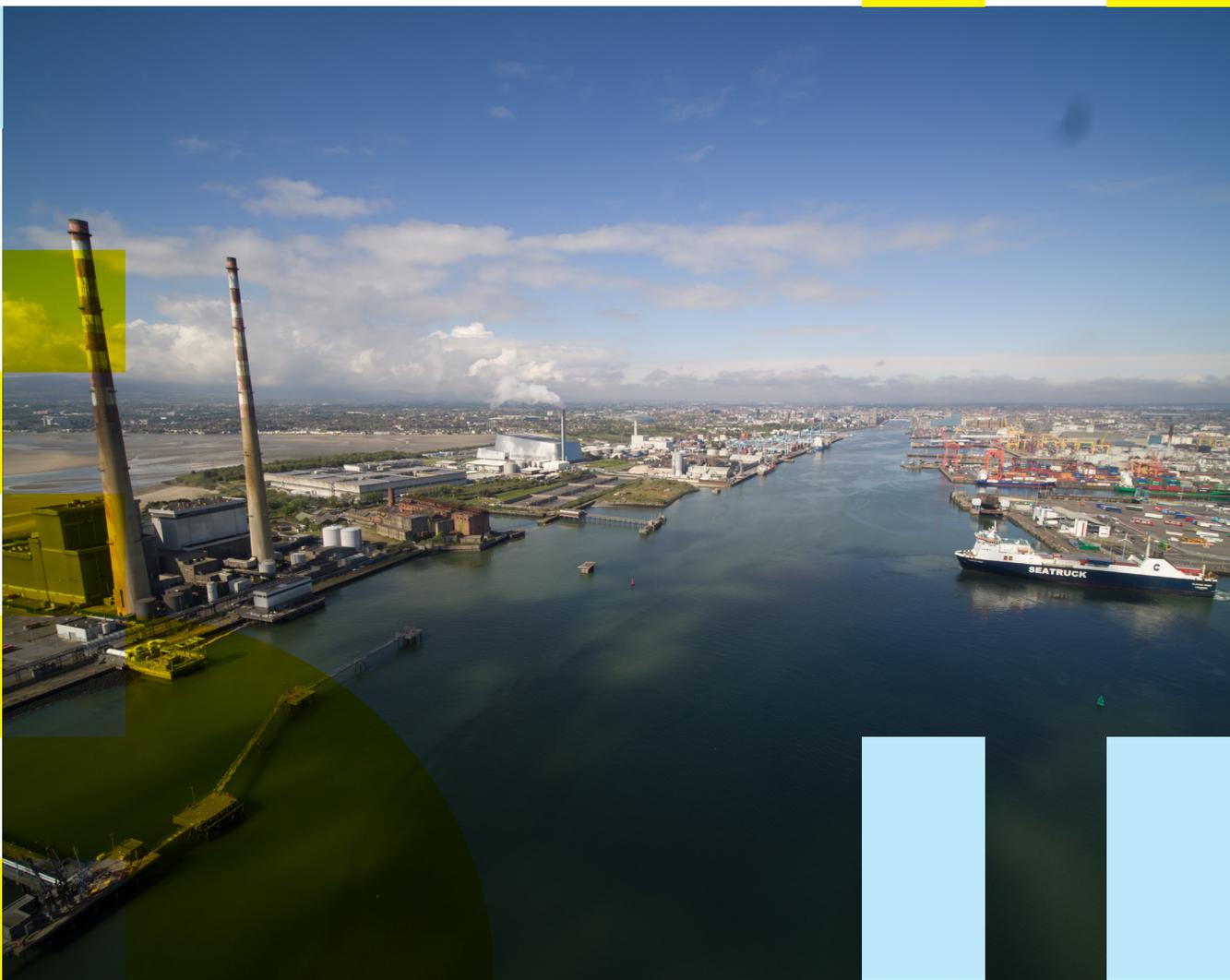


Control Of Major Accident Hazards (COMAH) Land Use Planning Assessment





**COMAH Land Use Planning Assessment of
Dublin Port Company's 3FM Project**

Prepared for:

RPS (Dublin Port Company's Planning & Environmental Consultants)

Ref: 541-24X0079 R0

14 June 2024

Byrne Ó Cléirigh, 30a Westland Square, Pearse Street, Dublin 2, D02 PN76, Ireland.
Telephone: + 353 – 1 – **6770733**. Facsimile: + 353 – 1 – **6770729**. Email: Admin@boc.ie. Web: www.boc.ie

Directors: LM Ó Cléirigh BE MIE CEng FIEI FIMechE; LP Ó Cléirigh BE MEngSc MBA CEng FIEI FEI; ST Malone BE MIE CEng FIEI;
JB FitzPatrick FCA. Registered in Dublin, Ireland No. 237982.

DISCLAIMER

This report has been prepared by Byrne Ó Cléirigh Limited with all reasonable skill, care and diligence within the terms of the Contract with the Client, incorporating our Terms and Conditions and taking account of the resources devoted to it by agreement with the Client.

We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report is confidential to the Client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

Contents

1	INTRODUCTION	4
2	PLANNING CONTEXT	4
2.1	Dublin City Development Plan.....	4
2.2	An Bord Pleanála	5
2.3	Strategic Infrastructure Act.....	5
2.4	Planning & Development Regulations	6
2.5	COMAH Regulations	7
3	DUBLIN PORT	8
3.1	Port Activities	8
3.2	Dublin Port Company and the Dublin Port Masterplan 2040.....	8
3.3	3FM Project	9
3.4	COMAH Establishments	12
3.5	Port & Surrounding Population	15
4	ASSESSMENT METHODOLOGY	20
4.1	Guidance on Land Use Planning	20
4.2	Assessment Criteria	21
4.3	Major Accident Scenarios.....	24
4.4	Consequence Assessment	27
4.5	Ambient Conditions	28
5	DEVELOPMENT SENSITIVITY LEVELS	29
5.1	Overview	29
5.2	3FM Project	30
6	RISK ASSESSMENT RESULTS	30
6.1	Individual Risk	30
6.2	Societal Risk.....	39
7	EMERGENCY RESPONSE MANAGEMENT	41
7.1	Introduction	41
7.2	Dublin Port Security.....	41
7.3	Dublin Port Emergency Management Plan	41
7.4	Dublin City Council Major Emergency Plan	43
7.5	Emergency Response Exercises	44
7.6	Dublin Port Dangerous Cargoes Bye-laws	45
8	CONCLUSIONS	45

APPENDICES

Appendix 1: COMAH Establishments in Dublin Port

Appendix 2: Development Layout

Appendix 3: Planning Summary

Appendix 4: Population Data

Appendix 5: Individual Risk Contours

Appendix 6: Extracts from Dublin City Development Plan 2022 – 2028

Appendix 7: Extracts from Legislation

1 INTRODUCTION

Dublin Port is a key part of the national port system and Dublin Port Company (DPC) seeks to ensure that it plays its role in providing national port capacity. For all of Ireland's major national ports, it is essential that capacity constraints do not emerge which could lead to supply chain inefficiencies.

DPC is in the process of bringing forward a number of projects to planning from the Dublin Port Masterplan 2040 to achieve the port's ultimate capacity of 77.2 million tonnes of cargo throughput per annum by 2040. This development has focused, to date, on the north side of the River Liffey (ABR Project and MP2 Project) and at Dublin Inland Port.

DPC's focus of attention now is to plan for the completion of the Masterplan 2040 by bringing forward the 3FM Project, the Third and Final Strategic Infrastructure Development project, to:

- Provide 20% of the capacity for freight required in the unitised modes Roll-On Roll-Off (Ro-Ro) and Lift-On Lift-Off (Lo-Lo) that will be needed by 2040 on the almost one fifth of Dublin Port's lands located on the Poolbeg Peninsula.
- Complete the development of Dublin Port's overall road network to entirely remove port traffic from public roads in the vicinity of Dublin Port.
- Complete a series of public realm, heritage and active travel projects on the Poolbeg Peninsula which mirror similar developments on the north side of the port to meet the Dublin Port Masterplan 2040's second objective to integrate Dublin Port with Dublin City.

The 3FM Project is within the vicinity of several establishments that fall within the scope of the *Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, 2015* (the COMAH Regulations), primarily the three COMAH establishments on the Poolbeg Peninsula, Dublin City.

To support the project, RPS (Dublin Port Company's planning & environmental advisors) requested Byrne Ó Cléirigh to conduct a COMAH land use planning assessment of the development. The purpose of the assessment is to examine the development in the context of the Health and Safety Authority's COMAH land use planning guidance. This report describes our assessment of the development and our conclusions as to the individual and societal risk presented to the development from the COMAH establishments.

2 PLANNING CONTEXT

2.1 Dublin City Development Plan

In accordance with the *Planning and Development Act, 2000*, as amended, Dublin City Council (DCC) has prepared the latest version of its development plan: *Dublin City Development Plan 2022-2028*. Section 9.5.10 of the Plan (reproduced in Appendix 6) summarises the COMAH legislative regime and the role of the Health and Safety Authority (HSA) in providing advice to planning authorities. DCC also sets out its policy regarding developments of establishments that fall within the scope of the COMAH Regulations and developments near such establishments:

It is the Policy of Dublin City Council:

SI44: To have regard to the provisions of the SEVESO III Directive (2012/18/EU) relating to the control of major accident hazards involving dangerous substances and its objectives to prevent major accidents and limit the consequences of such accidents. Dublin City Council will have regard to the provisions of the Directive and recommendations of the HSA in the assessment of all planning applications located on, or impacted by, COMAH establishments

in accordance with Guidance on Technical Land-use Planning Advice: for planning authorities and operators of COMAH establishments (2021).

2.2 An Bord Pleanála

In December 2011, the HSA and An Bord Pleanála (ABP) signed a Memorandum of Understanding (MOU) to facilitate the co-operation between the two bodies in the processing of applications for planning permission under planning legislation, and in particular direct applications to ABP under the *Planning and Development (Strategic Infrastructure) Act 2006* (the SIA).

The MOU noted that the HSA is obliged to provide technical land use planning advice relating to developments that qualify as COMAH establishments, or relating to developments in the vicinity of COMAH establishments, and that this advice must be provided to ABP on request and within prescribed timeframes. It also recognised that assessments by the HSA of planning applications from COMAH establishments or of developments in the vicinity of COMAH establishments can take a considerable amount of time and therefore sufficient lead time should be afforded to the HSA to formulate its technical advice to ABP.

In this context, ABP undertook to ensure that details of any proposed planning applications under the SIA and on which ABP may seek technical advice from the HSA, are made available to the HSA at the earliest opportunity. In addition, ABP noted that it will request that such details are provided to the HSA at the pre-application consultation stage by the (prospective) applicant.

2.3 Strategic Infrastructure Act

The SIA provided for, amongst other items, submitting applications for planning permission directly to An Bord Pleanála for certain developments of strategic importance to the state, and for the determinations of such applications to be carried out promptly. The types of strategic development that were included in the SIA included energy, transport, environmental and healthcare infrastructure. The specific types of transport infrastructure set out in the Act are:

1. An intermodal transshipment facility, an intermodal terminal or a passenger or goods facility which, in each case, would exceed 5 hectares in area.
2. A terminal, building or installation associated with a long-distance railway, tramway, surface, elevated or underground railway or railway supported by suspended lines or similar lines of a particular type, used exclusively or mainly for passenger transport, but excluding any proposed railway works referred to in section 37(3) of the Transport (Railway Infrastructure) Act 2001 (as amended by the Planning and Development (Strategic Infrastructure) Act 2006).
3. An airport (with not less than 2 million instances of passenger use per annum) or any runway, taxiway, pier, carpark, terminal or other facility or installation related to it (whether as regards passenger traffic or cargo traffic).
4. A harbour or port installation (which may include facilities in the form of loading or unloading areas, vehicle queuing and parking areas, ship repair areas, areas for berthing or drydocking of ships, areas for the weighing, handling or transport of goods or the movement or transport of passengers (including customs or passport control facilities), associated administrative offices or other similar facilities directly related to and forming an integral part of the installation)

- a) where the area or additional area of water enclosed would be 20 hectares or more, or
- b) which would involve the reclamation of 5 hectares or more of land, or
- c) which would involve the construction of one or more quays which or each of which would exceed 100 metres in length, or
- d) which would enable a vessel of over 1,350 tonnes to enter within it.

2.4 Planning & Development Regulations

Part 11 of the *Planning and Development Regulations*, as amended (reproduced in Appendix 7), sets out the requirements for planning applications relating to developments subject to the COMAH legislation. Article 137(1) requires that a planning authority¹ notifies the HSA where:

(b) a planning authority receives a planning application relating to development which would—

(i) be of a category listed in Table 1 of Schedule 8, and

(ii) be located within the distance listed in column 2 of Table 2 of Schedule 8 from an establishment of the corresponding type listed in column 1 of Table 2, or be located within such distance from a particular establishment as has been specified by the Health and Safety Authority in technical advice provided under article 27 of the Major Accident Regulations,

and the Health and Safety Authority has not previously provided, either in relation to the development to which the application relates or on a generic basis, relevant technical advice on the risk or consequences of a major accident,

(c) a planning authority receives a planning application relating to development which would, in its opinion, be—

(i) in the vicinity of an establishment, and

(ii) relevant to the risk or consequences of a major accident,

and the Health and Safety Authority has not previously provided, either in relation to the development to which the application relates or on a generic basis, relevant technical advice on the risk or consequences of a major accident, the planning authority shall notify the Health and Safety Authority.

Article 141 of the Regulations applies to planning appeals to ABP and places a similar obligation on ABP to notify the HSA of development at, in the vicinity of, or potentially affected by COMAH establishments.

As the 3FM Project is in the vicinity of the two National Oil Reserves Agency, and the single Synergen, COMAH establishments (refer to Section 3.4) and may fall within one of the categories of development in Table 1 of Schedule 8 of the *Planning and Development Regulations* (a transport link), the provisions of Articles 137(1)(b) or 137(1)(c), or the corresponding provisions under Article 141 applicable to ABP, may apply.

¹ A planning authority is defined as a local authority in the *Planning and Development Act*

2.5 COMAH Regulations

The COMAH Regulations have been made under the *Chemicals Acts 2008 and 2010* to transpose *Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC* ("the SEVESO III Directive"). The purpose of the COMAH Regulations is to lay down rules for the prevention of major accidents involving dangerous substances, and to seek to limit as far as possible the consequences for human health and the environment of such accidents when they occur, with the overall objective of providing a high level of protection in a consistent and effective manner.

The COMAH Regulations place an obligation on operators of establishments that store, handle, or process dangerous substances above certain thresholds to take all necessary measures to prevent major accidents and to limit the consequences for human health and the environment. Under the Regulations, an establishment may qualify as upper tier or lower tier, depending on the inventory of dangerous substances; sites that store, handle, or process dangerous substances below a certain threshold do not qualify as establishments under the Regulations.

The types of dangerous substance that contribute to an establishment's inventory include flammable substances (such as liquefied petroleum gas, gasoline / petrol, kerosene, and certain solvents), toxic substances, and substances that are hazardous to the aquatic environment. The types of establishment that may fall within the scope of the Regulations (depending on their inventories) include oil storage & distribution sites, LPG storage & distribution sites, pharmaceutical plants, and sites that manufacture and / or store certain types of fertiliser.

Under Part 7 of the Regulations, the HSA, as the Central Competent Authority, can provide technical advice to a planning authority² on developments of, or in the vicinity of, COMAH establishments, as follows:

24(2) The Central Competent Authority shall provide technical advice in response to a notice sent by a planning authority under Part 11 of the Planning and Development Regulations 2001 (SI No. 600 of 2001), requesting technical advice on the effects of a proposed development on the risk or consequences of a major accident in relation to the following types of developments...

(a) the siting and development of new establishments;

(b) modifications to establishments... [which could have significant consequences for major accident hazards...];

(c) new developments including transport routes, locations of public use and residential areas in the vicinity of establishments, where the siting, modifications or developments may be the source of, or increase the risk or consequences of, a major accident.

This COMAH land use planning assessment of the 3FM Project has been prepared in accordance with the HSA's *Guidance on technical land-use planning advice* to assist the competent authorities in their consideration of the applications for development consent.

² Under the COMAH Regulations, a planning authority is defined as a local authority (under the *Planning and Development Act*) and includes, where appropriate, An Bord Pleanála.

3 DUBLIN PORT

3.1 Port Activities

The proposed 3FM Project is located mainly within the southern lands of Dublin Port within the Poolbeg Peninsula, Dublin City. The southern lands of Dublin Port comprise 58 ha of land entirely within the ownership of Dublin Port Company. The entire Port Estate comprises 309 ha, including the lands at the Dublin Inland Port.

The following activities and operations currently take place within the southern port lands:

- Container terminal (Lift-on / Lift-off mode)
- Haulage and storage of empty containers
- Bulk cargo facilities
- Molasses storage facilities
- Storage facilities for petroleum products
- Waste management activities, including recycling and waste-to-energy
- Cement manufacturing
- Warehouse space
- Cruise liner operations
- Leisure craft mooring and movements
- Temporary site compounds

The 3FM Project will take place on the south-side of the river, with a new bridge crossing of the River Liffey downstream of Tom Clark Bridge, providing a Southern Port Access Route (SPAR).

3.2 Dublin Port Company and the Dublin Port Masterplan 2040

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

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

Dublin Port has been identified as a Core Port of international significance in the *Trans European Network (TEN-T) Guidelines* and it forms part of the European Union's Core Transportation Network, and it is also designated a Tier 1 Port of national importance in the *National Ports Policy 2013*³.

Dublin Port's large share of national port volumes, particularly in the Roll-On Roll-Off (Ro-Ro) and Lift-On Lift Off (Lo-Lo) modes, arises due to a combination of two factors: location and depth of water. Dublin Port is a key part of the national port system and DPC seeks to ensure that it plays its

³ The 2013 Policy remains the current policy; in October 2023, the Department for Transport commenced the first phase of a public consultation for the *Review of the National Ports Policy*.

role in providing national port capacity. For all of Ireland's major national ports, it is essential that capacity constraints do not emerge which could lead to supply chain inefficiencies.

The *Dublin Port Masterplan 2040* seeks to ensure that no capacity constraints emerge in Dublin Port between now and 2040.

The Dublin Port Masterplan 2040 sets out DPC's vision to transform Dublin Port into a highly land-efficient port, an attractive destination in its own right, and permeable to the people of Dublin to enjoy and experience the port's heritage in all its diversity from the natural environment, to arts, and to local history.

At its core, the Dublin Port Masterplan 2040 aims to maximise the throughput on Dublin Port's fixed brownfield land area before seeking to develop additional port capacity at another east coast location.

DPC is in the process of bringing forward a number of projects to planning from the Dublin Port Masterplan 2040 to achieve the port's ultimate capacity of 77.2 million tonnes of cargo throughput per annum by 2040. This development has focused, to date, on the north side of the River Liffey and at Dublin Inland Port.

On the north side of Dublin Port:

- The ABR Project is largely completed and works on the final stages are underway.
- The MP2 Project has commenced.
- The project to redevelop the port's internal road system has been completed and work is underway to complete a network of cycle and pedestrian routes throughout and on the periphery of the port.

At the 44-hectare Dublin Inland Port:

- Full planning permission has been granted for one site of 22 hectares.
- The first of nine plots has been developed and is in operation to provide capacity for port-related but non-core activities which have been removed from Dublin Port to meet one of the objectives of DPC's Franchise Policy.
- Plans for the development of the second 22-hectare site for the transit storage of trailers and containers are in preparation.

DPC's focus of attention now is to plan for the completion of the Masterplan 2040 by bringing forward the 3FM Project, the Third and Final Strategic Infrastructure Development project.

3.3 3FM Project

The 3FM Project – the subject of this COMAH land use planning assessment – is the third and final major capital project from the Dublin Port Masterplan. The proposed development focuses on Dublin Port Company-owned lands on the Poolbeg Peninsula, where one-fifth of the Dublin Port estate is located. This is known as the South Port area.

The key elements of the 3FM Project are as follows:

1. A new public road and bridge called the Southern Port Access Route (SPAR) to link the north and south port areas.

The route will include a new bridge over the River Liffey. It will be located immediately east of Tom Clarke Bridge and north of the R131. The route will facilitate heavy goods vehicles (HGV), active travel users (pedestrians, cyclists, wheelers, etc.), blue light services, and public transport users moving to and from the South Port and Poolbeg Peninsula. The SPAR will allow the 3FM Project to be rail-enabled through rapid road shunting of freight from the South Port, across the Liffey, to rail intermodal facilities in the North Port vicinity. The SPAR will have a direct connection to the Dublin Tunnel (Dublin Port Tunnel) via the North Port road system.

2. A new Lift-on Lift-off (Lo-Lo) container terminal with an annual throughput capacity of 550,000 twenty-foot equivalent units (TEU), or 5.34 million tonnes.

The Lo-Lo Terminal will consist of two main components:

- a. Terminal located north of the ESB's generating station on the eastern end of Poolbeg Peninsula, with 650 m of deep water berthage dredged to a depth of -13.0 m CD (chart datum), plus associated cargo handling areas (Dublin Port Masterplan Area N). This terminal will accommodate larger Lo-Lo vessels of up to 240 m, primarily from Continental Europe.
 - b. Transit container storage yard located on waterside land currently used for bulk cargo handling (Dublin Port Masterplan Area L).
3. Replacement of the existing Lo-Lo container terminal, currently operated by Marine Terminals Limited (MTL), with a new Roll-On Roll-Off (Ro-Ro) freight terminal with an annual throughput capacity of 360,000 Ro-Ro units or 8.69 million tonnes.

The Ro-Ro Terminal will consist of two main components:

- a. Terminal to be located at existing Berths 42-45 including provision of two berths, each with a single tier Ro-Ro ramp, plus associated cargo handling facilities (Dublin Port Masterplan Area K).
- b. Transit Ro-Ro trailer yard located on Port owned land on the southern side of the Poolbeg Peninsula (Dublin Port Masterplan Area O).

This combined terminal will accommodate larger Ro-Ro vessels of up to 240 m length, primarily from Continental Europe.

4. Provision of a 325 m diameter ship turning circle in the river channel north of Pigeon House Harbour, dredged to a depth of -10.0m CD.

The ship turning circle will enable safe navigation and efficient manoeuvring of vessels up to 240 m in length.

5. Maritime Village

Development of a new Maritime Village at Pigeon House Road and Berth 41.

This village will accommodate local rowing, sailing, and boat clubs and will provide a significantly enhanced public realm and facilities on the waterside. It will also accommodate the relocation of Port Harbour Operations from the North Port.

6. Community Gain

Integrating Dublin Port with Dublin City and its people is a core objective of the Masterplan for Dublin Port. Development of proposed new public amenities on the Poolbeg Peninsula as part of the 3FM Project will provide community gain and contribute towards integrating the port with the city. These include:

- Enhanced recreational amenity through:
 - 4.6 km of Active Travel Path (cycle, pedestrian, wheelers, etc) and 2.6 km of new or upgraded footway for the SPAR and Poolbeg Peninsula, which will link with the 1.4 km Liffey Tolka Greenway in the North Port, and from there to the 4.0 km Tolka Estuary Greenway currently under construction by Dublin Port. DPC will provide Dublin City Council with a €5million contribution for future upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula.
 - Development of a sailing, rowing and maritime campus (Maritime Village) adjacent to the existing Poolbeg Yacht and Boat Club in conjunction with local yacht and boating clubs, including a public slipway and facilities for maritime skills training.
 - Provision of Open Space
 - Port Park and Wildflower Meadow (2.5 ha)
 - Coastal Park (1.6 ha)
 - Provision of 1.1ha extension to Irishtown Nature Park.
- Enhanced public realm through:
 - Development of a new public plaza as a key part of the Maritime Village.
 - Extensive boundary softening works adjacent to the development sites forming part of the 3FM Project.
- Community support through:
 - Establishment of a new €2 million Community Benefit Fund for Education, Heritage & Maritime Training Skills projects within the Poolbeg area. The initial capital for the Fund will be administered by DPC in consultation with local stakeholders.
- Heritage & Biodiversity enhancements through:
 - Commissioning a new Public Access Feasibility Study regarding the Great South Wall so as to identify improved public interpretation, accessibility, facilities and conservation possibilities,
 - Provision of up to €1 million funding to implement the study recommendations.
 - Provision of an additional permanent marine structure (dolphin) to expand the available habitat and range of the Dublin Port Tern Colonies.

A general arrangement drawing of the 3FM Project is presented in Appendix 2.

3.4 COMAH Establishments

3.4.1 Overview

The COMAH establishments within Dublin Port, south of the River Liffey, are listed in Table 1 and shown on the drawing in Appendix 1. All three establishments store petroleum products.

Table 1: COMAH Establishments in Vicinity of 3FM Project⁴

Establishment	Location	Tier	Activity	Consultation Distance ^{Note}
Synergen Power Ltd t/a ESB Dublin Bay Power	Pigeon House Road, Ringsend, Dublin 4	Lower	Oil storage (power generation)	300 m
The National Oil Reserves Agency (NORA)	Shellybanks Road, Ringsend Dublin 4	Upper	Oil storage	300 m
The National Oil Reserves Agency	Pigeon House Road, Ringsend, Dublin 4	Upper	Oil storage	300 m

Note: The *Dublin City Development Plan 2022-2028* includes the consultation distances for the COMAH establishments.

The extent of the 3FM Project at Dublin Port South is within the consultation distance of each of the three COMAH establishments in Table 1.

There are also six COMAH establishments on the north side of Dublin Port. Most of these establishments store petroleum products (four of the six establishments). Of the remaining two, one stores and distributes LPG (Calor), and the other (Indaver) operates a hazardous waste facility. These establishments are listed in Table 2.

Table 2: COMAH Establishments in Dublin Port North of River Liffey

Establishment	Location	Tier	Activity	Consultation Distance ^{Note 1}
Calor Teoranta	Tolka Quay Road, Dublin 1	Upper	LPG storage & distribution	600 m
Circle K Ireland Holding Ltd	Promenade Road, Dublin Port, Dublin 3	Upper	Oil storage & distribution	400 m & 300 m
Indaver Ireland Ltd.	Tolka Quay Road, Dublin Port, Dublin 1	Upper	Hazardous waste	700 m
Tedcastles Oil Products	Promenade Road, Parish of St. Thomas, Dublin Port, Dublin 1	Upper	Oil storage & distribution	400 m
Valero Energy Ireland Ltd.	Alexandra Road, Dublin Port, Dublin 1	Upper	Oil storage & distribution	400 m
Iarnród Éireann	Alexandra Road, North Wall, Dublin 1	Lower	Oil storage	300 m

⁴ The HSA publishes details of upper tier and lower tier establishments on its website, www.hsa.ie.

Establishment	Location	Tier	Activity	Consultation Distance Note 1
<p>Note 1: The <i>Dublin City Development Plan 2022-2028</i> includes the consultation distances for the COMAH establishments.</p> <p>Note 2: The HSA's list of COMAH establishments and the Public Information notices under Regulation 25 (available on the HSA website) refer to the registered name of the operator as Iarnród Éireann.</p>				

The COMAH establishment on the north side of Dublin Port that is closest to the 3FM Project boundary is the Valero Energy Ireland Ltd. establishment on Alexandra Road. The oil storage tanks at this site (located close to its southern boundary) are approximately 500 m from the northern boundary of the 3FM Project (Ro-Ro unaccompanied freight terminal), and therefore the 3FM Project lies outside the consultation distance (400 m) for this establishment.

The COMAH establishments on the north side of Dublin Port with the largest consultation distances are the Calor Teoranta (600 m) and Indaver Ireland Ltd. (700 m) establishments. Both of these sites are located more than 1 km from the northern boundary of the 3FM Project.

Given the proximity of the 3FM Project to the establishments in the North Port, the potential impacts from a major accident at any of these COMAH establishments are not considered significant to the 3FM Project. Therefore, they have not been considered further in this assessment.

3.4.2 NORA Ringsend & Poolbeg Establishments

The NORA Ringsend Tank Farm comprises nine above ground oil storage tanks, along with a ship pipeline connection and a truck loading facility. The tank farm is divided into two bunded areas: the northern bund contains four tanks; the southern bund contains the remaining five tanks. A ship pipeline connects the facility to the quayside north of the site. The truck loading area is located in the south-east of the site. The site stores diesel, a class⁵ III petroleum product.

NORA's Poolbeg facility comprises seven above ground oil storage tanks and two marker dye tanks. There are six diesel (class III petroleum product) tanks and one kerosene tank (class II petroleum product):

- A single kerosene tank in the northeast bund
- 4 no. diesel / gas oil tanks in the northwest bund
- 2 no. marker dye tanks in the southern bund (south of the diesel / gas oil bund)

The Poolbeg tank farm is served by the existing jetty at the neighbouring ESB station and also has road loading facilities.

In addition, the ESB Poolbeg CCGT (combined-cycle gas turbine) power station is located to the west of NORA Poolbeg. This station is supplied by a natural gas pipeline via an AGI (above ground installation). The Poolbeg CCGT does not qualify as an establishment under the COMAH Regulations; however, as it includes an AGI and a natural gas pipeline the aboveground gas infrastructure (pipeline) it has been included in this assessment in line with the HSA's guidance.

⁵ Petroleum products are classified as class I, class II or class III depending on their flash point (the minimum temperature at which a liquid, under specific test conditions, gives off sufficient flammable vapour to ignite momentarily on the application of an ignition source). Class I products include gasoline / petrol, class II products include kerosene, and class III products include diesel / gas oil.

3.4.3 Dublin Bay Power

Synergen Power Ltd. (Dublin Bay Power) stores class III petroleum (gas oil) as a back-up fuel for the natural gas fired power plant. Dublin Bay Power is supplied by a natural gas pipeline via an AGI at the southeast corner of the site.

3.4.4 Planning Permission

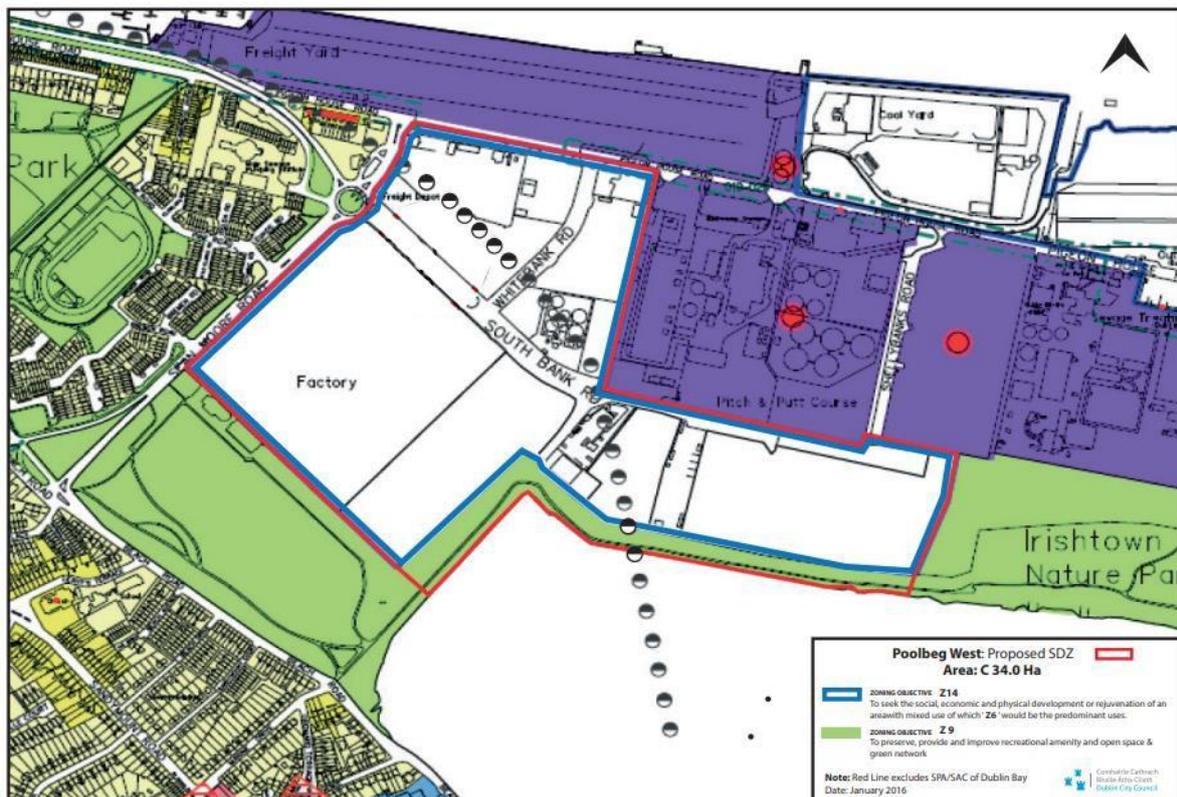
3.4.4.1 COMAH Establishments

Table 15 in Appendix 3 summarises the recent planning history for the current and prospective COMAH establishments and identifies COMAH-related developments for which planning applications have been submitted, or where planning permission has been granted but which have not yet commenced or are not yet operational.

3.4.4.2 Poolbeg West Strategic Development Zone

In May 2016, the Irish Government designated Poolbeg West as a Strategic Development Zone (SDZ) through the *Planning And Development Act 2000 (Designation Of Strategic Development Zone: Poolbeg West, Dublin City) Order 2016*. The designated area is for a mixed-use development which principally includes residential development; commercial and employment activities including office, hotel, leisure and retail facilities; port related activities; and provision of educational facilities, transport infrastructure, emergency services, and community facilities. The extent of the SDZ is shown in Figure 1 (the area outlined in red).

Figure 1: Poolbeg West SDZ



The planning scheme for this SDZ, together with modifications, was approved by An Bord Pleanála in April 2019. A summary of subsequent planning applications to Dublin City Council for developments within the SDZ, and changes to developments within the SDZ for which planning permission has been granted, is provided in Table 16 in Appendix 3.

3.5 Port & Surrounding Population

3.5.1 Overview

The population within the south side of Dublin Port comprises:

- workers at the respective industrial and commercial sites (at both the COMAH establishments and non-COMAH facilities)
- vehicle traffic using the Port road network, which includes:
 - workers commuting to and from their place of work within the port
 - goods vehicle drivers that operate to / from the port, including those associated with:
 - direct Port activities (e.g. delivering / collecting cargo, such as containers or trailers, shipped to / from the Port)
 - import / export related activities from facilities within the Port
 - non-Port related activities that are located within the Port estate
- other traffic that may access parts of the road network (primarily the eastern end of the Port), for example those using the Shellybanks Car Park to access the Great South Wall and Poolbeg Lighthouse
- shipping traffic at the berths along the south quays
- cruise liner passengers (and crew) arriving at / departing from the South Port

There are also several residential areas to the west and south-west of the Port estate, at Ringsend and Sandymount. These areas are approximately 550 m to 650 m from the nearest COMAH establishment.

To assess the societal risk presented by the COMAH establishments in the Port it is necessary to quantify the population that may be exposed to potential major accidents.

For certain types of population, estimating the number of people that may be exposed is relatively straightforward, as the number of people is known (e.g. from census data) and there is little or no temporal or spatial variation (the population is present at a fixed location for a discernible proportion of time). The residential populations to the west and south-west of the Port fall into this category, as do the populations at the commercial and industrial facilities to a lesser extent.

Other populations, however, are more difficult to characterise and quantify as they vary in terms of:

- the number of people present at any one time (e.g. the number of passengers on a cruise liner)
- the location of the people (e.g. people using the road network)
- when people are present, which can vary over the course of a day, week, and year (e.g. peak and off-peak traffic patterns, non-regular shipping)

Both the road traffic and, to a lesser extent, the shipping traffic, fall into this latter category, as these populations are both transient and mobile.

Nonetheless, for this assessment we have examined the population data available from Dublin Port and the Central Statistics Office, and have estimated the number of people that may be exposed to potential major accident hazards at the COMAH establishments.

In the following sub-sections, we describe the source of the population data we have used in our assessment, how we have characterised and quantified the populations, and our assessment of the conservative nature of the assumptions we have made. The objective of this exercise is to develop a representative population for the Port and surrounding area, rather than to develop a detailed population and transport model. The population data used in this assessment is summarised in Appendix 4.

3.5.2 Timeframes

Table 3 summarises the timeframes that we have used to characterise the population within and around the Port.

Table 3: Population Timeframes

Category	Period	Hour/day	Day/week	Hour/week	% of time
1. Daytime peak traffic	09:00 – 17:00	8	5	40	23.8%
2. Daytime off-peak traffic	n/a	0	5	0	0.0%
3. Non-daytime peak traffic	07:00 – 09:00 17:00 – 19:00	4	5	20	11.9%
4. Non-daytime off-peak traffic	19:00 – 07:00	12	5	60	35.7%
5. Weekend peak traffic	07:00 – 19:00	12	2	24	14.3%
6. Weekend off-peak traffic	19:00 – 07:00	12	2	24	14.3%
7. Other timeframes	Other timeframes for certain populations based on, for example, ferry timetables, berth occupancy data, and other non-standard occupancies that do not fit within the other six categories. The other timeframes are apportioned across the six categories (1 to 6) on a pro-rata basis. For example, if a shipping berth is occupied, on average, for 40% of the year, this occupancy is apportioned between the other six timeframes at the corresponding percentages (23.8%, 0%, 11.9%, 35.7%, 14.3% & 14.3%)				
Total	-	-	-	168	100%

3.5.3 Residential Areas

The closest residential areas to the west and southwest parts of the southern Port are:

- to the west, in Ringsend along Pigeon House Road and the adjoining roads (approximately 550 m from the western boundary of Dublin Bay Power). This area includes:
 - residential buildings (houses and apartments)
 - Ringsend Recycling Centre
 - 1st Port of Dublin, Ringsend Sea Scouts
 - Ringsend College (a multi denominational secondary school and further education college)
 - Irishtown Sports and Fitness Centre
 - Clanna Gael Fontenoy GAA Club
 - Poolbeg West SDZ developments
- to the southwest, in Sandymount (approximately 650 m from the southern boundary of Dublin Bay Power).

The latest population data from the CSO is from the 2022 census, with population data available at a variety of geographic levels:

- Provinces
- Regional Authorities (NUTS3)
- Local Authorities
- Local Electoral Areas (2022)
- Electoral Divisions
- Small Areas
- Limistéir Pleanála Teanga (Language Planning Areas)

For the residential population around the Port we have used the data from the Small Areas; these are areas of population generally comprising between 80 and 120 dwellings and are designed as the lowest⁶ level of geography for the compilation of statistics. There are 18,919 Small Areas from the 2022 census, 11 of which are within approximately 1 km of Dublin Bay Power, the nearest COMAH establishments to residential areas in the South Port.

Of these 11 Small Area, one covers the area of the Port on the north side of the river, and one covers the area of the Port on the south side of the river. The residential population within the Small Area on the north side of the river is approximately 2 km from the Synergen COMAH establishment and is outside the area that could be affected by any of the COMAH establishments on the south side of the river. The Small Area covering the area of the Port on the south side of the river includes both the Port (where there are no residences) and the residential area on Pigeon House Road; for this assessment, the population within the Small Area is assumed to be centred on the residential area, rather than the overall centre of the Small Area.

⁶ The CSO describes Small Areas as “the lowest level of geography for the compilation of statistics in line with data protection”. In urban areas, with a relatively high population density, Small Areas also represent the *smallest* (in area) level of geography.

In addition, we have conservatively included the residential population data from the proposed developments associated with the Poolbeg West SDZ for which planning permission has been applied for and / or granted (refer to Section 3.4.4.2).

3.5.4 Commercial & Industrial

3.5.4.1 Existing Population

Based on the 2016 census data, the CSO published data on the 'day-time population' of areas, referred to as workplace zones. The day-time population includes everyone who indicated they worked or studied in the area, along with persons in that area who do not work or study (and are therefore there during the day). These zones were created by the CSO by amalgamating and / or splitting the Small Areas output from the census.

Under the 2016 Census, there were three workplace zones covering the COMAH establishments and surrounding areas in the South Port estate. However, similar workplace zones were not developed under the 2022 Census. Therefore, while the 2016 workplace zones provide an indication of the population during daytime hours, they do not lend themselves to characterising the Port population to assess the societal risk as they cover too large an area. We estimate the commercial and industrial population using a variety of publicly available data sources.

3.5.4.2 3FM Project Future Population

The proposed landside developments associated the 3FM Project will result in changes to the commercial population in Dublin Port South. An estimate of the additional number of workers that are likely to be employed in each of the three main development areas – Area K, Area N, Area L and Area O – are set out in Table 4.

Table 4: Anticipated additional population arising from 3FM project

Group	Area K	Area N	Area O	Area L
Management, administration & IT staff	8	42	1	10
Equipment maintenance & engineers	3	10	-	-
STS operators	-	6	-	-
RTG operators	4	12	-	-
Reach-stacker drivers	4	-	-	-
Shunter drivers	14	-	1	-
Crane drivers	-	-	-	6
Mobile equipment operators	-	20	1	2
Supervisors	6	6	-	2
Marshalls	4	4	1	2
Security	2	4	2	2
General operatives	2	-	-	2

Group	Area K	Area N	Area O	
Other contractors & operators	6	4	-	2
Visitors	2	-	-	-
Total	55	108	6	28

In addition, we have conservatively included the commercial population from the proposed developments associated with the Poolbeg West SDZ for which planning has been applied for and / or granted (refer to Section 3.4.4.2).

3.5.5 Road Traffic

In support of the application for planning permission for the development, vehicle flow and non-motorised user traffic surveys were undertaken in 2022, the results of which are shown in Table 5 and Table 6.

Table 5: 24-hour vehicle flow survey

Location	Westbound	Eastbound
South Bank Road	1,916	2,066

Table 6: 24-hour daily average non-motorised users

Location	Two-way average (school term)	Two-way average (summer holidays)
Pedestrian crossing between R131 and Pigeon House Road	216	203
Irishtown Nature Park Active Travel Path Location 1	1,347	1,538
Irishtown Nature Park Active Travel Path Location 2	Note	706
Note: Data not available.		

3.5.6 Shipping Traffic

Data from DPC⁷ for 2023 shows that there were appropriately 7,300 vessel arrivals and departures (approximately 14,600 vessel movements, excluding movements between berths) in the Port in 2023, comprising RoRo passenger vessels (ferries); cruise liners; bulk carriers; container vessels; general, Ro-Ro & Lo-Lo cargo ships; oil & LPG tankers; vehicle carriers; and a wide range of other vessels. Passenger ferries accounted for approximately half of all vessel movements (52%), with RoRo cargo vessels accounting for approximately 21%, container vessels accounting for approximately 13%, oil/LPG tankers accounting for approximately 6.2%, and general cargo vessels accounting for approximately 3.6%. The population associated with the shipping traffic is summarised in Appendix 4.

⁷ <http://booking.dublinport.ie/webx/>

For the berths on the southside of Dublin Port MTL 41 to MTL 45 and Deep Water Berths 46 and 47 the data shows that the majority of shipping traffic is from general cargo vessels and container ships. Table 7 provides a summary for these berths for 2023.

Table 7: 2023 summary for southside berths

Berth	No. of vessels	Occupancy (approximate)
Deep Water Berth 46	75	36.0%
Deep Water Berth 47	69	47.3%
MTL 41	2	0.03%
MTL 42	113	44.0%
MTL 43	0	0%
MTL 44	108	45.0%
MTL 45	79	18.9%

4 ASSESSMENT METHODOLOGY

4.1 Guidance on Land Use Planning

4.1.1 EU Guidance

The EU's guidelines on land use planning⁸ describe the ideal LUP technical advice system:

In principle all risk assessment methods without regard to individual applications have the same relevant elements; these are:

- *Definition of scope, objectives and risk criteria*
- *Description of the object or area of concern*
- *Identification of hazards*
- *Identification of vulnerable targets*
- *Assumption of source terms or hazardous incidents*
- *Development of escalation scenarios*
- *Estimation of consequences*
- *Estimation of likelihood*
- *Presentation of resulting risk and comparison with established tolerability criteria*
- *Identification of mitigation measures*
- *Acceptance of result, modification or abandoning*

Besides these elements a proper risk assessment should furthermore ensure

- *A level of detail proportional to the severity of consequences*

⁸ Land use Planning Guidelines in the Context of Directives 96/82/EC and 105/2003/EC

- The use of acknowledged methods (or it must be demonstrated that these are equivalent)
- Reliability of data and relevant information and
- Transparency of the process

The HSA has set out its policy and approach to conducting land use planning assessments in its *Guidance on technical land-use planning advice*.

4.1.2 HSA Guidance

The HSA has set out its policy and approach to conducting land use planning assessments in its *Guidance on technical land-use planning advice* (2023). The development of the 3FM Project is in the vicinity of three COMAH establishments in the south Port – an overview of these sites is provided in in Section 3.4.

The HSA’s guidance sets out the loss of containment events and the associated consequences – exposure to thermal radiation and / or overpressure effects – to be considered for sites that store flammable liquids, such as petroleum products. We assess the **individual** risk (refer to Section 6.1) and the **societal** risk (refer to Section 6.2) against the HSA’s criteria (described in Sections 4.2.1 and 4.2.2, respectively).

4.2 Assessment Criteria

4.2.1 Individual Risk

The level of individual risk is assessed using a three-zone traffic light system shown in Table 8.

Table 8: Risk Based Contour Zones for Individual Risk

Zone	Risk of fatality per year		
Inner	1×10^{-5}	1 in 100,000	0.001%
Middle	1×10^{-6}	1 in 1 million	0.0001%
Outer	1×10^{-7}	1 in 10 million	0.00001%

The HSA provides its advice to planning authorities in the form ‘advises against’ or ‘does not advise against’ depending on which zone (from Table 8) the development lies within, as shown in Table 9 (a tick indicating ‘do not advise against’ and a cross indicating ‘advise against’).

Table 9: HSA Matrix for Land Use Planning Advice

Sensitivity Level	Individual Risk Zone (refer to Table 8)		
	Inner Zone	Middle Zone	Outer Zone
Level 1	✓	✓	✓
Level 2	✗	✓	✓
Level 3	✗	✗	✓
Level 4	✗	✗	✗

These three zones have been determined for the COMAH establishments in the south Port based on the scenarios identified in Section 4.3, and on the results from the consequence assessment as described in Section 6.1.

The land use in each of the three zones is assessed against the four levels (categories) of development to assess whether the land use is 'compatible' with the level of risk. Level 1 type developments (comprising workplaces and car parks) are considered to be less sensitive to risk, with the sensitivity to risk increasing to Level 4 type developments (very large and / or sensitive land use, such as hospitals, schools, and sports stadia). These development sensitivity levels are described in Section 5.

4.2.2 Societal Risk

4.2.2.1 Overview

Societal risk is a measure of the risk of large numbers of people being affected in a single accident⁹. The HSA's guidance notes that:

...The advice matrix [Table 9] takes account, to a degree, of group risk and the varied receptor sensitivities. It is applicable for the specified developments ... that are located near a single COMAH establishment, and where the existing societal risk is well within the tolerable limit. However, there are times when the risk of multiple fatalities from an accident – societal risk – should be taken into account more explicitly. For example, this may include where an application relates to a proposed significant off-site population density, or where there is already a significant population residing/working within the risk zone, or where the risk is emanating from more than one establishment.

There are several metrics that can be applied to estimate and assess societal risk; the two approaches described in the HSA's guidance are:

- Expectation Value (see Section 4.2.2.2)
- FN curve (see Section 4.2.2.3)

4.2.2.2 Expectation Value

The Expectation Value (EV) is the product of the frequency of an accident (expressed in 'chances per million') and the number of people exposed to lethal effects as a result of that accident. The HSA's guidance sets out several criteria for assessing the EV:

- between 100 and 10,000: it should be demonstrated that all practicable efforts have been made to reduce the risk to a level that is as low as reasonably practicable
- greater than 10,000: should not be exceeded; if the EV exceeds 10,000, the TLUP advice to the planning authority will always be 'advise against'
- developmental EV value is greater than 450: an FN curve will be required as part of the demonstration that all practicable efforts have been made to reduce the risk to a level that is as low as reasonably practicable.

⁹ Policy & Approach of the Health & Safety Authority to COMAH Risk-based Land-use Planning (19 March 2010)

- greater than 2,000: for new developments near an establishment further assessment of societal risk will be required and the creation of an FN curve and calculation of the total EV will be necessary.

4.2.2.3 FN-Curve

An FN curve shows the relationship between the frequency of an outcome and the cumulative severity of the outcome, typically plotted on a log-log scale to account for the range of values for both the frequency of occurrence and the severity of the outcome. It can take one of two forms¹⁰:

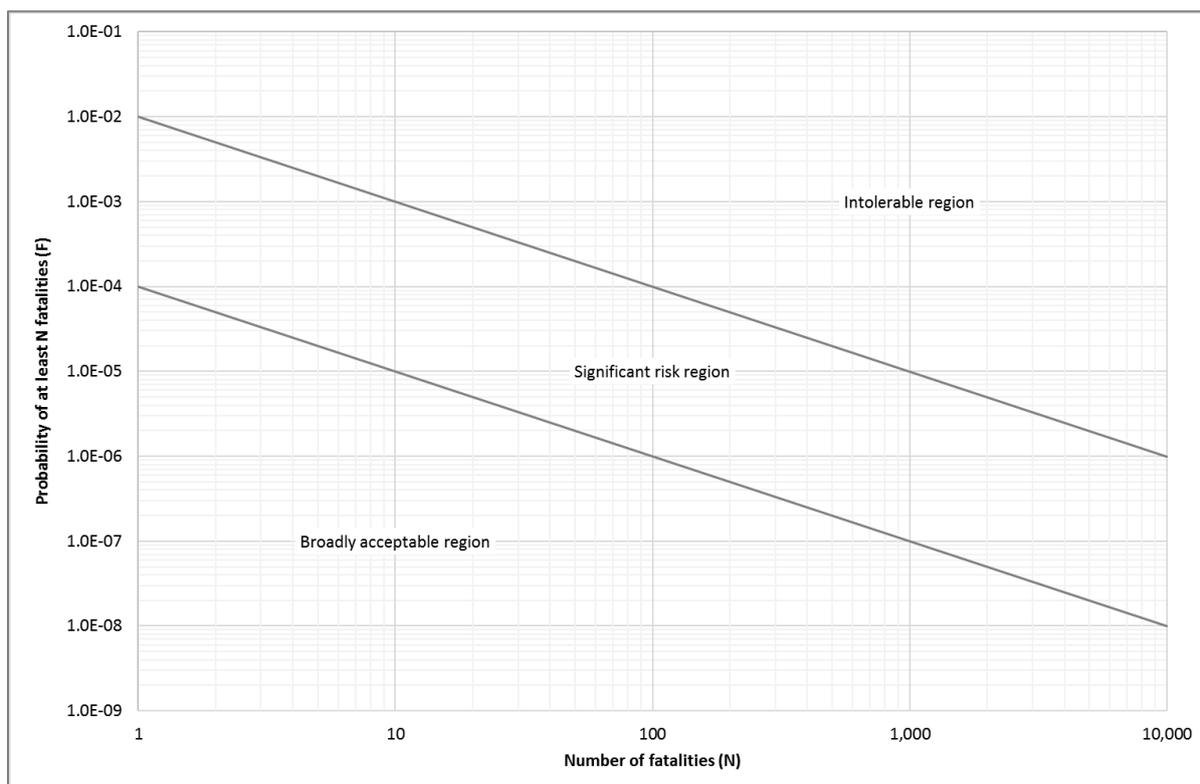
1. Non-cumulative frequency basis: for these graphs, called f-N curves (lower case 'f'), the value plotted on the y-axis is the discrete frequency of experiencing exactly N fatalities.
2. Cumulative frequency basis: for these graphs, called F-N curves (upper case 'F'), the value plotted on the y-axis is the cumulative frequency of experiencing N or more fatalities.

When assessing whether the level of societal risk may be regarded as tolerable, it is necessary to select appropriate criteria. In its guidance, the HSA identifies two criterion lines for FN (cumulative frequency) curves:

- an upper criterion of 1 in 5,000 for 50 fatalities
- a lower criterion line of 1 in 100,000 for 10 fatalities

Figure 2 shows the general format of an FN curve, with the number of (potential) fatalities, N , on the x-axis and the probability of at least N fatalities on the y-axis, F , together with the two criterion lines.

Figure 2: Criterion Lines for FN Curves



¹⁰ Guidelines for Developing Quantitative Safety Risk Criteria, Centre for Chemical Process Safety, 2009

The area above the upper criterion is the intolerable / unacceptable region and the area below the lower criterion line is the broadly acceptable region. The area between the two lines is generally considered to be the ALARP region, where the risk may be considered to be 'tolerable' provided that all reasonable efforts have been made to reduce the risk to a level that is as low as reasonably practicable (ALARP) ¹¹.

4.3 Major Accident Scenarios

4.3.1 Overview

The HSA's guidance sets out the types of major accident scenario to be considered as part of a COMAH land use planning assessment for the different types of establishment. For a site that stores flammable liquids (including petroleum products), such as the two NORA sites and Dublin Bay Power, the HSA's guidance identifies the corresponding loss of containment (LOC) scenarios and the relevant end events to be considered. In addition, the guidance sets out the approach to be taken for establishments where there is a significant major accident risk associated with releases from on-site natural gas pipelines, such as at Dublin Bay Power and ESB Poolbeg.

- Ignition category 3 substances (petroleum products)

The HSA's guidance advises that the types of end event relevant to class II and class III petroleum products (kerosene and diesel, the petroleum products stored at the three COMAH sites) are equivalent to ignition category 3 substance events.

The ignition probabilities for ignition category 3 substances are zero, and fire and explosion events are not considered credible unless they are located in the same bund as lower category (category 0, 1 or 2) substances; this is not applicable at the COMAH establishments in the South Port.

If an ignition category 3 substance overtops a bund and is released *outside* the establishment, it is conservatively assumed that it could ignite (as a pool fire) in the absence of the control measures (the controls on ignition sources) within the establishment boundary.

- Natural gas

The HSA's guidance advises that for establishments with underground or overground natural gas pipelines, pipeline rupture and pipeline leak scenarios need to be considered. The consequences associated with these loss of containment events are jet fires, flash fires, and vapour cloud explosions (VCEs).

4.3.2 Scenarios

The COMAH establishments included in this assessment, and the COMAH substances that may give rise to major accident scenarios, are summarised in Table 10, together with the non-COMAH ESB Poolbeg CCGT which is included by virtue of its natural gas infrastructure.

¹¹ The UK HSE comments on the use of the terms *so far as is reasonably practicable* (SFAIRP) and *as low as reasonably practicable* (ALARP). It notes that SFAIRP is most often used in the context of workplace health and safety legislation and that ALARP is used by risk specialists. The HSE uses the term ALARP in its COMAH guidance and, in its view, considers that the two terms are (generally) interchangeable.

Table 10: COMAH establishments & substances

Establishment	Location	Tier	COMAH Substances
NORA Ringsend Tank Farm	Shellybanks Road (Off Pigeon House Road), Ringsend, Dublin 4	Upper	Class III
NORA Poolbeg Tank Farm	Pigeon House Road, Dublin 4	Upper	Class II & III
Synergen t/a ESB Dublin Bay Power	Pigeon House Road, Ringsend, Dublin 4	Lower	Class III Natural gas ^{Note 1}
ESB Poolbeg CCGT	Pigeon House Road, Ringsend, Dublin 4	Note 2	Natural gas ^{Note 1}
<p>Note 1: Natural gas is not stored at these sites, but the sites are supplied by a natural gas pipeline via an AGI (above ground installation) and therefore this substance is included in this assessment consistent with Section 3.5 of the HSA's guidance.</p> <p>Note 2: The ESB Poolbeg generating station is not a COMAH establishment. However, as it is supplied by a natural gas pipeline via an AGI it is included in this assessment, consistent with Section 3.5 of the HSA's guidance.</p>			

The loss of containment events, consequences and probabilities set out in the HSA's guidance are set out in Table 11 for category 3 liquid substances and Table 12 for natural gas.

For the COMAH establishments at the South Port, we have conservatively assumed that the following overtopping events could occur such that pools could extend offsite¹².

- NORA Poolbeg
 - Kerosene tank bund: overtopping to the east and to the south under the current Port layout, and to the north under the future Port layout following construction of area N
 - Diesel /gas oil tank bund: overtopping to the west under the current Port layout, and to the north under the future Port layout following construction of area N
 - Dye tank bund: overtopping to the west, south, and east
- NORA Ringsend
 - North bund (four tanks): overtopping to the north, west, and east
 - South bund (five tanks): overtopping to the north (to the area east of the north bund), east, south and west
- Dublin Bay Power
 - Diesel / gas oil bund: overtopping to the north, east, south and west

¹² The NORA Ringsend establishment includes tertiary containment in the tank farm bund to minimise potential overtopping in certain directions; for this COMAH assessment, we have adopted a conservative approach and discounted the benefit of the tertiary containment.

Table 11: Major accident scenarios for kerosene and diesel tanks

Installation type	Establishment	Scenario	Loss of containment frequency (per annum)	Consequence	Ignition frequency (per annum)	HSA reference
Ignition Category 3 substances and mixtures (class II & III) (HSA §3.6.4)	NORA Poolbeg NORA Ringsend Dublin Bay Power	Instantaneous failure (overtop)	5×10^{-6}	Pool fire (unbunded)	5×10^{-8}	123

Table 12: Major accident scenarios for aboveground natural gas pipelines within an establishment

Scenario	Frequency (per metre per annum)			HSA reference
	$\varnothing < 75 \text{ mm}$	$75 \text{ mm} \leq \varnothing \leq 150 \text{ mm}$	$\varnothing > 150 \text{ mm}$	
Pipeline rupture	1×10^{-6}	3×10^{-7}	1×10^{-7}	87
Pipeline leak of 0.1 \varnothing (max. 50 mm)	5×10^{-6}	2×10^{-6}	5×10^{-7}	88
Note: The conditional probabilities for a flammable gas release from a pipeline are as follows: <ul style="list-style-type: none"> • Fireball / jet fire = 0.1 • Flash fire = 0.36 • Vapour cloud explosion = 0.54 				

4.4 Consequence Assessment

4.4.1 Risk of Fatality

The risk of fatality arising from a major accident hazard can be related to the consequences of the event (e.g. exposure to thermal radiation, a blast overpressure, or a toxic substance) by means of probit functions and other derived relations.

As described in the UK HSE's *Methods of approximation and determination of human vulnerability for offshore major accident hazard assessment*, probits account for the variation in tolerance to harm for an exposed population, with the fatality rate of personnel exposed to harmful agents calculated using a probit function of the general form:

$$Y = k_1 + k_2 \ln V^n$$

where:

- Y is the probit, a measure of the percentage of the vulnerable resource that might sustain damage (the probability of fatality).
- k_1 & k_2 are constants depending upon the type of harm that the population is exposed to (thermal, pressure, toxic effects).
- V is the product of intensity (I) or concentration (C) of the received hazardous agent to an exponent n and the duration of exposure in seconds or minutes (t). In other words, $V = C^n \cdot t$.

The probit function can be used to calculate the risk to people exposed to the hazardous agent (thermal radiation, overpressure, or concentration of toxic substance), expressed as a probability of lethal impacts:

$$Probability = \frac{1}{\sqrt{2\pi}} \int_{u=-\infty}^{u=Y-5} \exp -\frac{u^2}{2} du$$

For example, a probit value of 5 corresponds to a probability of fatality of 50%, while probit values of 3.72 and 6.28 correspond to probabilities of fatality of 10% and 90%, respectively.

4.4.2 Thermal Effects

The probit function for thermal effects is:

$$Y = -14.9 + 2.56 \cdot \ln I^4 \cdot t^3$$

In this equation, I is the thermal flux expressed in kilowatts per square metre (kW/m^2) and the time t is expressed in seconds. For short duration fire events, such as a fireball from a BLEVE at an LPG facility, the time during which people may be exposed to the thermal radiation is set at the duration of the event. For longer duration events, such as bund or pool fires, the duration is set at 60 seconds to take account of the time required for people to escape from the area.

For people located indoors, the HSA advises that the building may provide some protection from the fire and that this should be taken into account.

- For exposure to fluxes in excess of 25.6 kW/m² the building is conservatively assumed to catch fire quickly and a 100% fatality risk is applied.
- For exposure to fluxes less than 12.7 kW/m² the people inside the building are assumed to be protected and a 0% fatality risk is applied.
- For exposure to fluxes in between these two values, people are assumed to escape outdoors and, therefore, have a risk of fatality corresponding to that outdoors.

4.4.3 Overpressure Effects

The probit function for overpressure effects is:

$$Y = 1.47 + 1.35 \cdot \ln P$$

Unlike the probit for thermal effects, the probit for overpressure effects is only related to the overpressure (P) expressed in pounds per square inch (psi).

4.4.4 Major accidents to the environment (MATTE)

The HSA's land use planning guidance provides the following advice on major accidents to the environment (MATTE):

In the context of LUP, the prevention of MATTEs will be the primary objective and it is expected that accident pathways will be prevented. Where this is not practicable, or in the context of significant modifications at existing COMAH establishments, the assessment of major accidents to the environment focuses on the specific risks to sensitive receptors within the local environment, the extent of consequences to such receptors and the ability of such receptors to recover.

Given that the 3FM Project will not result in any changes, or any increase in risk, at the COMAH establishments, we have not considered MATTE events as part of this assessment.

4.5 Ambient Conditions

The impacts from a VCE and a flash fire depend on the meteorological conditions (wind speed and atmospheric stability). As set out in the HSA's guidance, two meteorological conditions have been considered for these end events:

- Typical conditions (D5): a wind speed of 5 m/s and a Pasquill stability class of D, assumed to occur 80% of the time
- Calm conditions (F2): a wind speed of 2 m/s and a Pasquill stability class of F, assumed to occur 20% of the time

Similarly, the consequences associated with pool fires have been modelled under two wind speeds: a 'low' wind speed of 5 m/s, and a 'high' wind speed of 10 m/s, with these conditions assumed to occur 80% and 20% of the time, respectively.

The consequences associated with the end events are also influenced, in part, by the ambient meteorological conditions, in particular temperature, humidity, and cloud cover. The consequence modelling has been carried out based on the following conditions, which are the average conditions from the Dublin Airport meteorological station between 2019 and 2023:

- Temperature: 10°C
- Humidity: 81.9%
- Cloud cover: 69.6%

5 DEVELOPMENT SENSITIVITY LEVELS

5.1 Overview

The HSA provides advice to the planning authorities under the COMAH Regulations using a similar system to that applied by the UK HSE, as described in the UK HSE's *Land Use Planning Methodology*. Different types of development are broadly categorised under one of four sensitivity levels:

- Level 1: people at work, parking (workplaces and parking areas)
- Level 2: developments for use by the general public (housing, hotel / hostel / holiday accommodation, transport links, indoor use by the public, outdoor use by the public)
- Level 3: developments for use by vulnerable people (institutional accommodation and education, prisons)
- Level 4: very large and sensitive developments (institutional accommodation, very large outdoor use by the public)

Table 13 provides a summary of the sensitivity levels and examples of the types of development.

Table 13: Summary of development types for Land Use Planning Zones

Zone	Type	Description / Examples
Inner	Workplaces	Workplaces (non-retail) for less than 100 occupants in any building and fewer than three occupied storeys
	Parking area	Parking facilities (car park, truck park) with no other associated facilities (other than toilets)
	Estate & access roads	Single carriageway roads
	Members of the public not normally present, or present in small numbers & for a short time	Developments for indoor use by the public where total floor space is less than 250 m² (e.g. restaurants and cafés, shops, petrol filling stations, coach / bus stations, ferry terminals)
Middle	Large workplaces	Workplaces (predominantly non-retail) providing for more than 100 occupants in any building, or three or more occupied storeys in height
	Transport links	Major transport links (e.g. motorway, dual carriageway)
	Indoor & outdoor areas for use by the general public	Developments for indoor use by the general public where total floor space is from 250 m ² up to 5,000 m ² Principally an outdoor development for use by the general public, i.e. developments where people will predominantly be outdoors and not more than 100 people will gather at the facility at any one time

Zone	Type	Description / Examples
Outer	Large developments for use by the general public	Developments for indoor use by the public where total floor space is greater than 5,000 m ² Predominantly open-air developments likely to attract the general public in numbers greater than 100 people, but up to 1,000 people at any one time
	Developments for use by vulnerable people	Institutional, educational and special accommodation for vulnerable people, or that provides a protective environment
Outside all zones	Very large outdoor use by the general public	Predominantly open-air developments where there could be more than 1,000 people present

5.2 3FM Project

The development sensitivity levels applicable to the 3FM Project are shown in Table 14.

6 RISK ASSESSMENT RESULTS

6.1 Individual Risk

6.1.1 Risk contours

The aggregated risk contours for the inner, middle, and outer zones around the COMAH establishments are shown in Appendix 5 for both the current and future layouts of the south Port. The risk contours show that two distinct sets of zones are formed: an eastern part, centred broadly at ESB Poolbeg and NORA Poolbeg, and a western part centred broadly at Dublin Bay Power and NORA Ringsend. The land use planning zones can be summarised as follows:

- Eastern part:
 - The inner and middle zones are formed over the natural gas installation at the AGI for the ESB Poolbeg CCGT.
 - The middle and outer zones extend over part of the new road development to the east of the proposed roundabout on Pigeon House Road.
 - The outer zone extends over the NORA Poolbeg establishment, as well as a small portion of the southern part of Area N.
- Western part:
 - The inner zone is formed over the natural gas installation at Dublin Bay Power.
 - The middle zone extends over the COMAH establishment at Ringsend (NORA oil storage facility) and Dublin Bay Power.
 - The outer zone extends over the proposed road upgrades along Shellybanks Road, South Bank Road, the new proposed road connecting South Bank Road and Pigeon House Road, the south-east corner of Area K, the north-west portion of Area O, and the north-east part of the proposed Port Park & Wildflower Meadow to the west of Area O.

Table 14: Development Sensitivity Levels applicable or analogous to 3FM Project

Development Type	Examples	Development Detail & Size	Justification
DT1.1 – workplaces	Offices, factories, warehouses, haulage depots, farm buildings, non-retail markets, builder's yards.	Workplaces (predominantly nonretail), providing for less than 100 occupants in each building and less than 3 occupied storeys – Level 1	Places where the occupants will be fit and healthy, and could be organised easily for emergency action. Members of the public will not be present or will be present in very small numbers and for a short time.
	Exclusions		
	-	DT1.1 ×1 Workplaces (predominantly non-retail) providing for 100 or more occupants in any building or 3 or more occupied storeys in height – Level 2 (except where the development is at the major hazard site itself, where it remains Level 1).	Substantial increase in numbers at risk with no direct benefit from exposure to the risk.
DT1.2 – parking areas	Car parks, truck parks, lock-up garages	Parking areas with no other associated facilities (other than toilets) – Level 1	-
	Exclusions		
	Car parks with picnic areas, or at a retail or leisure development, or serving a park and ride exchange.	DT1.2 ×1 Where parking areas are associated with other facilities and developments the sensitivity level and the decision will be based on the facility or development.	-

Development Type	Examples	Development Detail & Size	Justification
DT2.1 – housing	Houses, flats, retirement flats/ bungalows, residential caravans, mobile homes.	Developments up to and including 30 dwelling units and at a density of no more than 40 per hectare – Level 2	Development where people live or are temporarily resident. It may be difficult to organise people in the event of an emergency.
	Exclusions		
	Infill, backland development	DT2.1 ×1 Developments of 1 or 2 dwelling units – Level 1	Minimal increase in numbers at risk.
DT2.3 – transport links	Motorway, dual carriageway.	Major transport links in their own right; i.e. not as an integral part of other developments – Level 2	Prime purpose is as a transport link. Potentially large numbers exposed to risk, but exposure of an individual is only for a short period.
	Exclusions		
	Estate roads, access roads.	DT2.3 ×1 Single carriageway roads – Level 1	Minimal numbers present and mostly a small period of time exposed to risk Associated with other development
DT2.4 – indoor use by public	Food & drink: drive-through fast food. Retail: petrol filling station (total floor space based on shop area not forecourt), Assembly & leisure: coach / bus / railway stations, ferry terminals, airports.	Developments for use by the general public where total floor space is from 250 m ² up to 5,000 m ² – Level 2	Developments where members of the public will be present (but not resident) Emergency action may be difficult to co-ordinate.
	Exclusions		
	-	DT2.4 ×1 Development with less than 250 m ² total floor space (of all floors) – Level 1	Minimal increase in numbers at risk
DT2.5 – outdoor use by public	Assembly & leisure: coach / bus / railway stations, park & ride interchange, ferry terminals.	Principally an outdoor development for use by the general public i.e. developments where people will predominantly be outdoors and not more than 100 people will gather at the facility at any one time – Level 2	Developments where members of the public will be present (but not resident) either indoors or outdoors. Emergency action may be difficult to co-ordinate.

Development Type	Examples	Development Detail & Size	Justification
	Exclusions Outdoor markets, car boot sales, funfairs. Picnic area, park & ride interchange, viewing stands, marquees.	DT2.5 ×1 Predominantly open-air developments likely to attract the general public in numbers greater than 100 people but up to 1,000 at any one time – Level 3	Substantial increase in numbers at risk and more vulnerable due to being outside
DT3.1 – institutional accommodation and education	Hospitals, convalescent homes, nursing homes. Housing for elderly with warden on-site or 'on call', sheltered housing. Nurseries, crèches. Schools and academies for children up to school-leaving age.	Institutional, educational and special accommodation for vulnerable people, or that provides a protective environment – Level 3.	Places providing an element of care or protection. Due to age, infirmity or state of health, the occupants may be especially vulnerable to injury from hazardous events. Emergency action and evacuation may be very difficult.
	Exclusions		
	Hospitals, convalescent homes, nursing homes, sheltered housing.	DT3.1 ×1 24-hour care where the site on the planning application being developed is greater than 0.25 hectare – Level 4	Substantial increase in numbers of vulnerable people at risk.
Schools, nurseries, crèches.	DT3.1 ×2 Day care where the site on the planning application being developed is greater than 1.4 hectares – Level 4	Substantial increase in numbers of vulnerable people at risk.	

6.1.2 Development Sensitivity Levels

6.1.2.1 Overview

The development sensitivity levels applicable or analogous to the types of development associated with the 3FM Project described in Sections 6.1.2.2 to 6.1.2.6, based on the HSA's guidance and, in the absence of a direct comparison between the activities in the 3FM Project area and examples of a development type from the HSA's guidance, the principles (justification) outlined in the guidance.

However, before considering the development sensitivity levels associated with the individual areas of the 3FM Project, it is necessary to consider several groups of people that may be present in any of these areas, in particular:

- Professional drivers operating to, from and within the areas, whether delivering cargo to the Port for export, collecting cargo from the Port as an import, or as a passenger on a RoRo vessel accompanying the cargo.
- Shunter drivers / crane drivers and other operatives working on the landside of the Port.
- Ship personnel / crew members on board vessels berthed at the Port.
- State services personnel.
- Members of the public using amenity areas.

Section 6.1.2.2 sets out our assessment of these groups in the context of the development sensitivity levels.

6.1.2.2 Sensitivity Levels for Specific Personnel

Professional Drivers

In our opinion, professional drivers operating to and from the Port constitute workers, rather than members of the public. In this context, there are two broad categories of professional driver:

1. Dangerous Goods Vehicle Drivers

Drivers of heavy goods vehicle (HGV) and light goods vehicle (LGV) that transport dangerous goods are subject to the *European Agreement Concerning the International Carriage of Dangerous Goods by Road* (ADR). As set out in the HSA's guidance on ADR:

The ADR and current regulations on the carriage of dangerous goods by road require drivers of vehicles used for the carriage of dangerous goods by road to be trained to enable them to understand and be aware of hazards arising in the carriage of dangerous goods. The training must give drivers basic information indispensable for minimising the likelihood of an incident taking place and, in such an event, to enable them to take measures that may prove necessary for their own safety and that of the public and the environment, to limit the effects of such an incident.

There is no explicit guidance on whether trained drivers should be classified as members of the public or as workers¹³, or whether the areas in which such drivers operate should be classified as workplaces under the COMAH land use planning guidance. It is therefore

¹³ HGV, LGV and other professional drivers may be classified as workers based on their occupation / employment status.

necessary to consider the principles (justification) set out by the HSA for the different sensitivity levels.

In general, Sensitivity Level 1 developments (which can be accommodated within the inner zone) are places where occupants will be fit & healthy and could be organised easily for emergency action. Workplaces fall within Sensitivity Level 1, as well as places where (very) small numbers of members of the public may be present for a short time.

In this context, we consider that it is reasonable to classify drivers of dangerous goods vehicles as workers and the areas in which they operate as workplaces:

- Drivers of dangerous goods vehicles are exposed to hazards similar to those present within the Port, and at COMAH establishments in general, and therefore they may be expected to have a greater awareness of the hazards within the Port and a greater capacity to respond in an emergency.
- Drivers of dangerous goods vehicles are workers, and by virtue of using the Port, the Port forms part of their workplace.
- Drivers of dangerous goods vehicles are required to undergo specialised training on ADR, in addition to their training as professional drivers.

2. Other Drivers

Drivers of goods vehicles that do not convey dangerous goods are not required to undergo specialised ADR training and therefore may not be as familiar with hazardous substances and the associated risks. However, while this class of driver may not have undergone ADR training, professional drivers operating within the EU are subject to the *EU Directive on the initial qualification and periodic training of drivers of certain road vehicles for the carriage of goods or passengers* (2003/59/EC) and the corresponding national legislation. The Directive applies to drivers under licence categories C and D (LGV, HGV and passenger vehicles) and requires that drivers undergo specialised training:

- to know the regulations governing the carriage of goods: transport operating licences, international transport permits, crossing borders
- to make drivers aware of the risks of the road and of accidents at work: types of accidents at work in the transport sector, involvement of lorries / coaches, human, material and financial consequences.
- to assess emergency situations: behaviour in an emergency situation, assessment of the situation, avoiding complications of an accident, summoning assistance, assisting casualties and giving first aid, reaction in the event of fire, evacuation of occupants of a lorry / bus passengers, ensuring the safety of all passengers

While this training may not be specifically aimed at the hazards associated with COMAH establishments, it requires that professional drivers have a greater level of training than members of the public.

As in the case of drivers of dangerous goods vehicles, we consider that it is reasonable to consider that professional drivers of goods vehicles are workers and that the areas in which they operate are workplaces:

- All professional drivers are required to undergo specialised training, including training for emergency situations.
- Professional drivers are workers, and by virtue of using the Port, the Port forms part of their workplace.

Shunter Drivers / Crane Drivers

In our opinion, shunter drivers / crane drivers (and other 'ground' staff) may be classified as workers in the context of the COMAH land use planning guidance. The examples of workplaces provided in the HSA's (and HSE's) guidance include offices, factories, warehouses, and haulage depots and are therefore not confined to COMAH workplaces. The areas in which trailers / containers are parked and manoeuvred are analogous to warehouses and haulage depots (workplaces) or to truck parks (parking areas), both of which fall within Sensitivity Level 1 provided that there are no more than 100 occupants (workers) present.

Cargo ship personnel / crew

In our opinion, ship personnel and crew (with the exception of cruise liners / passenger vessels) may be considered as workers (rather than members of the public) on a similar basis to professional drivers, and therefore both the ship at a berth, and the berth itself constitute workplaces for ship personnel.

It is not evident from the HSA's (or HSE's) guidance whether the limitation on the number of occupants for a DT1.1 workplace should apply to a ship temporarily berthed at a RoRo / LoLo / bulk carrier (or other) terminal. We understand that the typical complement of a cargo vessel may be up to (approximately) 40, and that it would not exceed 100. Therefore, even on the assumption that the limit of 100 occupants were to apply to a ship at a berth, it would remain within Sensitivity Level 1.

If the passenger complement of a (cargo) vessel were also to be included in the number of occupants (which we consider to be a very conservative assumption), it may remain within Sensitivity Level 1 if the ship's complement plus the passenger complement does not exceed 100. However, we consider that a more reasonable application of the HSA's guidance would take into account both the temporary nature of the berthing (typically several hours) and the professional drivers that may be passengers on the ship and that are accounted for separately within the area.

Overall, in our opinion, a cargo or container or similar ship berthed in the south Port would fall within Sensitivity Level 1.

6.1.2.3 Area K and O: Ro-Ro Terminal

Replacement of the existing Lo-Lo container terminal, currently operated by Marine Terminals Limited (MTL), with a new Roll-On Roll-Off (Ro-Ro) freight terminal with an annual throughput capacity of 360,000 Ro-Ro units or 8.69m tonnes.

The Ro-Ro Terminal will consist of two main components:

- Terminal to be located at existing Berths 42 – 45 including provision of two berths, each with a single tier Ro-Ro ramp, plus associated cargo handling facilities (Dublin Port Masterplan Area K).
- Transit Ro-Ro trailer yard located on Port owned land on the southern side of the Poolbeg Peninsula (Dublin Port Masterplan Area O).
- This combined terminal will accommodate larger Ro-Ro vessels of up to 240m length. primarily from Continental Europe.

In our opinion, each of these Ro-Ro Terminal elements are considered a "workplace" and therefore

falls within development type DT1.1 (development sensitivity level), subject to the following constraints:

1. The number of occupants: the HSA's guidance places a limit of 100 occupants in each building within a development.
2. Occupied storeys: there is a limit of 3 on the number of occupied storeys for a workplace building to fall within DT1.1.

Both constraints are satisfied in these areas of the proposed development (i.e. less than 100 occupants will be present in this area of the development and occupied buildings will be less than three storeys); therefore, we consider that all of the individual elements are Sensitivity Level 1 developments. As set out in Section 6.5.4.1, the eastern portion of Area K lies within the outer zone. In our opinion, the development of Sensitivity Level 1 developments within this zone would satisfy the HSA's criteria under its land use planning guidance.

6.1.2.4 Areas N & L: Container Terminals

A **new Lift-on Lift-off (Lo-Lo) container terminal** with an annual throughput capacity of 550,000 Twenty-foot Equivalent Units (TEU) or 5.34m tonnes.

The Lo-Lo Terminal will consist of two main components:

- Terminal located north of the ESB's Generating Station on the eastern end of Poolbeg Peninsula with 650m of deep water berthage dredged to a depth of -13.0m CD (Chart Datum), plus associated cargo handling areas (Dublin Port Masterplan Area N). This terminal will accommodate larger Lo-Lo vessels of up to 240m, primarily from Continental Europe.
- Transit container storage yard located on waterside land currently used for bulk cargo handling (Dublin Port Masterplan Area L).

In our opinion, each of these Lo-Lo Terminal elements are considered a "workplace" and therefore falls within development type DT1.1 (development sensitivity level), subject to the constraints on the number of occupants (no more than 100 occupants in any one building / or outdoors) and the number of occupied stories in buildings (less than 3).

If either constraint for DT1.1 workplaces is not satisfied, the workplace would fall within the first *exclusion* to DT1.1, namely DT1.1 ×1, which applies to workplaces with more than 100 occupants in *any* building, or with three or more occupied stories. Such a development type falls within development Sensitivity Level 2. Up to 108 individuals could be present in Area N during normal operations; however, given the nature of the activities undertaken by the different groups of individuals, it is highly unlikely that all will be present within a single building.

A small portion of Area L lies within the risk contour outer zones. In our opinion, the development of Sensitivity Level 1 and 2 developments within this zone would satisfy the HSA's criteria under its land use planning guidance.

As set out in Section 6.1, a small portion of both Area O and Area N lie within the risk contour outer zones. In our opinion, development of sensitivity level 1 and 2 developments within this zone would satisfy the HSA's criteria under its land use planning guidance.

6.1.2.5 South Bank Road & Pigeon House Road

Under the HSA's guidance, roads and other transport links generally fall within Sensitivity Level 2 (DT2.3), namely motorways, dual carriageways, and transport links in their own right (transport links that are not an integral part of other developments). Estate and access roads for minimal numbers of people present, (mostly) for a short period of time, and associated with other development, generally fall under exclusion DT.2.3 ×1 (Sensitivity Level 1).

As set out in Section 6.1, the western part of the outer zones extends over South Bank Road to the south of the Dublin Bay Power and NORA Ringsend establishments, and the eastern part of the middle and outer zones extend over part of the new road development to the east of the proposed roundabout on Pigeon House Road. In our opinion, sensitivity level 1 developments within these zones would satisfy the HSA's criteria under its land use planning guidance.

6.1.2.6 Community Gain Areas

The 3FM Project includes a community gain proposal to provide additional and enhanced public realm throughout the Poolbeg Peninsula by way of new parks and active travel infrastructure. This will include:

- a sailing, rowing, and maritime campus at the existing Berth 41
- Port Park in the area of the Poolbeg West SDZ
- active travel infrastructure

The proposed routes and areas would be used by members of the public, with little (direct) control on either the numbers of people that may be present at any one time, or on the vulnerability of the people that may use it (e.g. elderly, infirm, young, or other sensitive populations).

Developments for indoor use by the public, e.g. restaurants/cafés in the proposed maritime village, where the total floor space is between 250 m² and 5,000 m² fall within DT2.4 (a Sensitivity Level 2 development). Neither the middle nor outer zone extends over this part of the 3FM development.

Developments for outdoor use by the public, e.g. picnic areas where less than 100 people gather at one time falls within DT2.5 (a Sensitivity Level 2 development). However, where numbers greater than 100 but less than 1,000 gather, the sensitivity increases to Sensitivity Level 3. The outer zone extends over the north-east portion of the proposed Port Park development, to the west of Area O. In our opinion, sensitivity level 2 and 3 developments within this zone would satisfy the HSA's criteria under its land use planning guidance.

6.1.3 Summary

Overall, in our opinion the constituent parts of the 3FM Project and their locations relative to the individual risk contours satisfy the HSA's individual risk criteria under its land use planning guidance.

6.2 Societal Risk

6.2.1 Expectation Value

The EV for Dublin Port South in its current layout, including the population associated with the Poolbeg West SDZ, is conservatively estimated at 109.9.

The EV for the South Port following the 3FM Project development is conservatively estimated at 111.3 (a marginal increase). The majority of the 3FM Project lies outside the COMAH land use planning zones and is generally subject to relatively low risks associated with the three COMAH establishments (and the non-COMAH generating station). The marginal increase in the EV is attributable, in general, to the increase in the number of people that will be present in the South Port associated with the 3FM Project, and the number of people that are expected to access the South Port.

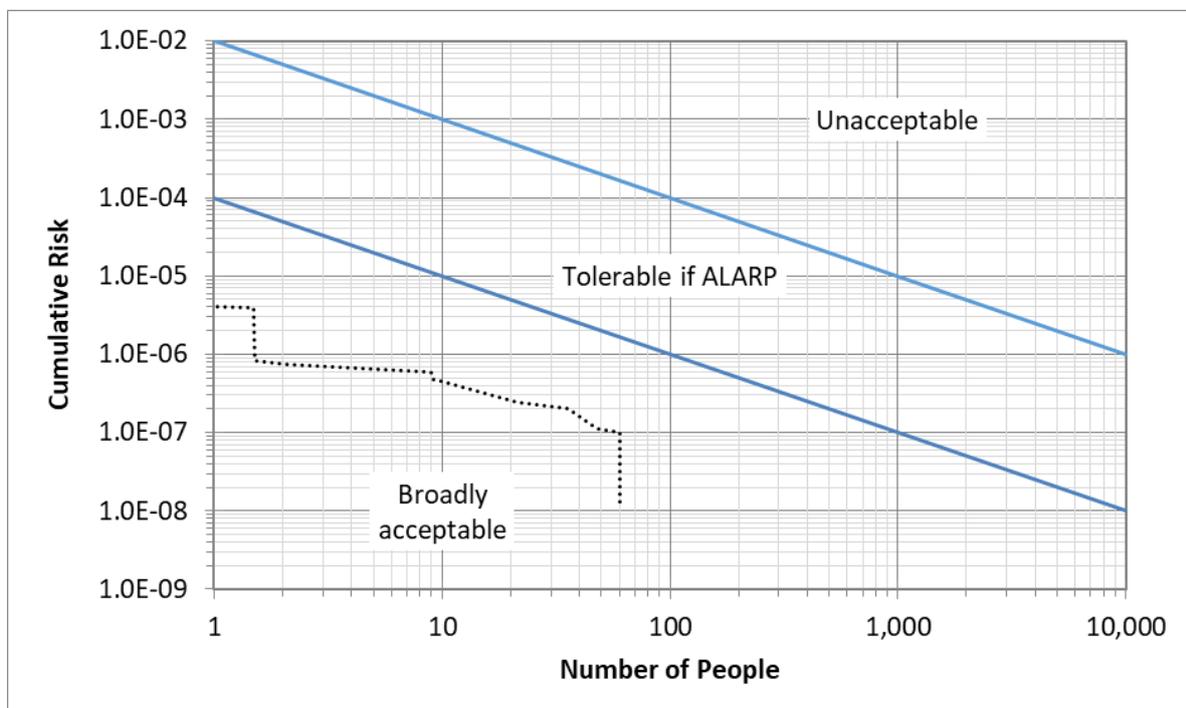
Overall, the societal risk (expressed as an EV) for the 3FM Project satisfies the HSA's COMAH land use planning criteria as it does not exceed a value of 450. Nonetheless, given the extent of the 3FM project boundary across Dublin Port South, we have further assessed the societal risk using an FN curve (refer to Section 6.2.2).

6.2.2 FN Curves

6.2.2.1 Current Port Layout

The conservative FN curve for the current layout of Dublin Port South is shown in Figure 3. This shows that the FN curve lies entirely within the broadly acceptable region.

Figure 3: FN Curve for Current Dublin Port South Layout



6.2.2.2 3FM Development

The FN curve for the future layout of Dublin Port South following the 3FM development is shown in Figure 4. Again, this shows that the curve lies entirely within the broadly acceptable region.

Figure 4: FN Curve for 3FM Development

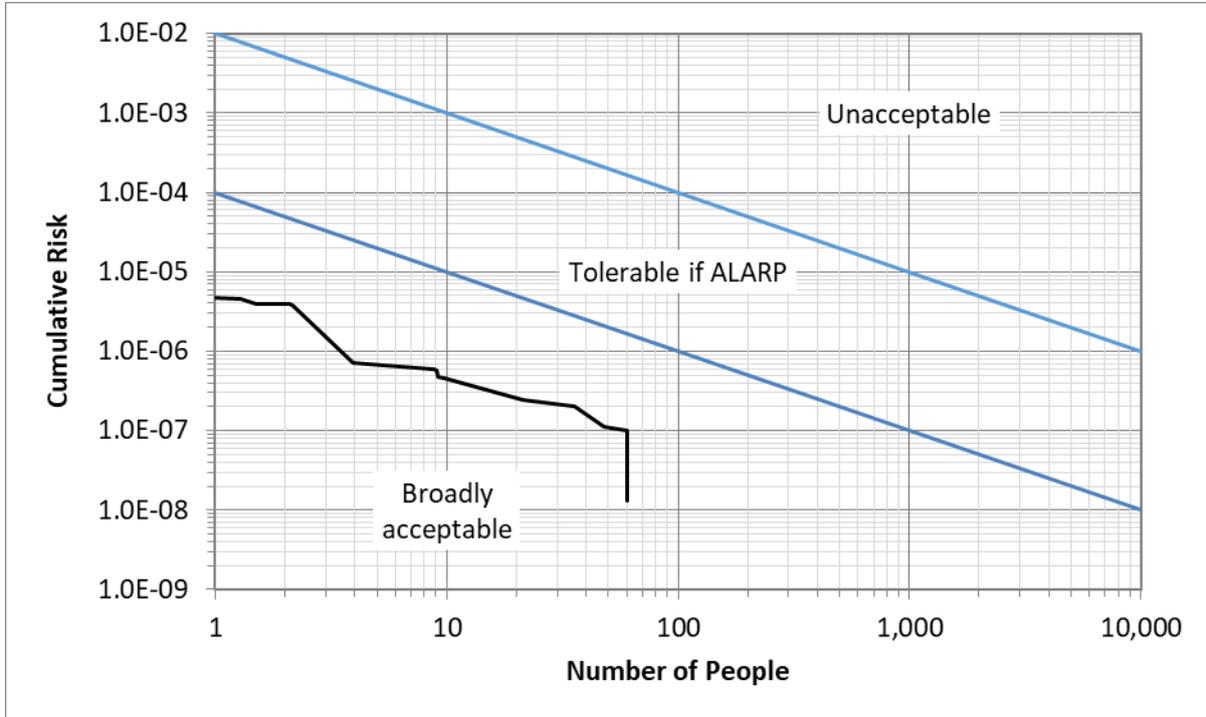


Figure 5 combines the FN curves for the current layout and the future (3FM development) layout.

Figure 5: Comparison between FN Curves – Current Layout & 3FM Development

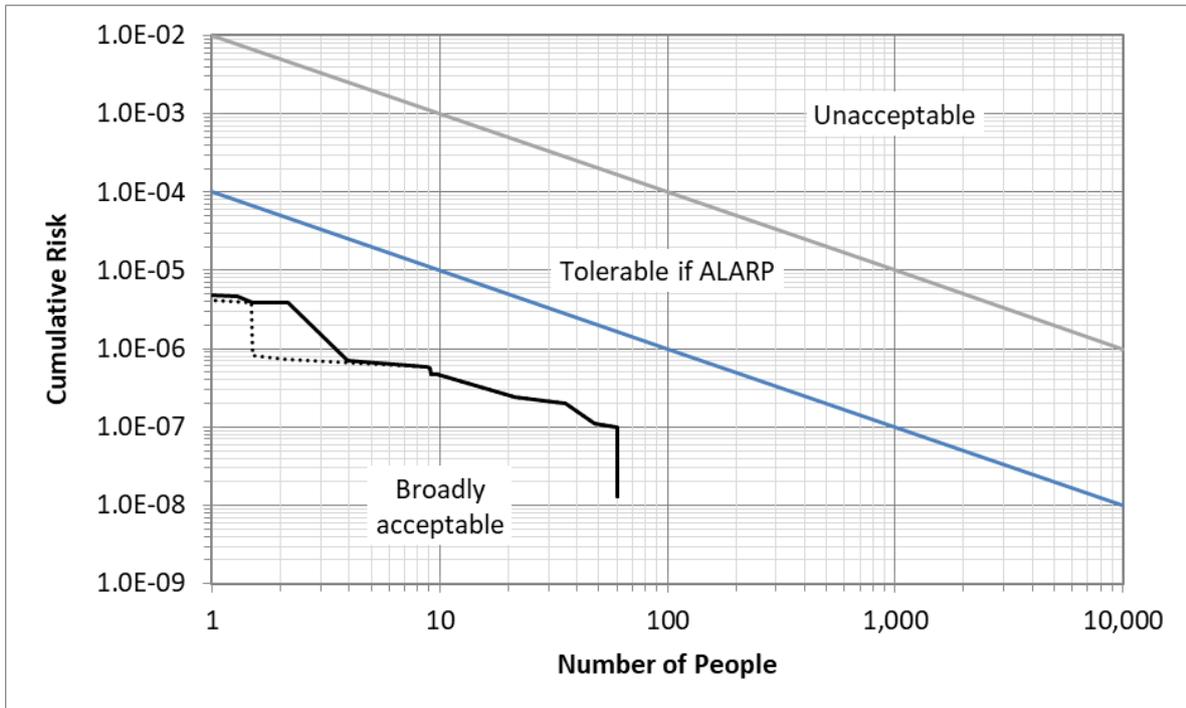


Figure 5 shows that there is a marginal increase in societal risk for events that could result in between 1 and 10 fatalities. As in the case of the EV assessment, the increase in societal risk estimated by means of an FN curve can be, broadly, attributable to the increase in the number of people that are expected to be present in the South Port area

Overall, the societal risk (expressed on FN curves) for the 3FM Project satisfies the HSA's COMAH land use planning criteria, as the curves (both current and future) lie entirely within the broadly acceptable region.

7 EMERGENCY RESPONSE MANAGEMENT

7.1 Introduction

Dublin Port's approach to Emergency Response Management is described in the following sub-sections, in the context of the potential for major accident hazards to arise at the COMAH establishments and, more generally, for other incidents and accidents that may arise across the Port estate.

7.2 Dublin Port Security

DPC operates its own port security, which is present 24 hours per day, 7 days per week, 365 days a year. Two patrol vehicles operate at all times in conjunction with An Garda Síochána, and the Port has a close working relationship with DCC, the operator of the Dublin Port Tunnel, and TII. In addition, DPC has a comprehensive CCTV system across the estate, with over 130 camera locations monitoring the complete road network and port infrastructure, with the system monitored by Harbour Police & Port Security 24 hours per day, 7 days per week, 365 days a year. Therefore, in the event of an incident on the road network, or an incident at a COMAH (or other facility) within the Port requiring the diversion of traffic, the Port can respond immediately and co-ordinate directly with the relevant emergency services.

7.3 Dublin Port Emergency Management Plan

7.3.1 Summary

As set out in *A Framework For Major Emergency Management* (produced by the National Steering Committee for Major Emergency Management), the *Harbours Act* places responsibility on the Harbour Master for the safety of shipping and all activities within the defined port limits. The legislation also requires that emergency plans be prepared in respect of the major ports. These emergency plans are designed generally to deal with incidents, in the first place using the port's own resources. Each port is also required to prepare an oil pollution plan to deal with oil pollution incidents, and responsibility for implementing the plan rests with the harbour master. Where COMAH establishments are located within a port (or harbour), the port authority is designated as a local competent authority and as such is included in the relevant external emergency planning process.

In this context, DPC has developed its *Emergency Management Plan*, the aim of which is to set out the structures and arrangements that will be used in response to an emergency to mitigate:

- loss of life or injury to employees, contractors, visitors and local residents
- damage to the environment

- damage to the facilities, plant and equipment within the port, its commercial partners, tenant companies and neighbours

The plan also aims to ensure that DPC emergency management structures and arrangements are compatible with the requirements of the *Framework for Major Emergency Management*.

The actions to be taken in an emergency are decided by the Emergency Management Team (EMT) and the plan itself may be activated by the Chief Executive Office, the Emergency Management Marine Coordinator (EMMC), or the Emergency Management Land Coordinator (EMLC), depending on the circumstances and severity of the incident.

The plan is designed to cater for both marine and land-based emergencies; land emergency scenarios may include:

- major fire within the general port area
- major oil spill
- major spill of hazardous material
- a vehicle accident involving hazardous material
- chemical incidents (e.g. toxic cloud)
- major incident in an oil, gas or hazardous material storage facility

The *Dublin Port Emergency Management Plan* also contains several scenario-specific sub plans for the individual types of emergency scenario, which focus on the immediate actions to be taken by internal sections of the port authority.

7.3.2 Dublin Port Alarm

The DPC fire alarm panel system is located in the Harbour Police / Port Security Control Room, situated on the ground floor of the Port Operations Centre. The fire alarm system monitors approximately 21 sites, and break glass units are located throughout the Port estate.

The fire alarm system can be activated manually or automatically from various points around the Port directly linked to the system. When activated, the Harbour Police / Port Security are immediately alerted and investigate the alarm before deciding on what action is required. The port wide sirens are located at the ESB North Wall Generating Station, the oil jetties, and DP Warehousing. With the exception of alarm tests, all pumping stops immediately on sounding of the Port-wide siren. Fire Wardens on the oil jetties communicate with all Common Oil Pipeline¹⁴ users by VHF radio.

For confirmed alarm activations, the affected site and Harbour Police / Port Security request the attendance of the emergency services, advising them of the nature of the emergency, name and location of the site affected using the ETHANE mnemonic:

¹⁴ The Common Oil Pipeline (COP) is used for transferring petroleum products from the oil berths to the various oil storage sites (including the eight COMAH establishments that store petroleum products), and for transferring LPG to the Calor establishment. The COP comprises separate pipelines for different products, including LPG, gasoline, kerosene, gas oil and bitumen (to three facilities that store bitumen and that are not subject to the COMAH Regulations). The COP is outside the scope of the COMAH Regulations.

- Exact location of the emergency
- Type of emergency (e.g. fire; hazardous material spill; road traffic accident)
- Hazards (present and potential)
- Access route to the emergency
- Number and type of casualties (if known)
- Emergency Services (those present and those required)

Once confirmed, the Harbour Police / Port Security immediately open the emergency gates located at the western end junction of Tolka Quay Road and East Wall Road, and this immediate area operates as the emergency services rendezvous point. Dublin Fire Brigade will be dispatched to the Port to deal with the incident, whilst the Harbour Police / Port Security will implement a traffic control plan, with the support of An Garda Síochána, as required.

The Port-wide alarm system is a continuous wailing alarm sound. On hearing this alarm, Port users should:

- Be aware that an incident is ongoing.
- Account for staff, visitors and contractors.
- Continue to operate as normal unless instructed otherwise, or individual company standard operating procedures indicate otherwise.
- Wait for further instructions from the Harbour Police / Port Security or the Principal Emergency Services¹⁵.

Port users should await further information from the Harbour Police / Port Security, whilst members of the public should tune in to a national radio station for updates.

7.3.3 Port Evacuation

During an emergency it may be necessary to evacuate the Port, or parts of the Port. As set out in the *Dublin Port Company Emergency Management Plan*, the Harbour Police / Port Security control traffic flow throughout the port in the event of an evacuation of one or more areas.

7.4 Dublin City Council Major Emergency Plan

Dublin City Council, the relevant Garda Division and Health Service Executive District are the principal response agencies (PRA) charged with managing the response to emergency situations that arise within Dublin City Council's administrative boundary. The Dublin City Council Major Emergency Plan is supported by, and is compatible with, the major emergency plans of An Garda Síochána and the Health Service Executive. In certain circumstances, the local response may be escalated to regional level, thus activating the plan for regional level co-ordination. If this is activated, the management of the incident is coordinated from a regional perspective.

¹⁵ An Garda Síochána, the Ambulance Service and the Fire Service. A fourth principal emergency service, the Irish Coast Guard, is responsible for the initiation, control and co-ordination of maritime emergencies in the Irish territorial waters, harbours and coastline.

Several specific local plans, such as the response plan to flood emergencies, remain in place as standalone plans, which can be implemented under the general arrangements and structures set out in the plan. Certain types of emergency have a particular focus, thus enabling a hazard or site-specific plan to be activated. Sub-plans deal with a range of incidents, such as severe weather emergencies, large crowd events and hazardous substances storage sites (such as COMAH establishments).

In the Dublin City Council administrative area, interagency specific off-site plans have been prepared for the upper tier establishments notified to the HSA (including those within the Port). In addition, the Port (which lies within the Dublin City Council administrative boundary) has prepared emergency plans and maintains emergency services commensurate with the hazards within the port boundary. Dublin Port authorities generally request the attendance of the principal emergency services at alerts, incidents and exercises at the facility. Where appropriate, a major emergency may be declared by the principal response agencies when responding to an incident in Dublin Port.

Dublin Fire Brigade provides the primary response to emergencies in the city and to the Port. The Council supports this response by providing amongst others, the following functions:

- coordinating the delivery of services from all council departments
- making buildings such as leisure and community centres available to people displaced by the emergency
- providing a volunteer civil defence organisation
- providing advice and assistance with clean up after major flooding or pollution
- assessing structural damage to buildings
- co-ordinating and leading multi-agency meetings to plan community recovery

Overall, and in accordance with the requirements of *A Framework for Major Emergency Management*, the Dublin City Council *Major Emergency Plan* has been prepared to facilitate the response to, and recovery from major emergencies as well as ensuring the Council's arrangements are coordinated with those of the other designated principal response agencies, the Health Service Executive and An Garda Síochána.

7.5 Emergency Response Exercises

The Port conducts regular emergency response exercises across its estate, covering incidents at the COMAH establishments in co-ordination with the operators of the establishments and with the emergency services, incidents at other facilities in the Port, road traffic incidents including incidents outside the Port estate that can have a knock-on effect on traffic within the Port, and incidents at the ferry terminals or berths. These exercises test the Port's procedures, response actions and the resources that may be deployed (personnel and emergency response equipment), thereby ensuring that the Port is well prepared to respond to an incident or emergency.

7.6 Dublin Port Dangerous Cargoes Bye-laws

In addition to the obligations on operators of COMAH establishments under the COMAH Regulations, and on the obligations of vessels and goods vehicles transporting dangerous goods under the *European Agreement concerning the International Carriage of Dangerous Goods by Road* (ADR) and the *International Maritime Dangerous Goods* (IMDG) Code, dangerous goods within the port estate are governed by the *Dublin Port Bye-Laws*. The byelaws regulate the movement and storage of dangerous goods within the Port:

- arrival by sea in packaged form, in liquid bulk or in solid bulk
- departure by sea
- arrival by road or rail
- storage / staging in the Port estate

In the context of storing / staging dangerous goods within the Port, including at the COMAH establishments, the byelaws require that all port terminals and tenants:

- develop and maintain a *Dangerous Goods Storage and Emergency Response Plan*
- maintain a Dangerous Goods Inventory
- hold and have readily available safety data sheets (SDS) for all dangerous cargoes stored at the site
- conduct an annual exercise of the emergency response plan
- employ a qualified dangerous goods safety advisor (DGSA)
- conduct and maintain a chemical risk assessment.

8 CONCLUSIONS

Based on this conservative assessment, in our opinion the proposal for the 3FM Project within Dublin Port South satisfies the HSA's criteria under its land use planning guidelines. For individual risk:

- No part of the proposed 3FM Project falls within the inner zones.
- The only element of the proposed development within the middle zones is part of the new road development to the east of the proposed roundabout on Pigeon House Road. This development may be classified as sensitivity level 1, which would satisfy the HSA's criteria under its land use planning guidance.
- The elements of the proposed development within the outer zone may be classified as sensitivity level 1, 2 or 3 developments and are, therefore, consistent with the HSA's criteria for individual risk.

In the case of the societal risk criteria, there is no material change in Expectation Value, and the risk profiles for both the current Port layout and following the 3FM Project lie within the broadly acceptable region with the FN curve for the 3FM Project showing a marginal increase in the risk profile. In this context, and taking into account that the COMAH establishments are required to manage their establishments such that the risks are as low as reasonably practicable, in our opinion the societal risk satisfies the HSA's land use planning criteria.

In addition, the Port has developed a comprehensive emergency management plan that caters for the range of accident and emergency events that may occur within its estate (or that may occur outside the estate and that have a direct, knock-on effect), and this plan is provided to the other relevant stakeholders, including An Garda Síochána, Dublin City Council, Transport Infrastructure Ireland, and the Principal Response Agencies. In the event of an incident at a COMAH establishment that could impact on people at other facilities in the Port, or on road traffic entering or exiting the Port, DPC will activate its emergency management plan, in which case people would be directed away from the source of the hazard. As it is not possible to model the different combinations of major accidents and the corresponding emergency response actions within the societal risk assessments, the estimated societal risk is concluded to be conservative.

Accordingly, in our opinion, the potential major accident risks associated with the proposed 3FM Project satisfy the Health and Safety Authority's COMAH land use planning guidance.

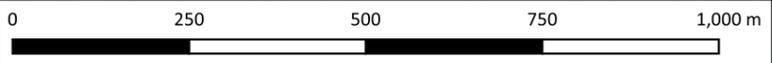
APPENDIX 1: COMAH ESTABLISHMENTS IN DUBLIN PORT



Legend

COMAH Establishments

- Lower tier
- Upper tier

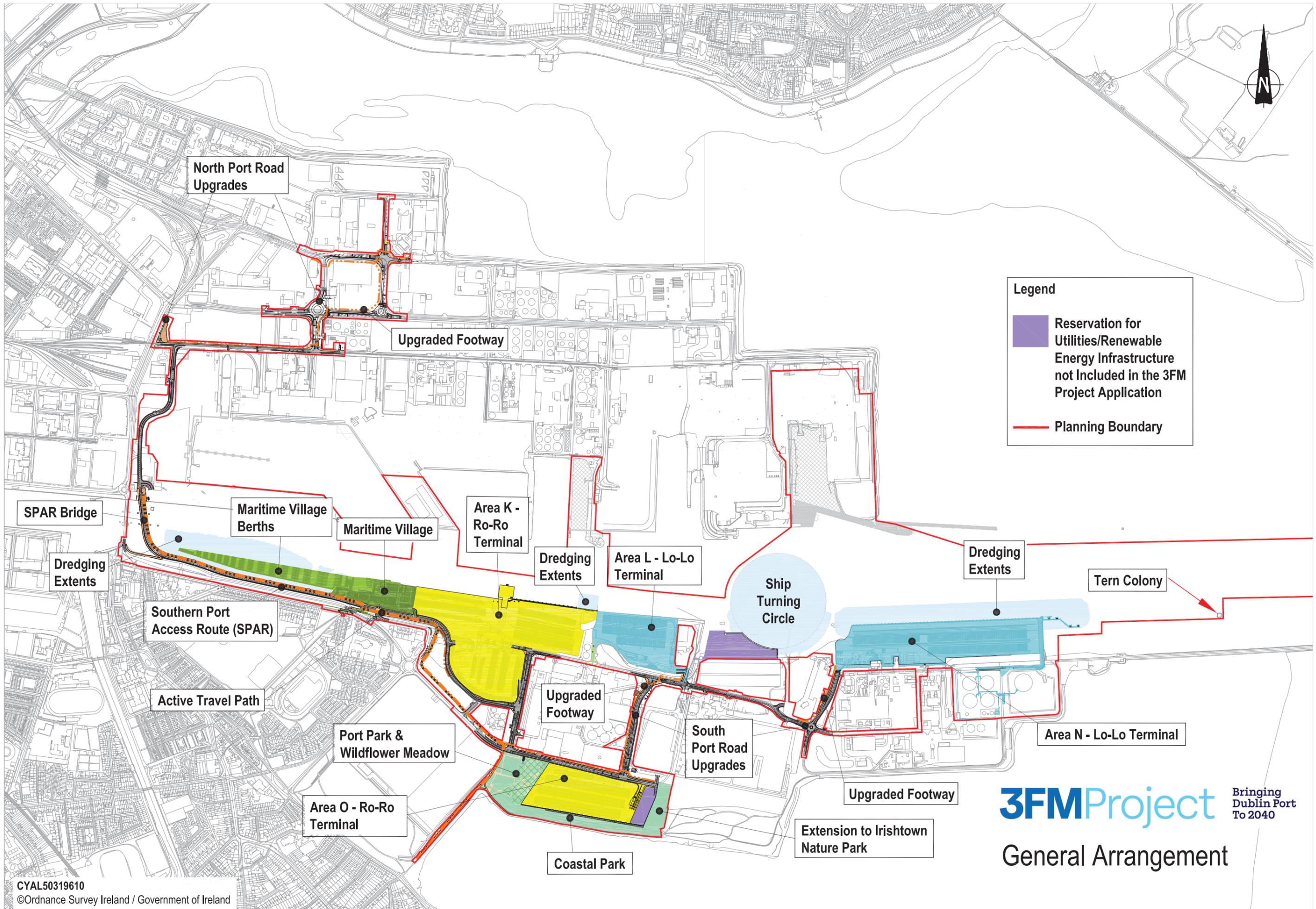


BYRNE Ó CLÉIRIGH
ENGINEERS & CONSULTANTS

Byrne Ó Cléirigh Ltd.
30A Westland Square
Pearse Street, Dublin 2, D02 PN76, Ireland
t: 353 1 677 0733 | f: +353 1 677 0729 | e: info@boc.ie
www.boc.ie

Client	RPS		
Project	COMAH Land Use Planning Assessment for Dublin Port 3FM Project		
Title	COMAH Establishment		
Scale	1:10,000	541-24X0079 R0 Appendix 1	R0
FBS	07.03.03		

APPENDIX 2: DEVELOPMENT LAYOUT



Legend

- Reservation for Utilities/Renewable Energy Infrastructure not Included in the 3FM Project Application
- Planning Boundary

3FMProject Bringing Dublin Port To 2040
 General Arrangement

APPENDIX 3: PLANNING SUMMARY

Table 15: Planning summary for COMAH establishments & generating stations

Establishment	Reference	Description	Status
Dublin Bay Power	3646/20	<p>Planning permission for development on a c. 3.5 ha site to the south of the existing Dublin Bay Power Station. The development will consist of a 30 MW capacity battery energy storage system (BESS) facility within a secured compound and will include the following elements:</p> <ul style="list-style-type: none"> • up to 11 battery container unit arrangements comprising: <ul style="list-style-type: none"> – 6 concrete plinths typically supporting battery containers, air conditioning unit, inverter unit, battery transformer unit and ring main unit (RMU) – 5 concrete plinths typically supporting battery containers, air conditioning unit, inverter unit, battery transformer unit and ring main unit (RMU) • a control building • industrial/electrical plant including a SCADA communications mast, a fenced transformer compound, VAR support unit on a concrete plinth, four lightning monopoles, a banded house transformer, cable trays and associated service connections, and pole mounted security cameras • removal of existing fencing and gates, and installation of various boundary and internal fencing and gates including palisade, chainlink and wall mounted blunt top railing and gates • ancillary site clearance and development works including provision of areas of hardstanding, internal access roads, onsite drainage and attenuation, temporary construction laydown areas • connections to site services networks including telecommunications, electrical, water supply, surface water drainage / attenuation, and ancillary cabling (these encompass connections within Dublin Bay Power Station) <p>Access will be from South Bank Road on the southern boundary and via the existing access to the east from Shellybanks Road. A minor part of the application – being a minor area of land identified for use as a temporary construction laydown area and for access, relates to development in the Poolbeg West Strategic Development Zone (SDZ). An Environmental Impact Assessment Report (EIAR) which complies with the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. 296 of 2018) will be submitted to the Planning Authority with the application. A Natura Impact Statement (NIS) will be submitted to the Planning Authority with the application.</p>	Final grant of permission on 6 th August 2021
Dublin Bay Power	3647/20	<p>Planning permission for development on a c. 6.1 ha site to the south of the existing Dublin Bay Power Station. The development will consist of a 75 MWe (electrical output) aero derivative gas fired turbine for the generation of electricity and will include the following elements:</p>	Final grant of permission on 6 th August 2021

Establishment	Reference	Description	Status
		<ul style="list-style-type: none"> • an aero derivative gas fired turbine module • ancillary buildings including a demineralised water forwarding pumps building, plant control module (PCM), compressed air and fire suppression building, control & instrumentation (C&I) communications module, welfare facilities building, electrical equipment module, fuel forwarding pumps building, gas reducing building, gas compressor building, and continuous emissions monitoring system (CEMS) hut. • industrial/electrical plant including a liquid fuel forwarding skid, lube oil skid, demineralised water tank, transformer compound, emergency diesel generator, fire ring main, bunded liquid fuel tank, gas compressor cooler, gaseous fire suppression cabinet, fin fan coolers, water wash cart, water injection skid, circuit breaker and bunded house transformer • removal of existing fencing and gates, and installation of various boundary and internal fencing and gates with different treatments including securi-mesh, palisade, chainlink, and wall mounted blunt top railing and gates • ancillary site clearance and development works including provision of areas of hardstanding and car parking, internal access roads, pipe bridges, onsite drainage, temporary construction laydown area • connections to site services including telecommunications, gas, electrical, liquid fuel, water supply, surface water drainage, and wastewater (these encompass connections within Dublin Bay Power Station). <p>Liquid fuel connections are also proposed including into the NORA Ringsend site, and between the Dublin Bay Power Station fuel oil storage tanks and the NORA Ringsend site. Access will be via the two existing access points located on the southern boundary, from South Bank Road.</p> <p>A minor part of the application – being a minor area of land identified for use as a temporary construction laydown area and for the construction of connections to site services, relates to development in the Poolbeg West Strategic Development Zone (SDZ). The proposed development is for the purposes of an activity requiring a licence from the Environmental Protection Agency under the Industrial Emissions Directive.</p>	
ESB Poolbeg Generating Station	3624/20	<p>The development will consist of a 75 MWe (electrical output) aero derivative gas fired turbine for the generation of electricity and will include the following elements:</p> <ul style="list-style-type: none"> • an aero derivative gas fired turbine module • ancillary buildings including a gas compressor building, liquid fuel forwarding pumps building; fire-fighting pumps building; water treatment plant building, gas reducing building, continuous emissions monitoring (CEMS) hut, electrical equipment module, control & instrumentation (C&I) communications module, plant control module (PCM), welfare facilities building fire suppression and compressed air system building; 	Final grant of permission on 22 nd June 2021

Establishment	Reference	Description	Status
		<ul style="list-style-type: none"> • industrial/ electrical plant including an emergency diesel generator, gas compressor cooler, de-mineralised water tank, spare parts storage container, bunded liquid fuel tank, raw / fire water tank, fire suppression cabinet, liquid fuel forwarding skid, water wash cart, lube oil skid, transformer compound, generator circuit breaker, fin fan coolers, water injection skid, bunded house transformer; • various boundary and internal fencing and gates with different treatments including securi-mesh, palisade, and chainlink; • ancillary site clearance and development works including provision of areas of hardstanding and car parking, internal access roads, pipe bridges, onsite drainage and attenuation, temporary construction laydown area; and connections to site services networks including: telecommunications, gas, liquid fuel, electrical, water supply, surface water drainage/ attenuation, and wastewater. <p>The primary access will be via the existing Poolbeg Generating Station entrance at Pigeon House Road with a temporary construction access via the existing entrance off the road immediately south of the site. The proposed development is for the purposes of an activity requiring a licence from the Environmental Protection Agency under the Industrial Emissions Directive.</p>	
ESB Poolbeg Generating Station	3625/20	<p>Planning permission for development on a c. 5.3 ha site located within the existing Poolbeg Generating Station. The development will consist of:</p> <ul style="list-style-type: none"> • The demolition of three existing disused modern buildings. • Works including: <ul style="list-style-type: none"> – remediation and cladding of exposed northern façade of redundant former administration building – cladding of exposed western façade of turbine hall building on eastern boundary of development site – ancillary site clearance, grading and surfacing • Construction and operation of a 75 MW capacity battery energy storage system (BESS) facility within a secured compound including the following elements: <ul style="list-style-type: none"> – Up to 24 battery container unit arrangements comprising 24 concrete plinths typically supporting battery containers, air conditioning (A/C) unit, inverter unit, battery transformer unit, and ring main unit (RMU) – a control building; – industrial/ electrical plant including three lightning monopoles, SCADA communication mast, VAR support unit on concrete plinth, two bunded house transformers, spare parts storage container, fenced 	Final grant of permission on 22 nd June 2021

Establishment	Reference	Description	Status
		<p>transformer compound, cable trays (and associated service connections), and pole mounted security cameras</p> <ul style="list-style-type: none"> Removal of existing fencing and gates, and installation of: various boundary and internal fencing and gates with different treatments including palisade and chainlink specification Ancillary development works including provision of areas of hardstanding, internal access roads, onsite drainage and attenuation, temporary construction laydown areas; and connections to site services networks including: telecommunications, electrical, water supply, surface water drainage/ attenuation, and ancillary cabling. <p>The primary access will be via the existing Poolbeg Generating Station entrance at Pigeon House Road with a temporary construction access via the existing entrance off the road immediately south of the Poolbeg Generating Station.</p>	
Adjacent to Dublin Bay Power	PWSDZ3074/23	<p>The proposed development will consist of the following elements:</p> <ol style="list-style-type: none"> Demolition of two storage buildings and demolition of four oil tanks within the bunded area of the NORA Ringsend oil farm. Construction/installation of an open cycle gas turbine (OCGT) generating unit and associated plant and equipment, comprising the following main components: <ol style="list-style-type: none"> Gas turbine air intake Generator enclosure Gas turbine enclosure including gas turbine auxiliaries and loading/ rotor turning area Exhaust diffuser & 40 m high exhaust stack Gas turbine power control and electrical control & instrumentation(C&I) module 10 fin fan coolers Main transformer and bund & auxiliary transformer and bund Demineralised water treatment plant & water tank, Water supply / gas supply rack & cable joint chamber (underground), and raw/fire water tank Fuel oil forwarding pumps Combined fire-fighting and demineralised water forwarding pumphouse Emergency diesel generator (250 kWe) 	Final grant of permission on 13 th February 2024

Establishment	Reference	Description	Status
		<ul style="list-style-type: none"> l. Generator circuit breaker m. Gas conditioning compound, which includes a gas compressor and auxiliaries building, gas compressor reducing building, gas compressor cooler, gas compressor blast wall, continuous emissions monitoring system (CEMS), 220 kV indoor switchgear building and bolted connections. n. Hydrogen storage compound o. Containerised office building & storage <p>3. Construction of bund wall between the proposed OCGT and NORA oil farm.</p> <p>4. Connection to the existing gas above ground installation (AGI).</p> <p>5. All associated works to facilitate the development e.g. temporary construction compound, security fencing and gates, baffle walls, underground cables, new lighting arrangement, lightning and telecommunication masts, parking and surface water drainage network.</p>	
ESB Poolbeg Generating Station	3137/23	<p>The proposed development will consist of:</p> <ul style="list-style-type: none"> 1. Demolition of the existing Babcock Store building, hydrogen tank, temporary control building and water tank within the NORA bunded area. 2. Construction/installation of an open cycle gas turbine (OCGT) generating unit and associated plant and equipment, comprising the following main components: <ul style="list-style-type: none"> a. Exhaust stack b. Gas turbine air intake c. Generator enclosure d. Gas turbine enclosure including gas turbine auxiliaries and loading / rotor turning area e. Exhaust diffuser f. Gas turbine power control and electrical control & instrumentation (C&I) module g. 9 fin fan coolers h. Main transformer, including a bund and blast walls i. Auxiliary transformer, including a bund and blast walls j. Demineralised water treatment plant k. Demineralised water tank 	Final grant of permission on 11 th December 2023

Establishment	Reference	Description	Status
		<ul style="list-style-type: none"> l. Raw/fire water tank m. 8,000 m³ distillate fuel (secondary oil tank), including baffle walls surrounding the tank n. Fuel oil forwarding pump o. Fire fighting pumphouse p. <1 MW thermal output emergency diesel generator 250 kWe q. Generator circuit breaker r. Two water (replacement) firewater tanks for NORA s. 3-bay 220 kV indoor switchgear building t. Gas conditioning compound, including a gas compressor and auxiliaries building, gas compressor reducing building and gas compressor cooler u. Hydrogen storage compound v. Continuous emissions monitoring system (CEMS) w. CCGT stores building x. Workshop, stores and administration building <p>3. Connection to the existing AGI</p> <p>4. Connection to the national grid via the existing 220 kV Poolbeg Substation</p> <p>5. All associated works to facilitate the development, e.g., temporary construction compound, perimeter fencing, blast and baffle walls, above-ground pipe racks, underground cables, a new lighting arrangement, lightning and telecommunication masts, parking and surface water drainage network including a new stormwater outfall.</p>	
Adjacent to NORA Ringsend	WEB1509/24	The development will consist of a 220kV underground cable measuring approximately 4.0m in length, from the Ringsend Open Cycle Gas Turbine (OCGT) plant permitted under application ref: PWSDZ3074/23 and the existing Irishtown 220kV substation, to facilitate electricity generated to be transferred to the national grid, and includes all associated works to facilitate the development.	Declared invalid
Adjacent to NORA Ringsend	WEB1558/24	The development will consist of a 220kV underground cable measuring approximately 4.0m in length, from the Ringsend Open Cycle Gas Turbine (OCGT) plant permitted under application ref: PWSDZ3074/23 and the existing Irishtown 220kV substation, to facilitate electricity generated to be transferred to the national grid, and includes all associated works to facilitate the development.	Applied

Establishment	Reference	Description	Status
ESB	PWSDZ3791/24	Development at this c 2.4 ha site on ESB lands located to the south of the existing Ringsend 110 kV Substation on the Poolbeg Peninsula, Southbank Road, Ringsend, Dublin 4. The development will consist of the removal of the existing Air Insulated Switchgear (AIS) electrical substation and the construction of a new 110 kV Gas Insulated Switchgear (GIS) electrical substation and will include the following elements: a. Construction of a new substation compound of approximately 3916 m ² , with a c. 2.6 m high palisade fence around the entire perimeter of the substation. The compound comprises a new indoor 20 bay GIS building measuring c. 1,090 sq.m (c. 44.5 (m) x c. 24.5 (m) x c. 16.3 (m)); b. Provision of new electrical plant and equipment within the substation including: -2 no. Transformer bunds (Length (c. 22.9m) x Width (c. 10.9m) x Height (c. 7.0m)); -2 no. 110 kV electrical transformers and associated outdoor electrical equipment to facilitate underground cable connections between the existing transmission circuits and the proposed GIS building; c. Provision of site services including compound lighting, telecommunications, access roads and drainage; d. Subsurface ground surface water attenuation tank (c. 143 m ²); e. All associated and ancillary site development works to accommodate the construction of the substation and transferring of the cable circuits from the existing AIS to the new GIS Building; and f. Retirement and removal of the above ground elements associated with the existing AIS. The application is partially located within Poolbeg West Strategic Development Zone (SDZ) Planning Scheme area. Planning permission is being sought for a period of 10 years. The application includes a Natura Impact Statement (NIS).	Applied
Poolbeg 220kV Electrical Substation and adjacent land, Pigeon House Road	4057/23	The development will consist of construction of a new 220kV gas insulated switchgear (GIS) Switchboard building measuring 65.2 x 51.8m and 17m high; construction of 2no. new shunt reactor units (each within a 4.3m x 8.2m x 5.5m enclosure) and 1no. new series reactor unit (within a 4.7m x 12.7m x 16.6m enclosure), associated connections to the 220kV GIS switchboard building an decommissioning and removal of 2no. existing shunt reactors; an extension of the existing internal access road around the new GIS switchgear building and 4no. car parking spaces; all ancillary and associated works to facilitate the development including removal of existing perimeter berm and new 2.6m high boundary fence around extended substation compound, perimeter planting, 3m high lightning protection to new GIS switchboard building, surface water drainage network including an attenuation pond, lighting and laying of 2 temporary cable circuits for the construction and commissioning period connection the existing AIS building to the new GIS switchboard building and all other associated site excavation, raising of site levels, infrastructural and site development works above and below ground. Planning permission is sought for a period of 10 years. A Natura Impact (NIS) will be submitted to the Planning Authority with the application.	Final grant of permission on 29 th November 2023 First party appeal submitted to ABP on 4 th January 2024

Table 16: Summary of recent planning for Poolbeg West SDZ

Planning Reference	Registration Date	Description	Decision
PWSDZ3270/19	2019-11-25	The proposed development will consist of streets, transportation, water services and utilities infrastructure; public realm and public amenity spaces; and, temporary landscaping of a school site, to facilitate Phase 1 development as provided for under the approved <i>Poolbeg West SDZ Planning Scheme</i> .	Grant permission
PWSDZ3207/21	2022-01-28	The proposed development will consist of amendments to Permission Register Reference PWSDZ3270/19 in those areas where the net site of 2.4 ha overlaps with the boundaries of the earlier 4.3 ha infrastructure permission. The proposed development will consist of the construction of a residential and mixed-use scheme, comprising four blocks to provide: <ul style="list-style-type: none"> • 600 apartment units and associated residential amenity facilities (gym, lounge, meeting room, cinema room and other private amenities) • childcare facility (80 childcare places and outdoor play area) • café restaurant • two retail units • 166 car parking and 961 bicycle parking spaces • landscaped open spaces to comprise residential communal courtyards (incl. children's play areas), and roof terraces • three ESB substations 	Grant permission
PWSDZ3350/22	2022-02-23	Planning permission for the continuation of use of an existing concrete batching plant and associated facilities (previously granted under Reg Refs No 2482/19; 2209/13 & ABP Ref No PL29S.241965; 1420/04 & ABP Ref No. PL29S.207144) for a temporary period of five years. The application site is located within the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme area.	Declared invalid
PWSDZ3469/22	2022-03-08	Planning permission for the continuation of use of an existing concrete batching plant and associated facilities (previously granted under Reg. Refs. No 2482/19; 2209/13 & ABP Ref. No PL29S.241965; 1420/04 & ABP Ref. No. PL29S.207144) for a temporary period of five years at South Bank Road, Irishtown, Dublin 4. The application is located within the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme area.	Grant permission

Planning Reference	Registration Date	Description	Decision
PWSDZ4121/21	2022-06-02	<p>The element of the scheme for which retention permission for development is sought consists of the removal of two sections of tree cover cumulatively-consisting of some 100 trees.</p> <p>The element of the scheme for which permission for development is sought will consist of amendments to the "Parent Permission" (PWSDZ3270/19) to temporarily provide three rows of tree cover and associated landscaping consisting of:</p> <ul style="list-style-type: none"> • 100 native trees • native understory whip mix • native wild flowers • erection of rabbit-proof fencing • two maintenance access gates 	Grant retention permission
PWSDZ4543/22	2022-07-25	<p>Temporary permission for development (fewer than five years, to coincide with the duration of the Phase 1 Permission (7 May 2027, approximately), granted on 24 March 2022 (Reg. Ref. PWSDZ3207/21) to amend the Cultural Hub ("Meanwhile Uses") element of the Phase 1 Permission in order to facilitate the construction of an "Expanded Meanwhile Uses" facility.</p>	Refused
PWSDZ3406/22	2022-12-06	<p>Permission for development for a mixed use development (Referred to as Phase1B) on this site of 15.06 hectares including lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4, focused primarily, but not exclusively, on a net site area of 0.76 hectares (identified as within the A3 Lands) in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019).</p> <p>The proposed Phase 1B development will consist of:</p> <ul style="list-style-type: none"> • 356 No. apartment units • residential amenity facilities (to include a lounge, meeting area, and other private amenities) • retail space located at the ground floor • 69 basement car parking spaces and 11 on-street car parking spaces • 610 bicycle parking spaces • plant rooms and resident storage spaces • landscaped open spaces to comprise residential communal courtyards (incl. children's play areas), and roof terraces • 1 ESB double substation and associated LV switch rooms 	Grant permission

Planning Reference	Registration Date	Description	Decision
PWSDZ4058/22	2023-04-03	Permission for development for a mixed use development (Referred to as Phase 2) on this site of 15.06 hectares including lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4, focused primarily on a net site area of 2.10 hectares (identified as within the A1 Lands) in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019).	Refused
PWSDZ4380/22	2023-04-14	Development of an office and mixed-use scheme (Referred to as Phase A Commercial) on an infill site of c.15.08 hectares (with a net focused site area of c. 1.78 ha) of land within the former Irish Glass Bottle (IGB) and Fabrizia sites on Sean Moore Road, Dublin 4 (including some 198 sq metres of public domain on Southbank Road to accommodate vehicle and pedestrian access). The site is identified as within the A1 Lands in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019).	Refused
PWSDZ4217/23	2023-07-26	Permission for development comprising modifications to a permitted mix-use scheme (referred to as phase 1B) at a site including lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4. The site is identified as being within the A3 lands in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019).	Declared invalid
PWSDZ4341/23	2023-08-21	<p>Planning permission for development comprising modifications to a permitted mixed-use scheme (Referred to as Phase 1B) at a site including lands known as Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4. The site is identified as being within the A3 Lands in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019).</p> <p>The proposed development consists of a change of plan and a change of unit types from that permitted under Dublin City Council Planning Reference PWSDZ3406/22. The proposed development will comprise a total of 324 no. residential units (as permitted).</p> <p>The amendments related to the replacement of 8 no. 2 bed units with 8 no. 1 bed units resulting in an overall unit mix of 100 no. 1 beds, 166 no. 2 beds, and 58 no. 3 beds. These unit modifications are to facilitate the construction of an additional stairs from the 10th to 17th storey within the permitted development to address fire safety requirements. The proposal will result in minor elevational changes.</p>	Grant permission
PWSDZ4276/23	2023-11-24	Planning permission for development comprising modifications to a permitted mixed-use development (referred to as Phase 1 located at this site which is identified as being within the A3 lands in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019). The wider site also includes the lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4. The amendments relate to the Block O tower of the development permitted under Dublin City Council Planning Reference PWSDZ3207/21 only. The proposed development consists of the following modifications:	Grant permission

Planning Reference	Registration Date	Description	Decision
		<ul style="list-style-type: none"> change of facade material from polished concrete to aluminium unitised panels on the permitted tower of Block O, partial reconfiguration of the basement and ground floor of block O to provide for additional residential amenity space, alteration of the permitted entrance to Block O. 	
PWSDZ3074/23	2023-12-13	See Table 15	Grant permission
PWSDZ3908/23	2023-12-18	Permission for development at our existing molasses storage terminal at the Corner of South Bank Road and Whitebank Road, Ringsend, Dublin, D04 TC98. Site located in the Poolbeg West Strategic Development Zone. The development will consist of 6 no. additional liquid storage tanks, a loading gantry, 2 x 200mm fixed pipelines to extend from the subject site to the Liffey/port quay side and a new pipe bridge crossing the Pigeon House Road at ED&F Man Liquid Products Ireland Limited.	Grant permission Note 1
PWSDZ5054/23	2023-12-22	For the construction of a 6 storey structure to accommodate a multi-functional Community Hub and an Innovation Hub (12,556 sq m GFA) (referred to as Block P, accommodating community, innovation (office), leisure, cultural, artistic, café, educational, and library uses) on a site of 15.06 hectares (identified as 'Glass Bottle') including lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4, focused primarily, but not exclusively, on a net site area of 0.4523 hectares in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019).	Declared invalid
PWSDZ3062/24	2024-01-19	<p>Pembroke Beach DAC intends to apply for permission for development for the construction of a 6 storey structure to accommodate a multi-functional Community Hub and an Innovation Hub (12,556 sqm GFA) (referred to as Block P, accommodating community, innovation (office), leisure, cultural, artistic, café, educational and library uses) on a site of 15.06 hectares (identified as 'Glass Bottle') including lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4, focussed primarily, but not exclusively, on a net site area of 0.4523 hectares in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019). The overall site is bounded to the north-west by Sean Moore Road, to the north-east by South Bank Road, to the south-east by Dublin Port lands and Dublin Bay, and to the south-west by Sean Moore Park.</p> <p>The Block P structure is bounded to the north-west by the permitted Blocks O and M, to the north-east by the school site, to the south-east by the permitted Village Green and to the south-west by Clanna Gael Fontenoy CLG. The overall site subsumes the 4.3 hectare site of the Infrastructure Permission ('Parent Permission') (Reg. Ref. PWSDZ3270/19) for which Dublin City Council issued a Notification of Final Decision (10-year permission) on 28 January 2020. The infrastructure Permission (Reg. Ref. PWSDZ3270/19) permits: streets, transportation, water services and utilities infrastructure; public realm and public amenity spaces (including the Village Green and a Dog Park); and temporary</p>	Applied

Planning Reference	Registration Date	Description	Decision
		<p>landscaping of a school site, all to facilitate Phase 1 development as provided for under the approved Poolbeg West SDZ Planning Scheme.</p> <p>The proposed Block P development will consist of:</p> <ul style="list-style-type: none"> • Amendment of Permission Register Reference PWSDZ3270/19 in those areas where the net site of 0.4523 hectares overlaps with the boundaries of the earlier 4.3 hectare Infrastructure Permission (Reg. Ref. PWSDZ3270/19) to facilitate amendments to materials, urban tree locations and landscaping, and to facilitate the change in levels between the western edge of the permitted Village Green and the proposed Block P together with public realm and public amenity space; • Amendment of Permission Register Reference PWSDZ3207/21 at the permitted local street (side street) identified as Holbrook Street where the net site area of 0.4523 hectares overlaps with the boundaries of the earlier 4.46 hectares' focussed site area of the Phase 1 Permission (Reg. Ref. PWSDZ3207/21) to facilitate the provision of on-street bicycle parking; and • the construction of a multi-functional Community Hub and an Innovation Hub (12,556 sqm GFA) comprising a single 6-storey Block (with set-backs at Levels 3, 4 and 5 including set-back accessible roof terraces at 5th floor level, roof amenity space (including an enclosed basketball court) and roof level plant) to provide: community and educational uses (2,863 sqm GFA); a Community/Innovation Centre (including café) (1,785 sqm GFA), cultural uses (678 sqm GFA) including (20 No. Artists' Studios (13 No. individual Artists' Studios and 7 No.-equivalent Shared Artists' Studio/Exhibition Space)); Innovation Hub (office) (7,058 sqm GFA) (including bike storage and changing facilities); and ancillary back-of-house spaces/facilities (172 sq m) including ESB substation and associated MV switchroom, tenant landlord switchroom, transformer room and telecom room; and bin stores). <p>The proposed Block P development will also consist of the: - Provision of 5 No. new on-street car parking spaces (incl. 2 No. Accessible car parking spaces) and 1 No. on-street loading/taxi bay; and - Provision of 219 No. bicycle parking spaces (147 No. long-stay standard bicycle parking spaces located at the Innovation Hub Bike Store; 70 No. short-stay standard bicycle parking spaces located on-street at surface level; and 2 No. cargo bicycle parking spaces located at surface level).</p> <p>Access and servicing of the proposed Block P development will be by way of the permitted Local Street (Side Street) identified on the emerging Masterplan as "Holbrook Street" (as included in the Permitted Phase 1 (Reg. Ref. PWSDZ3207/21) and Phase 1B (Reg. Ref. PWSDZ3406/22) Schemes) and by the Coastal Link to be delivered as part of this development between Holbrook Street and the Village Green (permitted under the 'Parent Permission' (Reg. Ref. PWSDZ3270/19). The proposed development will also consist of the provision of: hard and soft landscaping incl. Coastal Link Planting, and roof terraces; publicly-accessible roof amenity space; a mural on the south-east elevation; pedestrian and cycle links; boundary treatments; tree removal and tree planting; interim site hoarding; public lighting; green and</p>	

Planning Reference	Registration Date	Description	Decision
		blue roofs; piped site wide services; and all ancillary works and services necessary to facilitate construction and operation. This application will be accompanied by a Natural Impact Statement (NIS).	
PWSDZ3461/24	2024-03-28	For development, comprising modifications to a permitted mixed-use development (referred to as Phase 1). The subject lands include two sites of c. 678 sq m and c. 25 sq m (identified, respectively, on the Site Layout Plan) and are identified as being within the A3 Lands in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019). The wider site also includes the lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4. The modifications relate to the roof levels of Block K and Block M, permitted under Dublin City Council Planning Reference PWSDZ3207/21 (and amended through Planning Reference PWSDZ4276/23). The proposed development consists of the installation of air source heat pump plant on the roof of Block K (max height c. 0.83 m above roof parapet level), associated flue at the roof of Block M (max height c. c 0.63 m above roof parapet level), ancillary louvre screening, and all other associated and ancillary works.	Grant permission
PWSDZ3468/24	2024-03-28	Planning permission for development comprising modifications to a permitted mixed-use development (referred to as Phase 1) located at this site of c. 0.15 ha and is identified as being within the A3 Lands in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019). The wider site also includes the lands known as the Former Irish Glass Bottle & Fabrizia Sites, Poolbeg West, Dublin 4. The modifications relate to Block M and the street referred to in the Planning Scheme as the "Coastal Link", permitted under Dublin City Council Planning Reference PWSDZ3207/21 (and amended through Planning Reference PWSDZ4276/23). The proposed development consists of modifications to the permitted Coastal Link including omission of Condition 25(b) attached to the PWSDZ3207/21 Grant of Permission, which requires a 1 m wide paved verge to be included on both sides of the street, and landscape alterations. The proposed modifications also include a change of use of the Block M ground floor level bins store, fronting the Coastal Link, from a bins store to a management suite to accommodate the Scheme's management team.	Grant permission
WEB1509/24	2024-04-26	See Table 15	Declared invalid
WEB1558/24	2024-05-07	See Table 15	Grant permission
PWSDZ3700/24	2024-05-16	Pembroke Beach DAC intends to apply for permission for development for a mixed used development (referred to as Phase 2) on this site of 15.06 hectares including lands known as the Former Irish Glass bottle & Fabrizia Sites, Poolbeg West, Dublin 4, focused primarily on a net site area of 1.99 hectares (identified as within the A1 Lands) in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019). The proposed Phase 2 development will consist of: amendment to permission Register Reference PWSDZ3270/19 and PWSDZ3207/21 in those areas where the net site of 1.99 hectares overlaps with the boundaries to the earlier permitted developments (including amendment to the urban tree plant along the Sean Moore Road interface & minor	Applied

Planning Reference	Registration Date	Description	Decision
		<p>amendment to permitted public realm at the junction between Central Boulevard and South Bank Link Road) and the construction of a residential and mixed use scheme comprising an above ground gross floor area (GFA) of C. 48,648 sq.m., together with a basement/undercroft area of c. 10,654 sq.m., comprising 5 no. blocks (identified as blocks D1, D2, E1, E2, E2A) to provide: 502 no. apartment units and associated residential amenity facilities; a childcare facility; 3 no. Retail/ Food & Beverage units; 3 no. Retail Units, 2 no. Food/ beverage units; Health Facility; basement carparking; together with associated infrastructural works on the overall site. The proposed development will also include provision of the South Bank Link Road as identified in the SDZ Planning Scheme.</p> <p>Access and servicing of the proposed Phase 2 development will be by way of the central boulevard as permitted (subject to compliance with Condition No. 24e) in the Phase 1 planning permission (PWSDZ3207/21) which also amends the infrastructure permission (Parent Permission) (Reg. Ref. PWSDZ3270/19) amongst other things. An additional access for emergency vehicles only with retractable bollards will be provided at the junction of Bloom Street and Sean Moore Road.</p> <p>The proposed Phase 2 development will consist of :</p> <ul style="list-style-type: none"> • 5 no. Blocks (D1, D2, E1, E2, E2A) ranging in height between 6 and 7 storeys with 8 storey setback over basement/undercroft to provide 502 no. apartment units (with balconies/terraces to be provided on all elevations at all levels for each residential block), consisting of : 216 no. 1-bedroom units; 245 no. 2-bedroom units and 41 no. 3-bedroom units (for the avoidance of doubt, Section 11.5.1 of the Planning Scheme clarifies the description of 'height' in Figure 11.3 to be taken from the constructed ground floor level; references to 'basement' and 'undercroft', respectively, are interchangeable given the changes in level across the site); • The provision of c.740 sq.m. of residential amenity facilities within Block E1 (to include a tenant reception of with admin support spaces, shared work space, Residents Lounge, Events space, Library/ Film Room, Dining Kitchen & meeting room) • A childcare facility (c. 412 sq.m) located at the ground floor of block D1 providing c. 92 no. childcare places and an outdoor play area of c. 199 sq.m; • A health centre at ground floor of Block D1 (c. 202 sq.m.); • 3 no. retail/food and beverages spaces & 1 no. retail spaces located at the ground floor of Blocks D1, D2 (total GFA c. 1,153 sq. m); • 2 no. retail spaces and 2 no. food and beverage spaces located at the ground floor of Blocks E1, E2, E2A (total GFA c. 1,249 sq. m); • A total of 139 no. car parking spaces; 121 car parking spaces located at basement level (incl. 7 no. accessible spaces (2 of which are accessible/EV spaces) & 21 no EV spaces, 8 no. car share parking spaces (2 of which are car share/EV 	

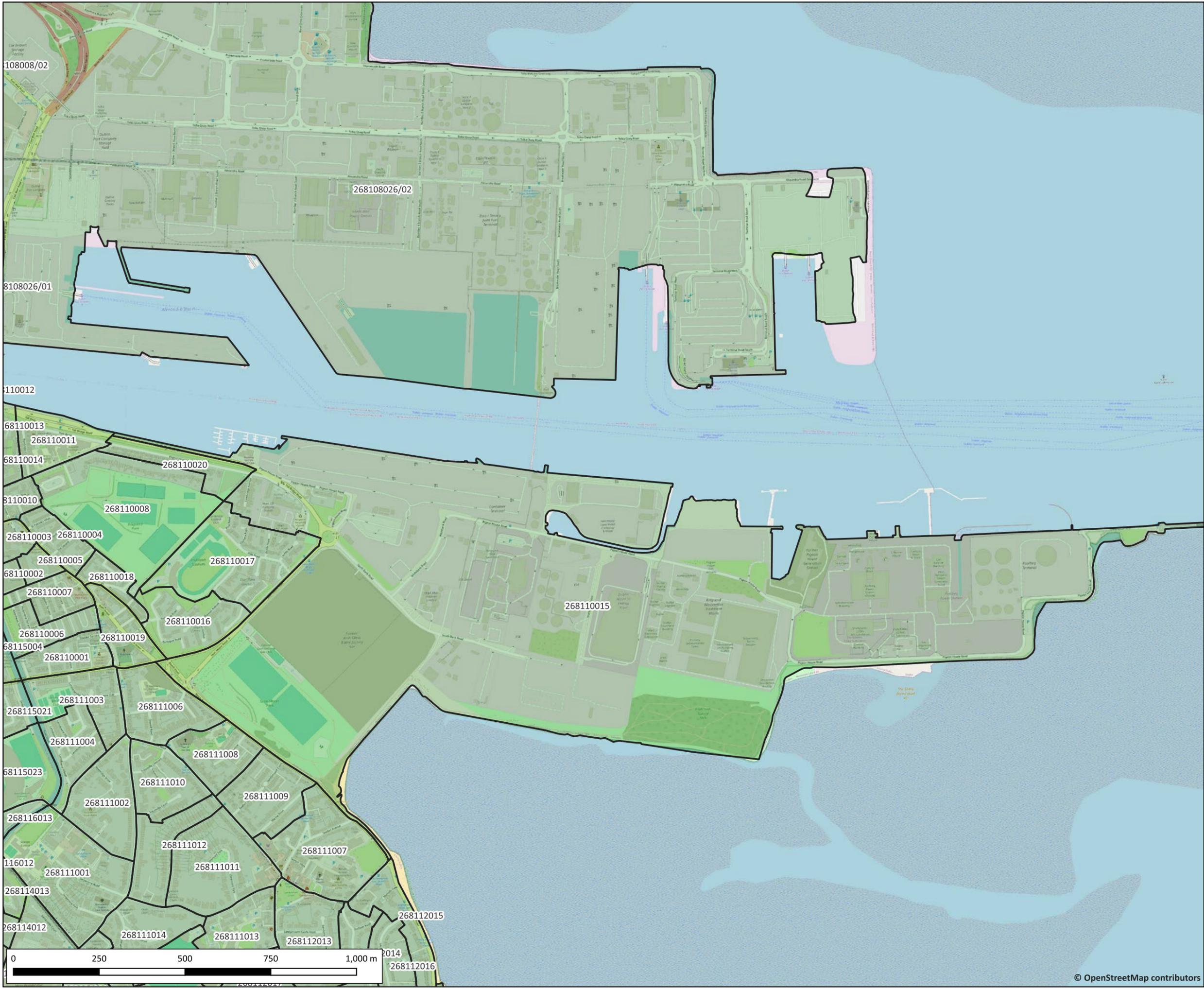
Planning Reference	Registration Date	Description	Decision
		<p>spaces), 4 no. crèche parking spaces, 4 no. health centre parking space & 4 no. retail parking spaces located at basement level with vehicular access from the street level (Block D1/D2 south eastern elevation); the provision of 18 no. on street car parking spaces (incl. 5 no. EV on-street car parking spaces and 7 no. accessible spaces) and 5 no. loading bays. (Note that 6 no. surface car parking spaces along South Bank Link Road will not be accessible until vehicular access from South Bank Road is provided at a future date);</p> <ul style="list-style-type: none"> • Provision of 906 no. bicycle parking spaces; 816 no. long stay stand bicycle parking spaces located at basement level (incl. 6 no. crèche, 24 no. retail, 20. no. cargo spaces and 28 no. e-bike spaces); 90 no. short-stay standard bicycle parking spaces located at surface level (70 no. residential (incl. 10 no. cargo bike spaces), 20 no. non-residential); • Plant rooms, resident storage spaces, bin stores, bicycle stores, water storage, sprinkler rooms. laundry located at basement level; • Landscaped open spaces to comprise residential communal courtyards incl. children's play areas (Block D1/D2 c. 815 sq. m & Blocks E1/E2 c.992 sq.m.); amenity terraces at 8th storey level on Blocks D1/D2 (totalling c. 900 sq.m.); amenity terraces at 8th storey level on Blocks E1/E2/E2A (totalling c. 1,798 sq.m); • 2 no ESB sub stations located at the ground floor level of blocks D1/D2 (totally c.48 sq.m) and 4 no. ESB sub stations located at the ground floor level of blocks E1/E2/E2A (totalling c. 42 sq. m); • 3 no. LV switch rooms located at ground floor level of Blocks D1/D2 (c. 66 sq.m) and 4 no. LV switch rooms at ground floor level of blocks E1/E2/E2A (totalling c. 57 sq.m); • Communal commercial bin stores located at ground floor of Block D2 (c. 40 sq. m) and at ground floor level of Block E2 (c. 30 sq.m); • Bin store and health waste bin store located at ground floor of Block D1 associated with the proposed health centre; • Ancillary storage spaces located at ground floor of blocks D2, E2; • Provision of public realm spaces including a portion of Glass Bottle Square, streets and public amenity spaces; • One new local /side street (Market Street) connecting to the permitted Central Boulevard; • The provision of the South Bank Link Road as identified in the SDZ Planning Scheme. Note that the proposed South Bank Link Road will include temporary bollards and fencing to restrict access until such time that a future connection/tie into South Bank Road is proposed and delivered. <p>The proposed development will include hard and soft landscaping, pedestrian and cycle links, boundary treatments, tree planting, interim site hoarding, public lighting, green/blue roofs, commercial and residential waste & recycling facilities, piped site wide services and all ancillary works and services necessary to facilitate construction and operation.</p>	

Planning Reference	Registration Date	Description	Decision
		This application will be accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS).	
PWSDZ3791/24	2024-05-30	See Table 15	Applied
PWSDZ3798/24	2024-05-31	<p>Planning permission for development of an office and mixed-use scheme (Referred to as Phase A Commercial) on an infill site of c.15.08 hectares (with a net focused site area of c. 1.75 ha) of land within the former Irish Glass Bottle (IGB) and Fabrizia sites on Sean Moore Road, Dublin 4 (including some 198 sq metres of public domain on Southbank Road to accommodate vehicle and pedestrian access). The site is identified as within the A1 Lands in the Poolbeg West Strategic Development Zone (SDZ) Planning Scheme (April 2019).</p> <p>The overall site is bounded to the north-west by Sean Moore Road, to the north-east by South Bank Road, to the south-east by Dublin Port lands and Dublin Bay, and to the south-west by Sean Moore Park. The overall site subsumes the 4.3 hectares site of the infrastructure permission (Parent Permission) (Reg. Ref. PWSDZ3270/19) for which Dublin City Council issued a Notification of Final Decision (10-year permission) on 28 January 2020, permitting: streets, transportation, water services and utilities' infrastructure; public realm and public amenity spaces; and temporary landscaping of a school site, to facilitate Phase 1 development as provided for under the approved Poolbeg West SDZ Planning Scheme.</p> <p>The proposed development will consist of an office and mixed-use scheme with a total GFA of 46,101 sq m (excl. basement / undercroft UC-02) comprising 2 No. blocks (identified as Blocks A and B).</p> <p>The proposed development will consist of: Block A (includes Block AA & AB) of 26,254 sq m and ranging in height from 5-7 storeys over basement/undercroft carparking to include double height (UC-01 & 00 Level) ground floor reception, office, a restaurant/ bar, bakery/ café and event space with the upper floors to be used as offices. The offices have been designed to be suitable for a single user or multiple users with subdivisions. Block B of 19,847 sq m, and ranging in height from 5-12 storeys over basement/undercroft car parking to include double height (UC-01 & 00 Level) ground floor reception, games bar and office with the upper floors to be used as offices. The offices have been designed to be suitable for a single user or multiple users with subdivisions.</p> <p>The UC-01 level of Block A includes café, sports and recreation area, collaborative office, storage and building services.</p> <p>The UC-01 level of Block B includes collaborative office, management facilities and building services.</p> <p>Each office block has a number of amenity terraces including at 1st, 3rd, 4th, 5th, 6th and roof level in Block A and at 4th and 6th floor level in Block B.</p> <p>A total of 77 no. commercial car parking spaces (incl. 4 no. disabled access spaces & 16 no. EV spaces) and 4 no. motorbike spaces, located at basement level with vehicular access from the street level (Block A north eastern</p>	Applied

Planning Reference	Registration Date	Description	Decision
		<p>elevation), and the provision of 27 no. on-street car parking spaces (incl. 7 no. EV spaces and 6 no. disabled access spaces). Provision of 616 no. bicycle parking spaces located at basement level with bicycle ramp access from street level and 100 no. short-stay standard bicycle parking spaces located at surface level.</p> <p>Plant rooms, building services and energy centres, water tank, sprinkler rooms, tenant rooms, kitchenette, parcel/courier store, archive store, bin stores, bicycle stores, lockers, showers, changing facilities, facilities management and games bar storage located at basement/ UC-01 level. Provision of public realm spaces including 1 no. public square (Pembroke Square), Glass Bottle Lane and public amenity spaces (totalling 1,920 sq m). Two new local/side streets (Pembroke Place & Glass Bottle Place) connecting to South Bank Road. The provision of the South Bank Link Road as identified in the SDZ Planning Scheme. The proposed development will include hard and soft landscaping, pedestrian and cycle links, boundary treatments, tree planting, public lighting, green roofs, solar pv panels, and all ancillary works and services necessary to facilitate construction and operation. The scheme also provides for an option which includes for temporary site hoarding, and cycle lane alongside Sean Moore Road, should the proposed development proceed ahead of the adjoining Phase 2 residential proposal commencing. This application will be accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS).</p>	

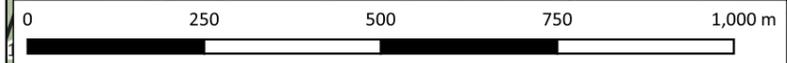
Note 1: Molasses is not classified as a dangerous substance under the COMAH Regulations and therefore this development is not included in, or relevant to, this COMAH land use planning assessment.

APPENDIX 4: POPULATION DATA



Legend

CSO Small Areas (2022 census)

© OpenStreetMap contributors



Byrne Ó Cléirigh Ltd.

30A Westland Square
 Pearse Street, Dublin 2, D02 PN76, Ireland
 t: 353 1 677 0733 | f: +353 1 677 0729 | e: info@boc.ie
 www.boc.ie

Client	RPS		
Project	COMAH Land Use Planning Assessment for Dublin Port 3FM Project		
Title	Population Data CSO Small Areas		
Scale	1:10,000	541-24X0079 R0 Appendix 4.1	R0
FBS	07.03.03		




Byrne Ó Cléirigh Ltd.
 30A Westland Square
 Pearse Street, Dublin 2, D02 PN76, Ireland
 t: 353 1 677 0733 | f: +353 1 677 0729 | e: info@boc.ie
 www.boc.ie

Client	RPS		
Project	COMAH Land Use Planning Assessment for Dublin Port 3FM Project		
Title	Dublin Port Berths		
Scale	1:7,500	541-24X0079 R0 Appendix 4.2	R0
FBS	07.03.03		

Table 17: CSO Small Area Data (2022 Census)

NO.	CSO Small Area (SA) reference	Co-ordinates of SA centroid		Residential population
		X	Y	
1	268110008	718,408	733,902	295
2	268110015	718,846	733,894	283
3	268110016	718,586	733,574	321
4	268110017	718,716	733,749	498
5	268110020	718,577	734,030	204
6	268111006	718,506	733,325	340
7	268111007	718,984	732,905	328
8	268111008	718,667	733,186	154
9	268111009	718,814	733,064	297
10	268112015	719,200	732,699	240

Table 18: Dublin Port South Commercial Occupancy & Population Estimate

Berth	Estimated population				Random occupancy (%)
	Daytime	Night-time	Anytime	Random	
Dublin Waste to Energy - (Covanta Plant)	60	4	2	1	8.33%
Hammond Lane Metal Recycling	24	-	-	-	-
Dublin Bay Power	40	4	4	1	8.33%
Kilsaran South Bank Road	20	-	-	-	-
Ringsend Flexgen	10	-	-	-	-
Murphy Ringsend P-FIX	15	-	-	-	-
Poolbeg Flexgen	15	-	-	-	-
Poolbeg AGI	31	1	-	1	8.33%
Ringsend Wastewater Treatment Plant	55	5	-	1	8.33%
Celtic Anglian Water	14	-	-	-	-
City Analysts Limited	9	-	-	-	-
Dublin Container & Transport Services Limited	8	-	-	-	-
Marine Terminals Limited	50	5	2	1	8.33%
Rushfleet Containers	5	-	-	-	-
ESB Dublin Bay Power Plant	20	4	4	1	8.33%
All Away Recycling & Skip Hire	4	-	-	-	-
NORA Poolbeg Oil Storage Terminal	1	-	-	1	8.33%
Ecocem Ireland	6	-	-	-	-

Table 19: Dublin Port Berth Occupancy (2023)

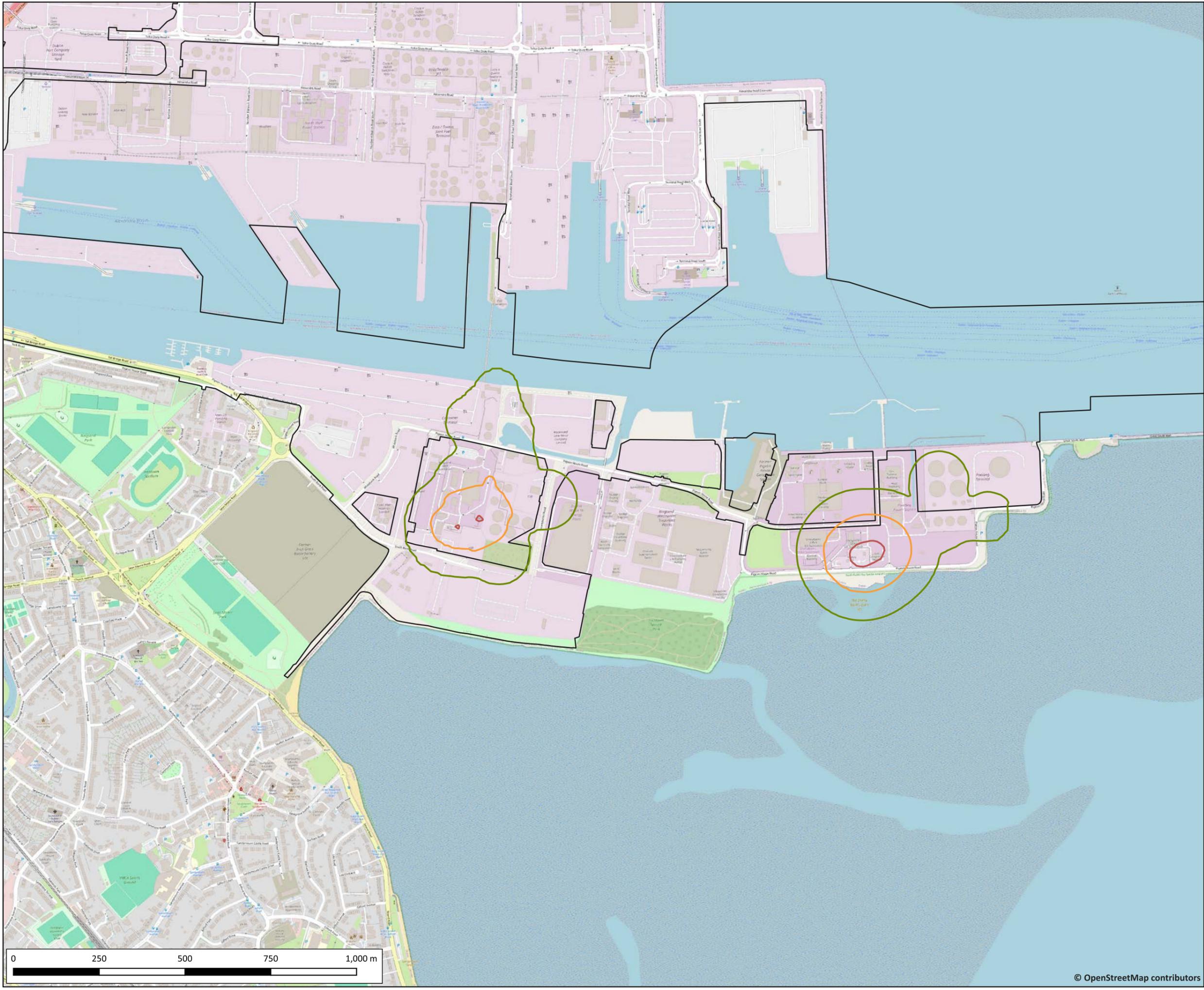
Berth	Number of days occupied	% of time occupied	Estimated population range
18	88.6	24.28%	0 – 1,157
19	64.8	17.74%	35
21	110.3	30.23%	34 – 171
26	215.8	59.14%	23 – 35
27	33.4	9.16%	10 – 34
49	175.4	48.05%	171 – 2,000
50	16.3	4.45%	15
51	192.4	52.70%	34 – 1,500
52	93.2	25.53%	34 – 171
53	99.8	27.35%	0 – 171
50A	137.7	37.74%	15
50N	170.6	46.74%	10 – 15
50S	176.1	48.24%	15
51A	183.6	50.31%	34 – 1,885
Alex Basin East 39	213.1	58.38%	10 – 15
Alex Basin East 40	0.5	0.15%	15
Alex Quay West 28	65.8	18.02%	10
Alex Quay West 29	1.2	0.32%	10
Alex Quay West 30	219.8	60.22%	10 – 40
Alex Quay West 31	3.3	0.90%	10
D.L.2	12.7	3.47%	0 – 372
D.L.4	3.7	1.01%	10 – 186
Deep Water Berth 46	131.6	36.04%	0 – 111
Deep Water Berth 47	172.6	47.28%	0 – 15
Dun Laoghaire Berth	13.7	3.74%	0 – 54
ESB Jetty 48	2.4	0.65%	10
MTL 42	160.4	43.95%	10 – 15
MTL 44	164.4	45.03%	10 – 2,728
MTL 45	68.8	18.86%	15 – 34
Nth Wall Quay 16A	7.3	2.01%	13
Nth Wall Quay 17	0.8	0.23%	5
Ocean Pier 32	0.6	0.17%	10
Ocean Pier 33	164.0	44.93%	10 – 34
Ocean Pier 35	113.2	31.03%	10 – 202
Ocean Pier 37	120.8	33.10%	10 – 34

Berth	Number of days occupied	% of time occupied	Estimated population range
Oil Berth No. 1	184.1	50.44%	10 – 15
Oil Berth No. 2	188.5	51.63%	10 – 15
Oil Berth No. 3	87.1	23.85%	10 – 15
Oil Berth No. 4	5.3	1.45%	10 – 15
Poolbeg Marina	37.9	10.38%	5
SJR Quay 8	59.5	16.30%	0 – 79
SJR Quay 9	5.8	1.59%	0 – 400

Notes:

1. Estimated berth occupancies are based on DPC Port arrival & departure data for 2023 (available at <http://booking.dublinport.ie/webx/>)
2. Estimated berth populations are based on the typical complement for the types of vessels moored at the berths. For larger vessels (cruise ships and passenger vessels), the estimates are based on the available data for passenger and crew capacities.

APPENDIX 5: INDIVIDUAL RISK CONTOURS



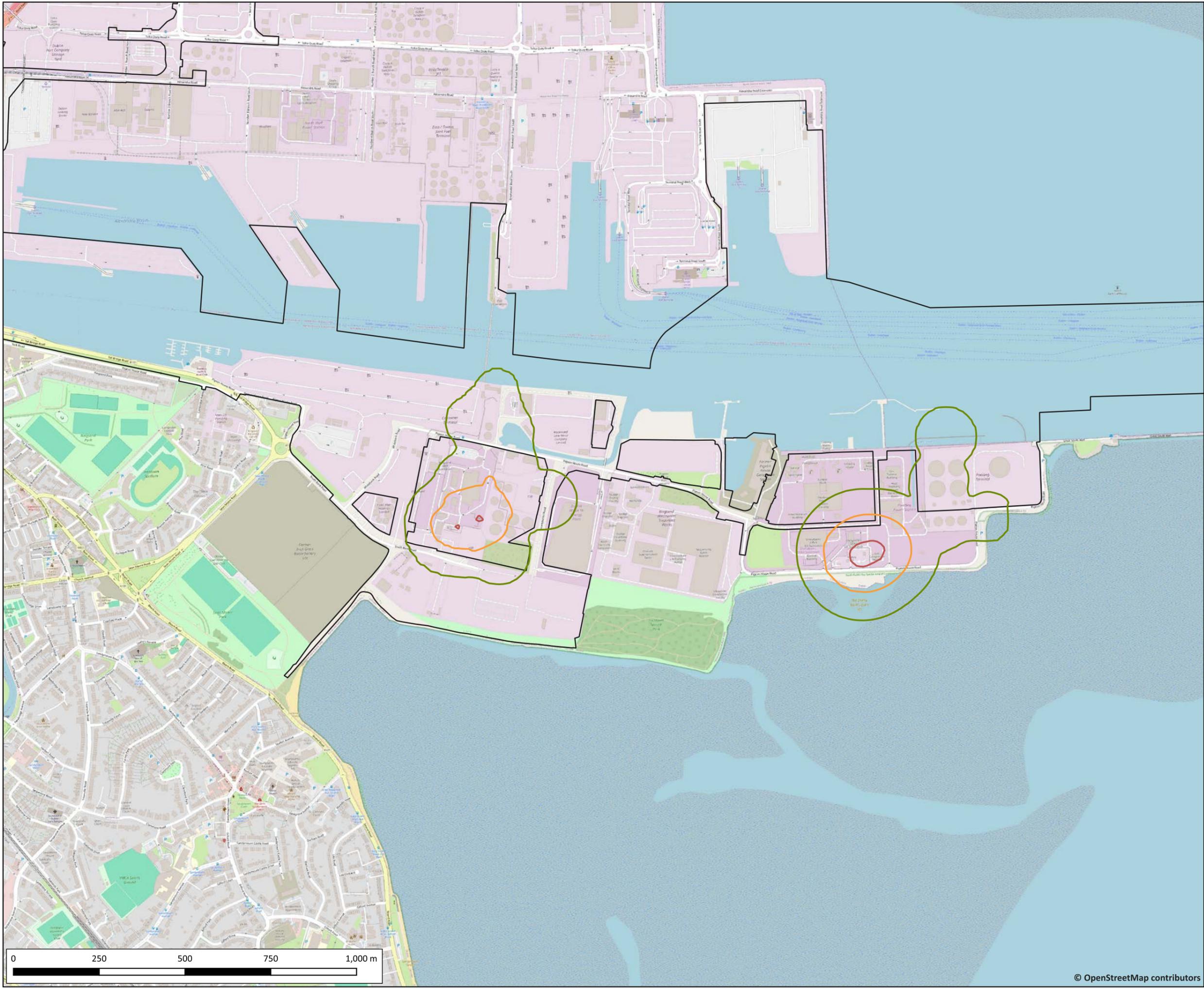
Legend

- 3FM Planning Boundary
- Individual risk contours
 - 1 x 10⁻⁷ per year
 - 1 x 10⁻⁶ per year
 - 1 x 10⁻⁵ per year



Byrne Ó Cléirigh Ltd.
 30A Westland Square
 Pearse Street, Dublin 2, D02 PN76, Ireland
 t: 353 1 677 0733 | f: +353 1 677 0729 | e: info@boc.ie
 www.boc.ie

Client	RPS		
Project	COMAH Land Use Planning Assessment for Dublin Port 3FM Project		
Title	Individual Risk Contours Current Port Layout		
Scale	1:10,000	541-24X0079 R0 Appendix 5.1	R0
FBS	07.03.03		



Legend

- 3FM Planning Boundary
- Individual risk contours
 - 1×10^{-7} per year
 - 1×10^{-6} per year
 - 1×10^{-5} per year

BYRNE Ó CLÉIRIGH
ENGINEERS CONSULTANTS

Byrne Ó Cléirigh Ltd.
30A Westland Square
Pearse Street, Dublin 2, D02 PN76, Ireland
t: 353 1 677 0733 | f: +353 1 677 0729 | e: info@boc.ie
www.boc.ie

Client	RPS		
Project	COMAH Land Use Planning Assessment for Dublin Port 3FM Project		
Title	Individual Risk Contours Future Port Layout (3FM)		
Scale	1:10,000	541-24X0079 R0 Appendix 5.2	R0
FBS	07.03.03		

APPENDIX 6: EXTRACTS FROM DUBLIN CITY DEVELOPMENT PLAN 2022 – 2028

9.5.10 Control of Major Accident Hazards Directive (Seveso Directive)

The SEVESO III Directive (2012/18/EU) requires that the objectives of preventing major accidents and limiting their consequences should be taken into account in land-use policy.

The Directive was transposed into Irish legislation through S.I. No. 209 of 2015 Chemicals Act Control of Major Accident Hazards (COMAH) Regulations 2015.

COMAH establishments, are defined as locations (typically industrial) where significant quantities of dangerous substances are stored and are categorised as Upper Tier or Lower Tier by the type and quantity of hazardous substances that they store.

The Health and Safety Authority (HSA) advises planning authorities on the consultation distance which applies to an establishment following the receipt of a notification from the operator. It also provides technical advice to planning authorities in respect of certain development proposals within that consultation distance/ on the site (see also Appendix 8).

It is the Policy of Dublin City Council: SI44:

To have regard to the provisions of the SEVESO III Directive (2012/18/EU) relating to the control of major accident hazards involving dangerous substances and its objectives to prevent major accidents and limit the consequences of such accidents. Dublin City Council will have regard to the provisions of the Directive and recommendations of the HSA in the assessment of all planning applications located on, or impacted by, COMAH establishments in accordance with Guidance on Technical Land-use Planning Advice: for planning authorities and operators of COMAH establishments (2021).

APPENDIX 7: EXTRACTS FROM LEGISLATION

PLANNING AND DEVELOPMENT REGULATIONS 2001 (AS AMENDED)

Part 11 Major Accidents Directive

137 Notice to Health and Safety Authority

(1) In addition to the requirements of article 28 where—

(b) a planning authority receives a planning application relating to development which would—

(i) be of a category listed in Table 1 of Schedule 8, and

(ii) be located within the distance listed in column 2 of Table 2 of Schedule 8 from an establishment of the corresponding type listed in column 1 of Table 2, or be located within such distance from a particular establishment as has been specified by the Health and Safety Authority in technical advice provided under article 27 of the Major Accident Regulations,

and the Health and Safety Authority has not previously provided, either in relation to the development to which the application relates or on a generic basis, relevant technical advice on the risk or consequences of a major accident,

(c) a planning authority receives a planning application relating to development which would, in its opinion, be –

(i) in the vicinity of an establishment, and

(ii) relevant to the risk or consequences of a major accident,

and the Health and Safety Authority has not previously provided, either in relation to the development to which the application relates or on a generic basis, relevant technical advice on the risk or consequences of a major accident, the planning authority shall notify the Health and Safety Authority.

(3) A notice sent by a planning authority under sub-article (1) shall—

(c) where the planning application relates to development referred to in sub-article (1)(b) or (c), identify the relevant establishment or establishments,

(f) request a determination as to whether the Major Accidents Regulations apply to the proposed development, and

(g) request that, where the Authority determines under (f) above that the Major Accidents Regulations apply to the proposed development, technical advice on the effects of the proposed development on the risk or consequences of a major accident be provided to the planning authority.

Schedule 8 Table 1 Development Categories

1. Provision of hotel, hostel or holiday accommodation, or housing.
2. Provision of schools, crèches or other educational or childcare facilities, training centres, hospitals, convalescent homes, homes for the elderly or sheltered accommodation.
3. Retail developments greater than 250 square metres in gross floor space.
4. Structures for community and leisure facilities, greater than 100 square metres in gross floor space.
5. Provision of facilities or use of land for activities likely to attract more than 1,000 people at any one time.
6. Commercial or industrial development designed to accommodate 20 or more employees.
7. Provision of parking facilities for more than 200 motor vehicles.
8. Transport links, including public roads.
9. Any development adjoining, or separated only by a road from, an establishment and which poses a risk of fire or explosion.
10. Modifications to categories 2, 3, 4, 6 or 7 which would give rise to an increase in size or capacity of 20 per cent or more.

Schedule 8 Table 2 Distances from establishments

Column 1 Type of establishment	Column 2 Distance from establishment perimeter (metres)
Establishment where pressurised flammable substances (including liquefied petroleum gas) are stored in bulk –	
- above ground	600
- mounded/underground	
≤ 100 tonnes	100
> 100 tonnes	200
Establishment where pressurised or refrigerated toxic substances (including ammonia) are present –	
- in bulk storage	2,000
- in cylinder or drum storage	700
Establishment consisting of or comprising a warehouse where chemicals are present.	700
Establishment where non-pressurised flammable substances are stored in bulk.	300
Establishment where chemical processing involving flammable or toxic substances takes place	1,000
Establishment where chemical processing, which involves the risk of dust explosion, takes place	300
Establishment where explosives are manufactured	1,000

CHEMICALS ACT (CONTROL OF MAJOR ACCIDENT HAZARDS INVOLVING DANGEROUS SUBSTANCES) REGULATIONS 2015

Part 7 Land-use Planning

24 Technical advice on land-use planning

(2) The Central Competent Authority shall provide technical advice in response to a notice sent by a planning authority under Part 11 of the Planning and Development Regulations 2001 (S.I. No. 600 of 2001), requesting technical advice on the effects of a proposed development on the risk or consequences of a major accident in relation to the following types of developments within the consultation distance notified in paragraph (1)—

(c) new developments including transport routes, locations of public use and residential areas in the vicinity of establishments, where the siting, modifications or developments may be the source of, or increase the risk or consequences of, a major accident.

(3) The technical advice provided by the Central Competent Authority to a planning authority pursuant to paragraph (2) may be generic or case specific in nature and shall be so formulated that it will assist the planning authority to take into account the need, in the long term—

(a) to maintain appropriate safety distances between establishments covered by these Regulations and residential areas, buildings and areas of public use, recreational areas, and, as far as possible, major transport routes;

(c) for the operator to take additional technical measures, in the case of existing establishments, in accordance with Regulation 7, so as not to increase the risks to human health and the environment.

(9) The Central Competent Authority shall provide the technical advice referred to in paragraph (2) within four weeks of receiving a request from a planning authority.

(10) Without prejudice to paragraph (9), where the Central Competent Authority requires additional information in order to provide the requested technical advice to the planning authority under paragraph (2), the following shall apply—

(a) the Central Competent Authority shall request the information from the planning authority within two weeks of the receipt of the request for technical advice;

(b) the planning authority shall provide the additional information requested by the Central Competent Authority, if necessary after requesting it from the applicant;

(c) the Central Competent Authority shall provide technical advice to the planning authority within four weeks of receiving the requested information.

(11) Operators of establishments shall provide sufficient information to the Central Competent Authority as part of the notification in Regulation 8 or an update under Regulation 12(2), and at any time at the request of the Central Competent Authority, on the risks arising from an establishment, necessary for the fulfilment of the Authority's functions under this Regulation, and in particular to ensure that technical advice on those risks for land-use planning purposes is available.