3FMProject

Bringing
Dublin Port
To 2040

Environmental Impact Assessment Report

Chapter 20

Cumulative Effects & Environmental Interactions

Volume 2 Part 5

COMHLACHT CHALAFORT ÁTHA CLIATH
DUBLIN PORT COMPANY

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A TETRA TECH COMPANY

Third & Final
Masterplan
Project

20 CUMULATIVE EFFECTS & ENVIRONMENTAL INTERACTIONS

This chapter presents a summary of the assessment of cumulative effects which may arise from different projects in the same area as the 3FM Project, well as the 3FM Project's own environmental interactions, which have been examined and analysed within individual technical chapter/environmental topics (Chapters 7 – 19).

20.1 Introduction

This assessment of cumulative effects, and environmental interactions, considers changes to the environment that are caused by an action in combination with other actions. These can arise from:

- the interaction between all existing and/or approved projects in the same area as the proposed 3FM Project; and
- the interaction between the various impacts arising from the 3FM Project.

The coexistence of impacts may increase or decrease their combined impact. Impacts that are considered to be insignificant, when assessed individually, may become significant when combined with other impacts. Cumulative effects and environmental interactions can occur at different temporal and spatial scales. The spatial scale can be local, regional or global, while the frequency or temporal scale includes past, present and future impacts on a specific environment or region.

The assessment of cumulative effects and environmental interactions is undertaken to ensure that the combined effects of the project and other influences are assessed together, and not as individual aspects of the environmental assessment.

The 3FM Project is the final project within the Dublin Port Masterplan 2040. This is assessed as a distinct project for the purposes of this assessment. The cumulative effects of all consented aspects of the Masterplan have been taken into consideration. The overall Masterplan was subject to Strategic Environmental Assessment (SEA) in 2018[1].

The EU Guidance on the preparation of the Environmental Impact Assessment Report (EIAR) states that it is important to consider effects, not in isolation, but cumulatively, as this may show that individually analysed impacts can become significant when they are added together, or with, other effects.

The methodology for selecting the relevant projects for assessment of cumulative effects is presented in Section 20.2.

The experts leading each of the chapters of this EIAR dedicated to technical or environmental topics (as presented in Chapters 7 to 19), have defined significance thresholds and criteria for the assessment of environmental interactions. The setting of these thresholds has been undertaken using professional judgement

[1] https://www.dublinport.ie/masterplan/masterplan-documents/

and consideration of relevant standards and guidelines via a collaborative approach, involving all the interested parties in the process of data collection and analysis, to determine whether likely in-combination effects give rise to additional levels of significance.

The overall summary of the assessment of the likely cumulative effects, and environmental interactions, is presented in Section 20.5, along with appropriate mitigation measures to address any identified in combination effects.

20.2 Methodology

The following guidance documents were considered when determining the potential to generate cumulative effects with the 3FM Project and the 3FM Project's environmental interactions:

- European Commission (EC) Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (1999);
- European Commission (EC) Guidance on the preparation of the Environmental Impact Assessment Report (2017);
- Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022);
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (2018); and
- UK Planning Inspectorate (PINS) Advice Note 17: Cumulative effects assessment relevant to national significant infrastructure projects. Version 2 (2019).

Volume Seven of the Institute of Environmental Management and Assessment (IEMA) Impact Assessment Outlook Journal (2020)[2] identifies that the best available guidance on the assessment of cumulative effects is contained within the Planning Inspectorate Advice Note 17 version 2 (2019)[3].

The Advice Note sets out a four-staged process that applicants may wish to adopt in cumulative effects assessment. The staged approach to the cumulative effects assessment is defined below:

- Stage 1: Establishing the long list;
- Stage 2: Establishing the short list;
- Stage 3: Information gathering; and
- Stage 4: Assessment.

[2] https://www.iema.net/resources/reading-room/2020/07/17/impact-assessment-outlook-journal-volume-7-demystifying-cumulative-effects-july-2020

[3] https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seventeen-cumulative-effects-assessment-relevant-to-nationally-significant-infrastructur/nationally-significant-infrastructure-projects-advice-note-seventeen-cumulative-effects-assessment-relevant-to-nationally-significant-infrastructur#staged-approach-and-formats-for-cea

Stage 1 – Identification of Existing and/or Approved Projects

The first stage in determining cumulative effects for the 3FM Project entailed the identification of a long list of projects in the locality that exist and/or have been approved. This stage involved a desktop study to review all existing and/or approved projects that are located in close proximity to the 3FM Project and, those that fall outside of the 3FM Project's application boundary but still have the potential to interact with it.

This review was carried out using the local authority planning web portals, relevant DPC frameworks, including the DPC Masterplan 2040 and any other sources to identify other projects that have the potential to interact with the 3FM Project.

Once the long list was established, a tiered approach to rating was assigned to each project to indicate the level of certainty associated with its implementation. Table 20.1 shows the classification of Tier 1 to Tier 3 projects. There is a decreasing level of detail likely to be available from Tier 1 to Tier 3.

Table 20.1 Tiered Classification for Existing and/or Approved Projects (source: Planning Advice Note 17)

Tier	Planning Stage	Decreasing level of detail likely to be available
1	Under construction	
	Permitted application(s) not yet implemented	
	Submitted application(s) but not yet determined	
2	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted.	
3	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted	
	Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals;	
	Identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.	

The long list was then scrutinised to identify which of the projects fell within the 3FM Project zone of influence, which, for the purposes of this assessment, were those projects within the greater Dublin Port area.

As recommended within the Planning Inspectorate Advice Note 17, the spatial extent of each planning application boundary was assessed in relation to the 3FM Project application boundary using GIS Analysis. This analysis determined whether the different projects fell within or outside the 3FM Project zone of influence. This determination was used to screen out projects where there was no spatial overlap with the 3FM Project or where no source-pathway-receptor linkage was considered likely. This derived a "short list" of potentially applicable projects for further assessment during Stage 2 of the process.

Stage 2 – Shortlisting

Stage 2 of this assessment involved applying inclusion or exclusion criteria to the list of existing and/or approved projects to determine whether they had any potential to give rise to cumulative effects with respect to the following criteria:

- Temporal scope – is there any temporal overlap and potential for interaction between the 3FM Project due to the relative construction operation and decommissioning programmes of other projects?
- Scale and nature of the other existing and/or approved projects – due to the scale and nature of the other projects, are they likely to interact with the 3FM Project to result in a cumulative effect? Statutory definitions of major development and EIA screening thresholds were considered in determining issues of scale.
- Other factors – such as the nature and/or capacity of the receiving environment, that would make significant cumulative effects with 'other developments' more or less likely. A source-pathway-receptor approach was used to inform the assessment of other factors.

The existing and/or approved projects considered as part of this cumulative assessment were identified through a desk study that identified projects in the same area as the 3FM Project and with the potential to interact with it. The resulting selected developments, listed in Table 20.2 comprise of:

- Projects within Dublin Port that are listed on the local planning authority website;
- Ongoing projects within the Dublin Port area; and
- Planned future DPC projects that the client and project staff are aware off.

The period up to the end of May 2024 was considered for the purposes of identifying existing and/or approved projects.

The identification and short list process is documented in Appendix 20.1. Professional judgement and consultation with chapter authors was used in applying these thresholds. The reasons for excluding any project from further consideration was recorded. Where the potential was identified for any existing and/or approved projects to give rise to significant cumulative effects, these were taken forward to Stage 3 of the process.

Stage 3 – Information Gathering

For the shortlisted projects, all available information was compiled to inform the cumulative effects, and environmental interactions, assessment. The relevant data was sourced from websites of the relevant planning authorities (An Bord Pleanála/Dublin City Council (DCC)) and included information such as:

- Proposed design and location information;
- Proposed programme of construction, operation and decommissioning; and

Environmental assessments that set out baseline data and effects arising from the 'other existing development and/or approved development'.

Stage 4 – Assessment

Cumulative effects assessment of the 3FM Project with the other existing and/or approved projects identified in Stages 1-3 of the process outlined above was undertaken.

When determining the significance of the cumulative effects of the 3FM Project and other existing and/or approved projects, consideration was given to the following factors:

- the duration of effect, i.e. will it be temporary or permanent;
- the extent of effect, e.g. the geographical area of an effect;
- the type of effect, e.g. whether additive (loss of 2 pieces of woodland of 1ha, resulting in 2ha cumulative woodland loss) or synergistic (two discharges combine to have an effect on a species not affected by discharges in isolation);
- the frequency of the effect;
- the 'value' and resilience of the receptor affected; and
- the likely success of mitigation.

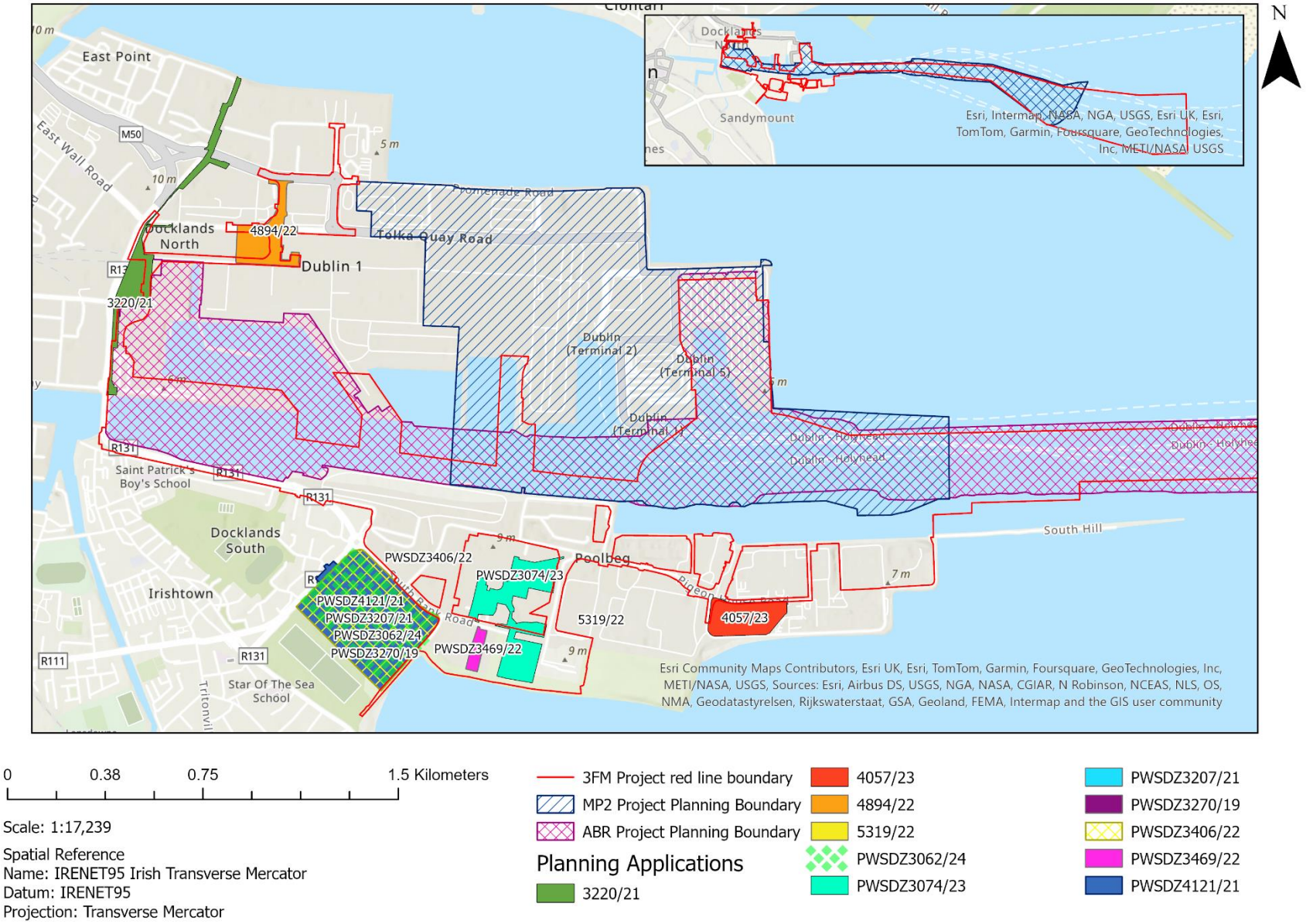

Figure 20.1 Shortlisted projects (in-port) surrounding the 3FM Application Area (DCC Planning Portal)

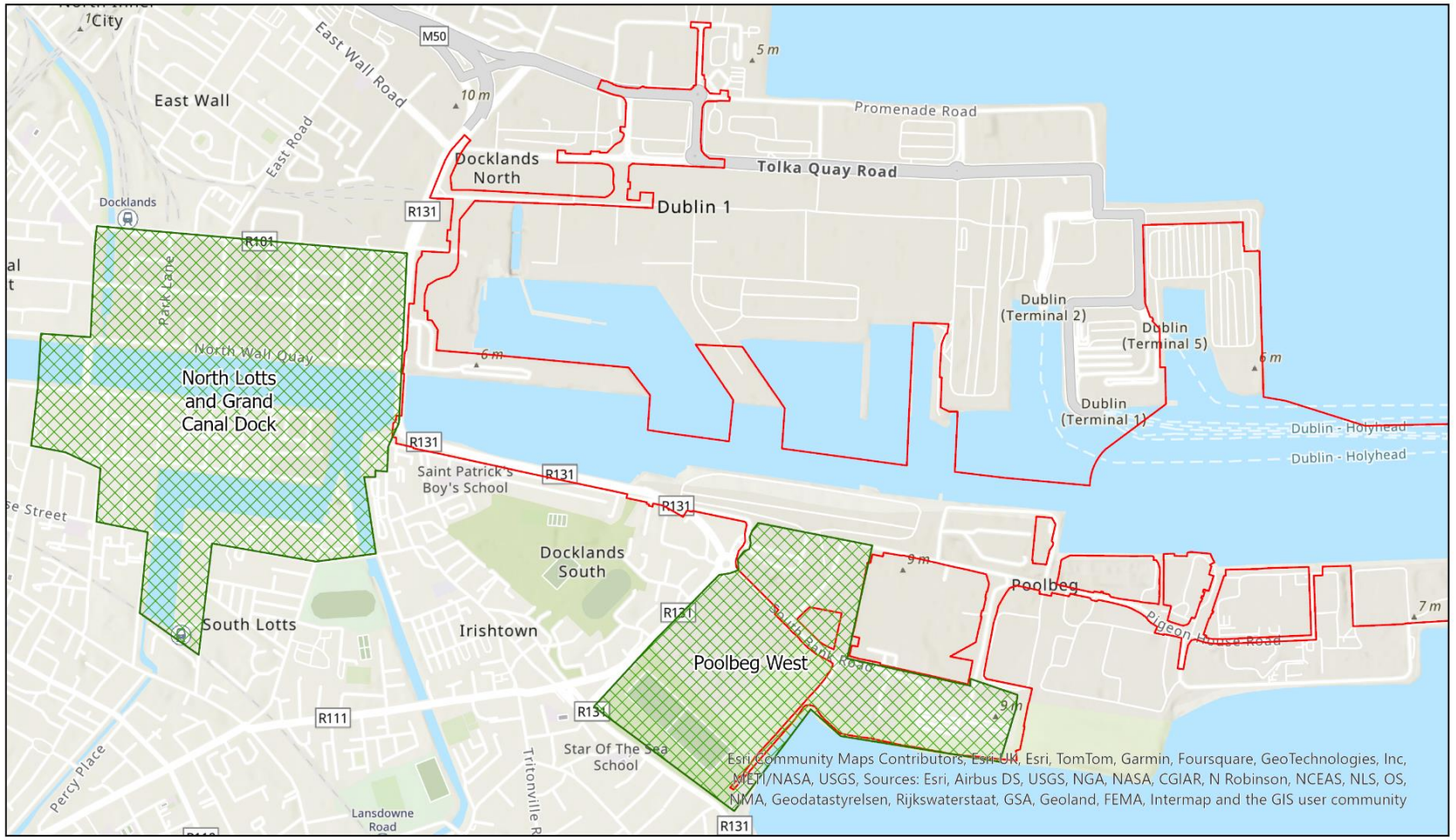

Figure 20.2 Other shortlisted projects surrounding the 3FM Application Boundary

20.3 Assessment of Cumulative Effects with Other Projects

This section summarises the potential for cumulative effects arising from the 3FM Project in association with other projects in the same area.

The identification and short list process included a review of all successful applications for permission within the greater Dublin Port area since 2013 using planning application spatial data downloaded from data.gov.ie. For recent planning applications Dublin City Planning application mapping was used.

Many of the successful applications prior to 2019 were discounted from this assessment on the basis that construction has already completed and any impacts have already been taken into account as baseline data used to assess the 3FM Project.

Appendix 20.1 contains the list of successful planning applications considered, details of each planning proposal and its status. The reasons for excluding any existing and/or approved projects from further consideration is also documented.

Figure 20.1 and Figure 20.2 illustrate the shortlisted projects (where boundary information was available from the DCC Planning Portal) brought forward to Stage 3 Information Gathering and Stage 4 Assessment. A detailed description of each shortlisted project is provided in Chapter 5, Section 5.6 Project Description.

Where an interaction has been identified between the 3FM Project and the existing and/or approved projects illustrated in Figure 20.1 and Figure 20.2, i.e. could foreseeably overlap temporally or spatially, these have been assessed within each technical chapter.

Table 20.2 details the key potential interactions between the short listed projects and the 3FM Project describing the cumulative impact of each short listed project by environmental topic.

Table 20.3 summarises where this potential exists for interaction, where these interactions are likely to result in no cumulative effects, adverse cumulative effects (in the absence of mitigation) or positive cumulative effects.

Following detailed assessment of these interactions and the potential cumulative effects, appropriate additional mitigation measures have been included to negate impacts, for example introducing revised licensing processes and ensuring that operations are separated, in terms of timings, across interacting projects.

Table 20.4 illustrates the refined assessment considering the additional mitigation measures, where these interactions are likely to result in no cumulative effects (with measures included where applicable), residual adverse cumulative effects or positive cumulative effects.

All adverse cumulative effects have been mitigated where possible, however residual adverse cumulative effects on climate remain. These adverse effects relate specifically to the 3FM Project facilitating greater shipping and road traffic movements at the port. This is intrinsic to the objectives of the 3FM Project and although will have positive cumulative impacts for traffic and transportation, will inherently have adverse residual cumulative impacts with regards to climate. It must be noted however, that the 3FM Project complies with existing and emerging policy requirements implemented through the CAP24. In addition, DPC has adhered to the requirements regarding Climate Reporting of section 15 of the Climate Action and Low Carbon

Development Act 2015, as amended. For impacts under the direct control of DPC, the impacts have been suitably mitigated and designed in line with national policy. While there are moderate adverse residual cumulative impacts identified as a result of road traffic and shipping, the planned legislative mitigation measures at international, EU and national levels will reduce these impacts. DPC will continue to perform its functions, in so far as practicable, in a manner consistent with any current or future climate policy on road traffic and shipping to aid in the reduction of these indirect sources.

The Risk of Major Accidents and Disasters has not been included in Table 20.2 to Table 20.4 as the risk assessment approach in Chapter 6 has already included baseline information on external accidents or disasters. Assessment of individual risk contours have been shown to not materially change through the inclusion of new developments.

The following projects have been included in Chapter 9, these have been discounted from Table 20.3 due to their existing and ongoing nature:

- Dublin Bay Power Plant (IED Licence PO486-02).
- Poolbeg Generating Station (IED Licence P0577-03).
- Covanta Waste Facility (Waste Licence W0232-01).

Given the nature of Chapter 11 Climate, all shortlisted projects have a degree of climate interaction, as all projects/developments will generate greenhouse gases (GHGs) from construction (via materials, operations and transport) and therefore there is a cumulative net adverse impact for climate from the construction of all projects on the list. As such, those projects considered to be most relevant have been included hereafter.

A number of planning applications have been included in Chapter 12, however these have been discounted from Table 20.3, due to the nature of the applications being such that they are not likely to generate significant noise or vibration impacts and/or given their distance from the 3FM Project.

Table 20.2 Description of each existing and/or approved project and the potential cumulative effects between the 3FM Project by technical chapter

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
Alexandra Basin Redevelopment (ABR) – ABP Reg. Ref. PL29N.PA0034	Potential interactions with the 3FM Project in combination with the ABR Project are: • Biodiversity Flora & Fauna • Water Quality & Flooding • Climate • Noise & Vibration • Coastal Processes • Traffic & Transport • Cultural Heritage • Landscape & Visual • Waste <u>Cumulative effects on Biodiversity Flora & Fauna:</u> The ABR Project is currently in late construction stage having been granted permission by ABP in July 2015. Capital Dredging was completed in 2021. The remaining construction works with potential to impact marine mammals, and benthos and fisheries are either completed, or at an advanced stage. Any activities in relation to the completion of dredging in Alexander Basin West and recovery or disposal of materials will be separated in time to ensure no cumulative impacts with the 3FM Project. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Water Quality & Flooding:</u> As stated in Chapter 9, the ABR Project and the 3FM Project are part of DPC's Masterplan. As part of the Masterplan, these have been planned and designed as part of a structured and integrated development programme that considers environmental impact and cumulative effects. Construction elements of the ABR Project are essentially complete. The only remaining work is completion of a dredging within Alexandra Basin West. This dredging and recovery disposal activity will be separated in time to ensure no cumulative impacts with the 3FM Project. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate:</u> In terms of the operation phase, ABR Project, in combination with the 3FM project, will facilitate greater shipping and road traffic movements at the port. As such, there is potential for indirect cumulative adverse climate impacts from the transport elements associated with these projects. Mitigation of both road and marine transport emissions is mandated at EU and national level through climate policy and the residual cumulative climate impact from shipping and road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Traffic & Transport: As the 3FM Project represents the Third and Final Masterplan Project, the traffic flows used in the Traffic and Transport Assessment (TTA) represent the fulfilment of the full DPMP2040 in the year 2040. Therefore, they inherently include the cumulative impact of the ABR Project. The assessment demonstrated that when the operational cumulative traffic impact is considered from third party schemes along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. The introduction of the SPAR removes 95% of HGVs from the Tom Clarke and 50% of HGVs from the East Wall Road per day. This removal of traffic from the external road network provides benefits to the schemes being progressed by others in the port environs. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Noise & Vibration: In terms of underwater noise cumulative impacts, the phasing of the 3FM Project with riverside construction works associated with the ABR Project has been considered. Riverside construction works for the ABR Project are at an advanced stage and will be separated in time to ensure no cumulative impacts with the 3FM Project. No cumulative impact is therefore envisaged. In addition, the underwater noise impact of shipping traffic in and out of Dublin Port has been quantified in the baseline measurements and modelled. The cumulative impact of these existing underwater noise sources does not alter the impact of the proposed 3FM Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Coastal Process: A Section 5(2) Notice was issued to DPC from the EPA on 7th November 2023 requesting additional information so that the Agency may complete a comprehensive assessment of the application. Computation modelling studies were subsequently undertaken with respect to the cumulative assessment of dredging activities, to predict sediment deposition within the Tolka Estuary. The studies assessed silt deposition, sand deposition and sediment deposition and dispersion, and determined that cumulative impacts can be considered *de minimis.* **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Cultural Heritage: DPC has commissioned and published the Conservation Strategy 2024 for the entire Dublin Port Estate as a pre-planning document to 3FM Project. This involves a strong commitment to heritage values across all of Dublin Port's projects, which deliver a coherent heritage strategy across all the phases of Masterplan 2040. As such, the ABR Project also involved the advice of the Heritage team and add a positive contribution to the interpretation of Heritage on the site. Consequently, the 3FM Project and ABR Project connect to provide a heritage landscape with an overall positive societal and cultural impact. **Therefore, positive cumulative impacts are anticipated.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Landscape & Visual: Dublin Port is an extensive harbour area that is continually in a state of flux which will offset potential cumulative landscape and visual impacts. The in-port projects are located within a robust maritime industrial landscape and will be read in this context along with the 3FM Project. There is limited opportunity to noticeably view the 3FM Project in-combination with other in-port projects with the exception of views from the East Link Toll area. The ABR Project is located closer to the city centre than the 3FM Project and will be more noticeable in local views from the East Link Toll area. The 3FM Project is hard to discern from existing port facilities at the area around the East Link Toll and no significant cumulative landscape or visual effects are predicted as a result. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Waste: Completion of dredging at Alexandra Basin West will be required post July 2025, with dredged material to be brought ashore for treatment and recovered as a fill material at the Berth 52/53 basin. Under 3FM, an estimated 70,000m3 of dredge material from Poolbeg Marina will require recovery/disposal. It is proposed that this material is also treated and recovered as a fill material at the Berth 52/53 basin under a revised IE licence, subject to availability of receptor capacity. **Therefore, no significant cumulative impacts are likely.**
MP2 Reg. Ref. ABP-304888-19	Potential interactions associated with the 3FM Project in combination with the MP2 Project are: • Biodiversity Flora & Fauna • Water Quality & Flooding • Air Quality • Climate • Traffic & Transport • Noise & Vibration • Coastal Processes • Cultural Heritage • Landscape & Visual • Population & Human Health • Waste Cumulative effects on Biodiversity, Flora & Fauna: The elements of construction works for the MP2 Project that will overlap with the 3FM construction programme entail landside works and will not impact marine mammals or benthic and fisheries. They are not considered further. The works will be phased throughout the life of the MP2 Project and are scheduled for completion in 2032. The main construction activities that have potential to give rise to cumulative impacts are dredging operations (benthos/prey impacts, and suspended solids) and piling noise.

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Significant mitigation is being implemented for both the MP2 and 3FM Projects in relation to underwater noise due to piling. This includes observing a soft start to percussive piling, and a progressive ramp up to maximum percussive piling energy. Marine Mammal Observers will ensure that marine mammals are not in designated monitoring zones prior to start of piling. DPC will also ensure that piling operations at the proposed Ro-Ro Terminal (Area K) as part of the 3FM Project, which is on the south side of the channel opposite MP2 construction locations to the north of the channel, will not take place simultaneously. This will ensure there will be no cumulative piling impacts on marine mammals. All potential piling impacts are confined to the inner harbour and significant impacts by either project are not likely in Dublin Bay. Piling in the River Liffey Channel upstream of Berth 49 will not take place between March and May in order to avoid the main salmon smolt run. Neither will piling take place in July and August upstream of Berth 49 or driving of the outer piles at Area N in order to avoid the peak of the adult salmon run to spawning grounds. This will mitigate the risk to marine mammal prey species. Provided the mitigation measures as listed in the environmental chapters are employed during construction and/or operation the overall impact to the environment, when considered in combination, is considered negligible. The MP2 Project and 3FM Project dredging impacts on benthos habitats are considered to be short-term and slight negative, with recovery expected to occur rapidly once dredging has been completed. DPC will ensure that dredging works for the MP2 Project and 3FM Project occur over separate winter periods. The phased nature of dredging elements, the small spatial extent of areas effected, and the lack of overlap between the MP2 Project and 3FM Project dredging campaigns will allow benthos habitat and biodiversity to recover rapidly, both in the dredged areas in the harbour and at the dump site and will avoid any significant cumulative impacts. Impacts of suspended solids due to dredging during both MP2 and 3FM Projects on fisheries are expected to be slight negative and temporary. No fish species should be adversely impacted at the population level due to the dredging proposed in these projects. Cumulative impact on benthos and prey species of marine mammals is expected to be negligible. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Water Quality & Flooding:</u> As stated in Chapter 9, the MP2 Project and the 3FM Project are part of DPC's Masterplan. As part of the Masterplan, these have been planned and designed as part of a structured and integrated development programme that considers environmental impact and cumulative effects. The next phase of the MP2 Project (Berth 50A extension / Oil Berth 3 / Infilling of Basin at Oil Berth 4) is due to commence in 2028. Works have the potential to overlap with the 3FM Project but piling and dredging operations will be managed by DPC to ensure no overlap. These works are situated on the north side of the Liffey channel and separated from the 3FM project site's piling locations. The MP2 Project's Environmental Impact Assessment Report (RPS, 2019) has determined that, in circumstances where the appropriate mitigation measures are fully implemented during the construction and operational phases, the impact of the MP2 Project on water quality will be imperceptible, and therefore the likelihood of cumulative impact with other the projects being considered here is low. Given the

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	mitigation measures proposed and the temporal and spatial separation of works, it is considered that there will be no cumulative impacts of MP2 construction phase works with the 3FM Project. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Air Quality:</u> There is the potential for cumulative dust impacts to the nearby sensitive receptors if the construction phase of the proposed 3FM Project coincides with the construction of any other developments, such as the MP2 Project, within 350m of the site. However, with the proposed 3FM Project dust mitigation measures applied throughout the construction phase, and similar appropriate mitigation measures applied for other developments, the predicted cumulative impacts on air quality and climate are deemed short-term and not significant. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate:</u> The MP2 project is a key feature of the DPC Masterplan and in combination with the 3FM project, will facilitate greater shipping and road traffic movements at the port. As such, there is potential for cumulative adverse climate impacts from the transport elements associated with these projects. It is noted that the MP2 Project was subject to EIA processes. The climate impact assessment included construction phase mitigation to support the use of low carbon materials. Therefore, while there is potential for cumulative construction phase impact to climate from embodied carbon in materials and construction methods, the cumulative impact is considered minor adverse given the level of mitigation applied. In terms of the operation phase, the MP2 Project, in combination with the 3FM project, will facilitate greater shipping and road traffic movements at the port. As such, there is potential for indirect cumulative adverse climate impacts from the transport elements associated with these projects. Mitigation of both road and marine transport emissions is mandated at EU and national level through climate policy and the residual cumulative climate impact from shipping and road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.** <u>Cumulative effects on Traffic & Transport:</u> As the 3FM Project represents the Third and Final Masterplan Project, the traffic flows used in the TTA represent the fulfilment of the full DPMP2040 in the year 2040. Therefore, they inherently include the cumulative impact of all committed and proposed developments, including the MP2 Project. The proposals (road, junction and active travel upgrades) therefore represent the mitigation of the cumulative impact within the Northern Estate. The assessment demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. The introduction of the SPAR removes 95% of HGVs from the Tom Clarke and 50% of HGVs from the

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	East Wall Road per day. This removal of traffic from the external road network provides benefits to the schemes being progressed by others in the port environs. **Therefore, positive cumulative impacts are anticipated.** <u>Cumulative effects on Noise & Vibration:</u> In terms of underwater noise cumulative impacts, the phasing of the 3FM Project with riverside construction works associated with the MP2 Project has been considered. The riverside construction works of the MP2 Project will be partially completed prior to commencement of the 3FM Project. The elements of the MP2 Project that require riverside works during the timescale of the 3FM construction works in the North Port are at Berth 50A and Oil Berth 3 (scheduled to commence in 2028). DPC will ensure that piling at Area K, opposite to these Berths, does not take place at the same time and this mitigation measure will ensure no cumulative impact. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Coastal Process:</u> A Section 5(2) Notice was issued to DPC from the EPA on 7th November 2023 requesting additional information so that the Agency may complete a comprehensive assessment of the application. Computation modelling studies were subsequently undertaken with respect to the cumulative assessment of dredging activities, to predict sediment deposition within the Tolka Estuary. The studies assessed silt deposition, sand deposition and sediment deposition and dispersion, and determined that cumulative impacts can be considered *de minimis.* **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Cultural Heritage:</u> DPC has commissioned and published the Conservation Strategy 2024 for the entire Port estate as a pre-planning document to the 3FM Project. This involves a strong commitment to Heritage values across all of Dublin Port's projects, which deliver a coherent heritage strategy across all the phases of Masterplan 2040. As such, the MP2 Project also involved the advice of the Heritage team and add a positive contribution to the interpretation of Heritage on the site. Consequently, the 3FM Project and MP2 Project connect to provide a heritage landscape with an overall positive societal and cultural impact. **Therefore, positive cumulative impacts are anticipated.** <u>Cumulative effects on Landscape & Visual:</u> Dublin Port is an extensive harbour area that is continually in a state of flux which will offset potential cumulative landscape and visual impacts. The in-port projects are located within a robust maritime industrial landscape and will be read in this context along with the 3FM Project. The MP2 Project is located in close proximity to the 3FM Project. In all of the cumulative viewpoints assessed, it will be difficult to read the MP2 Project in-combination with the 3FM Project facilities due to the character of the maritime industrial activities in which they are both read. When potential cumulative landscape and visual impacts are considered for the MP2 Project and the 3FM Project, no significant effects are predicted. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Population & Human: There would be some overlap in construction of the 3FM Project and ongoing MP2 Project (due to end in 2032). As a result, there would be cumulative benefits associated with the construction of both in parallel; firstly in Years 1-7 of 3FM Project construction, there would be a larger magnitude of total construction jobs being generated by Dublin Port. Then in Year 7-13 of 3FM Project construction, there is the potential for construction job retention for MP2 construction workers as direct FTE construction employment for the 3FM Project generally ramps up from 2032 (Year 7) to 2038 (Year 13). In both instances, there would be population and health benefits associated with employment generation and retention, resulting in positive impacts. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Waste: The construction elements of the MP2 Project will be partially completed/completed prior to commencement of the 3FM Project. It is predicted that the waste arisings will not result in cumulative impacts when considered with the 3FM Project. Both projects will be required to fully comply with the current legislation, policies, plans and best practice guidance which seek to minimise waste disposal to landfill. There are a high number of waste collectors and facilities registered /licenced in the EMR Region. **Therefore, no significant cumulative impacts are likely.**
The Liffey-Tolka Project-1.4km pedestrian walkway and a 2-way cycle lane – Reg. Ref. 3220/21	Potential interactions associated with the 3FM Project in combination with Liffey-Tolka Project are: • Cultural Heritage Cumulative effects on Cultural Heritage: DPC has commissioned and published the Conservation Strategy 2024 for the entire Port estate as a pre-planning document to 3FM Project. This involves a strong commitment to Heritage values across all of Dublin Port's projects, which deliver a coherent heritage strategy across all the phases of Masterplan 2040. The Liffey-Tolka Project also offers a significant contribution to Port-City integration. Consequently, these projects connect to provide a heritage landscape with an overall positive social and cultural cumulative impact, resulting in positive impacts. **Therefore, positive cumulative impacts are anticipated.**
T10 Link Road – Reg. Ref. 4894/22	**No potential for interaction with the 3FM Project identified and therefore no cumulative effects anticipated.**
Dublin Harbour Capital Dredging Project – Reg. Ref. Foreshore Application	Potential interactions associated with the 3FM Project in combination with the Dublin Harbour Capital Dredging Project are: • Biodiversity, Flora & Fauna • Water Quality & Flooding • Coastal Processes

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
FS007164/DAS Application S0033-01	<u>Cumulative effects on Biodiversity, Flora & Fauna:</u> Capital dredging under the Dublin Harbour Capital Dredging Project has the potential to overlap temporally with the 3FM Project, however DPC will programme these works to ensure they occur over separate winter periods, resulting in no cumulative impacts on biodiversity. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Water Quality:</u> All capital dredging activity at Dublin Port takes place over the winter period (October – March). No overspill is permitted within the inner Liffey channel. The hopper volume is limited to 4,100m^3 per trip. No dredging will take place between 1st April and 14th May (inclusively) in the inner Liffey channel upstream of Berth 49, including the main channel and channel-side berths but not including basins. Dredging in any year has been scheduled to temporally separate individual campaigns and minimise periods of overlap. Modelling (Coastal Processes Risk Assessment, RPS 2021; MP2 Project Additional Sediment Plume Modelling, RPS 2021) and monitoring data (DPC ABR/MP2 Project Environmental Monitoring Report, RPS 2023) have shown that during dredging operations, suspended sediment plumes are spatially confined at loading sites, and suspended sediment concentrations are generally low (less than 25 mg/l) beyond the immediate dredge area. In addition, computational modelling studies concluded that the impact of sediment deposition from cumulative dumping activities is several magnitudes lower compared to natural sedimentation and can therefore be considered to be de minimis. On the basis of scheduling of works and comprehensive mitigation measures applied it can be concluded that there will be no cumulative effects of the proposed Dublin Harbour Capital Dredging Project with the proposed 3FM Project. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Coastal Process:</u> A Section 5(2) Notice was issued to DPC from the EPA on 7th November 2023 requesting additional information so that the Agency may complete a comprehensive assessment of the application. Computation modelling studies were subsequently undertaken with respect to the cumulative assessment of dredging activities, to predict sediment deposition within the Tolka Estuary. The studies assessed silt deposition, sand deposition and sediment deposition and dispersion, and determined that cumulative impacts can be considered *de minimis.* **Therefore, no significant cumulative impacts are likely.**
Dublin Port Maintenance Dredging Programme 2022–2029 – Reg. Ref.	Potential interactions associated with the 3FM Project in combination with the Dublin Harbour Maintenance Dredging Programme are: • Biodiversity, Flora & Fauna • Water Quality & Flooding • Coastal Processes

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
FS007132 / DAS Permit S0004-03	Cumulative effects on Biodiversity, Flora & Fauna: DPC has permission to carry out regular maintenance dredging over an eight-year period, 2022 to 2029, with an annual maximum permissible dredging volume of 300,000m^3. Maintenance dredging will not overlap with the 3FM Project capital dredging works which will be restricted to winter months (October to March). The phased nature of maintenance and capital dredging elements, and their separation into discrete periods will allow benthos habitat and biodiversity to recover rapidly, both in the dredged areas in the harbour and at the dump site and will avoid any significant cumulative impacts on biodiversity or prey species. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality: Maintenance Dredging at Dublin Port between August 2022 and September 2029 has been consented (Dumping at Sea Permit S0004-03; Foreshore Licence FS007132) within the period April to September inclusive each year. On the basis of scheduling of works and comprehensive mitigation measures (as noted for the proposed capital dredging project) applied it can be concluded that there will be no cumulative effects of the proposed Dublin Port Maintenance Dredging Programme with the proposed 3FM Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Coastal Process: A Section 5(2) Notice was issued to DPC from the EPA on 7th November 2023 requesting additional information so that the Agency may complete a comprehensive assessment of the application. Computation modelling studies were subsequently undertaken with respect to the cumulative assessment of dredging activities, to predict sediment deposition within the Tolka Estuary. The studies assessed silt deposition, sand deposition and sediment deposition and dispersion, and determined that cumulative impacts can be considered *de minimis.* **Therefore, no significant cumulative impacts are likely.**
Open Cycle Gas Turbine (OCGT) and a generating plant. – Reg. Ref. PWSDZ3074/23 – done Q26	Potential interactions with the 3FM Project in combination with the OCGT Project are: • Land, Soils, Geology & Hydrogeology • Air Quality • Climate • Traffic & Transport • Population & Human Health • Waste

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Land, Soils, Geology & Hydrogeology: There is potential for cumulative effects on groundwater quality due to the introduction of a contamination source (hydrocarbons). However the proposed development will be required to fully comply with the current legislation, policies, plans and best practice guidance which seek to minimise the potential for contamination of soils and groundwater. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Air Quality: There is the potential for cumulative dust impacts to the nearby sensitive receptors if the construction phase of the proposed 3FM Project coincides with the construction of any other developments, such as the OCGT and generating plant, within 350m of the site. However, with the proposed 3FM Project dust mitigation measures applied throughout the construction phase, and similar appropriate mitigation measures applied for other developments, the predicted cumulative impacts on air quality and climate are deemed short-term and not significant. Future projects of a large scale would need to conduct an EIA to ensure that no significant impacts on air quality will occur as a result of those developments. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate: There will be direct GHG combustion emissions from the OCGT (periodically), which will be in addition to the direct operational emissions at the port energy use, however the cumulative impacts during the combined operations are classed as a minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Traffic & Transport: The TTA demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes, such as the OCGT, along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. The introduction of the SPAR removes 95% of HGVs from the Tom Clarke and 50% of HGVs from the East Wall Road per day. This removal of traffic from the external road network provides benefits to the schemes being progressed by others in the port environs. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Population & Human Health: The operational SPAR can be used by any HGV vehicle that has an origin or destination on the Poolbeg Peninsula and non-Port HGVs travelling between Sean Moore Road and the Tunnel in addition to all Port traffic and public transport. As a result, the SPAR will redistribute traffic away from the external road network for any project coming forward where this is the case, including the Open Cycle Gas Turbine and generating station; by redistributing this traffic away from the external road network, there would be cumulative operational benefits to the air quality and noise environment, with associated cumulative population and health benefits where this occurs. **Therefore, positive cumulative impacts are anticipated.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Waste: The construction elements of the OCGT and generating plant will be partially completed/completed prior to commencement of the 3FM Project. It is predicted that the waste arisings will not result in cumulative impacts when considered with the 3FM Project. Both projects will be required to fully comply with the current legislation, policies, plans and best practice guidance which seek to minimise waste disposal to landfill. There are a high number of waste collectors and facilities registered /licenced in the EMR Region. **Therefore, no significant cumulative impacts are likely.**
Underground Cable Programme is set to replace and upgrade five 220kV circuits – EirGrid Capital Projects ref: CP114 6 CP121 6 CP110 0	Potential interactions with the 3FM Project in combination with the Underground Cable Programme are: • Biodiversity, Flora & Fauna • Services M&E Cumulative effects on Biodiversity, Flora & Fauna: The laying of cables offshore will involve vessels using ploughs, mechanical excavation, or jetting. Some pre-installation dredging of sand waves may also be required. The material excavated will be retained in the cable corridor and no dumping at the Burford bank dump site will take place. Therefore, there will be no cumulative impact on benthic biodiversity and fisheries with 3FM Project dredge spoil dumping operations at the dump site, where sediment plumes have been shown to settle rapidly and within 750m of the site. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Services M&E: The 3FM Project was considered in the context of overall electricity requirements on the Poolbeg peninsula. Priority is being given by EirGrid to replacing the Poolbeg to North Wall 220kV cable which crosses under the Liffey between Poolbeg Marina and North Wall Quay Extension. The construction works associated with this cable replacement in the vicinity of Poolbeg Marina is programmed to be completed in advance of the proposed 3FM Project construction works. **Therefore, no significant cumulative impacts are likely.**
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building – Reg. Ref. 4057/23	Potential interactions with the 3FM Project in combination with the GIS Switchboard building are: • Climate • Population & Human Health Cumulative effects on Climate: There will be direct GHG combustion emissions from the GIS switchboard building, which will be in addition to the direct operational emissions at the port energy use, however the cumulative impacts during the combined operations are classed as a minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Population & Human Health: The operational SPAR can be used by any HGV vehicle that has an origin or destination on the Poolbeg Peninsula and non-port HGVs travelling between Sean Moore Road and the Tunnel in addition to all port traffic and public transport. As a result, the SPAR will redistribute traffic away from the external road network for any project coming forward where this is the case, including the new GIS Switchboard building; by redistributing this traffic away from the external road network, there would be cumulative operational benefits to the air quality and noise environment, with associated cumulative population and health benefits where this occurs. **Therefore, positive cumulative impacts are anticipated.**
Continuation of use of existing concrete batching plant and associated facilities. Reg. Ref. PWSDZ3469/22	Potential interactions with the 3FM Project in combination with the continued use of the existing concrete batching plant are: • Climate Cumulative effects on Climate: There will be direct GHG combustion emissions from the concrete batching plant which will be in addition to the direct operational emissions at the port energy use, however the cumulative impacts during the combined operations are classed as a minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.**
Development at the Ringsend Wastewater Treatment Plan. Reg. Ref. 5319/22	Potential interactions with the 3FM Project in combination with the development of the Ringsend WwTP are: • Biodiversity, Flora & Fauna Cumulative effects on Biodiversity, Flora & Fauna: The proposed development at Ringsend is on the south bank of the River Liffey. The application was granted permission in April 2019. Construction works are largely land based and unlikely to have any impact on marine mammals. The Natura Impact Statement, reflecting the Appropriate Assessment, concluded that the operational phase of the proposed upgrade will result in water quality improvement in Inner Dublin Bay because of a reduction in nutrient load, and that there will be no adverse effect on the integrity of any European site as a result. It is unlikely that the prey species of marine mammals in the Dublin Port area or in Dublin Bay will be negatively affected. **Therefore, no significant cumulative impacts are likely.**
Upgrade of the Ringsend Wastewater Treatment Plant (WwTP). Reg. Ref. PL29S.301798	Potential interactions with the 3FM Project in combination with the upgrade of the WwTP are: • Biodiversity, Flora & Fauna • Water Quality & Flooding • Climate • Noise & Vibration • Traffic & Transport

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	• Waste Cumulative effects on Biodiversity, Flora & Fauna: The works to repair and upgrade the UWWT plant discharge channel adjacent to the ESB Poolbeg Generating Station are expected to be completed prior to the commencement of the 3FM Project. ESB's repair and upgrade works are likely to result in scour and redistribution of soft, organic rich sediments that have accumulated in recent years at the damaged outfall weir. This will result in some loss of muddy habitat and replacement with habitats of coarser sediments. Given the extent of soft, muddy benthic habitat within harbour area, the cumulative impacts are likely to be minor adverse and not significant. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality & Flooding: Estimates of the potential reduction of pollutants due to the upgrade are provided in the Ringsend WwTP Upgrade Project EIAR (June 2018). It has been estimated in process-proving trials that the proposed upgrade and enhanced treatment process will result in a substantial reduction in Biochemical Oxygen Demand (BOD), suspended solids and nutrient loads with significant positive environmental benefits. The Ringsend WwTP Upgrade EIAR (June 2018) finds that there is potential for a temporary negative but not significant effect in the Tolka Estuary during the upgrade due to a number of secondary treatment tanks being temporarily out of operation. However, it concludes that the benefit of the permanent positive impact after the completion of construction outweighs the insignificant, temporary negative impact observed during the construction phase. Given the positive impact of the WwTP upgrade on receiving water quality it is unlikely that there will be any cumulative adverse effects when considered in combination with the 3FM Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate: There will be direct GHG combustion emissions from the WwTP, which will be in addition to the direct operational emissions at the port energy use, however the cumulative impacts during the combined operations are classed as a minor adverse climate impact. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Noise & Vibration: Further to consultation with ESB and Uisce Éireann on the ESB/Uisce Éireann Discharge Channel upgrade, it is expected that these works will be completed prior to commencement of the 3FM Project. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Traffic & Transport: The TTA demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes, such as the Ringsend WwTP, along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. The introduction of the SPAR removes 95% of HGVs from the Tom Clarke and 50% of HGVs from the East Wall Road

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	per day. This removal of traffic from the external road network provides benefits to the schemes being progressed by others in the port environs. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Waste: The construction elements of the upgrade works will be partially completed/completed prior to commencement of the 3FM Project. It is predicted that the waste arisings will not result in cumulative impacts when considered with the 3FM Project. Both projects will be required to fully comply with the current legislation, policies, plans and best practice guidance which seek to minimise waste disposal to landfill. There are a high number of waste collectors and facilities registered /licenced in the EMR Region. **Therefore, no significant cumulative impacts are likely.**
North Lotts & Grand Canal Dock Planning Scheme 2014- BP Ref. PL29N.ZD2011	Potential interactions with the 3FM Project in combination with the North Lotts & Grand Canal Dock Planning Scheme are: • Climate Cumulative effects on Climate: There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of mitigation applied as mandated by the Climate Action Plan 2024 policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required, however these volumes have been accounted for within the traffic analysis presented in Chapter 11 of this EIAR. Traffic and transport emissions from these developments may be somewhat mitigated through the active travel proposals included in the 3FM project which are beneficial relative to the baseline infrastructure. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.**
Point Bridge and Dodder Bridge Reg. Ref. ZE29N.ZE0006	Potential interactions with the 3FM Project in combination with the Point Bridge and Dodder Projects are: • Biodiversity, Flora & Fauna • Water Quality & Flooding • Climate • Noise & Vibration • Traffic & Transport • Coastal Processes

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Biodiversity, Flora & Fauna: DCC are developing these projects, however there are believed to be at an early stage of the design process and no planning application has yet been made to An Bord Pleanála. It is possible that these projects may overlap with the 3FM Project, however a detailed EIA and EIAR will be submitted, to include mitigation measures where appropriate. DPC and DCC will ensure piling at the SPAR Bridge and Point/Dodder Bridges will not occur simultaneously. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality: The proposed location of the Point Pedestrian & Cycling Bridge is within the Liffey Estuary Lower transitional water body. The changes to the hydromorphology of the Liffey Estuary Lower, which is a heavily modified water body, through the operation of the Point Pedestrian and Cycling Bridge will not be significant given the modified nature of this water body for port and navigation use. The scale of this project is small in comparison to the wider port activities and the proposed 3FM project. It is assumed that the bridge design will be undertaken in a manner that is sympathetic to the environmental objectives of the water body, particularly the mitigation measures that will be required for good ecological potential to be achieved and with full cognisance of the Tom Clarke Bridge and the SPAR road bridge. This will ensure that flows are not negatively impacted and the longitudinal connectivity of the Liffey Estuary Lower is not compromised therefore the movement of fish upstream or downstream will not be negatively affected. **Therefore, no significant cumulative impacts are likely.** The Point Pedestrian and Cycle Bridge will require a detailed EIA and EIAR. Provided the EIAR outlines the mitigation measures necessary to reduce the significant effects during the construction of the bridge then there is no risk of cumulative effects with the 3FM Project during construction. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Climate: There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of mitigation applied as mandated by the Climate Action Plan policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required, however these volumes have been accounted for within the traffic analysis presented in Chapter 11 of this EIAR. Traffic and transport emissions from these developments may be somewhat mitigated through the active travel proposals included in the 3FM project which are beneficial relative to the baseline infrastructure. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.** Cumulative effects on Noise & Vibration: These projects are at an early stage in the design process and their timeframes will potentially overlap with the 3FM Project. However, DPC,

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	in consultation with DCC, will ensure that piling at the SPAR Bridge and Point Bridge/Dodder Bridge does not take place at the same time. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Traffic & Transport: The TTA demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes, such as the Point Bridge and Dodder Bridge, along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Coastal Processes: Given that the support structures for this bridge will be of similar size and nature and directly aligned with those structures which support the Tom Clark bridge, the change to hydrodynamic streamlines and eddies would be negligible. The preliminary information available at this stage therefore indicates that the potential of any cumulative impacts on coastal processes between the 3FM Project and the Active Travel Bridge would be insignificant. **Therefore, no significant cumulative impacts are likely.**
The Howth Yacht Club (HYC) Marina Extension – Reg. Ref. DAS Permit Reg. No. S0010-01	Potential interactions with the 3FM Project in combination with the HYC marina extension are: • Biodiversity, Flora & Fauna • Water Quality & Flooding • Climate • Traffic & Transport Cumulative effects on Biodiversity, Flora & Fauna: No dumping at sea under the HYC permit has taken place since it was granted in 2011. In the unlikely event that this work was to proceed during the construction phase of the 3FM Project, all dumping will be subject to the approval of the Dublin Port Harbour Master and dumping activity will not be permitted by the Harbour Master for DPC and HYC operations simultaneously. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality: Only HYC and DPC currently hold Dumping at Sea Permits for the use of the Dublin Bay dumping site. HYC has the benefit of a Dumping at Sea Permit (Ref. No. S0010-01) to load and dump a maximum of 120,000 tonnes of dredged material from Howth Marina over a one year period. In its application documents, HYC estimated a maximum daily quantity for dumping of 1,200 tonnes and 800 tonnes in each load. It

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	also suggested a spring or winter commencement and campaign duration of six months. This volume of material is equivalent to approximately 6% of the annual permitted quantity of material that may be dumped at this site by Dublin Port Company under Dumping at Sea Permit S0024-01. While dumping by DPC is restricted to the winter months (October to March), no such restriction applies to HYC activities. Dumping will however be subject to the approval of the Dublin Port Harbour master and dumping activity will not be permitted by the Harbour Master for DPC and HYC operations simultaneously. The rates of dumping at sea will therefore not exceed those predicted in the model described in the coastal processes assessment and the model predictions remain valid. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate:</u> There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of mitigation applied as mandated by the Climate Action Plan 2024 policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required, however these volumes have been accounted for within the traffic analysis presented in Chapter 11 of this EIAR. Traffic and transport emissions from these developments may be somewhat mitigated through the active travel proposals included in the 3FM Project which are beneficial relative to the baseline infrastructure. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.**
Poolbeg West Strategic Development Zone (SDZ) – BP Ref. PL29N.ZD2013: Development for mixed usage – Reg. Ref. PWSDZ3270/19; PWSDZ3207/21; PWSDZ3406/22; PWSDZ4341/23 PWSDZ3798/24; PWSDZ3062/24; and PWSDZ3700/24.	Potential interactions with the 3FM Project in combination with the Poolbeg West SDZ are: • Land, Soils, Geology & Hydrogeology • Water Quality & Flooding • Climate • Traffic & Transport • Landscape & Visual <u>Cumulative effects on Land, Soils, Geology & Hydrogeology:</u> There is potential for positive cumulative effects on groundwater quality and on-site ground gas regime due to the proposed basement and undercroft. In addition, where applicable, the proposals will be accompanied by an EIAR and a NIS. **Therefore, positive cumulative impacts are anticipated.** <u>Cumulative effects on Water Quality & Flooding:</u> Wastewater discharges will be treated at Ringsend WwTP which captures any potential cumulative effects arising from the SDZ. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Climate: There is potential for construction phase impacts as significant material inputs are required and therefore there is potential from embodied carbon in materials and construction methods. The cumulative impacts are considered minor adverse given the level of mitigation applied as mandated by the Climate Action Plan policies on embodied carbon. During operations, additional road traffic volumes on the local road network will be required, however these volumes have been accounted for within the traffic analysis presented in Chapter 11 of this EIAR. Traffic and transport emissions from these developments may be somewhat mitigated through the active travel proposals included in the 3FM project which are beneficial relative to the baseline infrastructure. As noted, mitigation of road transport emissions is mandated at national level through the CAP and the residual cumulative climate impact from road traffic from these projects is considerate moderate adverse. **Therefore, residual adverse cumulative impacts are anticipated.** Cumulative effects on Traffic & Transport: The TTA demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes, such as the Poolbeg West SDZ, along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Landscape & Visual: In early 2022 planning consent was issued for the construction of 570 new homes and a total of 63,160sq m of mixed residential and commercial development on the site of the former Irish Glass Bottle factory site located immediately southwest of the 3FM Project. This project includes numerous tall buildings and structures, open space and a pathway network that will ultimately link with the site of the 3FM Project. The redevelopment of this derelict factory site will see a high quality built environment created that will be read as an extension to the adjacent urban built form to the west. Linkages to path networks around and through the Dublin Port area are planned that will complement the 3FM Project. The proposed residential and mixed use development is a large scale development that is proportionate in scale to the existing scale of development on the south port area that will prevent cumulative landscape and visual impacts. **Therefore, no significant cumulative impacts are likely.**
Dublin Array Wind Farm – Reg. Ref. FS007188	Potential interactions with the 3FM Project in combination with the Dublin Array Wind Farm are: • Biodiversity, Flora & Fauna • Water Quality & Flooding • Climate

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Biodiversity, Flora & Fauna: In relation to impact on marine mammals and fish the most significant potential adverse effect of onshore wind farms relates to the underwater noise generated during the construction and operation of wind turbines. Underwater noise impacts due to 3FM Project piling have been modelled, and determined that potential impacts on marine mammals and fish are essentially confined to the inner harbour area i.e. inside the Bull Walls, with no offshore effects. The physical barriers presented by the North and South Bull Walls, the narrow harbour entrance and the shallow waters of the harbour area all combine to rapidly attenuate underwater noise propagation and limit the zone of influence to the harbour area. Mitigation is proposed in the 3FM Project to mitigate impacts in the harbour area but no impacts on marine mammals in Dublin Bay are anticipated due to 3FM Project piling. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Water Quality & Flooding: The Dublin Array proposed offshore wind farm is located on the Kish and Bray Banks, 10km from the coastline of Dublin. These are naturally occurring sandbanks which the busy east coast commercial shipping routes avoid due to the shallowness of the water. The proximity of the wind farm to the coastline of Dublin, a major electricity demand hub, was a key consideration in the site selection. Subject to all necessary permits and consents being received, Dublin Array Wind Farm could begin construction in 2025, taking up to two years to complete (2027).The Dublin Array have proposed possible export cable landfall on the south of Poolbeg Peninsula in Dublin Bay, each with cable corridors that traverse south Dublin Bay from the southeast. The laying of cables offshore will involve vessels using ploughs, mechanical excavation, or jetting. Some pre-installation dredging of sand waves may also be required. ABR/MP2 modelling and monitoring data has shown that plumes from dredging within the Liffey channel are confined to the immediate area of operation and do not impact the wider environment. Dredging for cable corridors will also be separated from 3FM dredging within the Liffey channel by the Great South Wall. The material excavated during cable works will be retained in the cable corridor, and no dumping at the Burford bank dump site will take place. Therefore, there will be no cumulative impact with 3FM Project dredge spoil dumping operations at the dump site where sediment plumes have been shown to settle rapidly and within 750m of the site. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on climate: There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP24 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the 3FM port operations. **Therefore, positive cumulative impacts are anticipated.**
Codling Wind Park – Reg. Ref. FS007045	Potential interactions with the 3FM Project in combination with Codling Wind Park are: • Biodiversity, Flora & Fauna

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	• Water Quality & Flooding • Climate • Coastal Processes • Traffic & Transport • Services M&E • Cultural Heritage • Landscape & Visual <u>Cumulative effects on Biodiversity, Flora & Fauna:</u> Underwater noise impacts due to 3FM Project piling have been modelled, and determined that potential impacts on marine mammals and fish are essentially confined to the inner harbour area i.e. inside the Bull Walls, with no offshore effects. The physical barriers presented by the North and South Bull Walls, the narrow harbour entrance and the shallow waters of the harbour area all combine to rapidly attenuate underwater noise propagation and limit the zone of influence to the harbour area. Mitigation is proposed in the 3FM Project to mitigate impacts in the harbour area but no impacts on marine mammals in Dublin Bay are anticipated due to 3FM Project piling. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Water Quality & Flooding:</u> Modelling and monitoring data has shown that plumes from dredging within the Liffey channel are confined to the immediate area of operation and do not impact the wider environment. Dredging for cable corridors will also be separated from 3FM dredging within the Liffey channel by the Great South Wall. The material excavated during cable works will be retained in the cable corridor, and no dumping at the Burford bank dump site will take place. Therefore, there will be no cumulative impact with 3FM Project dredge spoil dumping operations at the dump site where sediment plumes have been shown to settle rapidly and within 750m of the site. **Therefore, no significant cumulative impacts are likely.** Codling Wind Park also intend to construct an onshore substation on Poolbeg peninsula adjacent to the proposed 3FM Project Turning Circle. A common boundary has been agreed between DPC and Codling Wind Park, comprising a vertical piled combi wall. This element of work has already been included in the 3FM Project assessment. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate:</u> There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP24 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the 3FM port operations. **Therefore, positive cumulative impacts are anticipated.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Coastal Processes: A small parcel of land at Pigeon House road is required by Codling Wind Park Limited (CWPL) to construct a 220kV substation. This substation is needed to facilitate the transmission of the 900 – 1,500 MW of electricity which would be produced by the proposed Codling Wind Park (CWP) Offshore Wind Farm (OWF) into the existing onshore grid network. Whilst the details of this scheme are yet to be finalised, it is understood through extensive consultation with CWPL that a high level, the scheme will involve the demolition and dredging of approximately *c.*170m^2 of land at the north east of the site. As a result, levels in this area will be decreased from between *c.* +3 and +7m to -10m CD. These levels are commensurate with the dredging required to create Turning Circle as proposed under the 3FM Project. In addition, it is also proposed to reclaim approximately 200m^2 of land at the south east corner of the Pigeon House site. To assess the potential in combination impact of this proposal with the 3FM Project, RPS updated the post 3FM numerical model to account for CWP proposal. Specifically, this involved updating the bathymetry to account for the proposed reclamation. It was not necessary to adjust the model to account for the proposed dredging of the north east corner as this was already included in the 3FM Project. This model was subsequently used to assess the potential combined impact of the schemes on tides and waves. The outputs of this are detailed in Chapter 13. Given the highly localised and negligblbe magnitude of this impact, the cumulative impact of the CWPL and 3FM Projects on tides, waves and sediment transport was concluded to be of minor to negligible significance. **Therefore, no significant cumulative impacts are likely.** Cumulative effects on Traffic & Transport: The TTA demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes, such as the CWP, along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR. **Therefore, positive cumulative impacts are anticipated.** Cumulative effects on Services M&E: The agreement of the common boundary between the 3FM Project and the Codling Wind Park Onshore Substation through the construction of a vertical piled combi wall has ensured that the marine environmental appraisals undertaken for the 3FM Project also take into account the Onshore Substation and therefore there are no additional cumulative impacts for this element of construction work. Mitigation measures include closed periods for piling to minimise the impact on nesting Terns and the migration of salmonids. **Therefore, no significant cumulative impacts are likely.**

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	Cumulative effects on Cultural Heritage: The Codling Bank Offshore Wind Farm Project is proposed in the future, located on the Berth 47A Hardstand immediately north of Pigeon House Harbour. The building and associated works will need careful design to avoid a potential negative impact on the surrounding heritage landscape, avoiding the risk of dominating historic structures on the site and on the GSW and its associated historic quay walls. Dublin Port's Conservation Strategy 2024 has been provided to inform the promoter's design team of the significance of the curtilage of adjoining protected structures and a conservation architect has been appointed upon the advice of DPC's Heritage team to ensure excellence of design. Drawings for the project are not yet available to the Heritage team for comment at the time of the EIAR production and therefore no definitive comment on the scheme's heritage impact can be made. However, the information and actions taken by the heritage team are likely to reduce any overall cumulative impact on built heritage and **therefore provide a positive effect on cumulative impact.** Cumulative effects on Landscape & Visual: As part of the Codling Wind Park it is proposed to construct a sub-station on a site located immediately west of the existing Pigeon House Harbour and between Area K and Area N of the 3FM Project. This proposed sub-station project will include a number of tall buildings and structures that will be new features in the landscape with potential to be read with the 3FM Project. The proposed location for the Codling Wind Park Sub-Station has existing tall buildings located to the east, south and west that will make visibility very difficult in these directions. Very long-distance views may be available from the north west at Howth but the details of the new sub-station site will be very difficult to discern from such long distance. This existing context for the site of proposed sub-station will also result in there being very limited potential for it to be read with the 3FM Project in views from the surrounding landscape. Both proposed developments will be read with, and are also consistent with, the existing harbour industrial landscape character. Overall, these factors will limit potential cumulative landscape and visual impacts to negligible to minor. **Therefore, no significant cumulative impacts are likely.**
North Irish Sea Array – Reg. Ref. FS007031	Potential interactions with the 3FM Project in combination with the North Irish Sea Array are: • Biodiversity, Flora & Fauna • Water Quality & Flooding • Climate Cumulative effects on Biodiversity, Flora & Fauna: Underwater noise impacts due to 3FM Project piling have been modelled, and determined that potential impacts on marine mammals and fish are essentially confined to the inner harbour area i.e. inside the Bull Walls, with no offshore effects. The physical barriers presented by the North and South Bull Walls, the narrow harbour entrance and the shallow waters of the harbour area all combine to rapidly attenuate underwater noise propagation and limit the zone of influence to the harbour area. Mitigation is proposed in the 3FM Project to mitigate impacts in the harbour area but no impacts on marine mammals in Dublin Bay are anticipated due to 3FM Project piling. Therefore, even if temporal overlap of piling occurs during construction phases of the 3FM Project and the North Irish Sea Array, no cumulative impact is likely.

Existing and/or approved Project	Interaction with the 3FM Project and Potential for Cumulative Effects
	The laying of cables offshore will involve vessels using ploughs, mechanical excavation, or jetting. Some pre-installation dredging of sand waves may also be required. The material excavated will be retained in the cable corridor and no dumping at the Burford bank dump site will take place. Therefore, there will be no cumulative impact on benthic biodiversity and fisheries with the 3FM Project dredge spoil dumping operations at the dump site, where sediment plumes have been shown to settle rapidly and within 750m of the site. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Water Quality & Flooding:</u> Modelling and monitoring data has shown that plumes from dredging within the Liffey channel are confined to the immediate area of operation and do not impact the wider environment. Dredging for cable corridors will also be separated from 3FM dredging within the Liffey channel by the Great South Wall. The material excavated during cable works will be retained in the cable corridor, and no dumping at the Burford bank dump site will take place. Therefore, there will be no cumulative impact with 3FM Project dredge spoil dumping operations at the dump site where sediment plumes have been shown to settle rapidly and within 750m of the site. **Therefore, no significant cumulative impacts are likely.** <u>Cumulative effects on Climate:</u> There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP24 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the 3FM port operations. **Therefore, positive cumulative impacts are anticipated.**
Seastacks Wind Farm - Reg. Ref. FS007134	Potential interactions with the 3FM Project in combination with the Seastacks Wind Farm are: • Climate <u>Cumulative effects on Climate:</u> There is potential for construction phase climate impacts through the need for significant material inputs and construction methods. However, the net climate impact of these developments once operational is long term and positive given the introduction of renewable electricity generation and reducing the demand for fossil fuel combustion to generate electricity in line with CAP24 targets. This will reduce the carbon intensity of the electricity grid and therefore reduce indirect emissions from electricity use such as that predicted for the 3FM port operations. **Therefore, positive cumulative impacts are anticipated.**

Table 20.3 Summary matrix showing potential cumulative effects in the absence of mitigation, by environmental topic between the 3FM Project and other existing and/or approved projects

	Risk of major Accidents & Disasters		Biodiversity Flora & Fauna		Land, Soils, Geology, Hydrogeology		Water Quality & Flooding		Air Quality		Climate		Noise & Vibration		Coastal Processes		Traffic & Transport		Services M&E		Cultural Heritage		Landscape & Visual		Population & Human Heath		Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
In-port projects																												
Alexandra Basin Redevelopment (ABR) – ABP Reg. Ref. PL29N.PA0034			✓				✓					✓	✓					✓			✓		✓	✓			✓	
MP2 Reg. Ref. ABP-304888-19			✓				✓		✓		✓	✓	✓		✓		✓	✓			✓		✓	✓	✓		✓	
The Liffey-Tolka Project. 1.4km pedestrian walkway and a 2-way cycle lane – Reg. Ref. 3220/21																					✓							
T10 Link Road – Reg. Ref. 4894/22																												
Dublin Harbour Capital Dredging Project – Reg. Ref. Foreshore Application FS007164/DAS Application S0033-01			✓				✓								✓													
Dublin Port Maintenance Dredging Programme 2022–2029 – Reg. Ref. FS007132 / DAS Permit S0004-03			✓				✓									✓												
Open Cycle Gas Turbine (OCGT) and a generating plant. – Reg. Ref. PWSDZ3074/23 – done Q26	✓				✓				✓			✓	✓				✓	✓								✓	✓	
Underground Cable Programme is set to replace and upgrade five 220kV circuits – Reg. Ref.																												
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building – Reg. Ref. 4057/23.												✓	✓													✓		
Continuation of use of an existing concrete batching plant and associated facilities. Reg. Ref. PWSDZ3469/22												✓	✓															
Development at the Ringsend Wastewater Treatment Plan. Reg. Ref. 5319/22			✓																									
Upgrade of the Ringsend Wastewater Treatment Plant (WwTP). Reg. Ref. PL29S.301798			✓				✓					✓	✓				✓	✓									✓	

	Risk of major Accidents & Disasters		Biodiversity Flora & Fauna		Land, Soils, Geology, Hydrogeology		Water Quality & Flooding		Air Quality		Climate		Noise & Vibration		Coastal Processes		Traffic & Transport		Services M&E		Cultural Heritage		Landscape & Visual		Population & Human Heath		Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Projects in the area Surrounding Dublin Port																												
North Lotts & Grand Canal Dock Planning Scheme 2014- BP Ref. PL29N.ZD2011											✓	✓																
Point Bridge and Dodder Bridge Reg. Ref. ZE29N.ZE0006			✓				✓				✓	✓	✓		✓		✓	✓										
The Howth Yacht Club Marina Extension – Reg. Ref. DAS Permit Reg. No. S0010-01			✓				✓				✓	✓																
Poolbeg West Strategic Development Zone (SDZ)																												
BP Ref. PL29N.ZD2013: Development for mixed usage – Reg. Ref. PWSDZ3270/19; PWSDZ3207/21; PWSDZ3406/22; PWSDZ4341/23 PWSDZ3798/24; PWSDZ3062/24; and PWSDZ3700/24.					✓		✓				✓	✓					✓	✓					✓	✓				
Offshore Wind Energy Projects																												
Dublin Array Wind Farm – Reg. Ref. FS007188			✓				✓				✓	✓																
Codling Wind Park – Reg. Ref. FS007045			✓				✓				✓	✓			✓		✓	✓	✓		✓	✓	✓	✓				
North Irish Sea Array – Reg. Ref. FS007031			✓				✓				✓	✓																
Seastacks Wind Farm - Reg. Ref. FS007134											✓	✓																

Key:

	No potential for interaction with the 3FM Project environmental topic
✓	Likely to result in adverse cumulative effects (in the absence of mitigation)
✓	No adverse cumulative effects anticipated with proposed mitigation measures implemented
✓	Positive cumulative effects anticipated

Table 20.2 Summary matrix showing potential cumulative effects, with mitigation measures included, by environmental topic between the 3FM Project and other existing and/or approved projects

	Risk of major Accidents & Disasters		Biodiversity Flora & Fauna		Land, Soils, Geology, Hydrogeology		Water Quality & Flooding		Air Quality		Climate		Noise & Vibration		Coastal Processes		Traffic & Transport		Services M&E		Cultural Heritage		Landscape & Visual		Population & Human Heath		Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
In-port projects																												
Alexandra Basin Redevelopment (ABR) – ABP Reg. Ref. PL29N.PA0034			✓				✓					✓	✓					✓			✓		✓	✓			✓	
MP2 Reg. Ref. ABP-304888-19			✓				✓		✓		✓	✓	✓		✓		✓	✓			✓		✓	✓	✓		✓	
The Liffey-Tolka Project. 1.4km pedestrian walkway and a 2-way cycle lane – Reg. Ref. 3220/21																					✓							
T10 Link Road – Reg. Ref. 4894/22																												
Dublin Harbour Capital Dredging Project – Reg. Ref. Foreshore Application FS007164/DAS Application S0033-01			✓				✓								✓													
Dublin Port Maintenance Dredging Programme 2022–2029 – Reg. Ref. FS007132 / DAS Permit S0004-03			✓				✓									✓												
Open Cycle Gas Turbine (OCGT) and a generating plant. – Reg. Ref. PWSDZ3074/23 – done Q26	✓				✓				✓			✓					✓	✓								✓	✓	
Underground Cable Programme is set to replace and upgrade five 220kV circuits – Reg. Ref.																			✓									
Construction of a new 220kV gas insulated switchgear (GIS) Switchboard building – Reg. Ref. 4057/23.												✓														✓		
Continuation of use of an existing concrete batching plant and associated facilities. Reg. Ref. PWSDZ3469/22												✓																
Development at the Ringsend Wastewater Treatment Plan. Reg. Ref. 5319/22			✓																									
Upgrade of the Ringsend Wastewater Treatment Plant (WwTP). Reg. Ref. PL29S.301798			✓				✓					✓	✓				✓	✓									✓	

	Risk of major Accidents & Disasters		Biodiversity Flora & Fauna		Land, Soils, Geology, Hydrogeology		Water Quality & Flooding		Air Quality		Climate		Noise & Vibration		Coastal Processes		Traffic & Transport		Services M&E		Cultural Heritage		Landscape & Visual		Population & Human Heath		Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Projects in the area Surrounding Dublin Port																												
North Lotts & Grand Canal Dock Planning Scheme 2014- BP Ref. PL29N.ZD2011											✓	✓																
Point Bridge and Dodder Bridge Reg. Ref. ZE29N.ZE0006			✓				✓				✓	✓	✓		✓		✓	✓										
The Howth Yacht Club Marina Extension – Reg. Ref. DAS Permit Reg. No. S0010-01			✓				✓				✓	✓																
Poolbeg West Strategic Development Zone (SDZ)																												
BP Ref. PL29N.ZD2013: Development for mixed usage – Reg. Ref. PWSDZ3270/19; PWSDZ3207/21; PWSDZ3406/22; PWSDZ4341/23 PWSDZ3798/24; PWSDZ3062/24; and PWSDZ3700/24.					✓		✓				✓	✓					✓	✓					✓	✓				
Offshore Wind Energy Projects																												
Dublin Array Wind Farm – Reg. Ref. FS007188			✓				✓				✓	✓																
Codling Wind Park – Reg. Ref. FS007045			✓				✓				✓	✓			✓		✓	✓	✓		✓	✓	✓	✓				
North Irish Sea Array – Reg. Ref. FS007031			✓				✓				✓	✓																
Seastacks Wind Farm - Reg. Ref. FS007134											✓	✓																

Key:

	No potential for interaction with the 3FM Project environmental topic
✓	Likely to result in residual adverse cumulative effects
✓	No residual adverse cumulative effects anticipated with proposed mitigation measures implemented
✓	Positive cumulative effects anticipated

20.4 Assessment of Environmental Interactions

The potential interaction between environmental effects, arising from within the 3FM Project were also considered. Each technical chapter/environmental topic of the EIAR details individual environmental baseline information and identifies the potential effects of the project. In addition, the potential for other environmental interactions is identified and the relevant impact either on, or from these other aspects is analysed via data exchange between, and assessment review by the relevant experts.

This section summarises the significance of the interactions within the 3FM Project. Table 20.3 shows a matrix of potential interactions between each technical chapter/environmental topic of this EIAR.

Although potential interactions have been identified, it is anticipated that the detailed environmental mitigation measures included in the 3FM Project (and outlined in the relevant sections of the EIAR) will also minimise or off-set potential for significant effects.

Where potential interactions exist between environmental topics, additional and/or amendments to mitigation measures have been identified to negate potential adverse impacts. These include measures to reduce the risk of sediment intake during combined dredging and power generation activities, additional monitoring to control potential vibration risk in areas of sensitive cultural heritage and modification of noise measures to ensure visual connectivity to cultural heritage features.

Table 20.6 summarises the 3FM Project's environmental interactions which have been assessed in a matrix format across the environmental topics.

Table 20.7 describes these interactions and the additional mitigation measures identified, where required, to address these potential interactions.

Table 20.3 Matrix of interactions between technical chapters 7-19 (KEY✓ Potential interaction between technical chapters)

	Biodiversity, Flora & Fauna		Land, Soils, Geology & Hydro geology		Water Quality & Flooding		Air Quality		Climate		Noise & Vibration		Coastal Processes		Traffic & Transport		Services M&E		Cultural Heritage		Landscape & Visual		Population & Human Health		Waste	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Biodiversity, Flora & Fauna			x	x	✓	x	✓	✓	x	✓	✓	x	✓	✓	x	x	x	x	x	x	✓	✓	✓	✓	x	x
Land, Soils, Geology & Hydrogeology					✓	x	✓	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	✓	x	✓	x
Water Quality & Flooding							x	x	x	x	x	x	✓	✓	x	x	x	x	x	x	x	x	✓	✓	x	x
Air Quality									✓	✓	x	x	x	x	✓	✓	x	x	x	x	x	x	✓	✓	✓	x
Climate											x	x	x	x	x	✓	x	x	x	x	x	x	✓	✓	x	x
Noise & Vibration													x	x	✓	✓	x	x	✓	✓	x	x	✓	✓	x	x
Coastal Processes															x	x	x	x	x	x	x	x	x	x	x	x
Traffic & Transport																	x	x	x	x	x	x	x	✓	x	x
Services M&E																			x	x	x	x	x	x	x	x
Cultural Heritage																					x	x	✓	✓	x	x
Landscape & Visual																							✓	✓	x	x
Population & Human Health																									x	x
Waste																										

Table 20.4 Description of interactions between technical chapters 7-19

Chapters	Summary of Interactions
Chapter 7 – Biodiversity, Flora & Fauna	The most significant interactions in relation to Biodiversity, Flora & Fauna are considered to be: • Water Quality & Flooding, including the potential that water quality parameters which do not meet environmental standards may subsequently impact on aquatic animals and plants, also avian species and through the food chain terrestrial species. This potential interaction focusses on the construction phase of the 3FM project. • Air Quality, including the potential that air quality parameters which do not meet environmental standards may subsequently impact on avian aquatic or terrestrial animal and plant species. This potential interaction arises for both the construction and operational phases of the 3FM Project. • Climate, including the potential long term GHG emissions impacting flora and fauna. Measures at national and international level are relevant beyond the 3FM Project's influence to mitigate this operational phase interaction. • Noise & Vibration, terrestrial and underwater noise and vibration has the potential to impact aquatic and terrestrial animals and plants and also avian species. This potential interaction focusses on the construction phase of the 3FM project as the operational activities will be similar to those in the current port environment. • Coastal Processes, increases in suspended sediment concentration as a result of capital dredging works have the potential to impact of marine mammals, fish and shellfish and benthic ecology. Changes in tidal flow and temperature may impact marine mammals, fish and shellfish and benthic ecology. This potential interaction arises for both the construction and operational phases of the 3FM Project. • Landscape & Visual, including the potential that screening and planting treatments may impact on terrestrial and avian species. This potential interaction arises for both the construction and operational phases of the 3FM Project with both negative and positive potential impacts. • Population & Human Health, including the community gain aspects of the scheme to enhance biodiversity for terns, and park and meadow creation for species and human enjoyment. This potential interaction arises for both the construction and operational phases of the 3FM Project with both negative and positive potential impacts. Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Biodiversity, Flora & Fauna and these potentially interacting environmental topics.

Chapters	Summary of Interactions
Chapter 8 – Land, Soils & Geology & Hydrogeology	The most significant interactions in relation to Land, Soils, Geology & Hydrogeology are considered to be: • Water Quality & Flooding, including the potential that water quality could be impacted by disturbance of contaminated soils or sediments. This potential interaction focusses on the construction phase of the 3FM Project. • Air Quality, including the potential that air quality could be impacted by dust generation during activities such as stone importation, excavation, earth moving. This potential interaction focusses on the construction phase of the 3FM Project. • Population and Human Health, including the potential that elevated air quality parameters may subsequently impact on human health and activities. This potential interaction focusses on the construction phase of the 3FM Project. • Waste, including the potential that waste emissions could be impacted by disposal or recovery of contaminated soils or sediments. This potential interaction focusses on the construction phase of the 3FM Project. Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Land, Soils, Geology & Hydrogeology and these potentially interacting environmental topics.
Chapter 9 – Water Quality & Flood Risk Assessment	The most significant interactions in relation to Water Quality & Flooding are considered to be: • Coastal Processes, this assessment informs the impact of the project on the supporting hydromorphological and physico-chemical conditions of ecological status in terms of water quality status. The assessment of changes to wave climate and water level has been used to inform the assessment of flood risk associated with the 3FM Project. This potential interaction arises for both the construction and operational phases of the 3FM Project. • Population & Human Health, including the potential that elevated water quality parameters may subsequently impact on activities such as power generation. This potential interaction arises for both the construction and operational phases of the 3FM Project. Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that an additional mitigation measure was required to address the interaction between water quality and population and human health, to further mitigate the potential intake of sediments by power station operations. Four power plants within the Dublin Port area abstract water from the Liffey. The water is abstracted as part of the electricity generation process and/or for cooling water components. High levels of suspended solids in cooling water has the potential to impact upon the plants' cooling systems and may result in an increase in operation and maintenance costs. A review of dredging simulation results showed that that the increased levels of suspended sediment concentrations at the power station intakes are

Chapters	Summary of Interactions
	generally very small by comparison with background levels in the Liffey Estuary. It is therefore unlikely to have a significant effect on the quality of intake waters at power stations in terms of suspended solids content. However, precautionary mitigation measures have been included as an additional safeguard. If dredging is scheduled to take place within a 500m radius of the intakes, the relevant stakeholders are notified so that additional measures can be taken if deemed necessary.
Chapter 10 – Air Quality & Climate	The most significant interactions in relation to Air Quality are considered to be: • Climate, including the air quality parameters associated with GHGs which are also considered under climate quality. This potential interaction arises for both the construction and operational phases of the 3FM Project. • Traffic & Transport, including the linkage between vehicle movements and emissions. This potential interaction arises for both the construction and operational phases of the 3FM Project • Population & Human Health, including the potential that elevated air quality parameters may subsequently impact on human health and activities. This potential interaction arises for both the construction and operational phases of the 3FM Project. • Waste, including the linkage between nuisance odour from recovered materials. This potential interaction focusses on the construction phase of the 3FM Project. Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Air Quality and these potentially interacting environmental topics.
Chapter 11 – Climate	The most significant interactions in relation to Climate are considered to be: • Traffic & Transport, including the linkage between vehicle movements and emissions. This potential interaction arises for both the construction and operational phases of the 3FM Project. • Population & Human Health, including the potential that elevated climate quality may subsequently impact on human health and activities. This potential interaction arises for both the construction and operational phases of the 3FM Project. Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Climate and these potentially interacting environmental topics.
Chapter 12 – Noise & Vibration	The most significant interactions in relation to Noise & Vibration are considered to be: • Traffic & Transport, including the linkage between vehicle movements and both noise and vibration generation. This potential interaction arises for both the construction and operational phases of the 3FM Project. • Cultural Heritage, including the linkage between vehicle movements, vibration generation and potentially sensitive heritage features. This potential interaction arises for both the construction and operational phases of the 3FM Project.

Chapters	Summary of Interactions
	• Population & Human Health, including the potential that elevated noise levels may subsequently impact on human health and activities. This potential interaction arises for both the construction and operational phases of the 3FM Project. Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that an additional mitigation measure was required to address the interaction between noise & vibration and cultural heritage, to further mitigate the potential noise disturbance at Area K whereby the acoustic barrier was modified to provide a viewpoint supporting the connectivity of cultural heritage features. Where the noise barrier and Great South Wall (GSW) intersect, the proposed GSW interpretation incorporates panels with translucent material, painting a scene of the GSW. Some of the construction phase activities have the potential to result in vibration impacts at sensitive receptors if sufficiently close to the respective receptor. The nearest properties on Pigeon House Road are approximately 40m from the nearest construction piling activity and the vibration impacts during the construction phase will be minor. However additional mitigation measures have been recommended, such that vibration monitoring is to be completed during the worst-case phase of piling in this area to ensure that there are no significant vibration effects experienced
Chapter 13 – Coastal Processes	The most significant interactions in relation to Coastal Processes have been considered in the preceding topics with no further significant interactions.
Chapter 14 – Traffic & Transport	The most significant interactions in relation to Traffic & Transport are considered to be: • Population & Human Health, including the community gain aspects of the scheme to provide active travel pathways and upgraded footways. This potential interaction focusses on the operational phase of the 3FM Project Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Traffic & Transport and these potentially interacting environmental topics.
Chapter 15 – Services M&E	There are no significant interactions with Services M&E.
Chapter 16 – Cultural Heritage	The most significant interactions in relation to Cultural Heritage are considered to be: • Population & Human Health, including the community gain aspects of the scheme to enhance cultural heritage by provision of funding for future schemes. This potential interaction arises for both the construction and operational phases of the 3FM Project with both negative and positive potential impacts.

Chapters	Summary of Interactions
	Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Cultural Heritage and these potentially interacting environmental topics.
Chapter 17 – Landscape & Visual	The most significant interactions in relation to Landscape & Visual are considered to be: • Population & Human Health, including the community gain aspects of the scheme to enhance landscape & visual with walkways, park and meadow creation for human enjoyment. This potential interaction arises for both the construction and operational phases of the 3FM Project with both negative and positive potential impacts. Consideration of each interaction provided in relevant chapters within the EIAR with appropriate mitigation measures included. The assessments identified that the mitigation measures were suitable for the interactions with no additional or modified measures required for the interaction between Landscape & Visual and these potentially interacting environmental topics.
Chapter 18 – Population & Human Health	The most significant interactions in relation to Population & Human Health have been considered in the preceding topics with not further significant interactions.
Chapter 19 – Waste	The most significant interactions in relation to Waste have been considered in the preceding topics with not further significant interactions.

20.5 Assessment Summary and Conclusions

The potential cumulative effects of consented schemes nearby the 3FM Project were assessed. Relevant projects were selected, and the project team defined significance thresholds and criteria for assessment. These were based on professional judgement, alongside relevant standards and guidelines, to determine whether in-combination effects give rise to additional levels of significance.

The ABR Project and MP2 Project were considered significant in terms of cumulative impact, as these projects involve potentially overlapping construction activities of a similar nature taking place across the navigation channel from the 3FM Project. The ABR Project was selected with regard to the completion of dredging of, and material recovery from the Alexandra Basin West after commencement of construction of the 3FM Project. The MP2 Project was selected due to the potential overlapping for construction activities of some of its later phases of marine infrastructure after the commencement of the 3FM Project.

The key environmental topics with potential cumulative effects with the 3FM Project were: Biodiversity; Water Quality (supported by Coastal Processes); Noise; and Waste. Construction phase mitigation measures were identified to prevent the potential interaction, and thus mitigate the potential for, cumulative effects on all of these environmental topics.

The potential cumulative effects resulting from dredging and disposal operations required inclusion of additional mitigation measures to separate operations in terms of time. This means that the dredging element of the 3FM Project will not overlap with ABR capital dredging and/or DPC maintenance dredging campaigns, thus reducing potential impacts to water quality, biodiversity/habitat deterioration and underwater noise. The ABR Project, completion of dredging at Alexandra Basin West, will require dredged material to be brought ashore for treatment and recovered as a fill material at the Berth 52/53 basin. Under the 3FM Project, an estimated 70,000m^3 of Dredge Material from Poolbeg Marina will require recovery/disposal. It is proposed that this material is also treated and recovered as a fill material at the Berth 52/53 basin under a revised IE licence, subject to availability of receptor capacity. The license revision process, and its in built controls, will therefore ensure that the two projects will not result in cumulative impact thus reducing potential impact to Waste.

Similarly, the piling operations for the 3FM project will be separated in time from the MP2 Project piling operations, as a specific cumulative impact mitigation, in order to prevent potential impacts to underwater noise and biodiversity/marine mammals.

In terms of the operation phase of the in-port projects, such as the ABR and MP2 Projects, as well as those surrounding Dublin Port, such as the North Lotts/Grand Canal scheme, Poolbeg West SDZ, Howth Yacht Club Marina Extension and the Point Bridge and Dodder Bridge, it is noted that these developments will facilitate greater shipping and road traffic movements at the port. This is intrinsic to the objectives of the 3FM Project. However it should be noted that the TTA demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039. Post 2038, any construction traffic associated with 3FM Project will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project. This removal of traffic from the external road

network provides benefits to the schemes being progressed by others in the environs of Dublin Port. The use of high traffic growth rates in the TTA for non-port traffic flows to derive future year flows inherently incorporates development schemes being delivered in the local environs of the port up to the year 2040.

The 3FM Project will facilitate greater shipping and road traffic movements in the port environs which although will have positive cumulative impacts for traffic and transportation, will inherently have adverse residual cumulative impacts with regards to climate. However, the 3FM Project complies with existing and emerging policy requirements implemented in the CAP24 and elsewhere, which includes national measures such as the electrification of the road haulage fleet and the biofuels blend. With regards to the 3FM Project, DPC has adhered to the requirements of section 15 of the Climate Action and Low Carbon Development Act 2015, as amended, and the Climate Action Plan 2024. For impacts under the direct control of DPC, the impacts have been suitably mitigated and designed in line with national policy. While there are moderate adverse residual cumulative impacts identified as a result of road traffic and shipping, the planned legislative mitigation measures at international, EU and national levels will reduce these impacts. DPC will continue to perform its functions, in so far as practicable, in a manner consistent with any current or future climate policy on road traffic and shipping to aid in the reduction of these indirect sources.

DPC has commissioned and published the Conservation Strategy 2024 for the entire Dublin Port Estate as a pre-planning document to 3FM Project. This involves a strong commitment to Heritage values across all of DPC's projects, which deliver a coherent heritage strategy across all the phases of Masterplan 2040. As such, the ABR Project, the MP2 Project and Alexander Quay West Project also involved the advice of the Heritage team and add a positive contribution to the interpretation of Heritage on the overall site. The Liffey-Tolka Project also offers a significant contribution to Port-City integration. Consequently, these projects connect to provide a heritage landscape with an overall positive social and cultural cumulative impact.

The other selected projects were assessed across all environmental topics and no significant cumulative impacts (positive or negative) were identified on the basis that the 3FM Project mitigations were applied. Therefore, no further cumulative impact mitigations were required.

The potential interactions between environmental aspects arising from within the 3FM Project were assessed. Each technical environmental chapter within the EIAR identifies and analyses the potential for other environmental interactions. These chapters also detail environmental baseline information and identify the significant potential and residual construction and operational effects/impacts of the discrete 3FM Project. The cumulative assessment identified many potential inter-relationships and interactions. Additional mitigation measures were included to minimise and/or off-set the potential for significant effects resulting from such interactions.

For example, an interaction link exists between Water Quality and Human Beings. Dredging operations has the potential to impact on water quality at water intakes and outfalls. Four power plants within the Dublin Port area abstract water from the Liffey. The water is abstracted as part of the electricity generation process and/or for cooling water components. High levels of suspended solids in cooling water have the potential to impact upon the plants' cooling systems and may result in an increase in operation and maintenance costs. A review of dredging simulation results showed that that the increased levels of suspended sediment concentrations at the power station intakes are generally very small by comparison with background levels in the Liffey Estuary. It is

therefore unlikely to have a significant effect on the quality of intake waters at power stations in terms of suspended solids content. Precautionary mitigation measures have been included as an additional safeguard. If dredging is scheduled to take place within a 500m radius of the intakes, the relevant stakeholders are notified so that additional measures can be taken if deemed necessary.

The interaction assessments also identified that an additional mitigation measure was required to address the interaction between noise & vibration and cultural heritage, to further mitigate the potential noise disturbance at Area K whereby the acoustic barrier was modified to provide a viewpoint supporting the connectivity of cultural heritage features. Where the noise barrier and Great South Wall (GSW) intersect, the proposed GSW interpretation incorporates panels with translucent material, painting a scene of the GSW.

The construction phase of the proposed 3FM Project is not likely to result in any significant vibration impacts at the nearest sensitive receptors. The contractor will adhere to the mitigation measures included in BS5228:2009+A1:2014 where practicable to reduce vibration levels from general and piling activities to the lowest possible levels. As an additional precautionary measure, it is recommended that vibration monitoring is conducted at the nearest properties on Pigeon House Road to the proposed piling works for the SPAR as a verification measure to ensure that no unusual sub-strata features generate unanticipated vibration effects at these properties.

All potential cumulative effects and environmental interactions of the 3FM Project's construction and operational stages are included in Chapter 20. All mitigation measures for the 3FM Project resulting from the individual assessments, and the cumulative effects and environmental assessment are listed in detail in Chapter 21 and the Project Construction Environmental Management Plan (CEMP). Provided the suggested mitigation measures as listed in the environmental chapters are employed during construction and/or operation the overall impact to the environment, even considered in combination, is considered not significant.