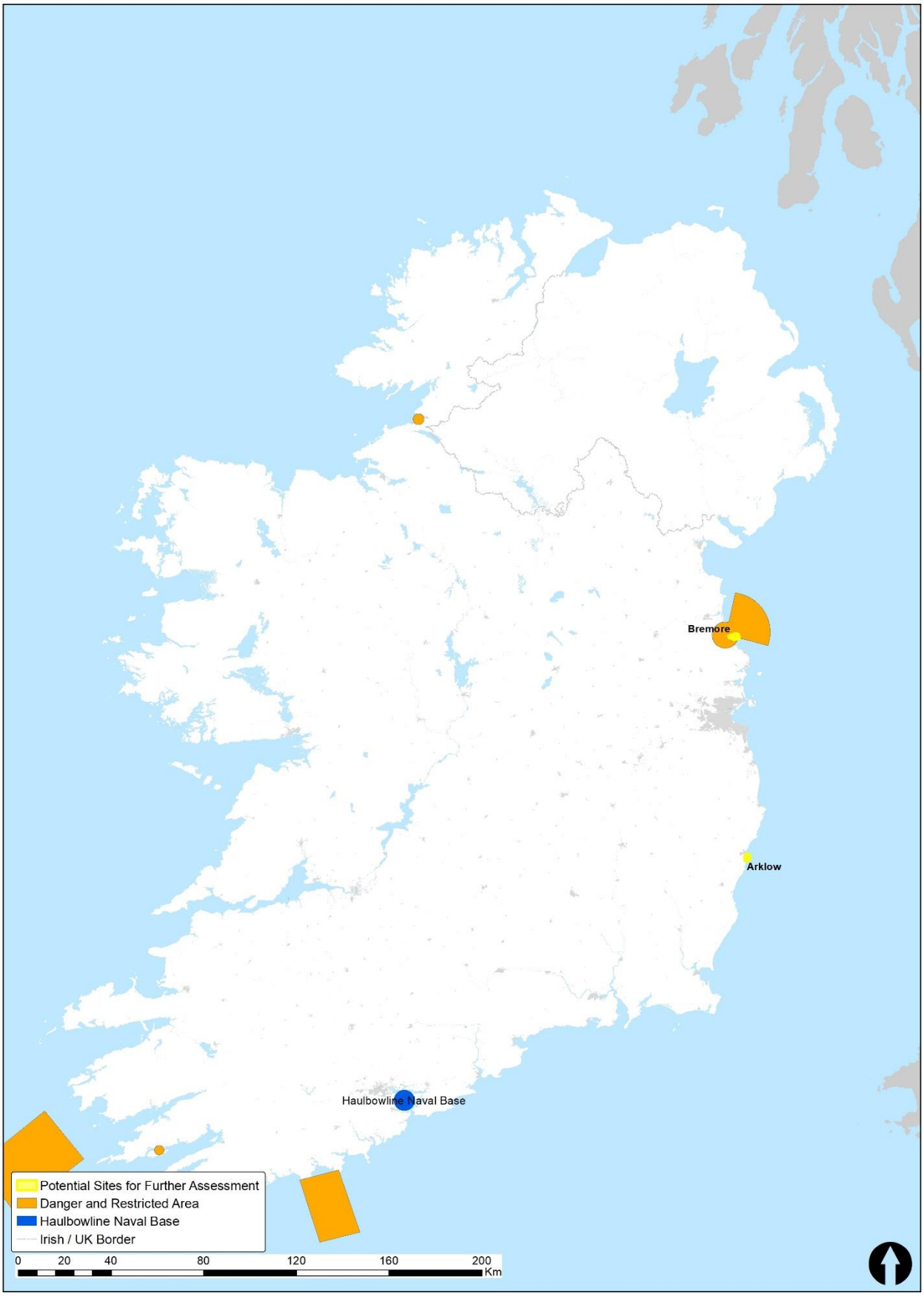
National Gas Network Map (Gas Networks Ireland)



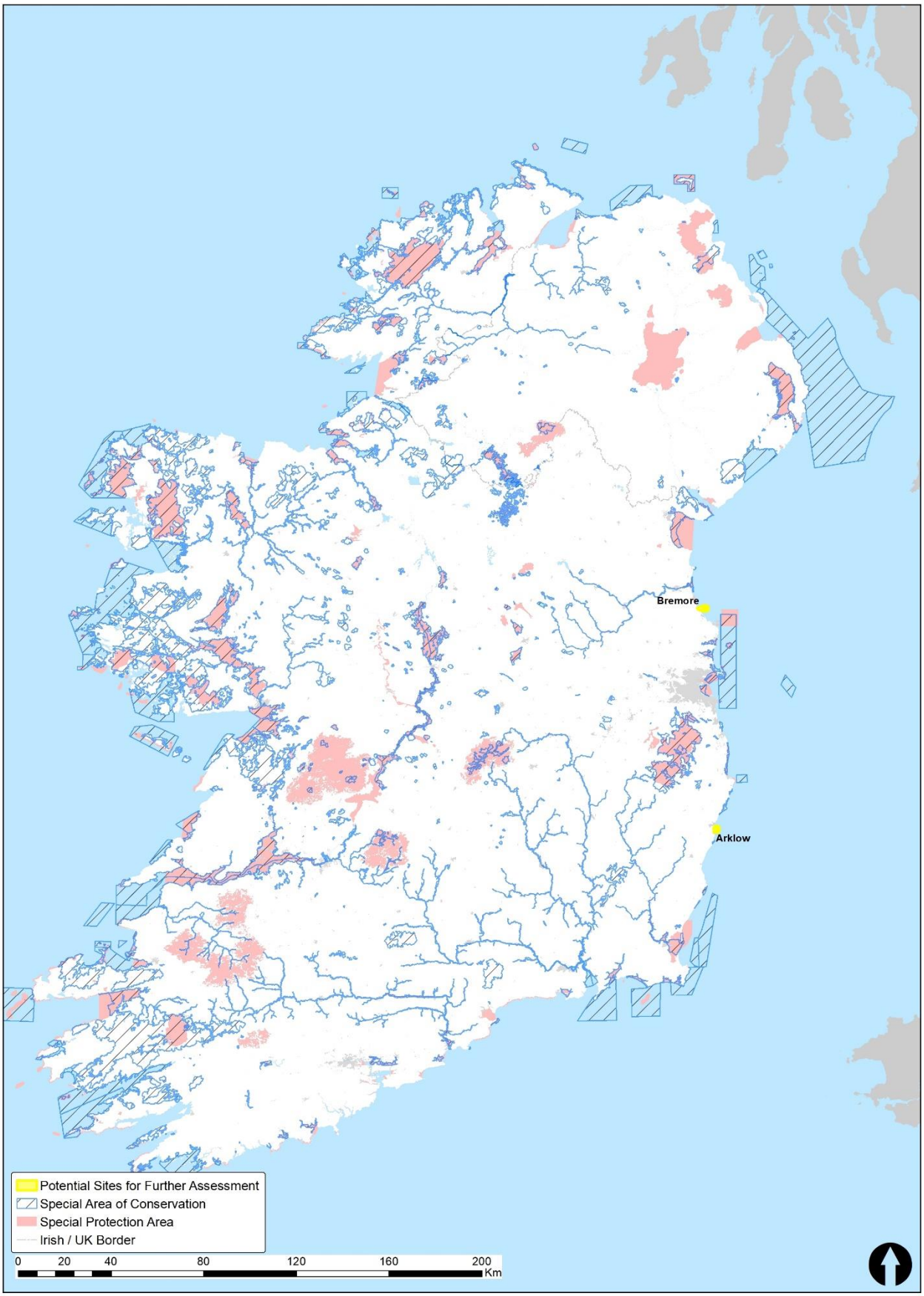
Ports of National and Regional Significance



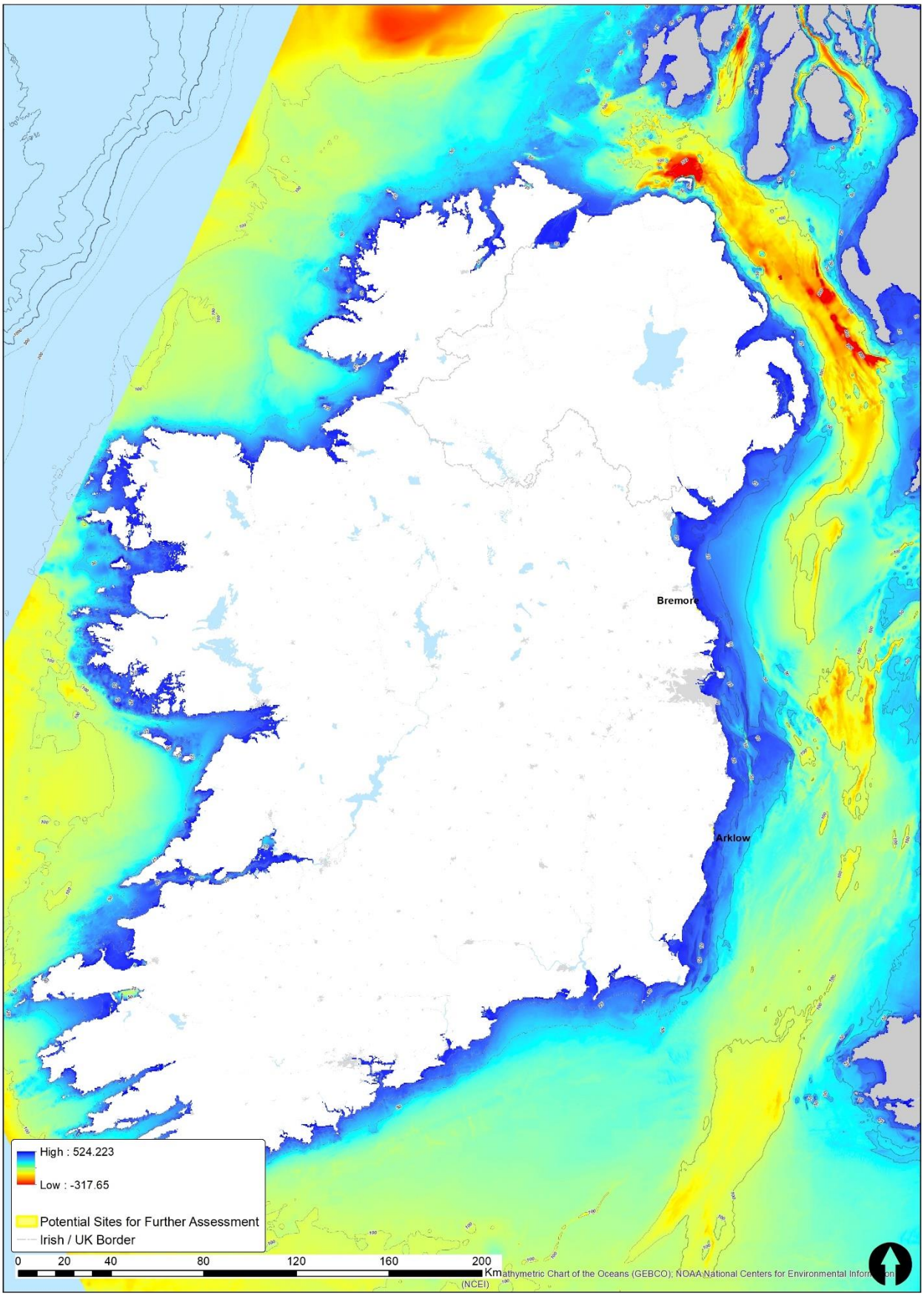
Off-shore Marine Energy and infrastructure



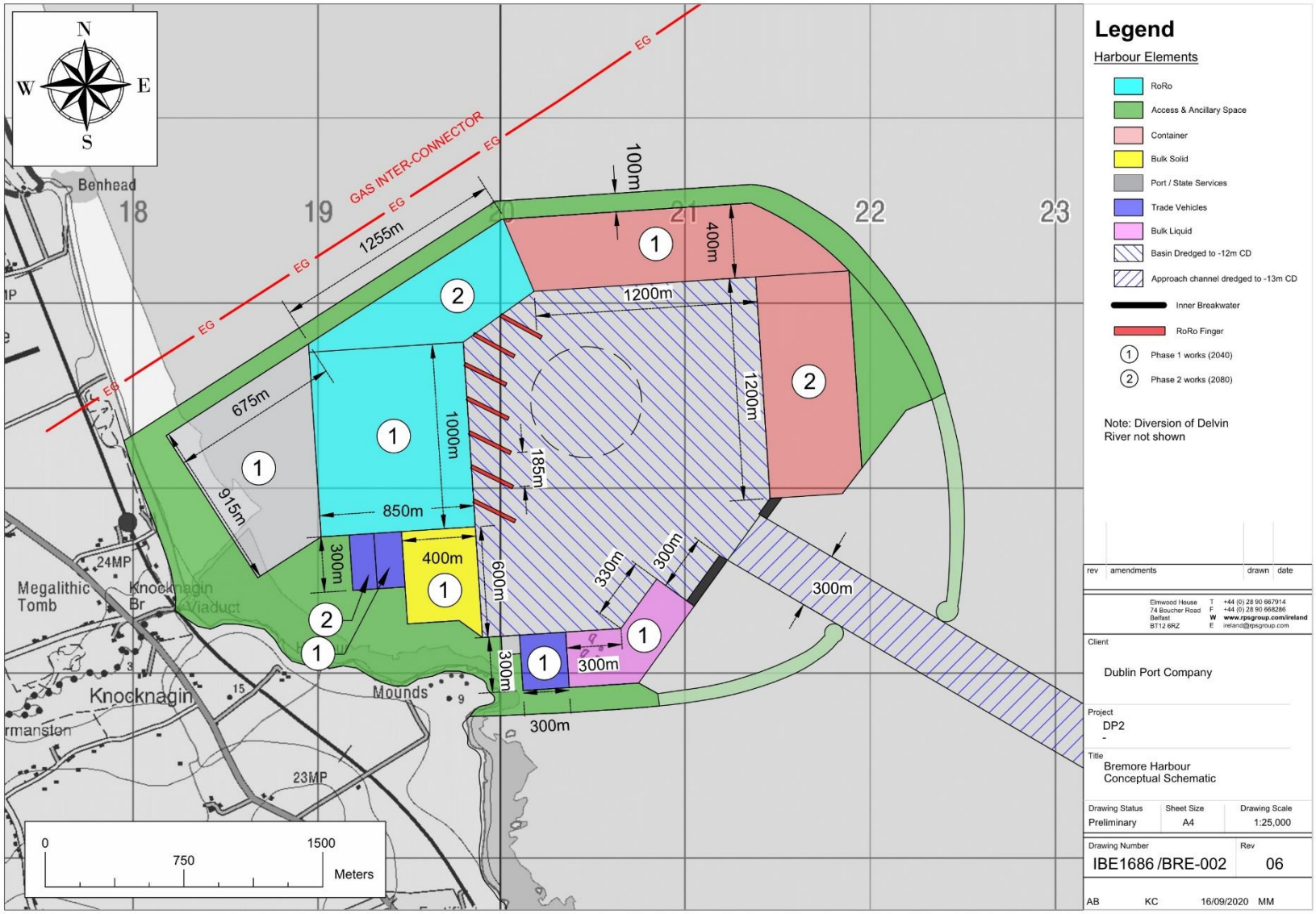
Location of Marine Danger and Restricted Areas (Irish Aviation Authority – 2015)



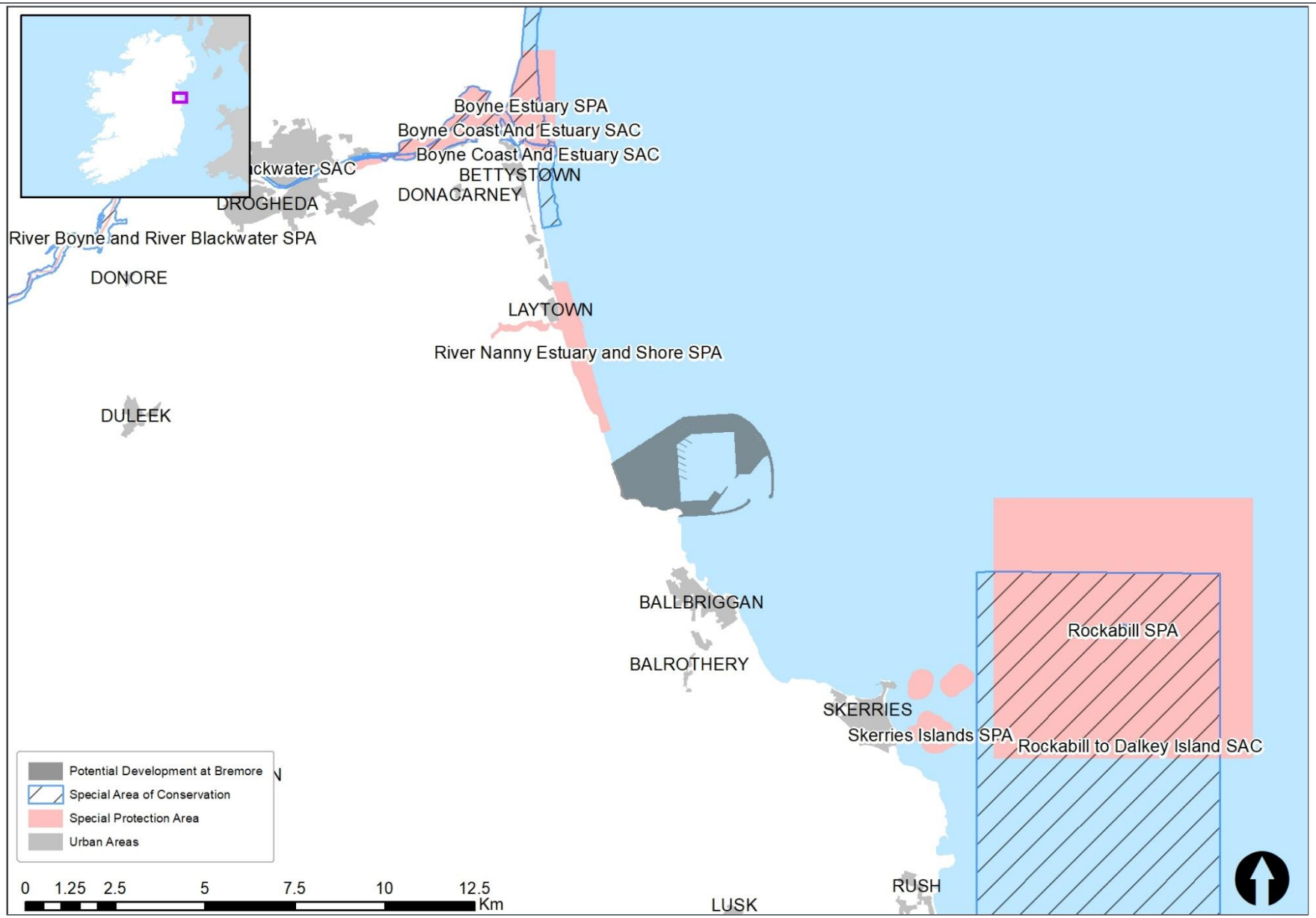
Natura 2000 Network (Ireland / Northern Ireland)



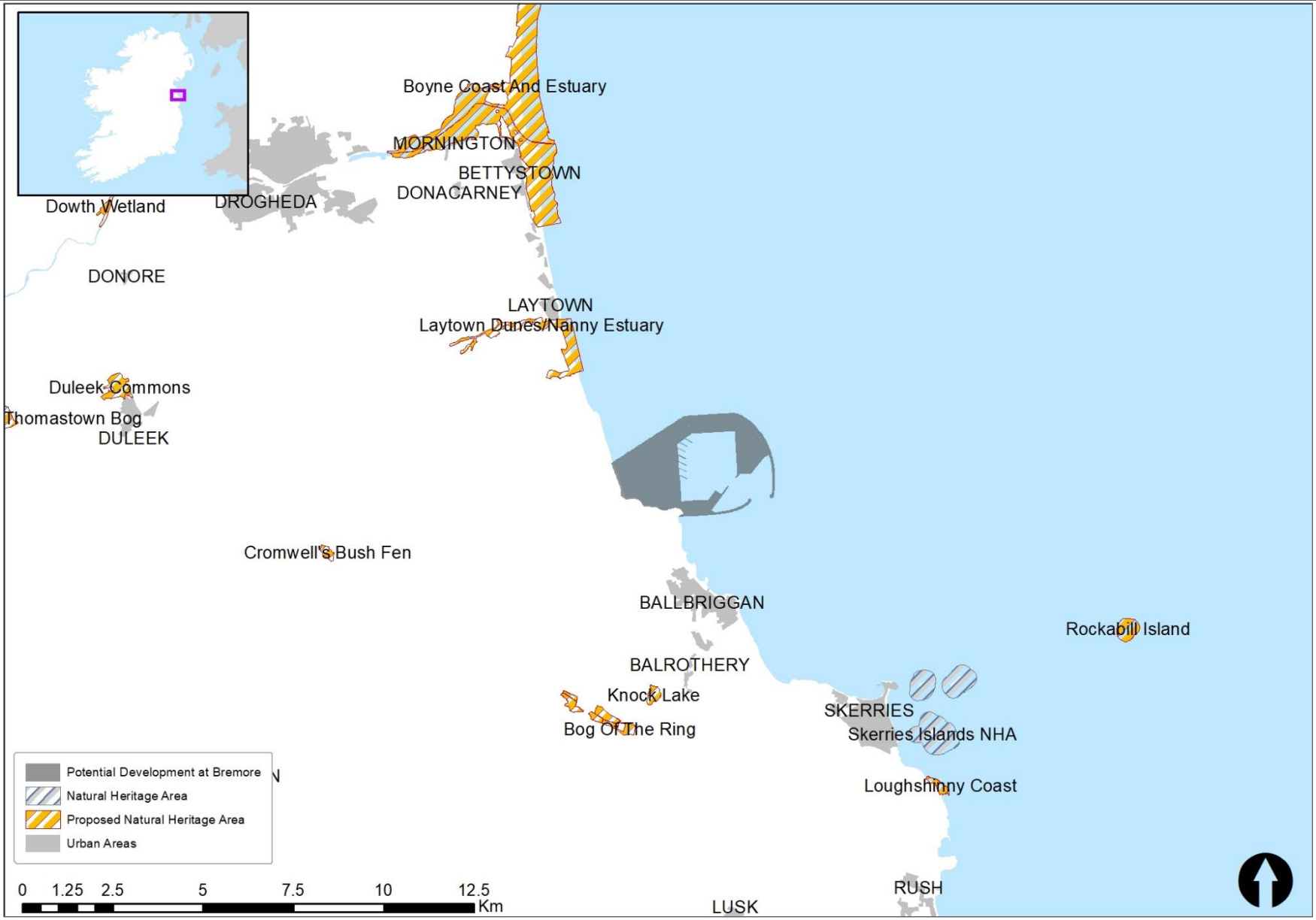
Irish Sea Bathymetry (GEBCO)



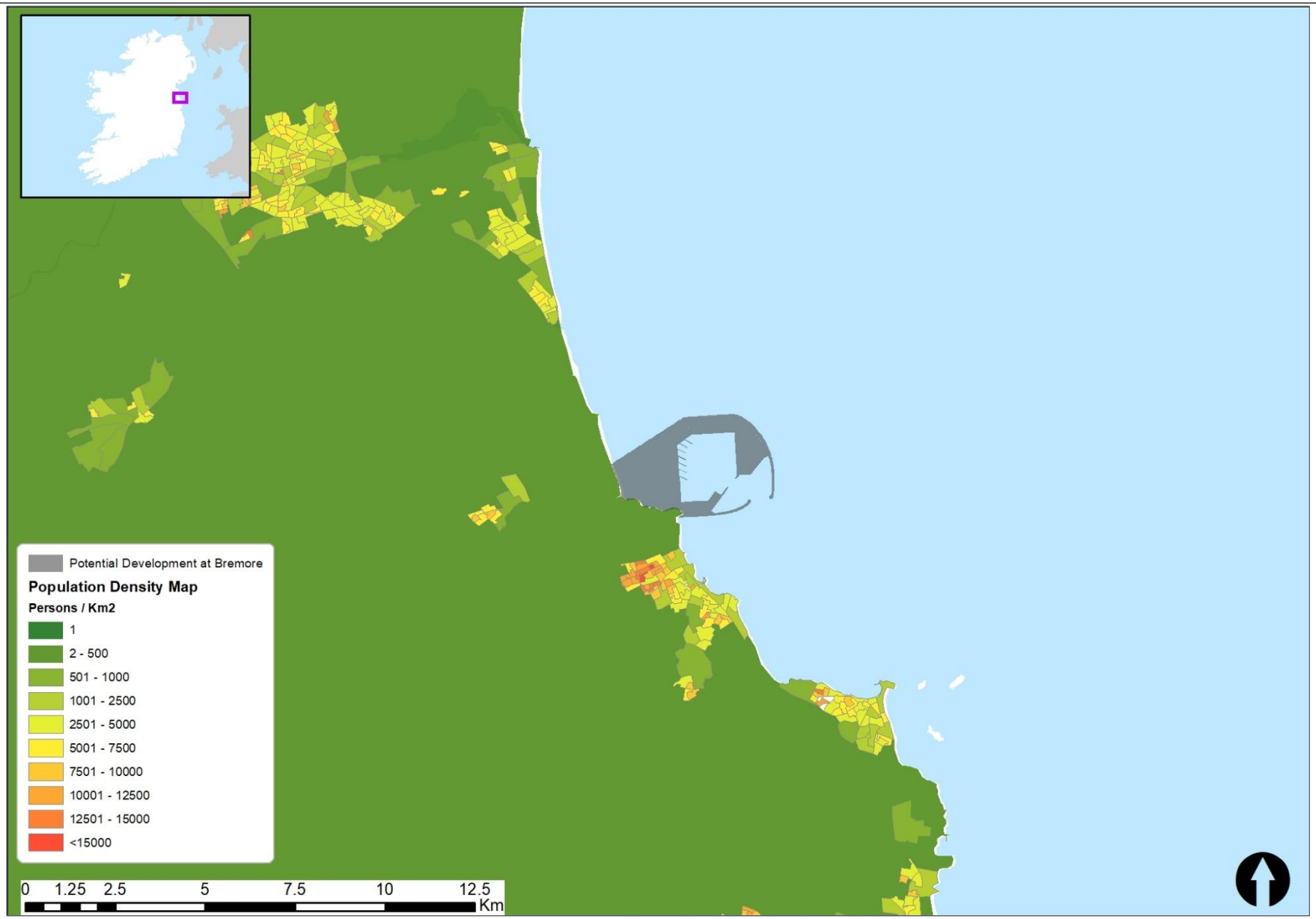
Bremore Site – Conceptual Schematic



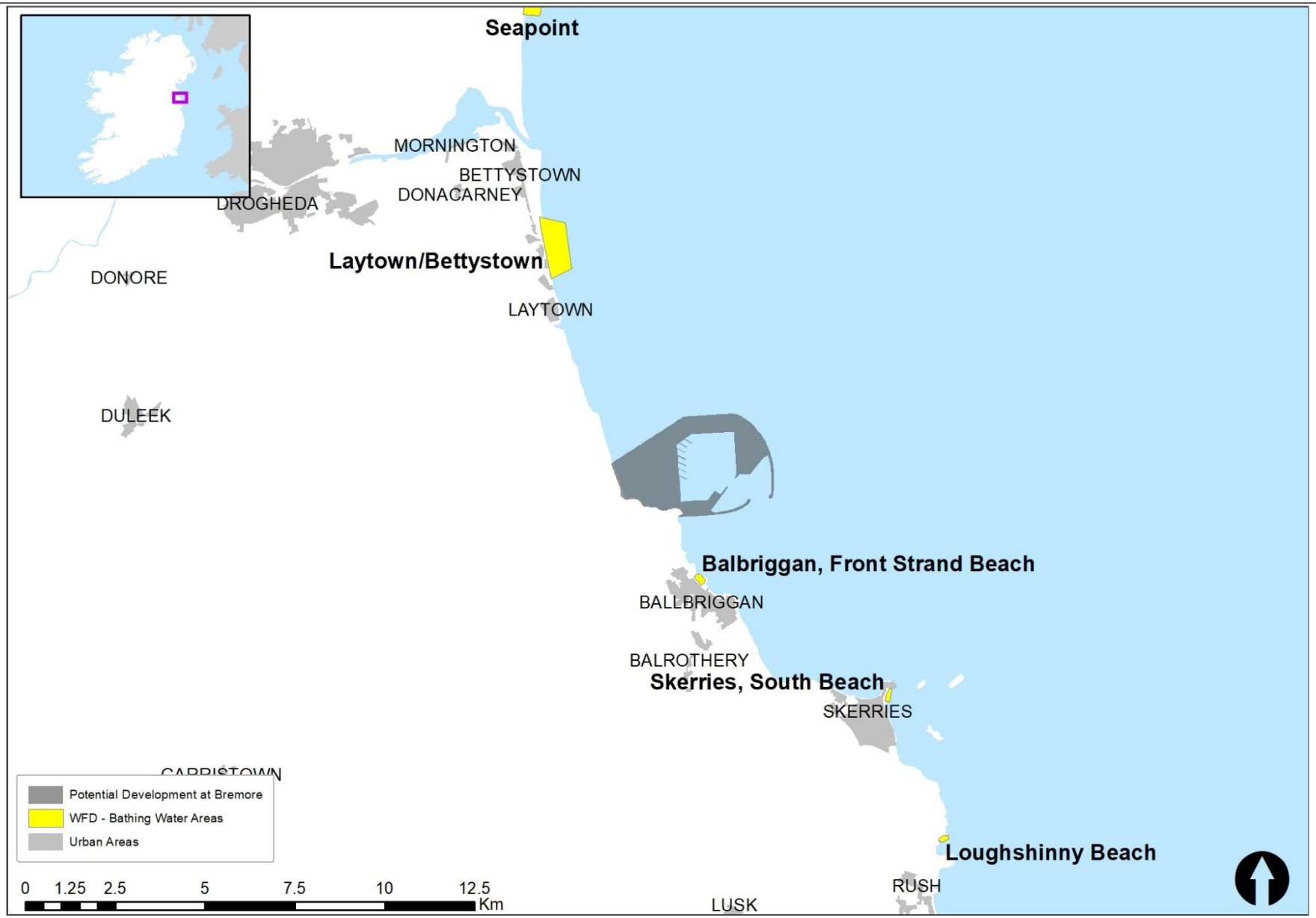
Bremore Site – Biodiversity (Natura 2000 Designated Sites)



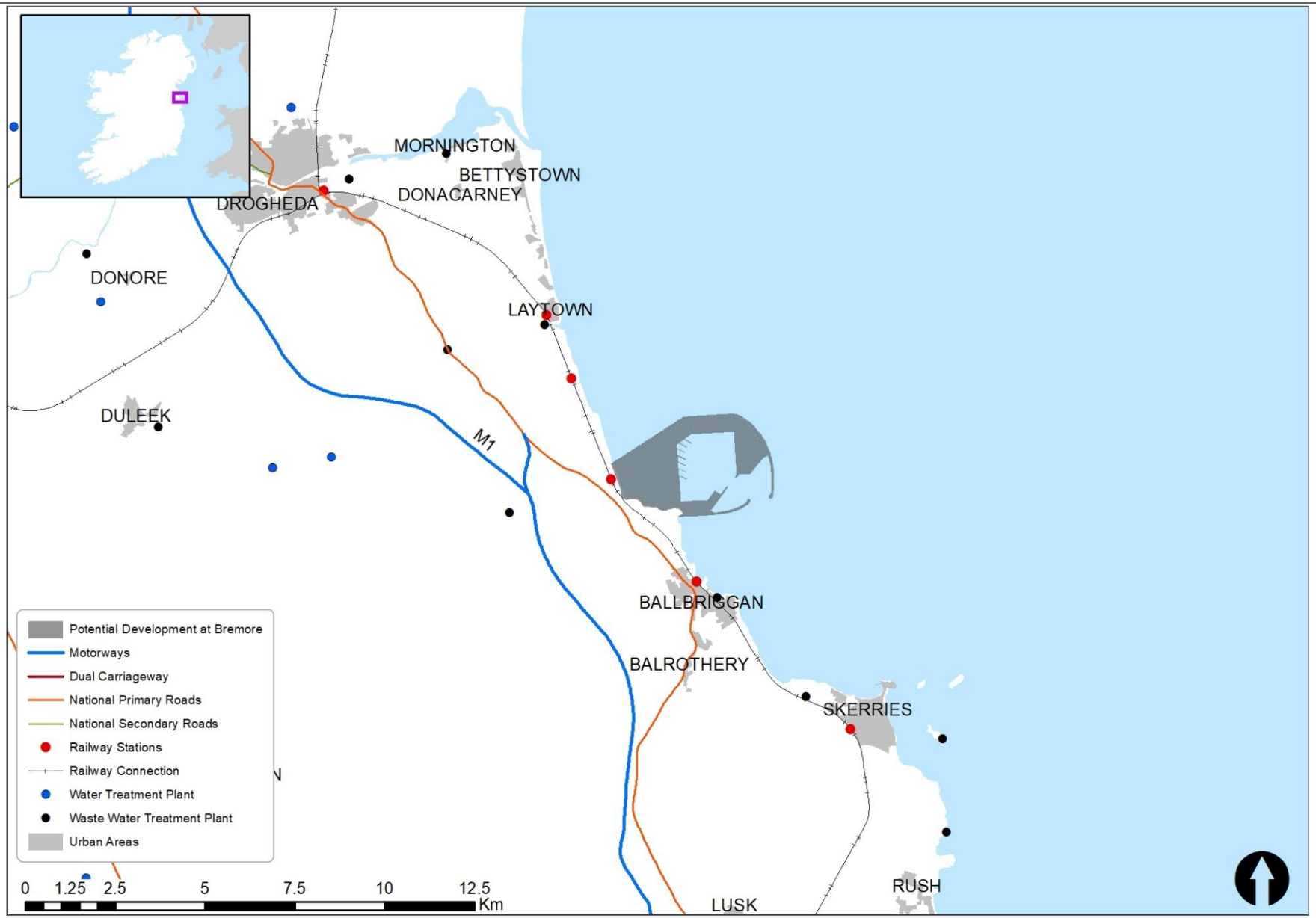
Bremore Site – Biodiversity (Nationally Designated Sites)



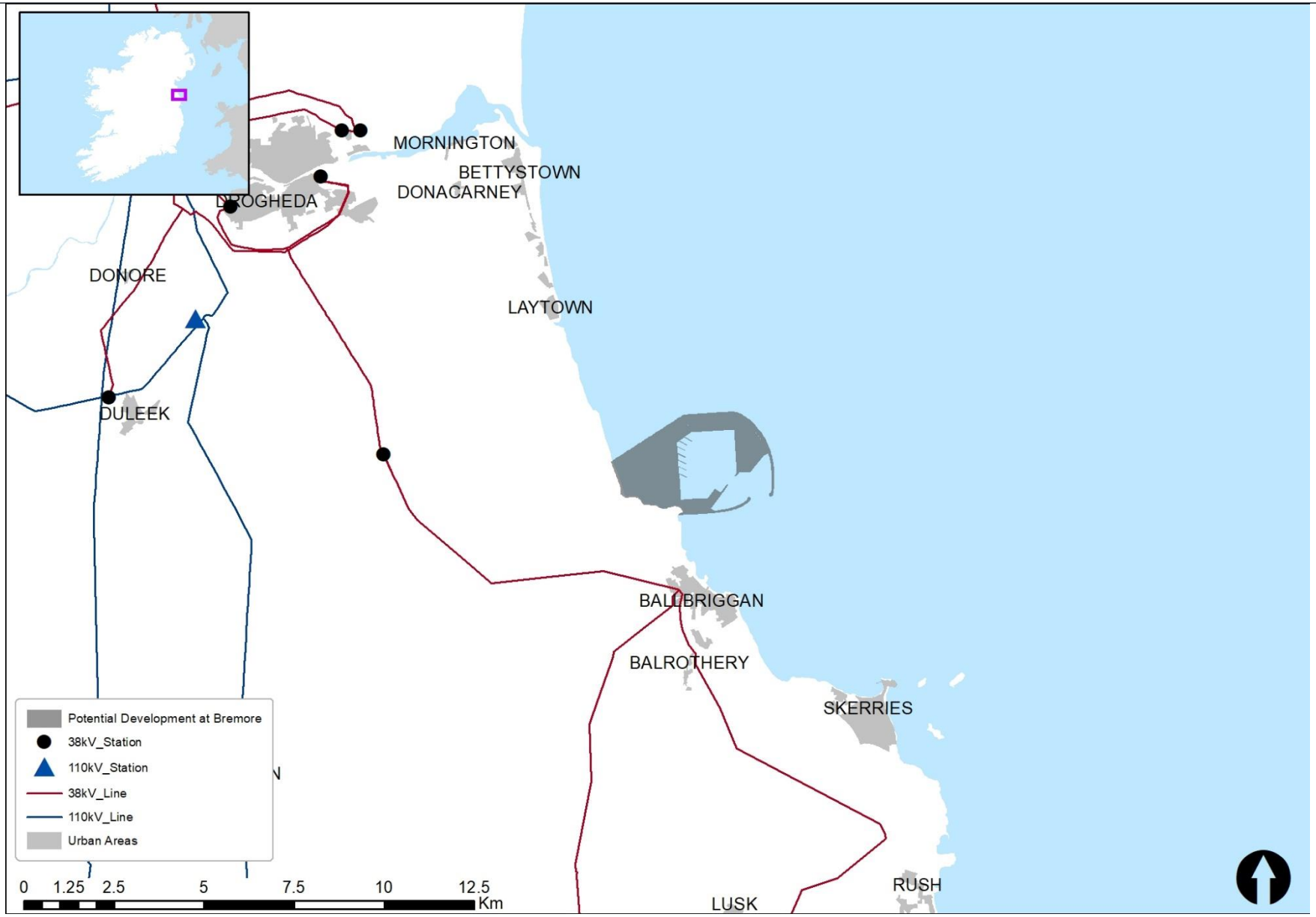
Bremore Site – Population Density Map (Persons/Km^2) – CSO Census 2016



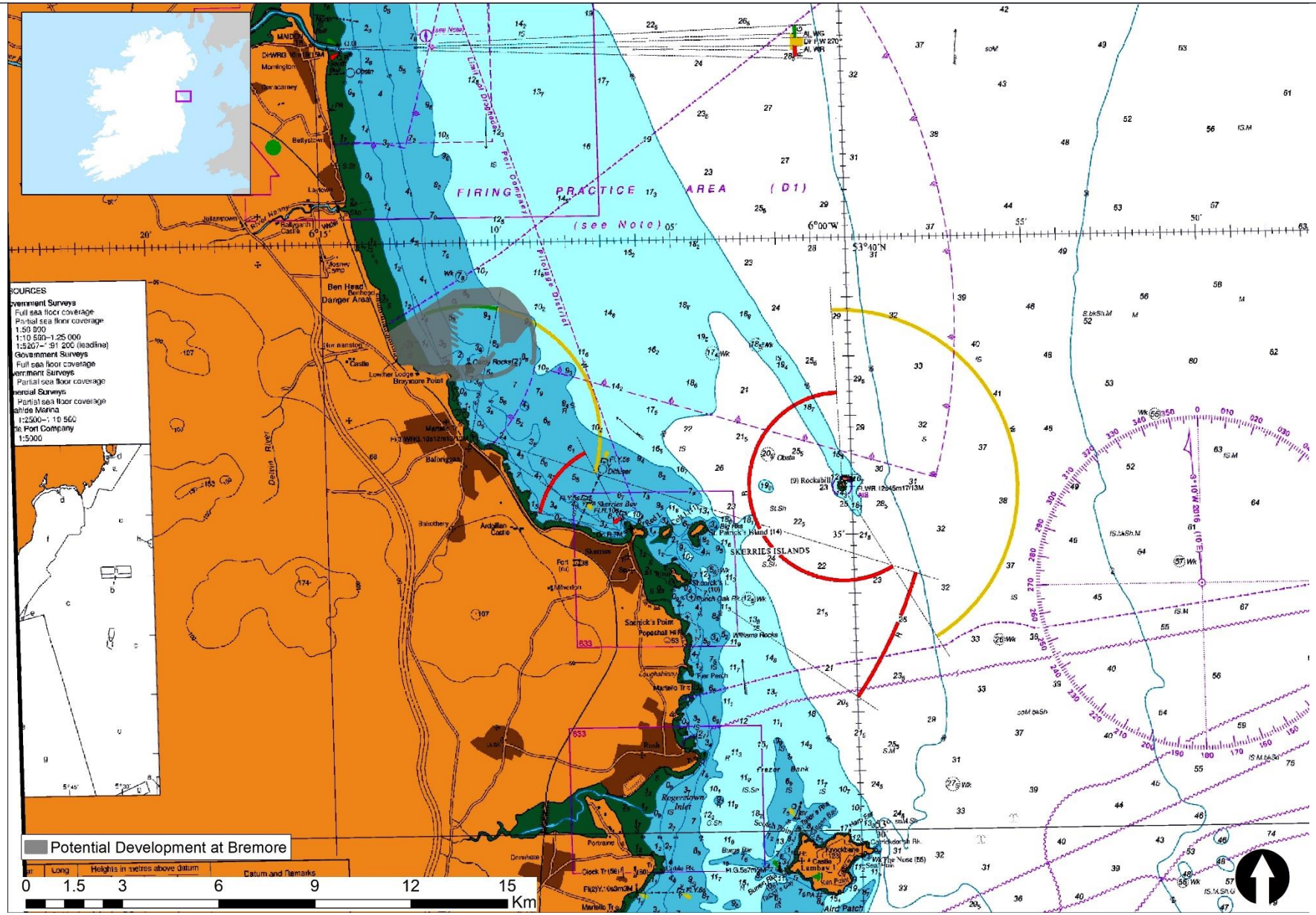
Bremore Site – Water Framework Directive Bathing Waters



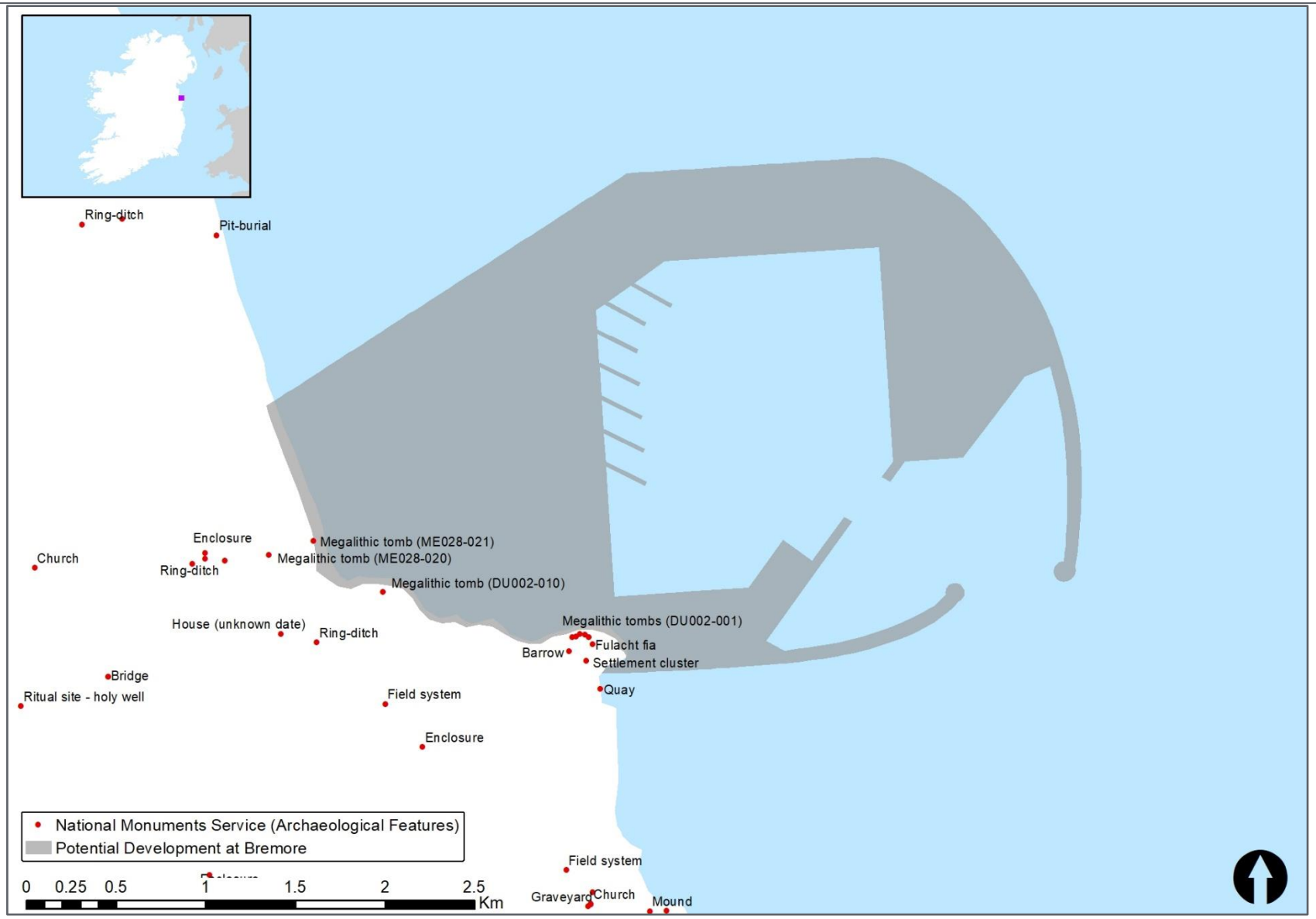
Bremore Site – Material Assets (Road, Rail, Water and Waste Water Infrastructure)



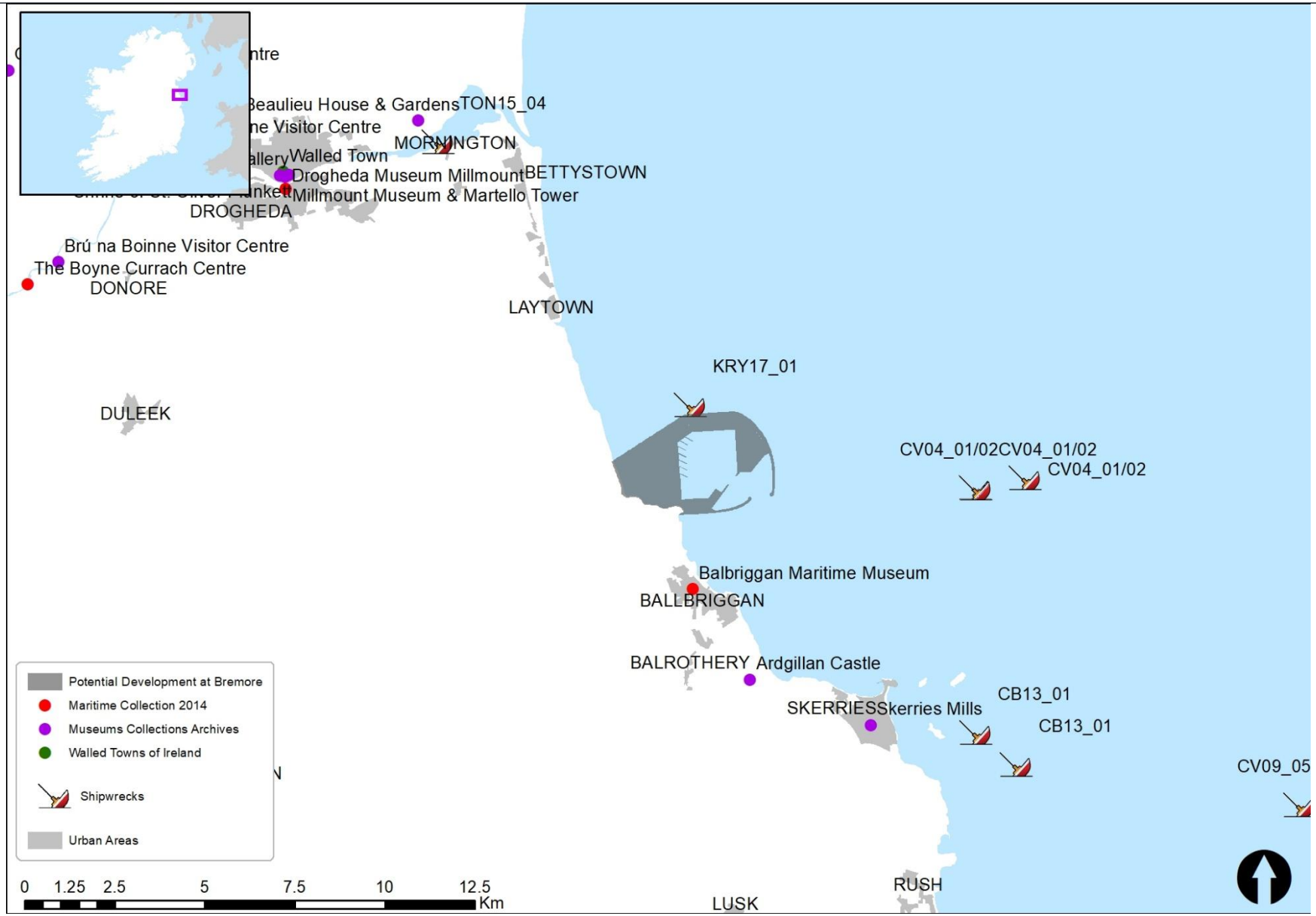
Bremore Site – Material Assets (National Electricity Network)



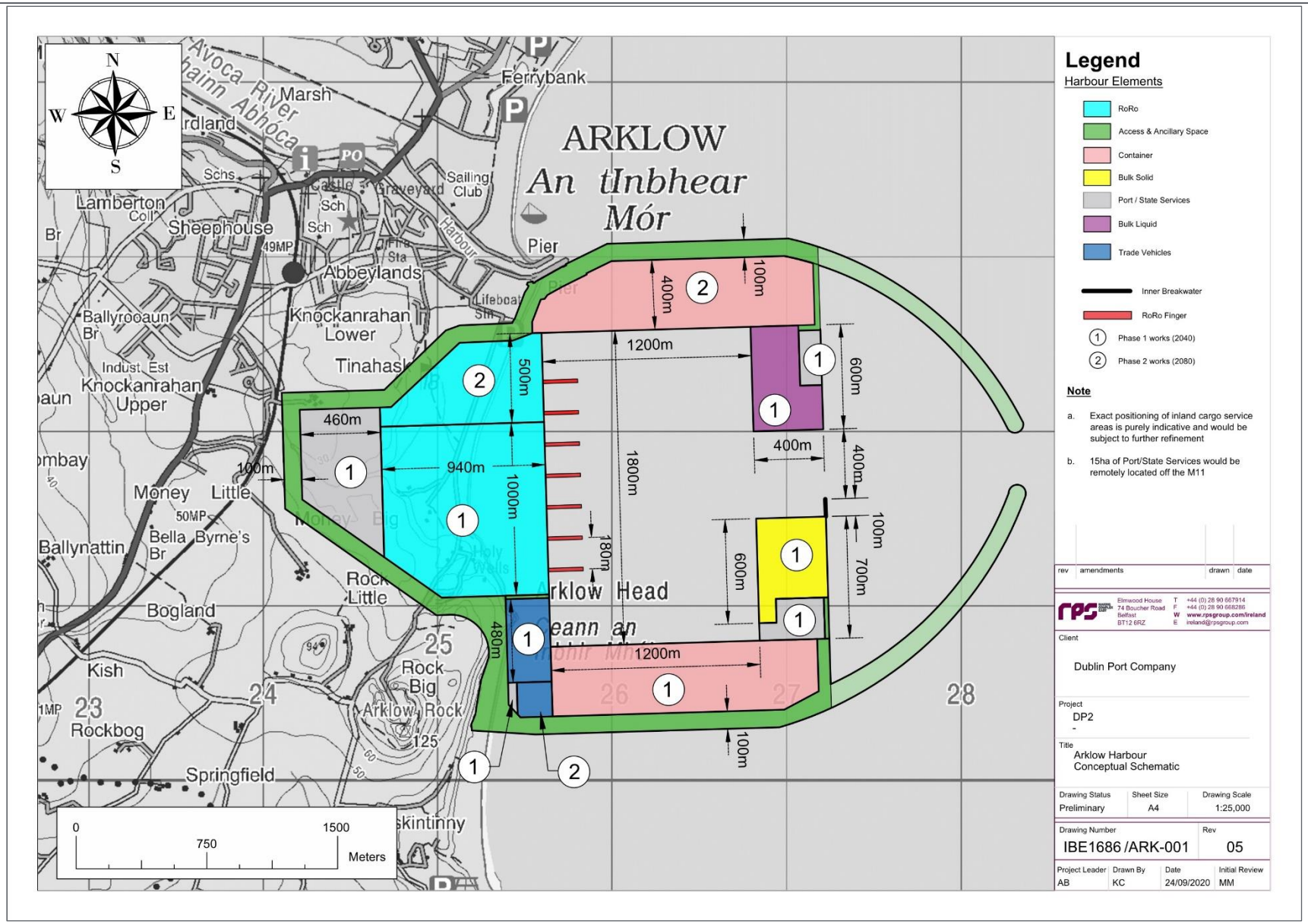
Bremore Site – Admiralty Chart



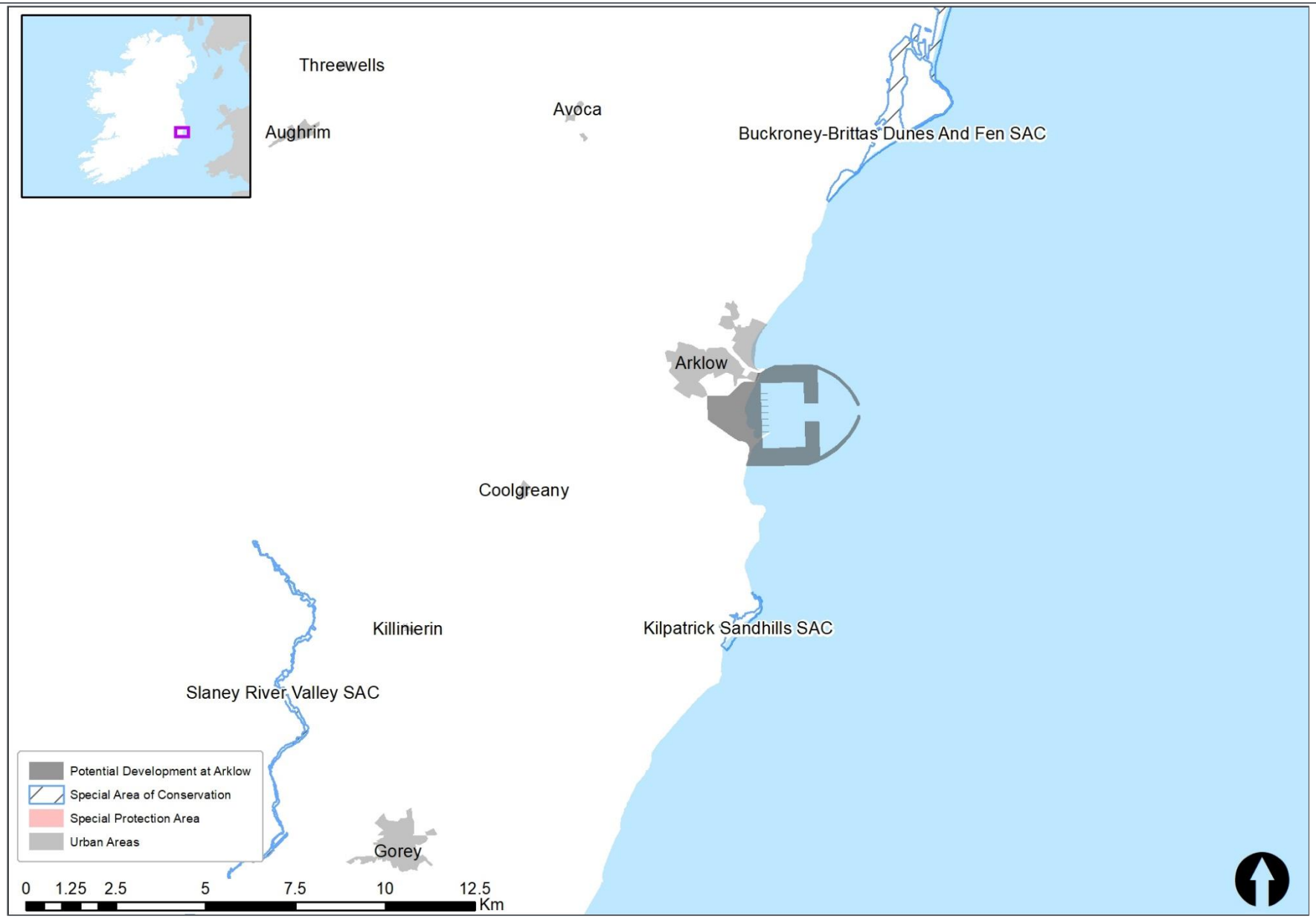
Bremore Site – Sites of Archaeological Significance – National Monuments Service



Bremore Site –Sites of Archaeological Significance

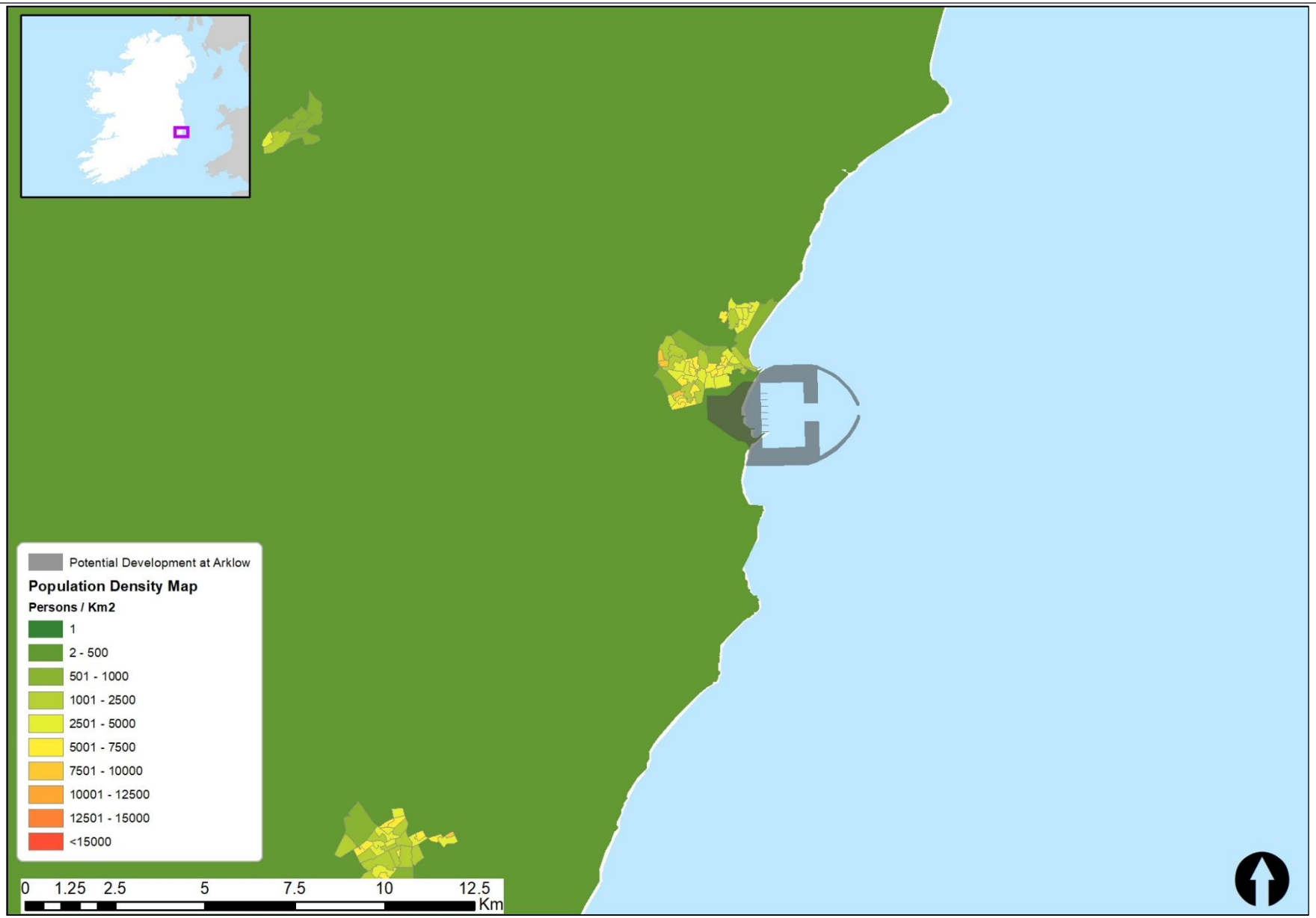


Arklow Site – Conceptual Schematic

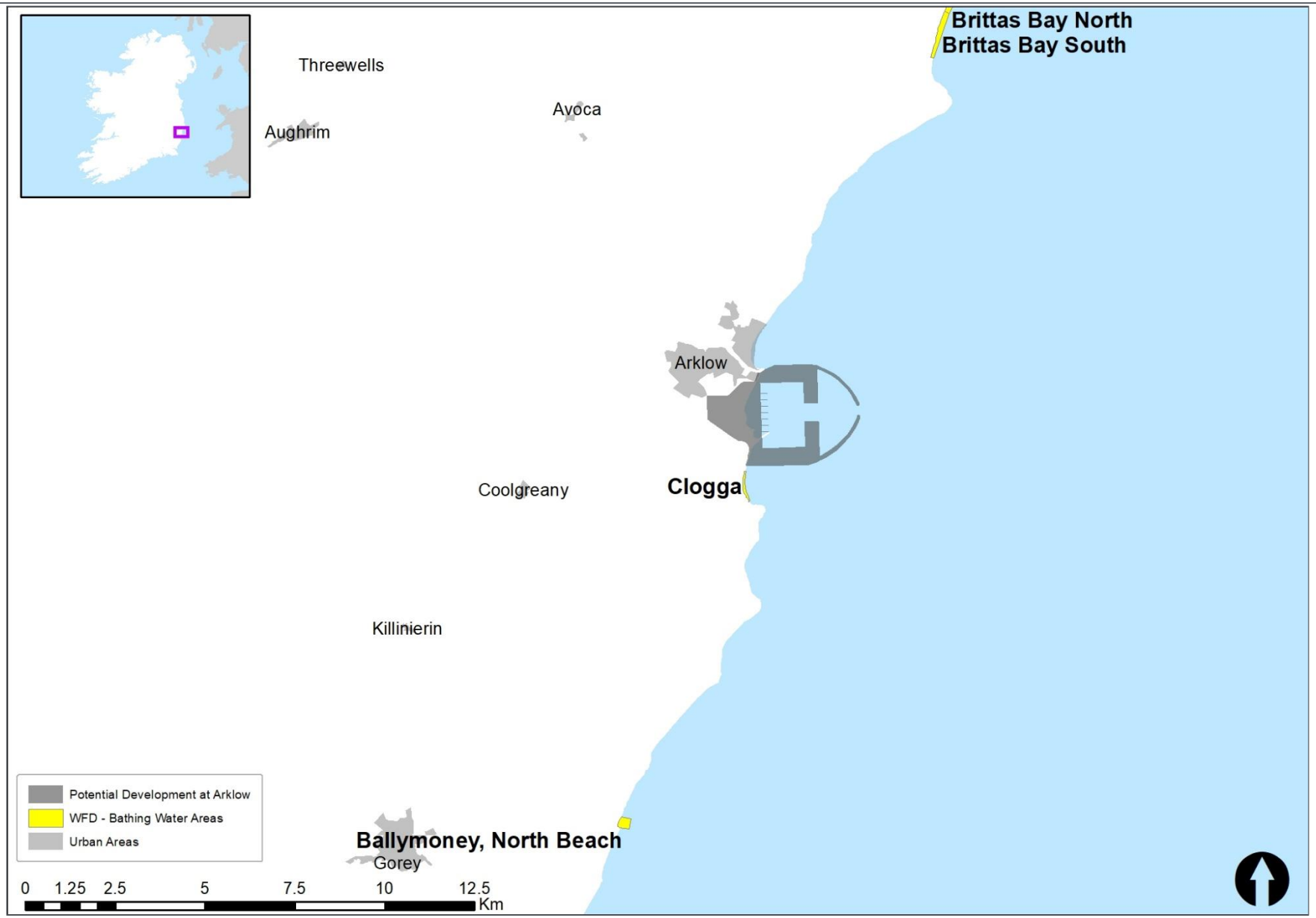


Arklow Site – Biodiversity Map (Natura 2000 Network)

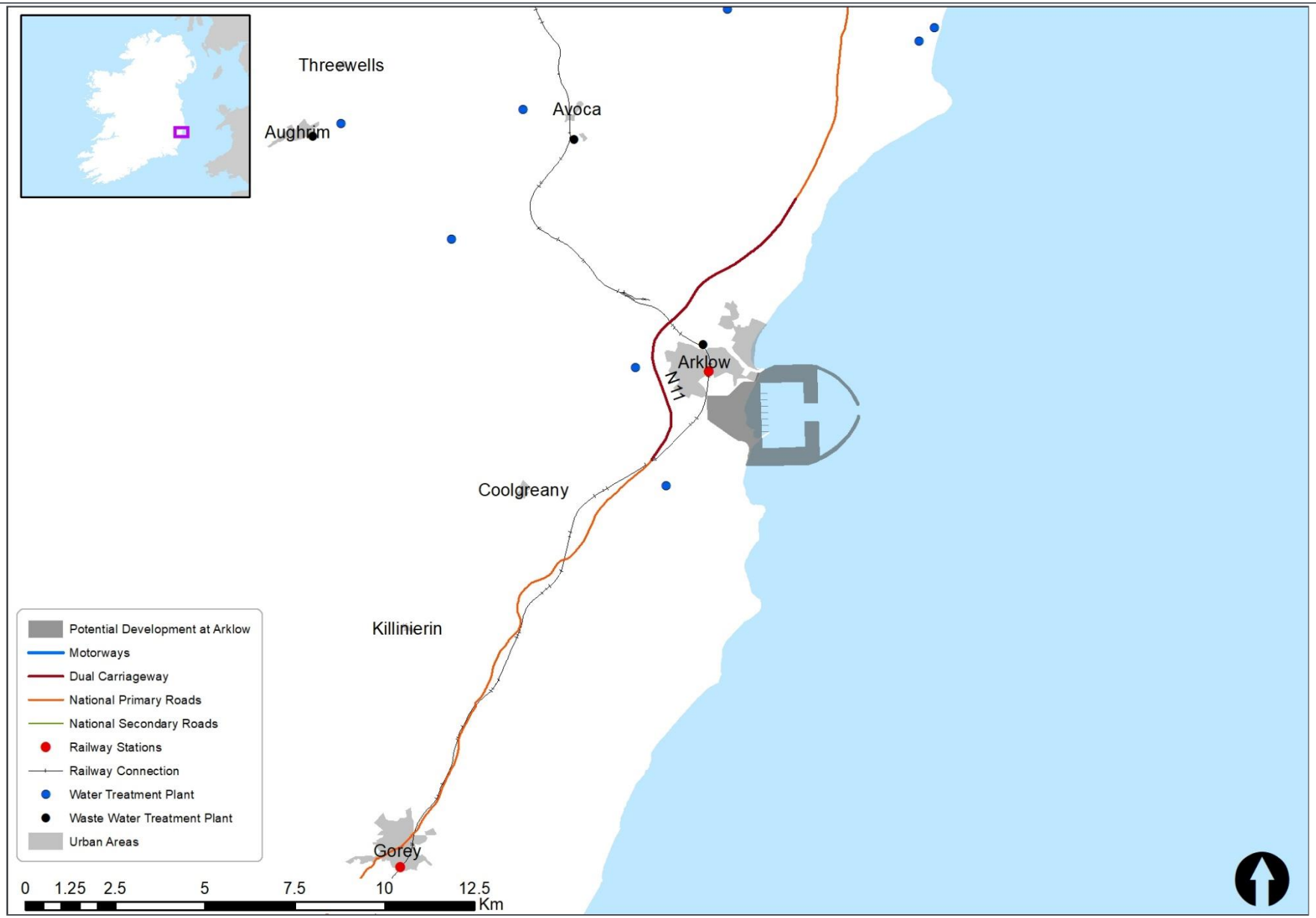
Arklow Site – Biodiversity Map (Nationally Designated Site)



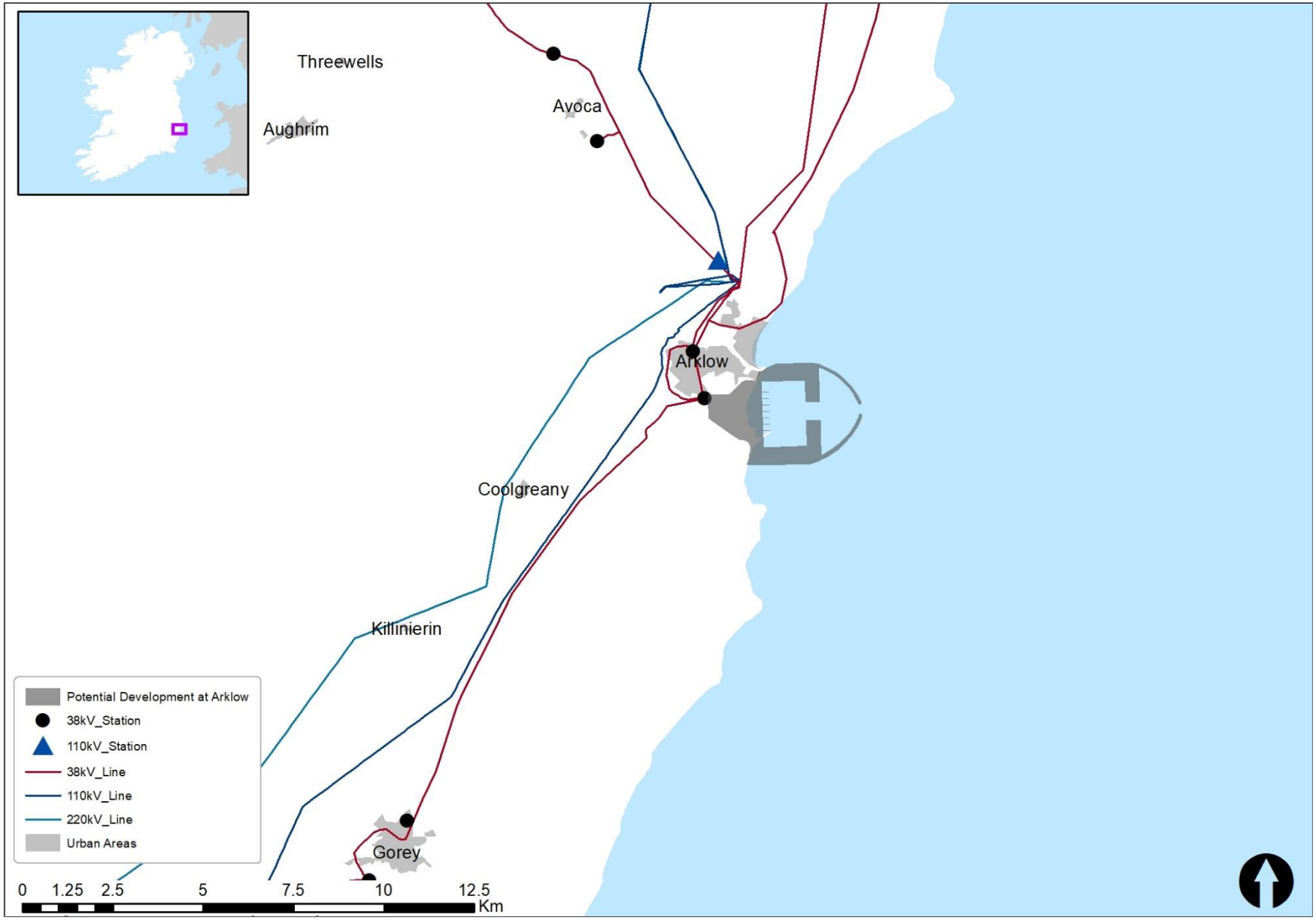
Arklow Site – Population Density Map (Persons/Km^2) – CSO Census 2016



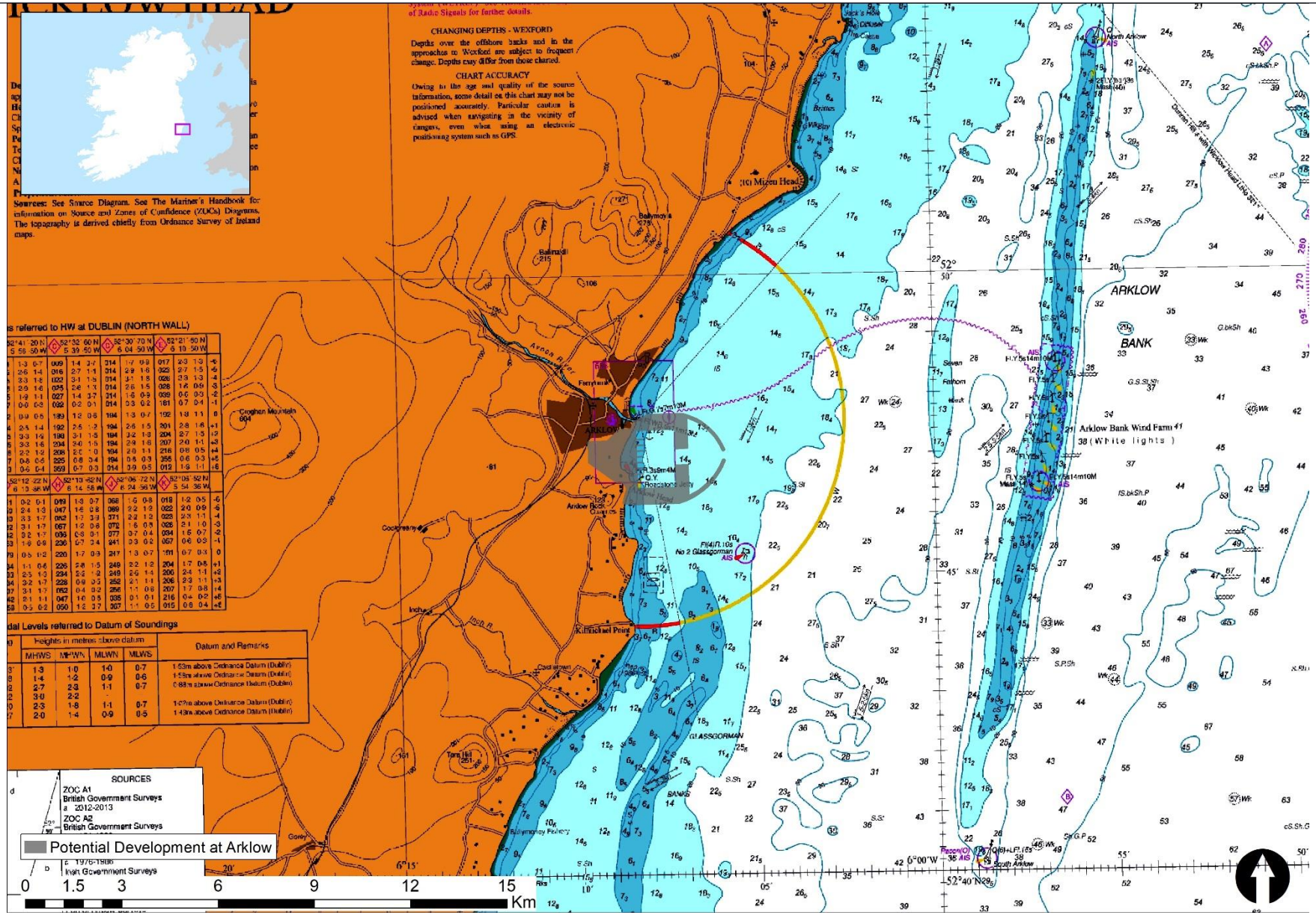
Arklow Site – Water Framework Directive Bathing Waters



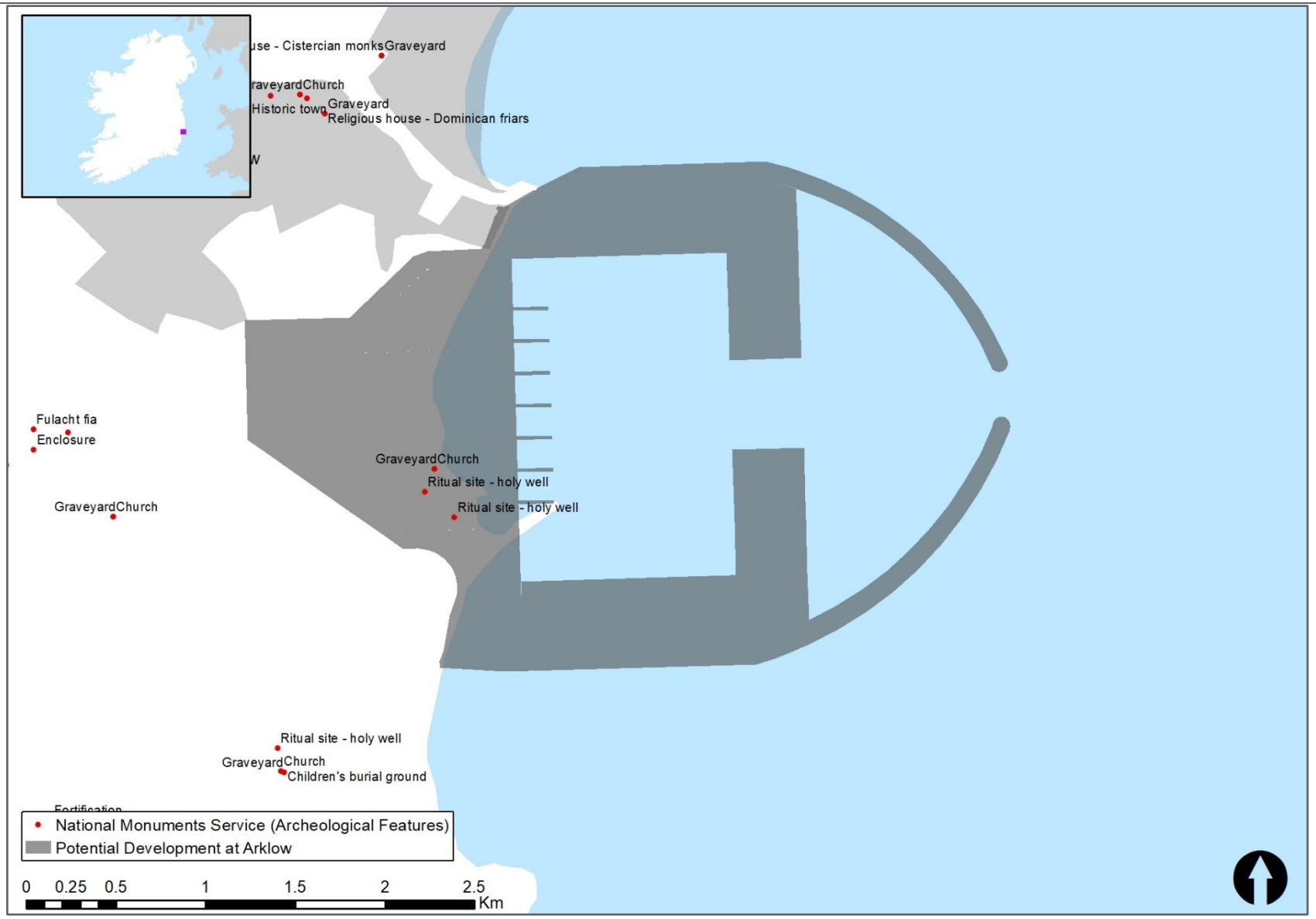
Arklow Site – Material Assets (Road, Rail, Water and Waste Water Infrastructure)



Arklow Site – Material Assets (National Electricity Network)



Arklow Site – Admiralty Chart



Arklow Site – Sites of Archaeological Significance – National Monuments Service

Arklow Site –Sites of Archaeological Significance