3FMProject

Bringing
Dublin Port
To 2040

Environmental Impact Assessment Report

Chapter 14

Traffic and Transport

Volume 2 Part 4

COMHLACHT CHALAFORT ÁTHA CLIATH
DUBLIN PORT COMPANY

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A TETRA TECH COMPANY

Third & Final
Masterplan
Project

14 TRAFFIC & TRANSPORTATION

14.1 Introduction

This Chapter assesses the impact of the 3FM Project on traffic and transportation, referred to as the Traffic and Transportation Assessment (TTA) for ease of reference.

Chapter 5 of the EIAR has presented the details of the proposed scheme as shown in Figure 14.1.

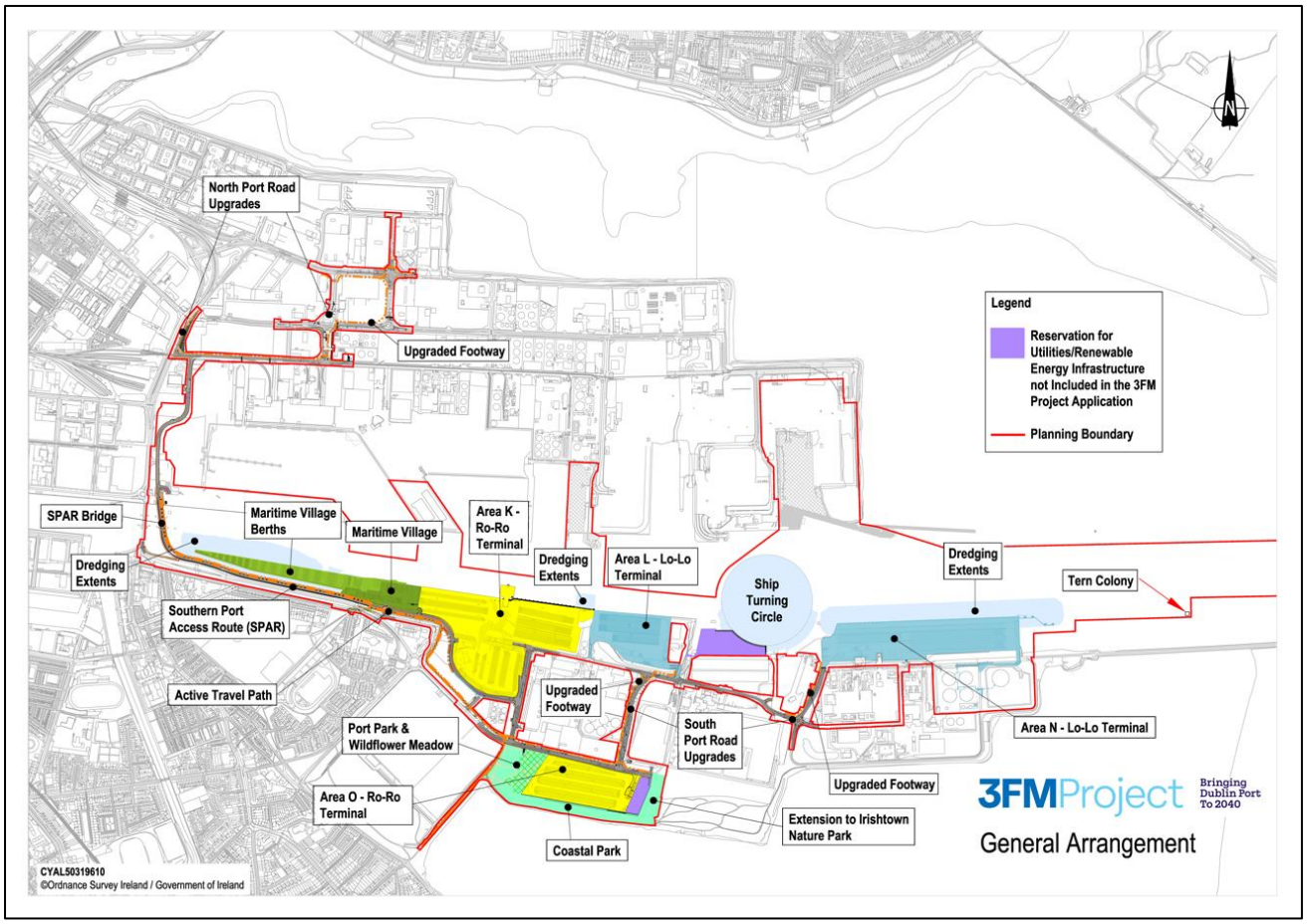

Figure 14.1 Proposed 3FM Project Infrastructure works

14.2 Existing Environment

The existing land uses, land ownership, and road network within and surrounding Dublin Port, in addition to existing traffic management strategies that specifically affect the operations of Dublin Port, are described in the following sections. These aspects of the existing conditions at Dublin Port and its environs are relevant to the 3FM TTA.

14.2.1 Existing Port Accesses and Approach Roads

The existing access and approach roads to the port are annotated in the Figure 14.2 overleaf.

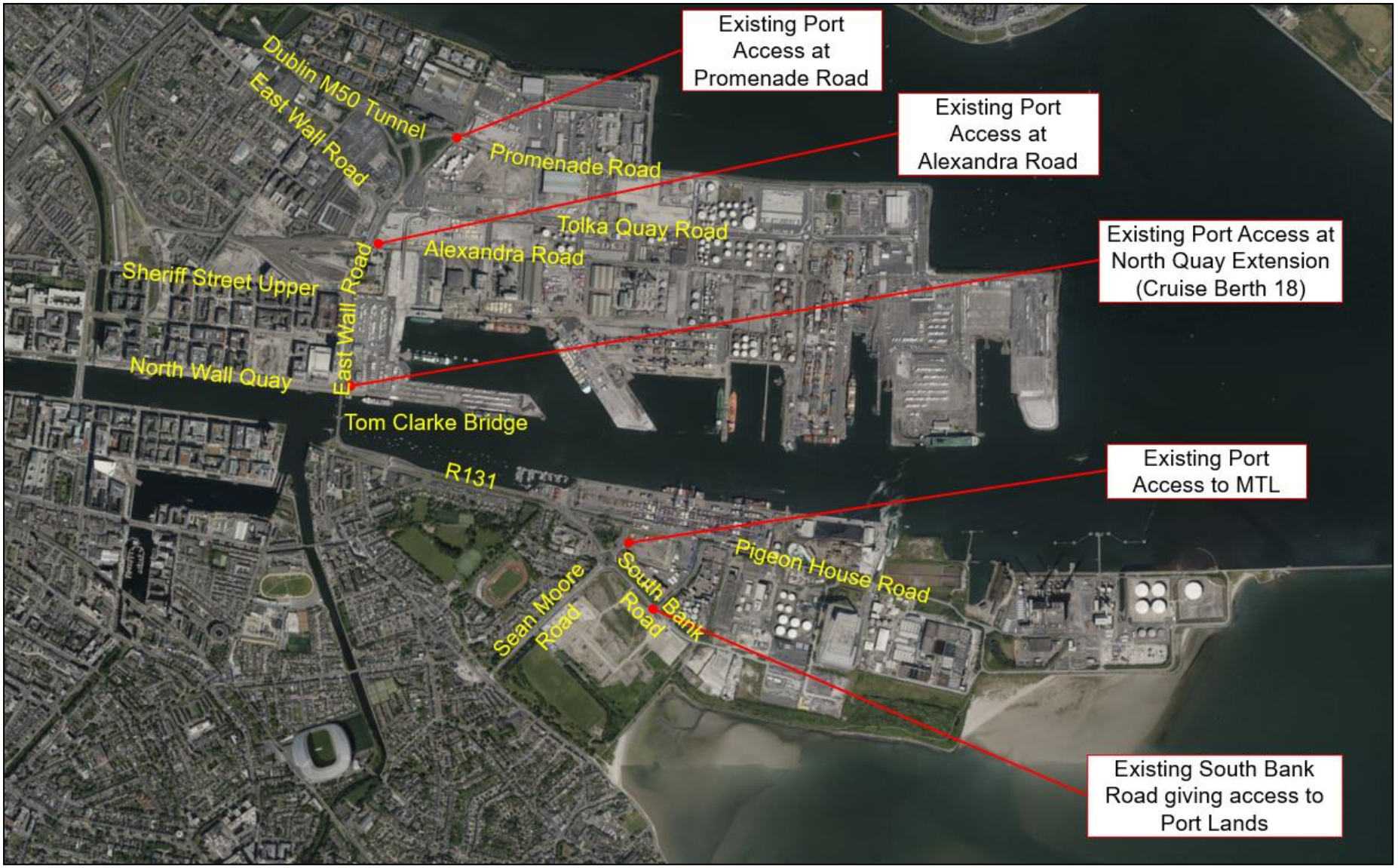

Figure 14.2 Existing Port Accesses and Approach Roads Most Relevant to the 3FM Project

14.2.2 Context within the Strategic Road Networks

The location of the 3FM proposals in the context of the strategic road network surrounding Dublin City is indicated in the following Figure 14.3.

Figure 14.3 3FM Location in Context of Strategic Road Network

14.2.3 Dublin City HGV Management Strategy

Dublin City Council's Heavy Goods Vehicles (HGV) Management Strategy came into operation on 19 February 2007. Since then, 5+ axle vehicles are prohibited from travelling within restricted areas of Dublin City during certain hours, unless in possession of a valid permit.

The DCC HGV cordon map is shown below.

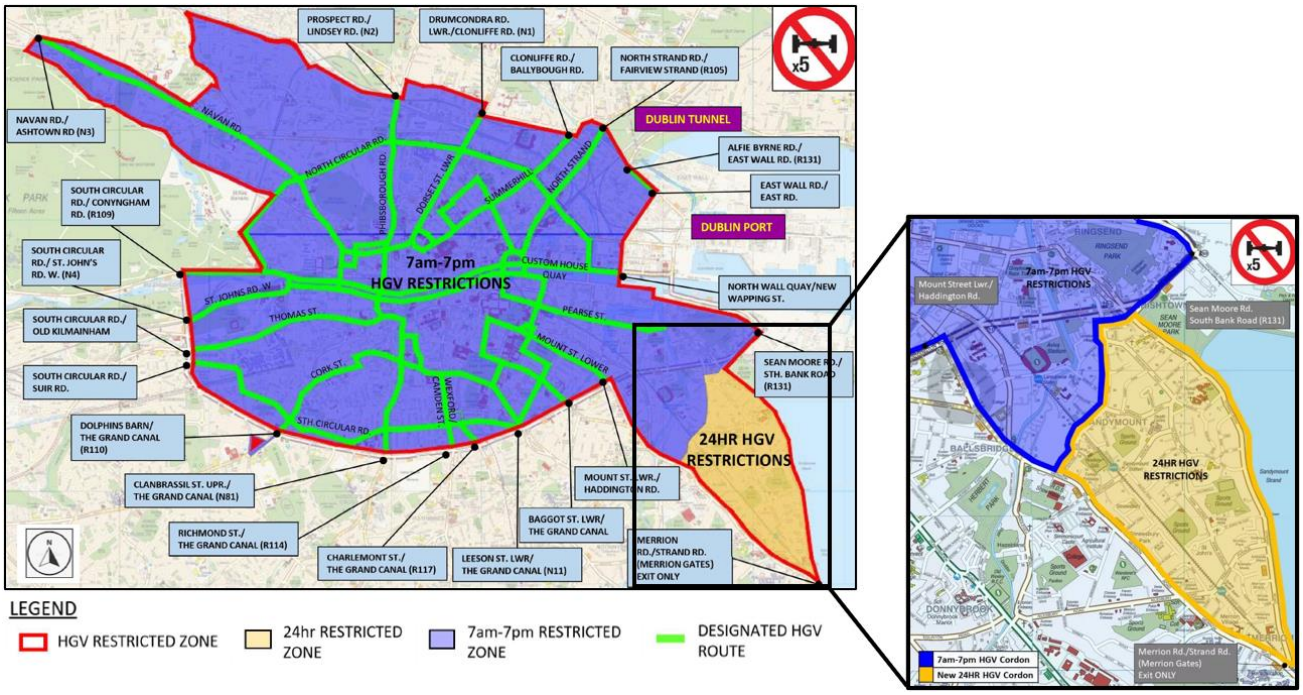

Figure 14.4 DCC HGV Management Cordon

The 07:00 starting time of the HGV Management Strategy has an impact on the traffic patterns associated with Dublin Port and contributes to an early peak hour for the internal Port Road network.

Notably for the 3FM Project, since 1 March 2022 the 5+ axle HGV cordon around the Sandymount area began operating 24 hours, 7 days a week. This change means that neither Strand Road nor Seán Moore Road can be used as an approach road by 5+ axle HGVs to access Dublin Port and the 3FM Project.

14.2.4 Existing traffic conditions

Existing traffic surveys were carried out in October 2023. Some elements of note relating to this date include:

- The previous Terminal 3 (P&O) left-in, left-out access on East Wall Road was closed in January 2023 to facilitate Terminal 4 becoming an Unaccompanied Ro-Ro terminal (currently Seatruck) and the previous T3 uses being relocated to the Unified Ferry Terminal (UFT) located at the western end of the North Port Estate.
- In March 2022 the Dublin City HGV Management Strategy was extended to provide a 24hr ban on 5+ axle HGVs to the south of the existing Seán Moore Roundabout.
- A previous traffic survey had been carried out for the 3FM Project in May 2022. However, during pre-application discussions in 2023, DCC raised an issue that 2022 traffic flows may not reflect post-Covid recovery.

Hence the October 2023 traffic surveys provide a baseline that already incorporates the changes above and that reflect post-Covid recovery conditions.

14.2.5 Existing daily profile for traffic flows entering the North Port Estate

The existing profile for vehicles entering the Dublin Port North Estate (i.e. the sum of traffic volumes entering via Promenade Road and Alexandra Road) are shown in Figure 14.5 below. The flows are based on the traffic surveys carried out in October 2023.

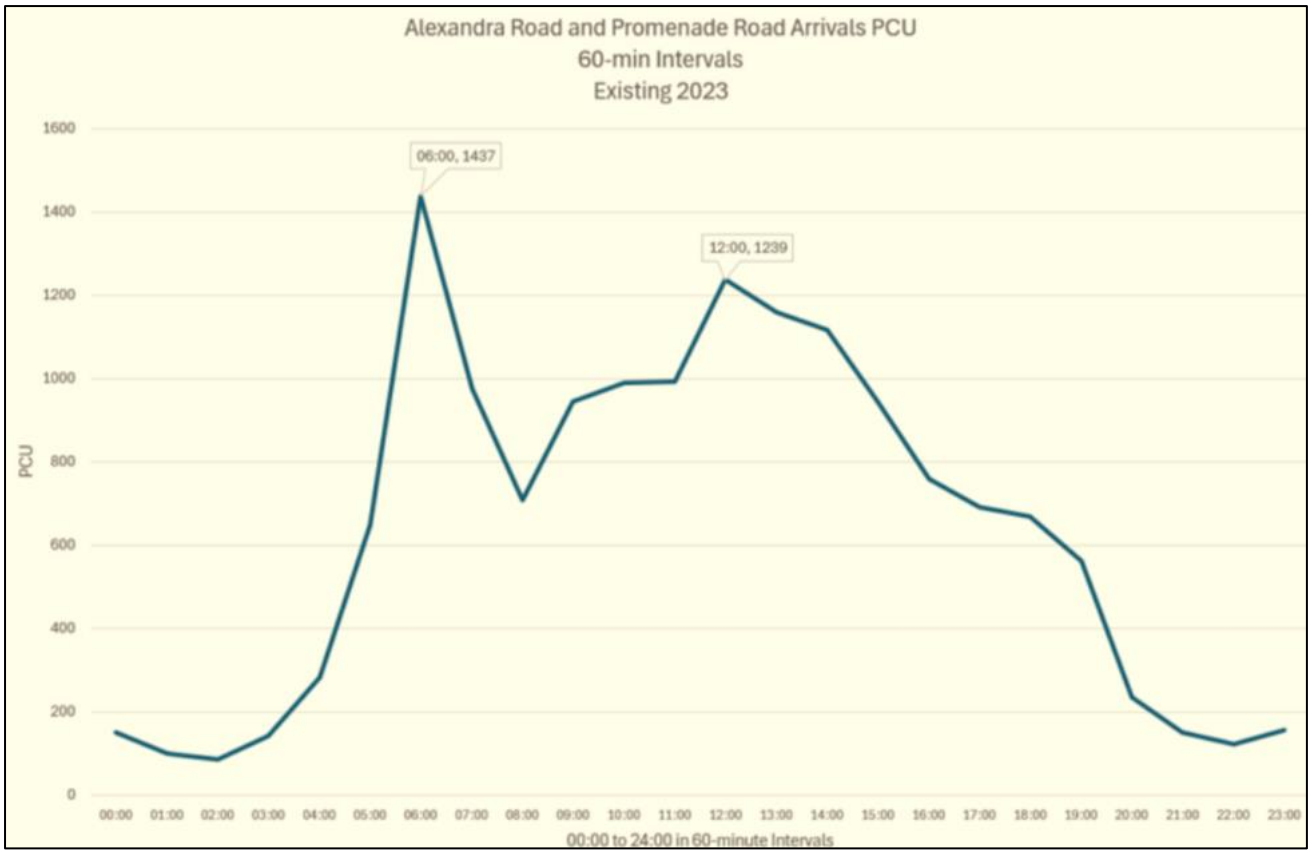

Figure 14.5 existing profile for vehicles entering the Dublin Port North Estate 2023

Figure 14.5 shows that the busiest period for entering the North Port Estate is c06:00 with 1,437 PCUs. As referenced above, the 07:00 starting time of the HGV Management Strategy has an impact on the traffic patterns associated with Dublin Port and contributes to an early peak hour for the internal Port Road network. Notably the profile shows that there is currently a significant decrease in traffic entering the Port during the night-time hours compared to daytime hours, plateauing to under 200 PCUs per hour between 20:00 and 04:00.

This demonstrates that currently there is minimal night-time running on the approach roads to the port.

This pattern is highlighted early within this report as it impacts on the robustness of the proposed road and junction improvements within the North Port Estate.

14.2.6 Existing Level of Port HGVs on the M50 Junction 3 (M1) to Junction 17 (M11)

In 2022, RPS undertook an extensive Origin-Destination survey of freight movements to and from the port. This involved surveying c. 35% of all HGVs and was an update on previous surveys conducted in 2001 and 2011.

The level of detail in the 2022 Origin-Destination survey was such that RPS were able to estimate how port related HGV traffic builds up across the M50 as it heads to and from the Port Tunnel. See Figure 14.6 below.

Using this data, and TII's 2022 published network data for the M50, it was estimated that, across the length of the M50 from Junction 17 (M11) to Junction 3 (M1), HGV traffic to and from the port makes up 1.7% of total vehicle numbers. To put this in some context, vehicle numbers of all types on the M50 reach c. 150,000 per day at the busiest point on the network.

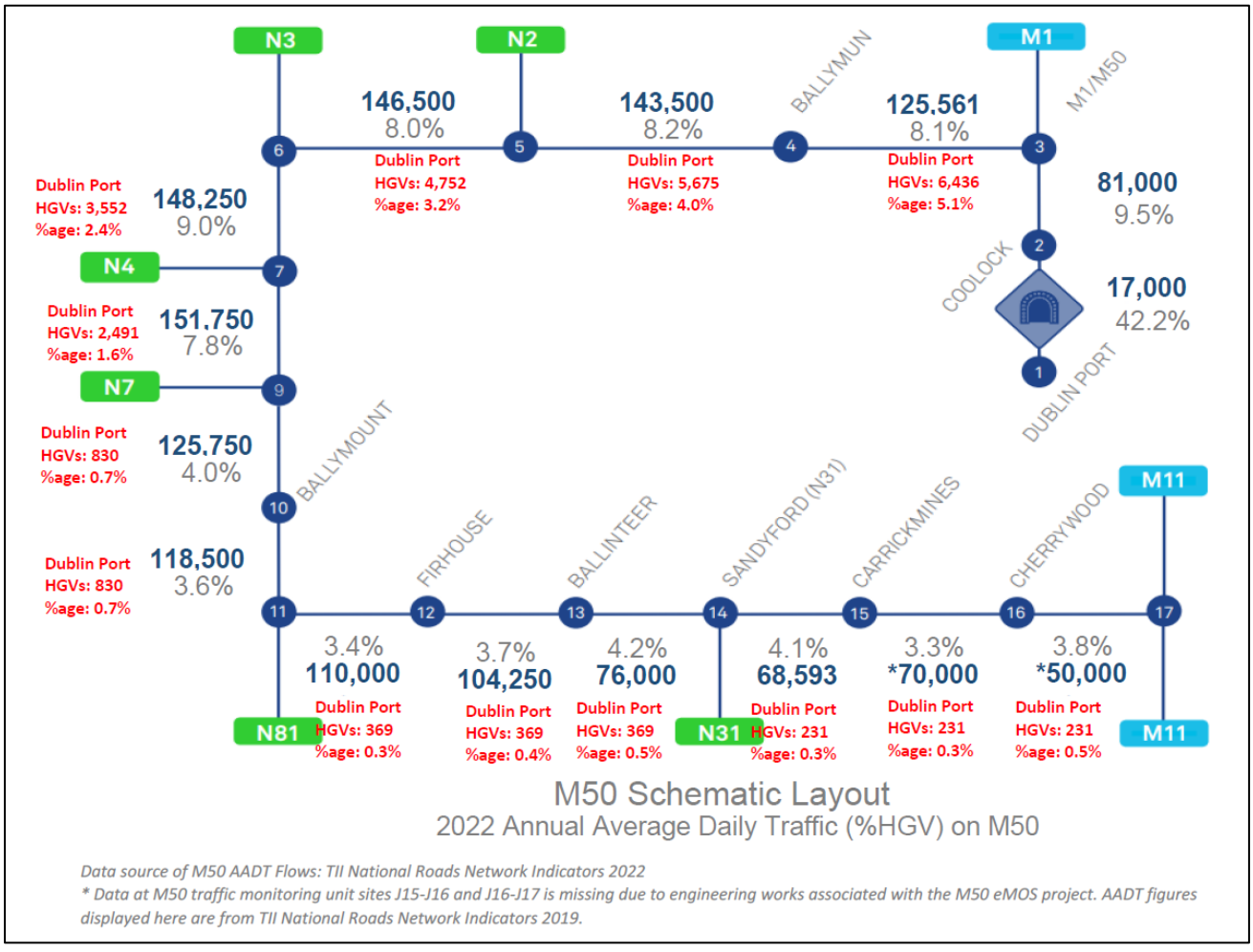

Figure 14.6 Schematic showing overall vehicle numbers across the M50 in 2022. Dublin Port related HGV figures and percentages of overall vehicles are in red

14.2.7 Existing Active Travel Users / NMUs

NMU (Non-Motorised User) surveys were carried out at the locations shown in Figure 14.7 to capture pedestrian, cyclist and other active travel user movements on the existing active travel path at Irishtown Nature Reserve, and at the existing pedestrian crossing between the R131 and Pigeon House Road.

The surveys captured NMU movements at these locations during one week in May 2022, considered to be a typical period, and during one week in August 2022 which was a peak holiday period.

A summary of the NMU activity at the three surveyed locations is shown in Figure 14.7 below.

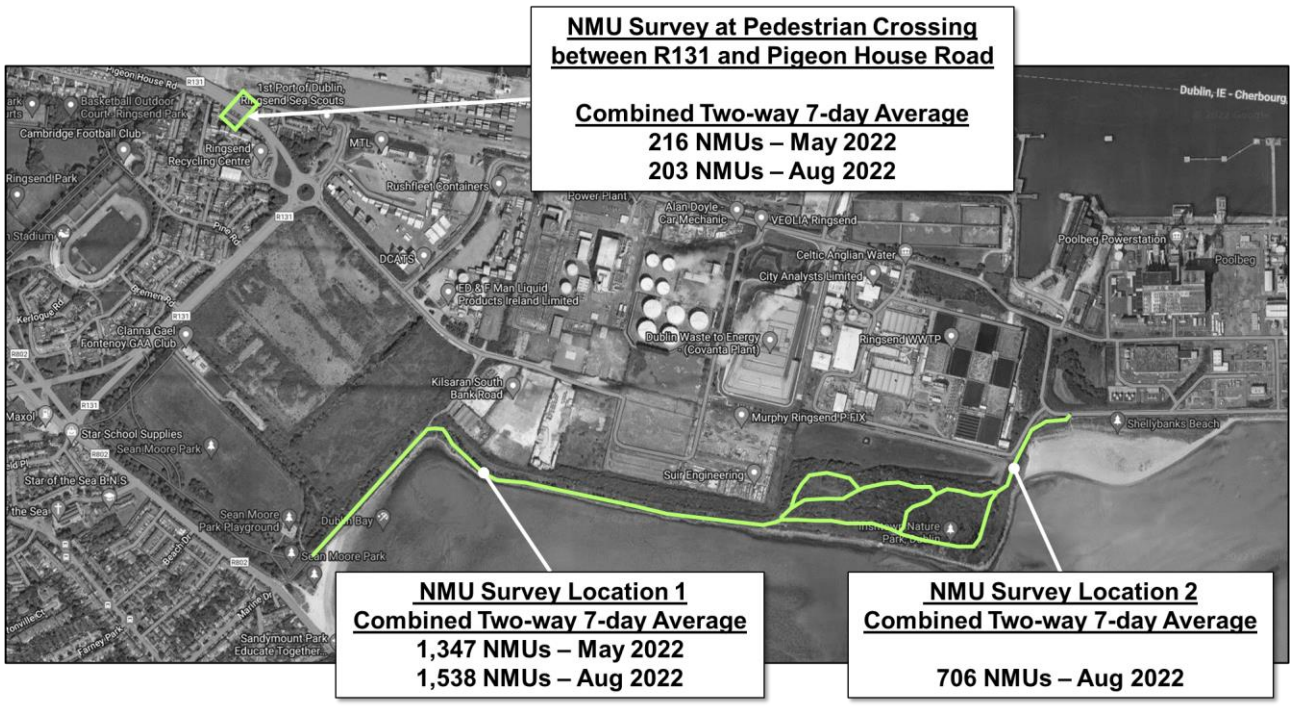

Figure 14.7 High Level Summary of Active Travel User/NMU Surveys at Dublin Port 2022

The number of NMUs in August 2022 at Irishtown Nature Park was 1,538 (two-way, seven-day average) with the peak hour having 192 NMUs recorded between 18:00 and 19:00. Pedestrians make up the majority of active travel path users at 87% and Cyclists make up 12%. Evidence of NMU activity at Irishtown Nature Park from the camera footage is provided in Figure 14.8.

Figure 14.8 Evidence of Active Travel User/NMU Activity at Irishtown nature Park Active Travel Path

14.2.8 Existing Land Use and Ownership

The Poolbeg Peninsula consists of both private and public roads which serve a range of commercial sites and public areas. In the following Figure 14.9, lands owned by DPC are indicated as yellow and DPC-owned roads are orange. Areas not owned by DPC are indicated as green.

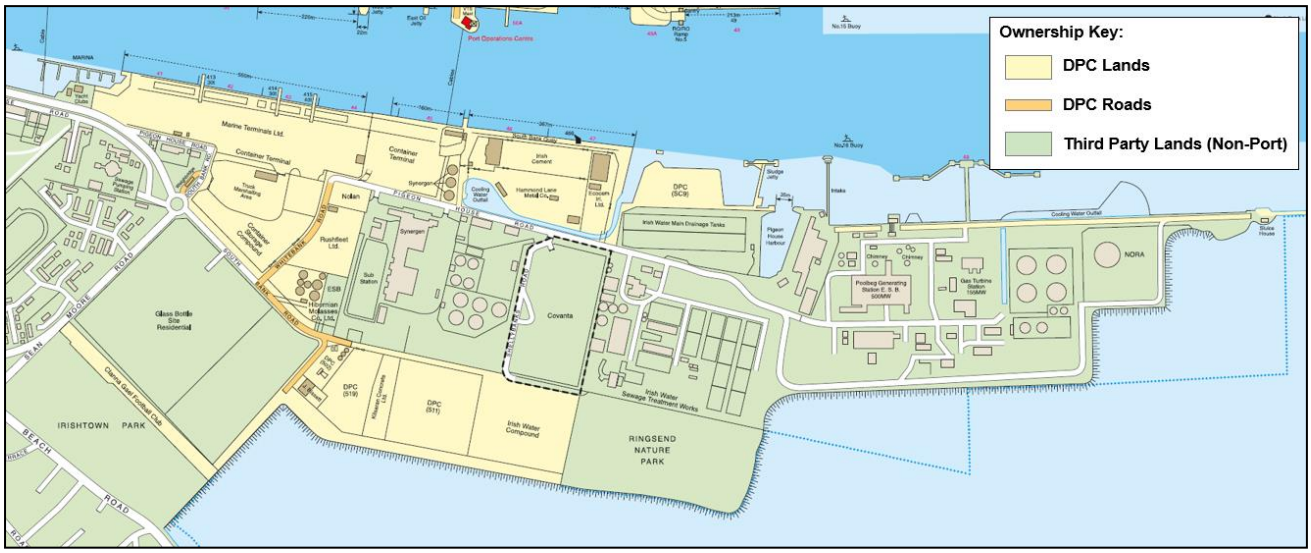

Figure 14.9 Extract from DPC Litho Land Ownership Map

The existing land uses of the South Port Estate of the Poolbeg Peninsula that generate traffic are:

- MTL (Lo-Lo Operator), Rushfleet Ltd and Nolan. (Port-related, nominally Area K in the DPMP2040)- focus on unaccompanied Lo-Lo operations.
- Coal Yard, Scrap Yard and Ecocem. Referred to as Area L in the DPMP2040 – (Port-related) - Break bulk.
- **Referred to as Area O in the DPMP2040 – (Port-related)** – Various commercial uses. The eastern section of the area has been as construction compounds for Encyclis (formally Covanta, an existing Waste to Energy facility) and currently for works at Irish Water Ringsend Wastewater Treatment Plant (WWTP) site.
- **Referred to as Area M in the DPMP2040 – (Port-related)** - Reclaimed area with surface vegetation and has occasional vehicle overrun as an informal storage area for port-related plant.
- Hibernian Molasses Plant (Port-related). Liquid Bulk

Other non-port existing uses on the Poolbeg Peninsula that generate existing vehicular and active travel trips include:

- Commercial Premises including:

- ESB Poolbeg and Ringsend Plants (Non-Port).
- Irish Water Ringsend WWTP (Non-Port).
- Encyclis (existing Waste to Energy facility) (Non-Port).
- Residential units
- Users of the amenity and heritage elements such as the Great South Wall, Ringsend Nature Park, and Pigeon House Harbour.

A diagram of the existing land uses is provided in Figure 14.10.

Figure 14.10 Existing Land Uses Most Relevant to the 3FM Project

14.2.9 T10 Link Road Extension

The T10 Link Road Extension received Grant planning permission on 15 August 2023 (Planning Ref No. 4894/22). The proposed layout is shown in Figure 14.11 below.

As stated in the Engineering Report completed in support of the planning application for the T10 Link Road Extension (Report Reference: *T10LR-ROD-GEN-SW_AE-RP-ZM-4001*), the aim of the scheme is to accommodate a primary route for traffic leaving the Port and enhance the resiliency of the existing Port network, providing a second point of access to Promenade Road and Dublin Tunnel.

This committed link road was a primary consideration in the progression of the proposed road and junction designs for the 3FM Project within the North Port Estate

Figure 14.11 T10 Link Road Extension Proposed Location and Layout (DCC Planning Ref. No.: 4894/22)

14.3 Dublin Port Masterplan and the Strategic Transportation Study

14.3.1 Dublin Port Company Masterplan 2012-2040

The original Dublin Port Masterplan 2012-2040 provided a high-level vision as to how Dublin Port could be developed to cater for an anticipated 60 million gross tonnes by 2040, a rate of 2.5% per annum (pa), as well as working to enhance the integration of the Port with Dublin City.

14.3.2 Dublin Port Masterplan 2040, Reviewed 2018

The Dublin Port Masterplan 2040, Reviewed 2018 was adopted in July 2018 and is referred to within this report as DPMP2040 for ease of reference. The DPMP2040 anticipates a throughput of 77m gross tonnes by 2040, resulting in an Average Annual Growth Rate (AAGR) of 3.3% pa.

14.3.3 Strategic Transportation Study 2018

In 2018 a Strategic Transportation Study was prepared to inform the Strategic Environmental Assessment (SEA) associated with the revision to the Dublin Port Masterplan in 2018. It assessed the increase in growth, proposed modifications to the road network and the suite of sustainable transport measures included in the DPMP2040.

The key features were the AAGR increasing from 2.5% pa to 3.3% pa, and the benefits of the provision of the SPAR (Southern Port Access Route) anticipated for delivery towards the last third of the lifespan of the Masterplan. That Study found that SPAR removes a third of the traffic from the Tom Clarke and 25% from East Wall Road.

The suite of documents can be found at http://www.dublinport.ie/masterplan/masterplan-documents/.

Since the revision of the Masterplan in 2018, the MP2 Project (the second of the three major Dublin Port Strategic Infrastructure Developments (SID) from the Masterplan) received planning permission in 2020.

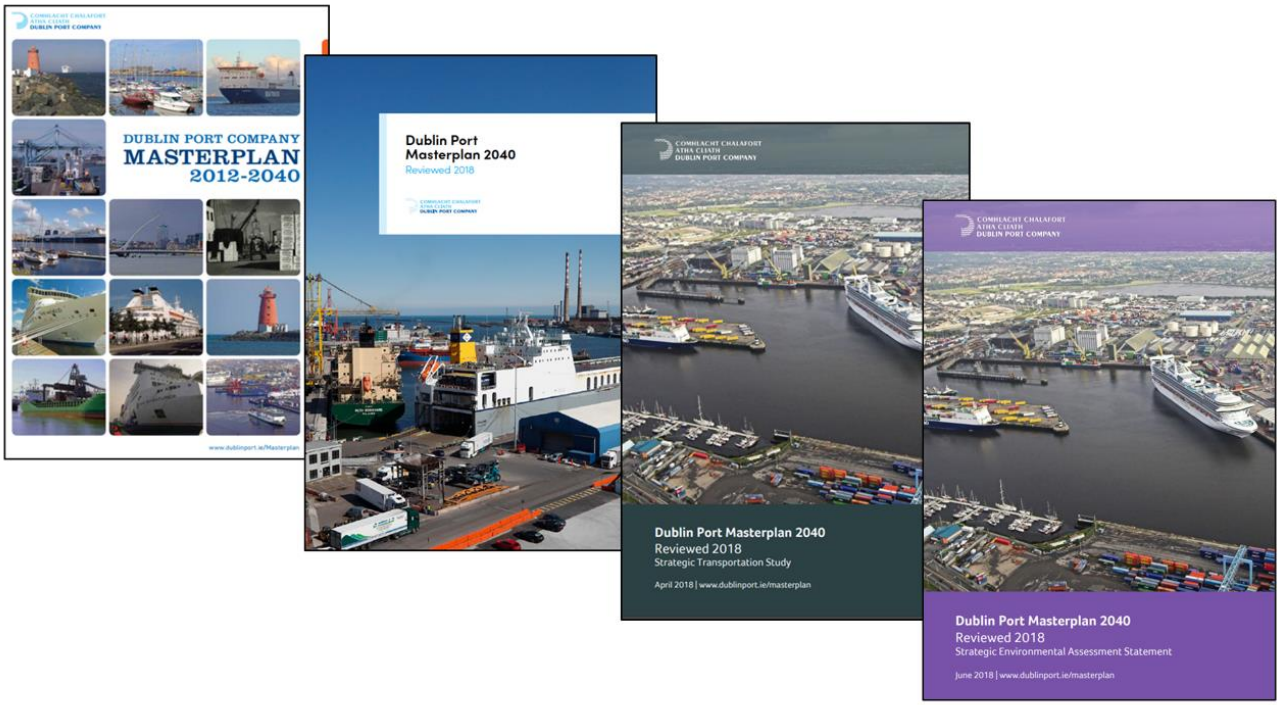

Figure 14.12 Original Masterplan, Revised Masterplan, Strategic Transportation Study and SEA

14.4 Policy Context

Full consideration of relevant planning and policy context at the national, regional, and local level is provided in Chapter 2 of this EIAR. The policy relevant to the traffic and transportation aspects of 3FM is summarised in Table 14.1 below.

Table 14.1 Summary of Planning Policy Context Relevant to 3FM TTA

Planning Policy Document	Sections Relevant to 3FM TTA *(with page reference in policy document)*
National	
Project Ireland 2040 National Planning Framework	• National Strategic Outcome 6 (*page 37 & 145)* • National Policy Objective 27 (*page 82)*
Regional	
Transport Strategy for the Greater Dublin Area, 2022 to 2042	• Measure INT2 - International Gateways *(page 75)* • Measure ROAD2 – National Roads Requirements, No.9 *(page 171)* • Measure ROAD5 – Southern Port Access Route *(page 173)* • Measure ROAD7 – Dublin Tunnel Emergency Diversion Route *(page 175)* • Measure FREIGHT3 – Planning Policy and Freight *(page 199)* • Measure FREIGHT5 – Rail Freight *(page 200)*
Greater Dublin Area Cycle Network Plan 2022	• 2022 Greater Dublin Area Cycle Network Plan - Dublin City Centre *(page 3)*
Local	
Dublin City Development Plan 2022-2028	• SC7 Dublin Port *(page 115)* • CE35 Dublin Port *(page 199)* • SMTO1 Transition to More Sustainable Travel Modes *(page 236)* • SMT3 Integrated Transport Network *(page 239)* • SMT22 Key Sustainable Transport Projects *(page 253)* • SMT23 The Rail Network and Freight Transport *(page 253)* • SMT30 National Road Projects *(page 259)* • Employment & Economic Development *(page 447)* • Movement & Transport *(page 449-450)* • Existing and Future Strategic Transport and Parking Areas - shows indicative SPAR alignment. *(Map J)* • Land Zones *(Map F)*
Poolbeg West SDZ Planning Scheme	• Figure 9.1 Land Uses *(page 64)*

14.5 Proposed Development

The General Arrangement drawing for the 3FM Project is shown in Figure 14.1 above.

The detailed 3FM proposals are outlined in the Proposed Development Chapter of this EIAR. The specific elements that are relevant to the traffic and transportation assessment are addressed in this section.

14.5.1 Overview of SPAR and Road Upgrades

The SPAR is a new 2.3km road, linking the North Port Estate to the South Port Estate. The SPAR itself is defined as the entire route from North Wall Quay Extension in the north, to the Area O access point at the south, as shown in Figure 14.13.

At the northern end, the SPAR will connect into the proposed Berth 18 Access Road which connects to Alexandra Road, providing a congestion free link across the River Liffey on a new 220m bridge and 595m viaduct, landing on the southern shoreline in close proximity to the proposed Maritime Village. The SPAR will then connect into a re-aligned Whitebank Road which connects into the Pigeon House Road and onto the extended South Bank Road, providing connectivity as far as the new Area O Ro-Ro terminal. The 3FM Project will also provide upgrades to the existing road network throughout the South Port and the North Port.

The SPAR bridge will be located east of the Tom Clarke (East Link) Bridge and will include a 45m lifting section to maintain the navigable channel.

The SPAR will be a public road with restricted use. The SPAR will accommodate port-related traffic movements from Areas K, L, N and O and connect them to the North Port Estate and the M50 (Dublin Tunnel). Although the majority of SPAR traffic will be HGVs connected with the operation of the port, the SPAR will also accommodate other traffic flows such as Public Transport, active travel users, emergency vehicles (blue light), heavy traffic movements from the Encyclis (formerly Covanta) Waste-to-Energy Plant and other Goods vehicles.

Figure 14.13 3FM Project Preliminary General Arrangement Layout (May 2024)

The key principles behind the development of the SPAR are:

- The majority of HGV vehicles will be removed from the external DCC road network,
- HGV traffic will be relocated further from residential areas,
- Traffic flows will be relatively free-flowing.

These principles should reduce the impact of the HGVs currently have on traffic capacity, congestion, air quality, noise and vibration.

The bridge section and viaduct will accommodate substantial active travel facilities to provide sustainable transport connections for staff and visitors of the 3FM scheme, in addition to providing a community gain and interconnection between public realm schemes.

14.5.2 North Port Road Upgrades

Road improvements in the North Port Estate include the following, also shown on Figure 14.14:

- Provision of a left slip lane from East Wall Road onto Alexandra Road for HGV entry into Terminal 4 (Currently Seatruck) and Alexandra Quay East (currently DSG).

- Conversion of Promenade Road / Bond Drive roundabout to a signal-controlled junction with associated upgrade and lane reallocation of approach arms,
- Lane reallocation of approach arms to Tolka Quay Road / Bond Drive roundabout,
- Provision of new T10 Link Road roundabout and associated approach arms (already permitted),
- Provision of new signalised junction at proposed T10 Link Road / Alexandra Road intersection,
- Provision of new Berth 18 Access Road providing access from Alexandra Road to Berth 18 and the proposed SPAR,
- Provision new and upgraded active travel connections and footways in conjunction with upgraded roadworks in the North Port.

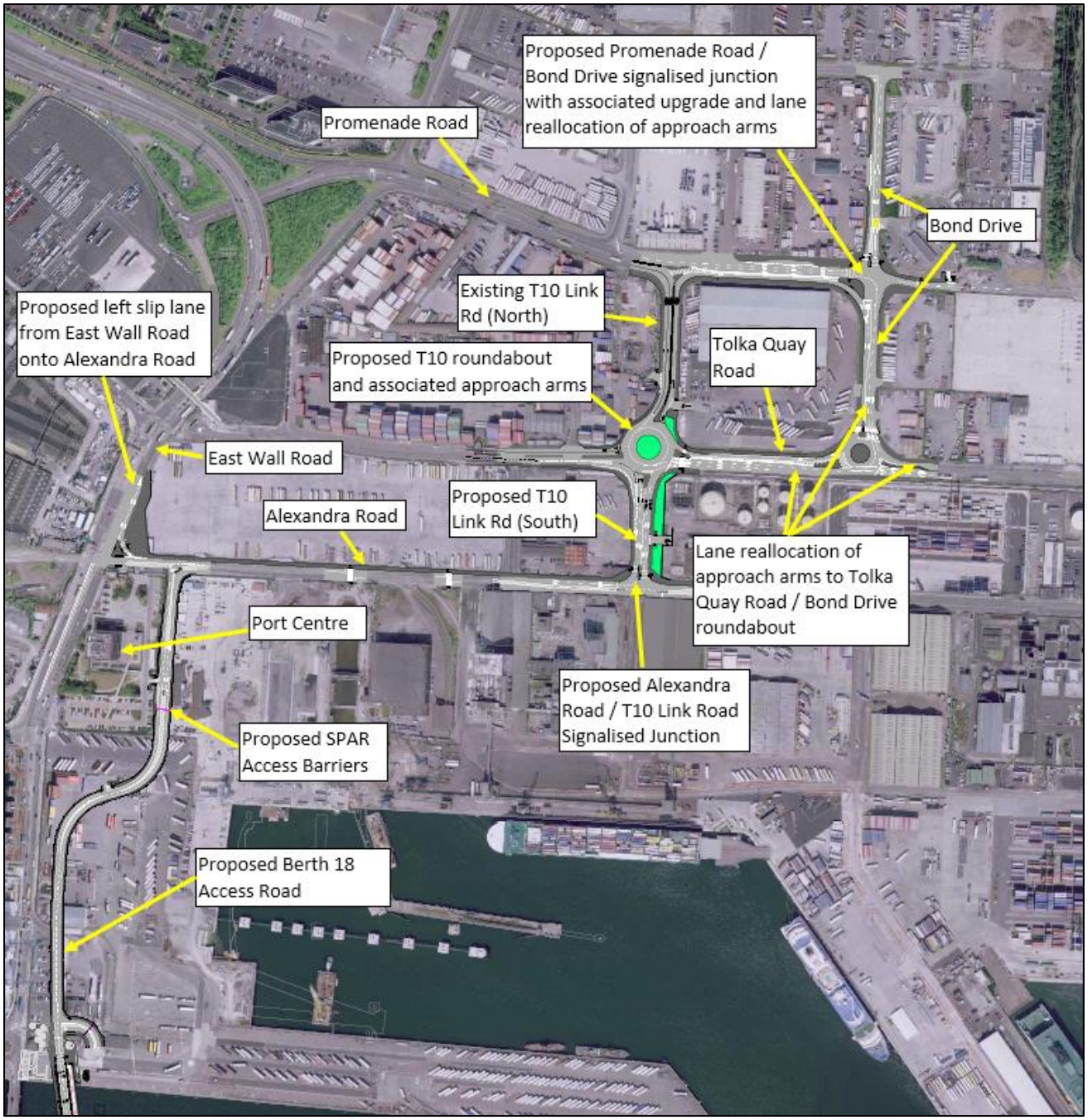

Figure 14.14 North Port Road Upgrade Works

Design standards will comply with the Design Manual for Urban Roads and Streets (DMURS), with a design speed of 40kph.

A new access to the Port Centre will be provided from the proposed Berth 18 Access Road. SPAR access control infrastructure will be provided just south of the proposed new access to the Port Centre.

The Berth 18 Access Road will comprise a two-lane carriageway with a total width of 8m (including 2 x 0.5m hard strips). A 2m wide footway will be constructed on each side of the carriageway.

14.5.3 SPAR Bridge and Viaduct and connection to Whitebank Road

The SPAR begins just north of the SPAR Bridge northern abutment, at the signalised Active Travel crossing connecting the SPAR Bridge Active Travel to North Wall Square, which forms part of the permitted Liffey Tolka public realm scheme.

Figure 14.15 CGI Aerial View of Proposed SPAR River Liffey crossing (lifting span closed) and Tom Clarke Bridge in the foreground, looking east

The SPAR Bridge is a 220m crossing of the Liffey and is positioned immediately east of Tom Clarke Bridge on a skewed alignment. The bridge will include a lifting span above the navigation channel. The 45m straight lifting span will be constructed to align with the opening section of the Tom Clarke (East Link) Bridge. Design of the SPAR bridge is intended to maximise the amount of offsite construction. This will facilitate safety management, optimise quality, and reduce environmental and social impact during construction.

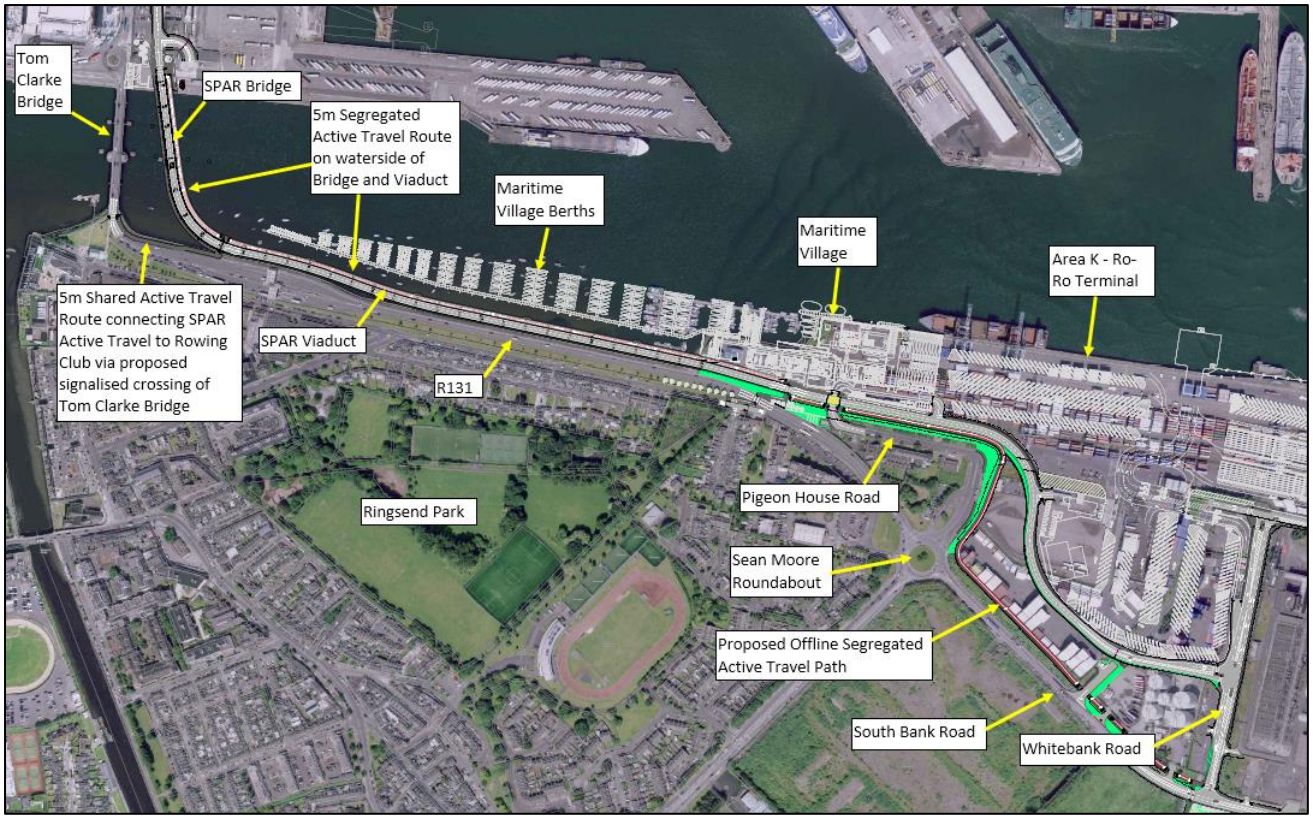

Figure 14.16 SPAR Bridge and Viaduct and connection to Whitebank Road

The bridge deck will comprise a traffic-carrying central deck with width varying from 10.8m to 11.8m, including a two-lane carriageway with total width varying from 7m to 8m, and a vehicle containment system, drainage, etc. There will be a primary Active Travel path to the east side of the traffic. This will include a two-way cycleway with a minimum clear width of 3m, and an adjacent footway with a clear width of 2m. The footway is located to the outside edge of the bridge to allow pedestrians to avail of the view. An additional path will be located to the west side of the traffic, with a clear width of 3.3m. This will initially be considered as a shared footway and cycle path but with provision to be converted to accommodate the LUAS.

The Southern Port Access Route (SPAR) bridge has been designed so that it can be modified in the future to accommodate a LUAS provision, should it be decided by the NTA that the preferred routing of the LUAS to Poolbeg should go via this route. There are other alternative routings to Poolbeg which the NTA will also evaluate.

Road signage, traffic barriers, vehicle restraint systems, traffic signals, and bridge lighting will be installed on the road network as required.

The SPAR Viaduct is a 595m long structure that runs alongside the existing R131 public road and spans from its connection to the southern end of the SPAR bridge to its landing point near the Maritime Village. This section will comprise a two-lane carriageway with total width of 8m.

There will be a 5m wide active travel route, similar to that provided on the SPAR Bridge with 2m footway and 3m segregated cycleway, to facilitate efficient commuter links, see Figure 14.17. This active travel route is to the north of the carriageway, providing an uninterrupted connection from the northern end of the SPAR Bridge

to the proposed Maritime Village. A 5m shared Active Travel connection will be provided from the southern end of the SPAR Bridge alongside the R131 to St Patrick's Rowing Club via a proposed signalised crossing at the southern end of the Tom Clarke Bridge.

The section of the SPAR from the viaduct to Whitebank Road is designed to follow the southern boundary of the Maritime Village and Area K.

Vehicular access to the Maritime Village will be from the public road network via Sean Moore Roundabout and Pigeon House Road. A signalised at-grade crossing of the SPAR will be provided to Maritime Village from Pigeon House Road, with the addition of vehicular barriers to prevent unwanted access to SPAR from the public road network.

Active Travel connections and at-grade crossings will also be provided to the Maritime Village from Ringsend Park. The online segregated active travel route along the SPAR diverges from the SPAR just east of the Coastguard cottages, runs alongside Southbank Road and crosses South Bank Road to provide connectivity to Port Park, the existing path along the southern shoreline of the Poolbeg Peninsula, Sean Moore Park and the wider Sandymount area.

A 3m wide active travel shared footway/cycleway will run to the north of the SPAR, beyond the at-grade crossing, providing an active travel route into the proposed Ro-Ro Terminal - Area K. Vehicular access into Area K will be provided for staff from this section of the SPAR also.

The SPAR will be designed to DMURS with a design speed of 50kph. It is noted that the section of the SPAR from North Wall Quay to Maritime Village will also be aligned to TII standards with a design speed of 60kph.

The SPAR meets the realigned Whitebank Road with a signalised junction.

SPAR access control infrastructure will be provided along this section prior to its junction with Whitebank Road.

Landscaping and vegetation strips will increase the separation between residents and the route. This will include vehicle restraint barriers as required. A 4m high noise barrier along the Coastguard Cottages and along the southern boundary of Area K will be installed to mitigate noise impacts.

Figure 14.17 CGI View along the SPAR 5m wide active travel route

14.5.4 South Port Roads and SPAR

The southern section of the SPAR extends further southwards encompassing the southern section of Whitebank Road and the connection to Area O, from the junction with South Bank Road. For the benefit of this section of the report, each section of road that the SPAR includes will be referred to by its name, for ease of reference.

Road improvements in the South Port Estate include the following, also shown on Figure 14.18:

- Realignment of Whitebank Road including new signalised junctions with Pigeon House Road to the north and South Bank Road to the south. Include provision of access to Area K, with exit from Area K onto the new signalised junction with Pigeon House Road. A signalised junction will be provided approximately mid-length along Whitebank Road to provide access to the western extents of the SPAR and onward connection to the North Port and Dublin Tunnel (M50). The portion of Whitebank Road south of this signalised junction forms part of the SPAR.
- Extension of South Bank Road, connecting to the realigned Whitebank Road and Shellybanks Road, providing access to Area O – Ro-Ro terminal. This portion of South Bank Road will form part of the SPAR. Includes 3m shared Active Travel on northern side of road, providing connectivity to Area O, Encyclis and Area L – Lo-Lo terminal.
- Widening and upgrade of Shellybanks Road including improvements to horizontal alignment at northern end. Includes signalised junctions with Pigeon House Road and the extended South Bank Road. Includes 3m shared Active Travel providing connectivity to Area L – Lo-Lo terminal.
- Upgrades to Pigeon House Road including widened access to Ecocem / Area L exit, provision of new right-turn facility into existing Encyclis site, widening of footway serving Ecocem / Area L, localised curve widening and verge clearance/widening on approach to Area N Access Road to improve cross-section and visibility, provision of a terminal roundabout at the eastern end of the road which facilitates access to Area N, ESB and the access road towards Poolbeg Lighthouse, as well as providing U-turn capability.
- Provision of Area N Access Road which provides exclusive access to the Area N – Lo-Lo Terminal. Includes 3m shared Active Travel on western side of road. Includes vehicle scanning infrastructure.

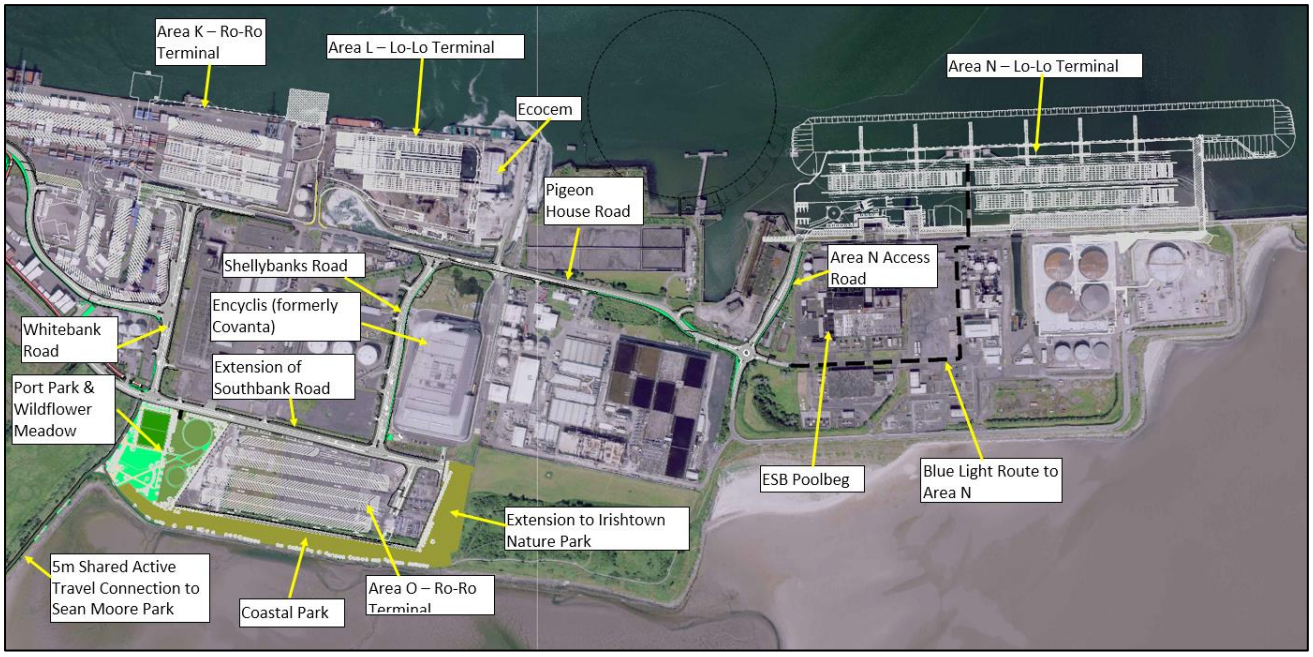

Figure 14.18 South Port Road Works

3m wide shared active travel paths will provide connections to Areas K, L, N and O, with 2m wide pedestrian footpaths also provided where appropriate.

Design standards will comply with DMURS with a design speed of 50kph.

Updated access arrangements into private sites such as ESB, Encyclis and ED&F Mann will be provided. A Blue Light Access route will be provided through the ESB Poolbeg site to Area N. The planning application for the 3FM Project has an expansive suite of accompanying design drawing providing full detailing of the design of the proposals.

14.5.5 Restricted Use of the SPAR

In previous discussions with NTA and DCC regarding use of the SPAR, it has been accepted that private cars should not use the route. Currently, private cars are not expected to have access to the SPAR as it is designed primarily for port traffic and HGVs to ease the burden on public infrastructure. Accordingly, it is proposed by DPC that the following categories of vehicles will have free access to the SPAR:

- Commercial vehicles going to and from Dublin Port facilities.
- Dublin Port Company vehicles
- OGV1 Commercial Goods Vehicles going to and from the Poolbeg Peninsula. This includes all rigid vehicles over 3.5 tonnes gross vehicle weight with two or three axles.
- OGV2 Commercial Goods Vehicles going to and from the Poolbeg Peninsula. This includes all rigid vehicles with four or more axles and all articulated vehicles.
- Public transport buses of 25+ passenger capacity.
- Emergency Services vehicles

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14.5.6 Lo-Lo Terminal & Ro-Ro Terminal

The proposed Lo-Lo Terminal will deliver an annual throughput capacity of approximately 550,000 Twenty-foot equivalent units (TEU) or 5.34m tonnes.

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

- Lo-Lo Terminal - Area N: Handles 100% of exports & 40% of imports. Entry & exit HGV movements are via a single access road, Area N Access Road. Staff and Visitors enter & exit through the same access.
- Lo-Lo Terminal - Area L: Handles 60% of imports. HGVs enter by the western access and exit via the eastern access. Note that Area L shares its eastern exit with two-way traffic generated by Ecocem that stays in-situ. Staff and Visitors enter & exit through the same access arrangements.

The proposed Ro-Ro Terminal will deliver an annual throughput capacity of approximately 360,000 Ro-Ro units or 8.69m tonnes.

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

- Ro-Ro Terminal - Area K: Handles 100% exports and 50% imports. HGV movements enter via a left-in only from the Realigned Whitebank Road. HGVs exit via the western exit arm of the proposed Pigeon House Road / Realigned Whitebank Road signalised junction. Staff and Visitors have a separate access for entry & exit directly from the SPAR.
- Ro-Ro Terminal – Area O: Handles 50% of imports. Entry & exit HGV movements are via a single access road located at the eastern side of the site. Staff & visitors enter & exit through the same access.

The location of proposed Areas N, L, K and O are shown in the following Figure 14.19. Figure 14.20 provides a schematic of land use, location and access arrangements for HGVs to Areas K, L, N & O.

Figure 14.19 Proposed Area K, Area N, Area L and Area O

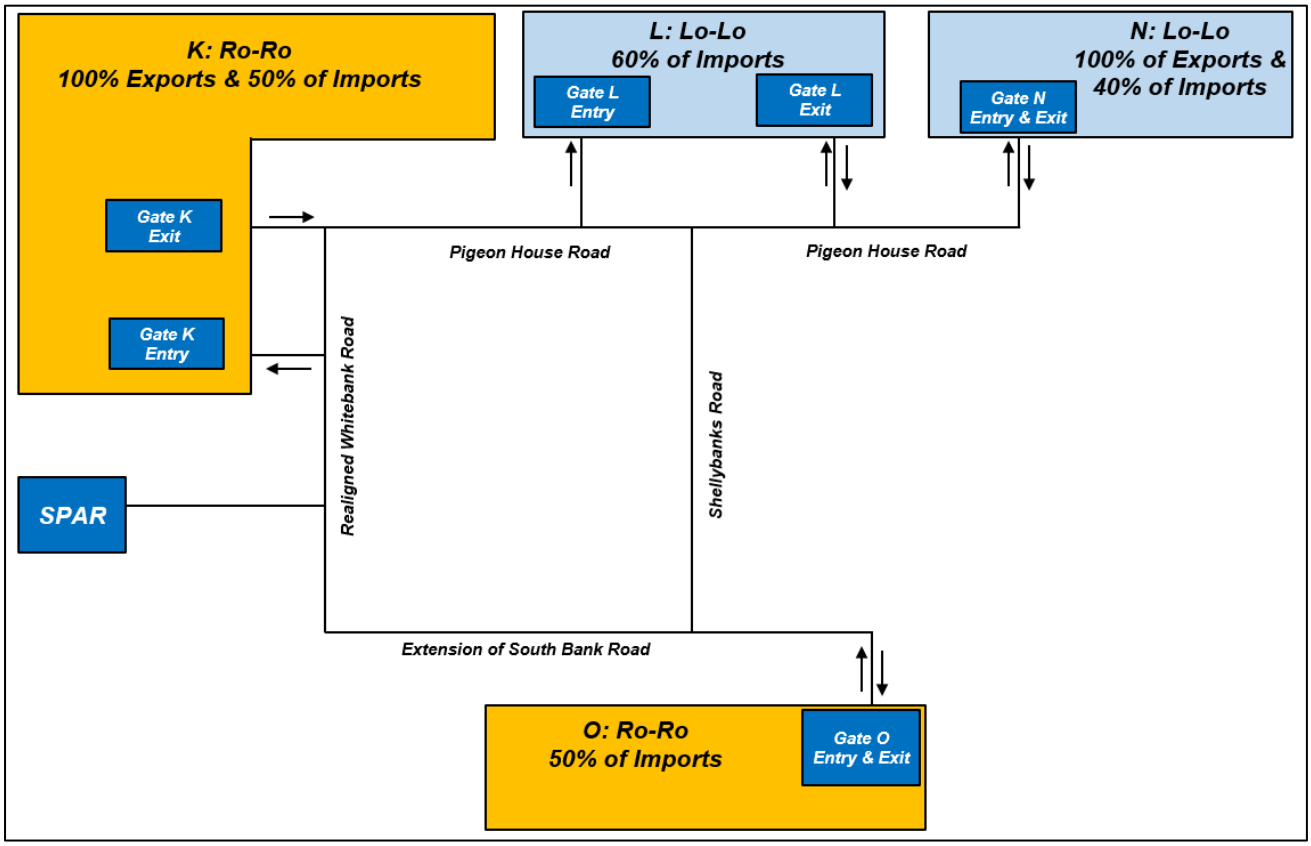


Figure 14.20 Schematic of Land Use, Location and Access Arrangements for HGVs to Areas K, L, N & O

14.5.7 HGV Routing to the 3FM Project

The following diagrams indicate the proposed HGV routing between the Dublin Tunnel (M50) and the 3FM Project. As the diagrams show the only access to the 3FM Project for HGVs will be via Promenade Road connecting to the SPAR via the Berth 18 Access Road within the North Port Estate.

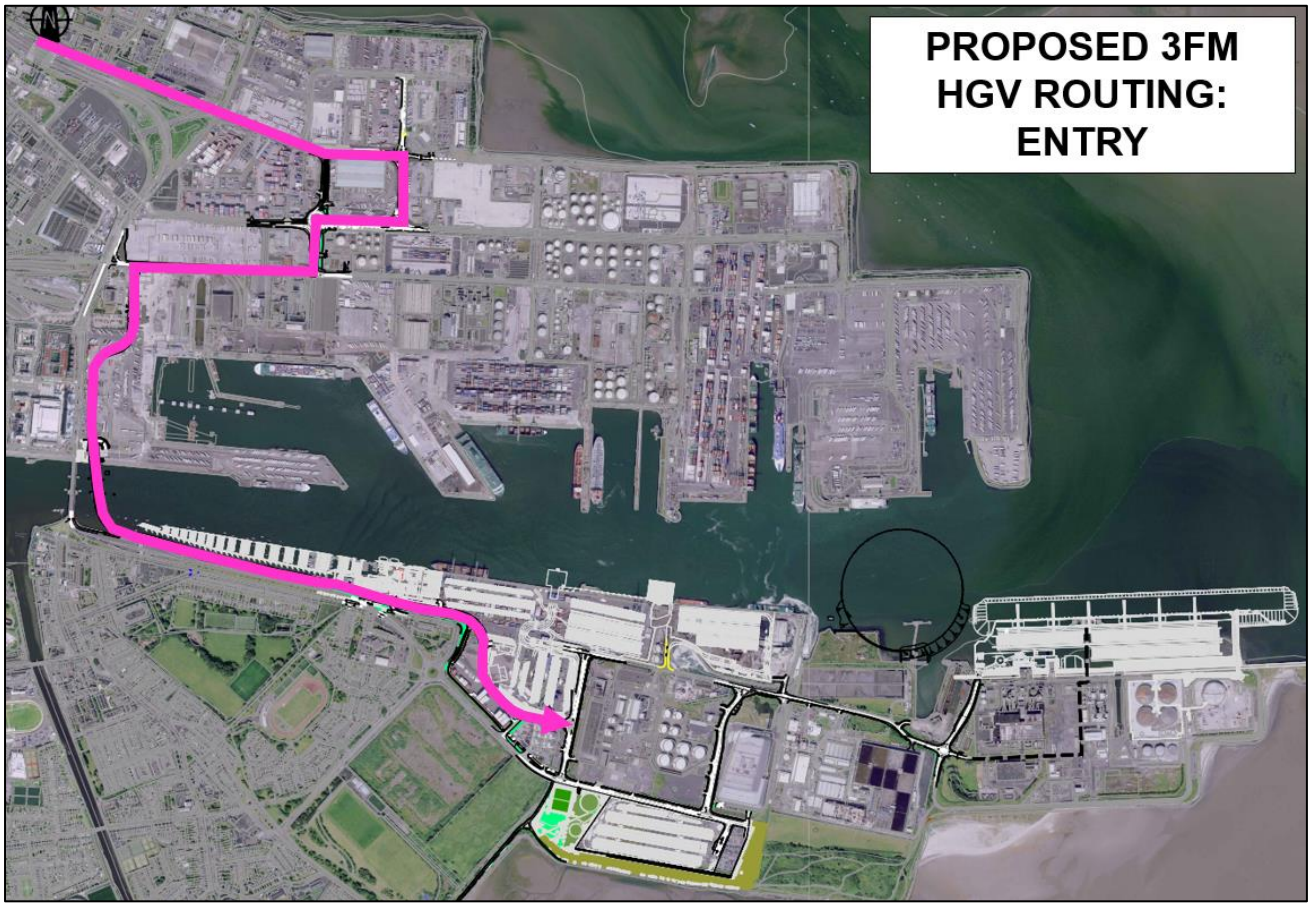


Figure 14.21 Proposed HGV Routing – Entry to the 3FM Project

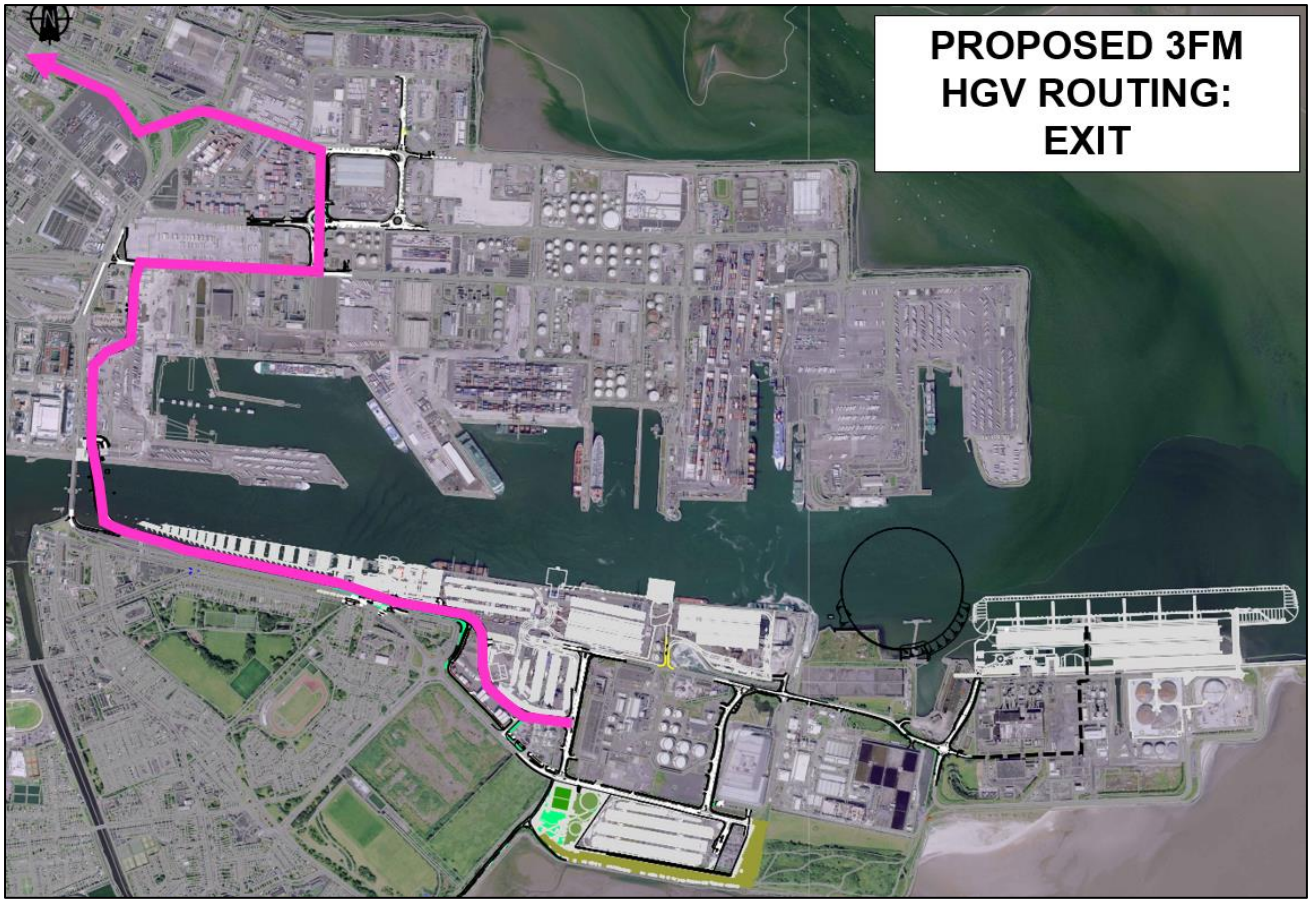


Figure 14.22 Proposed HGV Routing – Exit from the 3FM Project

The 3FM Project proposes an upgraded left slip entry from East Wall Road onto Alexandra Road for HGV entry to Terminal 4 (currently Seatruck) and Alexandra Quay East (currently DSG), as illustrated in Figure 14.23 below. All other traffic movements will not be permissible at this junction. Notably, there is no access to the SPAR from the Alexandra Road Left Slip.

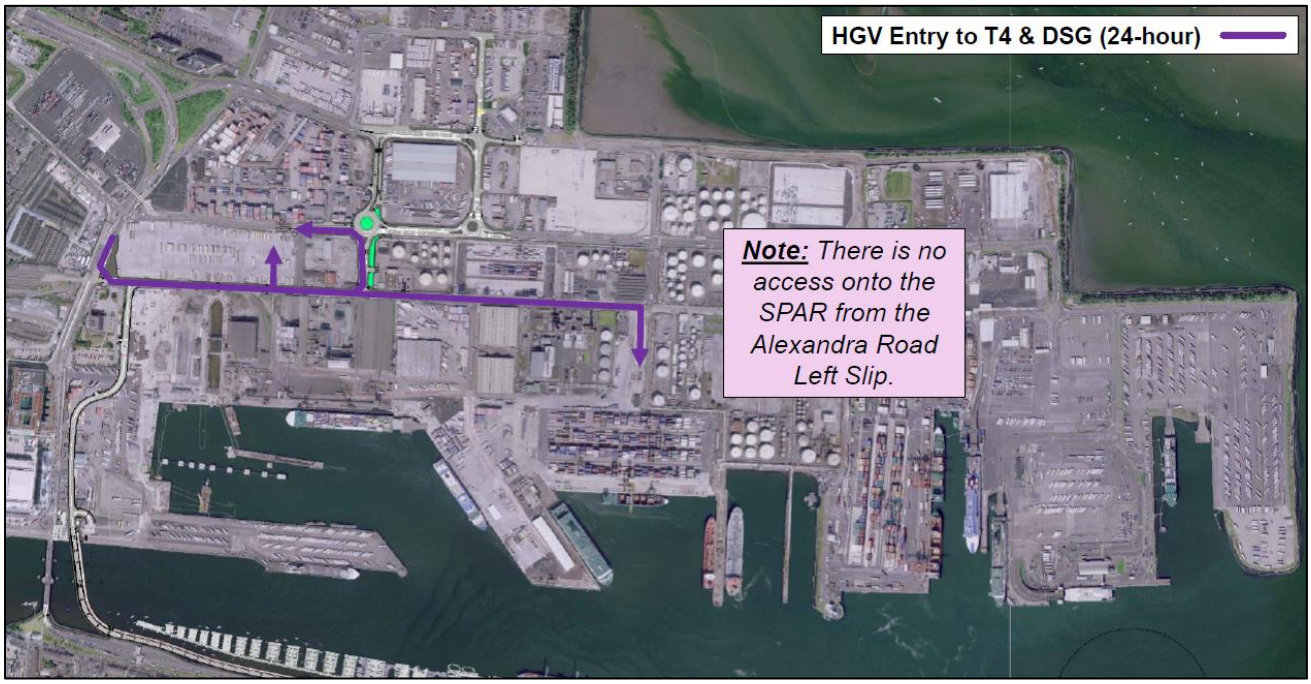


Figure 14.23 Proposed HGV Routing – Entry from the East Wall Road Left Slip

The Alexandra Road access to the Dublin Port North Estate also allow access for blue light and retains the ability to be used in an emergency should an incident occur within the port estate.

Figure 14.23 contains details of the proposed HGV routing (entry, exit and between Areas) for Areas N & L (the Lo-Lo terminal) and Areas K & O (the Ro-Ro terminal). Notably third party haulier HGVs are routed away from the Glass Bottle site duing the nighttime hours of 23:00-07:00 to minimise any potential inconvenience to residents. The only exception is shunting vehicles returning unladen from Area O to Area K, however all port shunting vehicles will be electrically powered or similar to provide lower carbon & reduced noise benefits.

14.5.8 Maritime Village and Harbour Operations Centre

The proposed Maritime Village is comprised:

- A new Maritime Village, with provision for local sailing and rowing clubs to replace the existing Stella Maris Rowing Club and Poolbeg Yacht and Boat Club.
- The relocation of the Port Harbour Operations Centre from the North Port Estate.
- Extended public realm and new waterfront access to be located at the existing Berth 41.

The site location of the proposed Maritime Village and Harbour Operations Centre is shown in Figure 14.24 below.

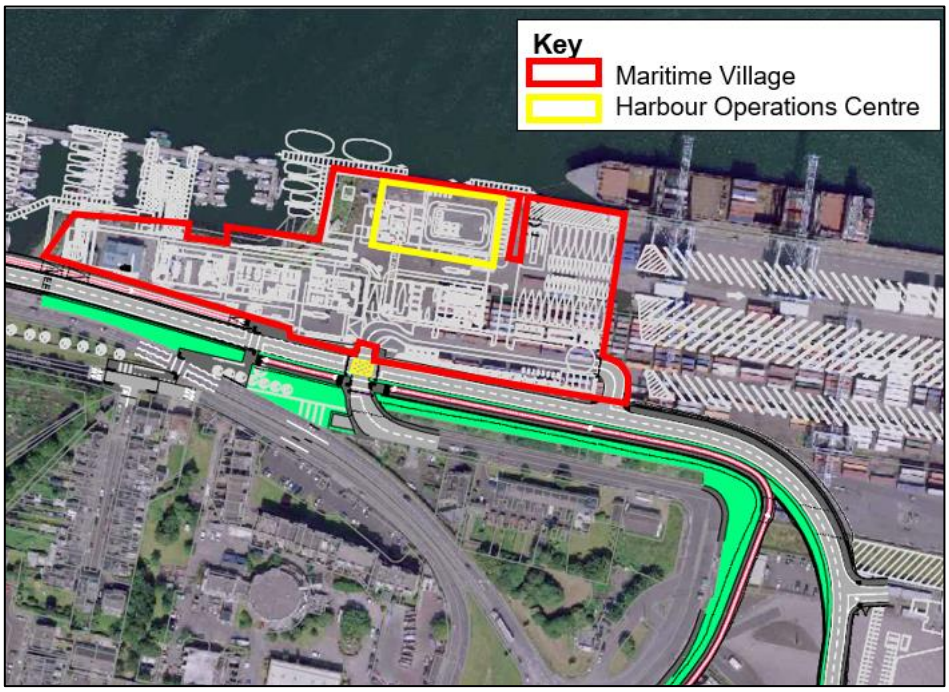


Figure 14.24 Proposed Site Location of Maritime Village and Harbour Operations Centre

Vehicular access to the Maritime Village will be from the public road network via Sean Moore Roundabout and Pigeon House Road. A 'demand-controlled' signalised at-grade crossing of the SPAR will be provided to access the Maritime Village from Pigeon House Road, with the addition of vehicular barriers to prevent unwanted access to the SPAR from the Maritime Village or public road network.

The Harbour Operations Centre will be provided with a segregated parking area and separate access to service the building. Operational traffic to and from the Harbour Operations Centre will access via the eastern most access from the site onto the SPAR. This access will be gated and restricted to Harbour Operations traffic only.

The access arrangements for Maritime Village and the Harbour Operations Centre are shown in Figure 14.25.

The traffic and parking impacts of the proposed Maritime Village will be considered in this TTA.

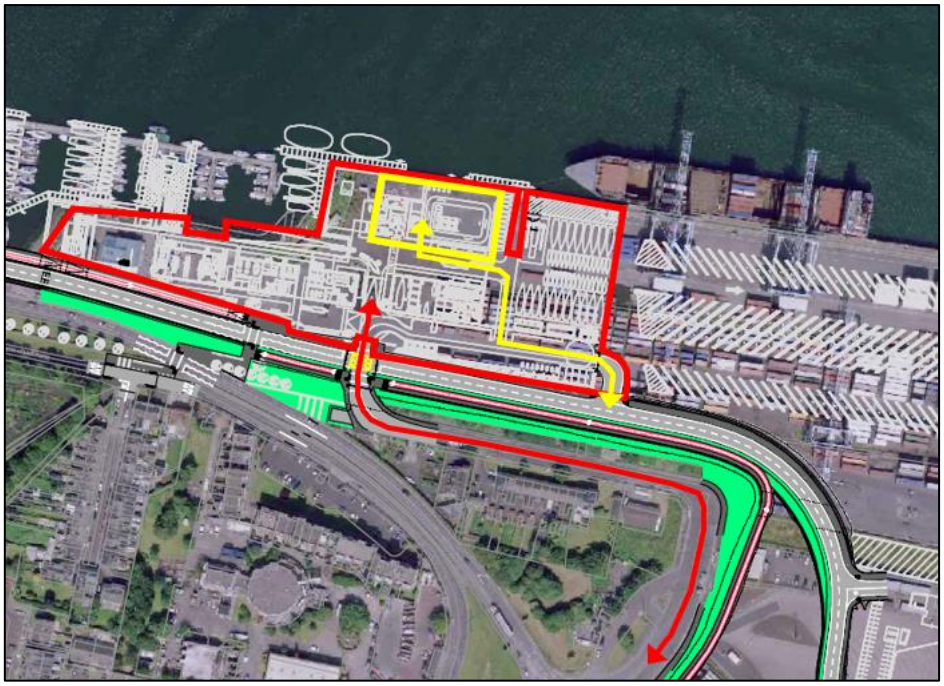


Figure 14.25 Proposed Access Arrangements Maritime Village and Harbour Operations Centre

Specific access arrangements for events held at the proposed Maritime Village will be dealt with by the respective event organisers on a case-by-case basis in liaison with DCC and DPC (if required). Therefore, event management will be dealt with post-submission of the 3FM Project as and when it is needed.

14.5.9 Port Park

Port Park is a proposed 2.8-hectare public park on the south side of the Poolbeg Peninsula, adjacent to the proposed Area O. Port Park will comprise the development of new natural grass floodlit playing pitch for the use of local clubs. As suggested by DCC Parks Department, Port Park has been considered as a car free scheme within this TTA. The proposed site layout is shown in Figure 14.26 below.

Figure 14.26 Proposed Site Location of Port Park

14.5.10 Community Gain & Active Travel

The 3FM proposals include the creation of new public realm within the Poolbeg Peninsula and commitment to provision of active travel paths to serve Areas N, O and K as community gain.

This includes 7km of new or upgraded Active Travel Path (cycle, pedestrian, wheelers etc.) and 4.9km of new or upgraded footway across the North Port Estate, SPAR and Poolbeg Peninsula, which will link with the 1.4km Liffey Tolka Greenway in the North Port Estate, and from there to the 3.2km Tolka Estuary Greenway currently under construction by Dublin Port. DPC will also provide Dublin City Council with a €5 million contribution for future upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula.

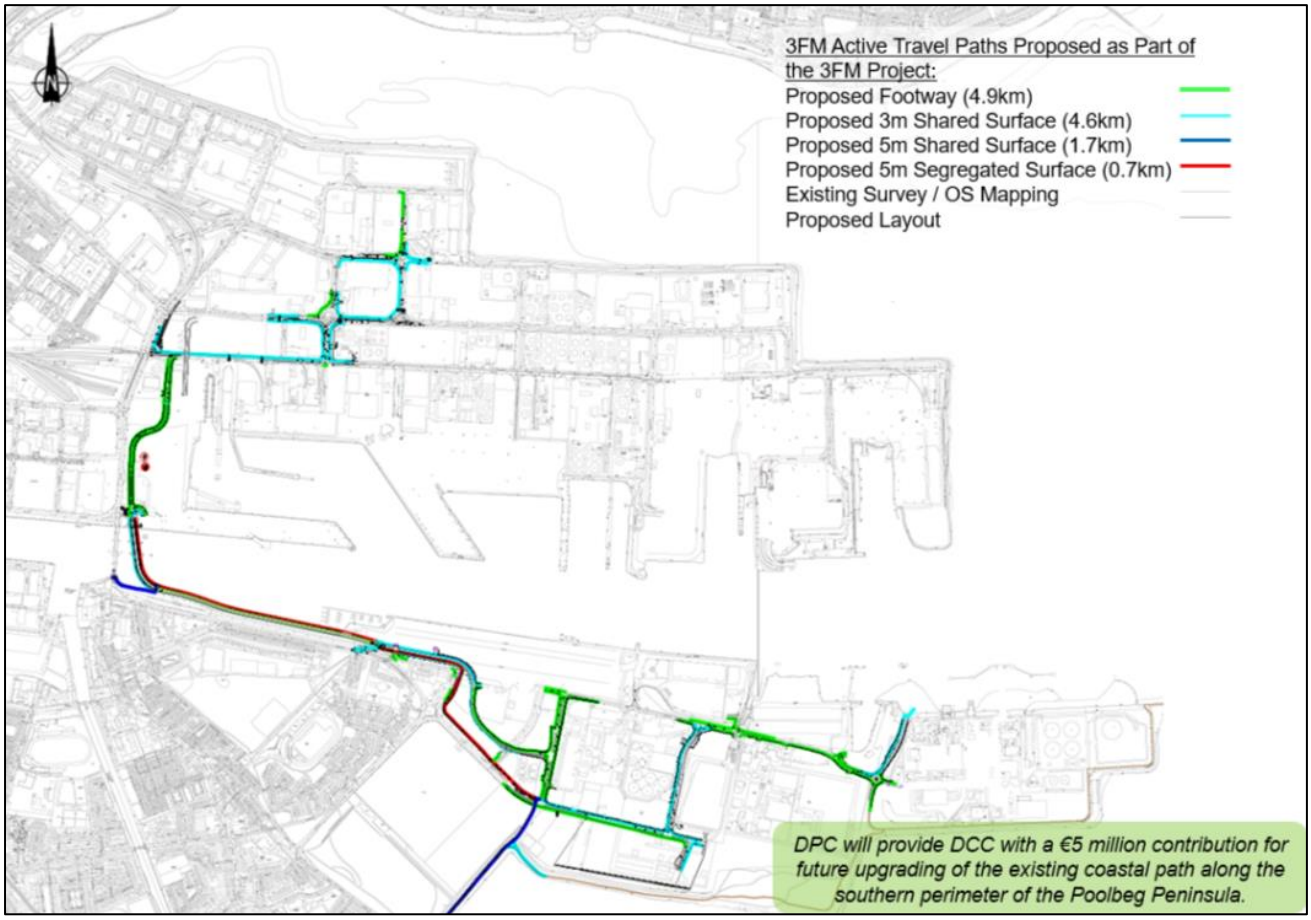


Figure 14.27 Proposed Active Travel Routes for the 3FM Project

14.5.11 Proposed Rail Freight Facilities

Dublin Port facilitates freight train movements within the North Port Estate on a daily basis. A detailed consideration was given to rail freight enabling of the 3FM Project. DPC has reviewed options for rail connectivity for the 3FM Project and the port more generally. DPC considers that the preferred option, which is most beneficial from a cost, sustainability and environmental perspective is the servicing of rail freight for the port from a dedicated intermodal rail freight depot at North Wall, accessed by a dedicated bridge over East Wall Road, with 3FM terminals accessing the terminal via shunting through the SPAR.

An intermodal rail freight deport at this location would ensure the full access to the national rail network of cargo landed at the proposed new 3FM terminals in the South Port Estate, without necessitating the construction of a dedicated rail bridge across the Liffey with the associated financial and carbon costs of such a significant piece of construction. Through the envisaged intermodal freight depot at North Wall, freight from the proposed 3FM facilities would access the national rail network by being shunted across the newly proposed SPAR by electrically powered shunting vehicles, resulting in the proposed 3FM facilities being fully rail-accessible in the most sustainable and economic possible fashion.

In the TTA all of the proposed throughput for the operational plots has been assessed as travelling by road to provide a robust assessment of the road network capacity.

14.5.12 Summary of Parking Requirements for Lo-Lo and Ro-Ro Terminals

Table 14.2 summarises the breakdown of the proposed car parking provision (car, EV & cycle) for staff & visitors at Areas N&L (Lo-Lo Terminal) and K&O (Ro-Ro Terminal). The derivation of the parking provision is detailed later within the report in Section 14.12.4.

Table 14.2 Proposed Staff & Parking (Car, EV & Cycle) Levels at Areas N, L, K & O

Proposed Terminal	Area	Total Number of Proposed Staff in 2040 per shift	Total Number car parking spaces	Number of car parking spaces that are EV	Minimum Number of Cycle parking spaces required
Lo-Lo Terminal	**N**	108	52	26	23
	L	28	13	7	6
Ro-Ro Terminal	**K**	55	26	13	12
	O	6	3	2	1

14.5.13 Proposed Parking – EV Requirements

In accordance with policy SMT29, 'Expansion of the EV Charging Network' on page 257 of the Dublin City Development Plan 2022-2028, 50% of car parking spaces included within the 3FM Project will be equipped with EV Charging Points.

SMT29	Expansion of the EV Charging Network To support the expansion of the EV charging network by increasing the provision of designated charging facilities for Electric Vehicles on public land and private developments in partnership with the ESB and other relevant stakeholders; and to support the Dublin Regional EV Parking Strategy.

Figure 14.28 Extract of Policy SMT29 from Dublin City Development Plan

14.6 Pre-Application Consultation

To inform and assist the transportation assessment, several meetings were held with relevant stakeholders.

DPC sent information scoping request letters to a number of statutory bodies including:

- Transport Infrastructure Ireland (TII)
- Land Use, Planning and Transportation Section of the Dublin City Council (DCC)
- National Transport Authority (NTA)
- ESB
- Iarnród Éireann.

A public consultation was held via online virtual information room for the 3FM proposals. Stakeholders and members of the public were invited to submit their feedback. The public consultation process and findings are detailed in Chapter 3, 'Project Consultation and Scoping,' of this 3FM EIAR.

The following Table 14.3 shows the schedule of stakeholder meetings in which traffic and transportation matters were discussed.

Table 14.3 Stakeholder Consultation Schedule

Stakeholder	Meeting Date
Series of meetings throughout the lead up the submission with DCC, ROD, DPC & RPS on the Point Pedestrian & Cycle Bridge and Tom Clarke Bridge Widening Works project, the Dodder Bridge project and DCC proposed upgrade of the East Wall Road.	Series of meetings throughout the lead up the submission

Stakeholder	Meeting Date
DCC Planning Division	25 May 2022
DCC Planning Division	28 September 2022
DCC Transport Planning Division	9 May 2023
NTA	13 June 2023 and Several follow up sessions in Q3 2023
DCC Transport Planning Division	22 August 2023
DCC Active Travel Unit and Parks	14 September 2023
TII	2 October 2023
DCC Transport Planning Division Including Road Design and Planning Divisions	5 October 2023
DPC, PMO and NTA	Friday 7 July 2023
DPC and NTA	Thursday 24 August 2023
NTA BusConnects	Monday 12 February 2024
DCC Transport Planning Division	Tuesday 14 May 2024
NTA	28 May 2024
TII	Wednesday 29 May 2024

14.6.1 Pre-application Discussions with NTA

- Meetings were undertaken with NTA to facilitate a bus stop and bus turning area adjacent to the Glass Bottle site (Bus Route 82).
- The NTA BusConnects team were consulted regarding their future proposals in the environs of the port, which have been taken account of in the TTA.
- As requested by NTA, the SPAR bridge has been designed so that it can be modified in the future to accommodate a LUAS provision, should it be decided by the NTA that the preferred routing of the LUAS to Poolbeg should go via this route. There are other alternative routings to Poolbeg which the NTA will also evaluate.
- To satisfy the request from NTA during pre-application discussions, in this assessment it has been considered that non-port HGVs travelling between Sean Moore Road and the Dublin Tunnel (M50) can use the SPAR.
- NTA identified that the 3FM Project would be compatible with the delivery of the Ringsend CBC scheme. It is noted that the proposed route for the Ringsend CBC crosses the River Dodder via the

proposed DCC-led Dodder Bridge which will have provision for active travel and public transport. The 3FM Project has proposed an active travel connection from the SPAR to the Tom Clarke Bridge to connect to the Point Pedestrian & Cycle Bridge and Tom Clarke Widening Works project and the Dodder Bridge project.

- The Transport Strategy for the Greater Dublin Area provides for the delivery of a Luas line to Poolbeg from Dublin City Centre. One of the options for this line is to extend the existing Red Line from its current terminus at The Point directly to Poolbeg via a new bridge over the River Liffey. In designing the SPAR, consultation with NTA and TII was undertaken in order to ensure that the bridge could accommodate this option for the delivery of Luas Poolbeg should it be required. The NTA have provided correspondence to Dublin Port stating that they are satisfied that the proposed design of the SPAR bridge could accommodate Luas.
- In their pre-application response, NTA expressed interest in how the cycling elements of the 3FM Project tie-in to the wider GDA Cycle Network. This is presented in Section 14.7.2.

14.6.2 Pre-application Discussions with DCC

- The scoping of the TTA was carried out with DCC as part of the in-person meeting on Tuesday 22 August 2023, at a dedicated scoping meeting on Thursday 5 October 2023 and an update to present the findings of the TTA on 14 May 2024.
- DCC stated that they felt 2022 baseline traffic data didn't reflect post-Covid recovery conditions. Hence the port and its environs were resurveyed in Oct 2023.
- During the pre-application meetings with the DCC Transport Planning Division (TPD), it was noted that South Bank Road will be the only access to the Poolbeg Peninsula until the opening of the SPAR in 2039. DCC TPD therefore requested consideration be given to the cumulative traffic impact on South Bank Road for construction and operational traffic for existing and committed schemes during the construction of the 3FM Project but prior to the opening of the SPAR (i.e. for the period 2026-2038). This assessment has been carried out within Section 14.15 and 14.16 of this Chapter and has demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes (NTA BusConnects & Dodder Bridge, ESB Ringsend OCGT, ESB Poolbeg OCGT, Glass Bottle scheme & Ecocem Extension) along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039.
- DCC queried if any of the traffic generated by the 3FM Project would travel by rail freight. A detailed consideration was given to rail freight enabling of the 3FM Project. The provision for enabling the rail-accessibility of the 3FM Project, arrived at following detailed consultation with DCC and Iarnród Éireann has been set out above.

- During the presentation of the findings of the TTA on 14 May 2024, DCC requested details about the delivery date of the proposed left slip road from East Wall Road onto Alexandra Road. The construction sequence shows when the proposed road and junction works associated with the 3FM Project will be delivered and confirms that the left slip will be delivered early in the construction programme in 2027. DCC also asked of the proposed slip road was permanent or temporary. To confirm, it will be permanent.
- The applicant confirms that the roads and active travel routes (where directly constructed) will be designed and specified to Taking in Charge standards, and that Taken-in-Charge areas will be agreed post-planning submission with DCC.
- DCC also asked about abnormal loads routing once SPAR is operational. The SPAR will be subject to the normal statutory procedure for abnormal loads, considered on a case-by-case basis once it is complete and operational. It does have a vertical height restriction due to the opening mechanism which will need to be taken into account in any abnormal loads route assessment.

14.6.3 Pre-application discussions with TII

- TII raised the issue of Measure ROAD7 (of Transport Strategy for GDA 2022-2042) in relation to traffic routing in the event of an emergency or prolonged closure of Dublin Tunnel. DPC is continuing to liaise with DCC and TII to progress this policy and to identify an agreed route with a mechanism to temporarily suspend the Dublin City HGV Management Strategy to accommodate the emergency route if applicable. This is a general issue between DPC, DCC and TII and is not directly specific to the 3FM Project.
- TII also enquired about abnormal loads on the SPAR – see response above.
- TII asked DPC if it was planning any demand management strategies. It is proposed that the Lo-Lo & Ro-Ro terminals within the 3FM Project will generate traffic evenly over the 24 hours. (Note that for assessment purposes port simulations introduce peaks for the week, day, and hour to provide robust assessments for operations and traffic flows). As for the North Port Estate, the existing traffic surveys from Oct 2023 show that there is currently a significant decrease in traffic entering the port during the night-time hours compared to daytime hours, plateauing to under 200 PCUs per hour between 20:00 and 04:00, with the busiest period for entering the North Port Estate being c06:00. It is proposed that the current diurnal traffic patterns entering the Port are multiplied up on a pro-rata basis to establish the proposed traffic flows in 2040. This provides a robust assessment of the proposed road and junction improvements within the North Port Estate as there may be trend towards the spreading of peak hours and night-time running through the Dublin Tunnel (M50) especially towards the end of the DPMP2040. If this peak hour spreading or night-time running trend happens, it will lessen the daytime peak hour flows that have been modelled in this TTA. Therefore, the proposed infrastructure at Dublin Port will have sufficient capacity to deal with the worst case peak traffic flows in 2040.

- TII asked if there would be a CTMP accompanying the application. The 3FM Project construction works will be undertaken in compliance with a Construction Environmental Management Plan (CEMP) and a Construction Traffic Management Plan (CTMP) containing a suite of appropriate and effective traffic management measures such as haulage routes, expected numbers of construction vehicles for each phase, details of temporary warning signage, provision for wheel washing, roadside cleaning, load checking and general maintenance of larger vehicles.

14.7 Accessibility

The provision of accessibility, sustainable travel, and active transport for the 3FM Project, was a key factor considered during the design process.

The main components that provide a high level of accessibility for the 3FM Project are:

- Existing density of active travel facilities available in Dublin City Centre.
- Existing density of sustainable travel facilities in Dublin City Centre including bus, rail, DART, and Luas.
- Existing provision of cycle locker facilities of the Port Centre public realm scheme to facilitate multi-modal journeys by sustainable travel.
- Upgraded active travel measures incorporated within the recently upgraded internal roads scheme delivered by DPC within the North Port Estate.
- The 3FM Project is future-proofed for Integration with potential transport and active travel schemes proposed by DCC in the environs of the port along East Wall Road, North Wall Quay, and the Dodder
- **The 3FM Project provides 7km of new or upgraded Active Travel Path** (cycle, pedestrian, wheelers etc.) **and 4.9km of new or upgraded footway** across the North Port, SPAR and Poolbeg Peninsula, which will link with the 1.4km Liffey Tolka Greenway in the North Port Estate, and from there to the 3.2km Tolka Estuary Greenway currently under construction by Dublin Port. The active travel paths will also have permeability into the Glass Bottle site into the environs of the Port Park scheme.
- DPC will also provide Dublin City Council with a €5 million contribution for future upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula as an additional planning gain to be provided by the 3FM Project.
- In designing the SPAR, consultation with NTA and TII was undertaken in order to ensure that the bridge could accommodate the delivery of Luas Poolbeg should it be required. The NTA have provided correspondence to Dublin Port stating that they are satisfied that the proposed design of the SPAR bridge could accommodate Luas.
- Proposed commitment to a Mobility Management Plan for the 3FM Project, as outlined in this report.

The MMP located in Appendix 14.2 considers the full detail of the following in relation to accessibility:

- Consented Active and Sustainable Travel Schemes Relevant to 3FM
- Existing Active Travel Network
- Existing Cycling Facilities
- Integrated Multi-Modal Transport Options

- Existing Bus Services and Facilities
- Existing Rail Services and Facilities
- Potential NTA BusConnects Ringsend CBC
- Potential Luas Extension
- The Dart+ Programme

14.7.1 Schemes Relevant to the accessibility of the 3FM Project

There are some schemes and transportation infrastructure improvements, both within the Port Estate and within its environs, which are of relevance to the TTA for the 3FM Project. Some have planning permission and others are in pre-application planning. As the 3FM Project has a 15-year construction programme and a year of opening of 2040, it is prudent that the proposed design for the 3FM Project has been future-proofed to provide connectivity to the consented and possible schemes.

The active travel paths proposed by the 3FM Project connect into the public realm spaces and the existing, committed, and potential active travel facilities as illustrated in Figure 14.29 below.

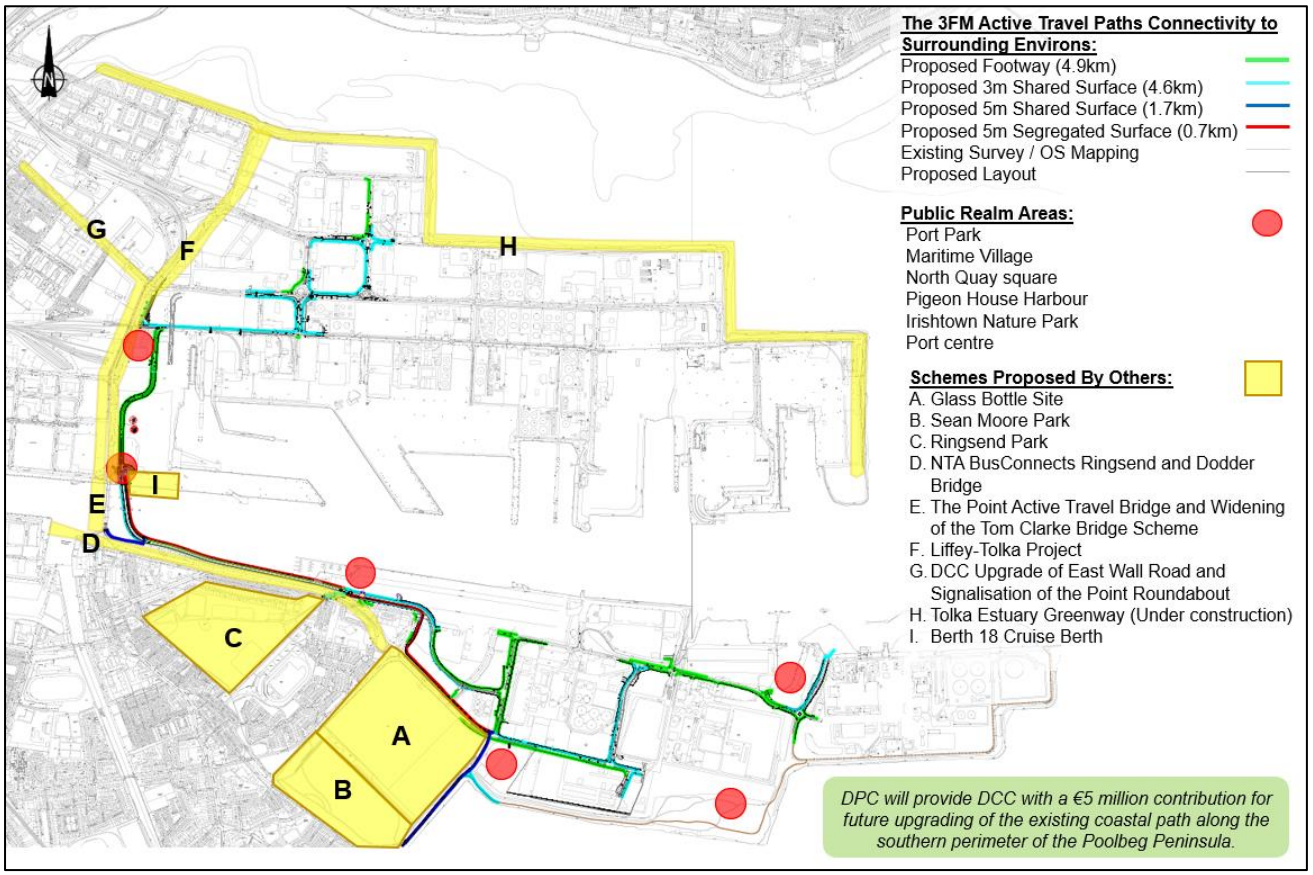


Figure 14.29 The 3FM Project Active Travel Proposal – Connectivity to Surrounding Environs

East Wall Road and Signalisation of Point Roundabout Schemes

There is DCC proposal to replace the existing Point Roundabout with a signalised junction and provide improved pedestrian and cycling facilities along East Wall Road. The delivery of the signalisation is dependent on the removal of Port-related traffic being removed from the existing roundabout. Dublin Port has already facilitated that by closing the previous Terminal 3 left-in left out access with East Wall Road in January 2023.

Liffey-Tolka Project

DPC are proposing a new public realm space along East Wall Road, connecting the River Liffey to the River Tolka Estuary. Proposals include:

- A new public square called 'North Wall Square'
- A new 1.4km pedestrian and cycle route
- A new pedestrian and cycle bridge over Bond Road.

The scheme will create public realm area along a 1.4km dedicated cycle and pedestrian (active travel) route, linking the River Liffey with the Tolka Estuary through Dublin Port lands on the east side of East Wall Road. The Liffey-Tolka Project will connect to the Tolka Estuary Greenway, currently under construction.

Tolka-Estuary Greenway

DPC are progressing the construction of the Tolka-Estuary Greenway, a dedicated 3.2km cycle and pedestrian (active travel) route along the northern perimeter of the Port, overlooking the Tolka Estuary. Construction is ongoing and it is expected the route will be open to the public in Autumn 2024.

The route begins at the Port's boundary with Eastpoint Business Park and follows along the shoreline to the Unified Ferry Terminal (Permitted under the MP2 Project planning application).

The Greenway connects the city to Dublin Port, and particularly to the proposed enhanced public realm and heritage area located to the east of North Port Estate.

Road Upgrades on the North Port Estate

DPC has invested significantly in improving the road network within the Port Estate to facilitate the efficient movement of goods to and from the various terminals and facilities in the port. The scheme incorporated upgraded active travel measures delivered by DPC within the North Port Estate.

Public Realm Scheme, Opening Up Port Centre

The public realm scheme in the environs of the Port Centre building was opened in 2016 and softened the boundary between the port and the East Wall Road. This scheme provides cycling, walking and public realm facilities. Existing provision of cycle locker facilities of the Port Centre public realm scheme to facilitate multi-modal journeys by sustainable travel. The Liffey-Tolka Project will connect this area this to the 3FM Project.

Glass Bottle Residential Development

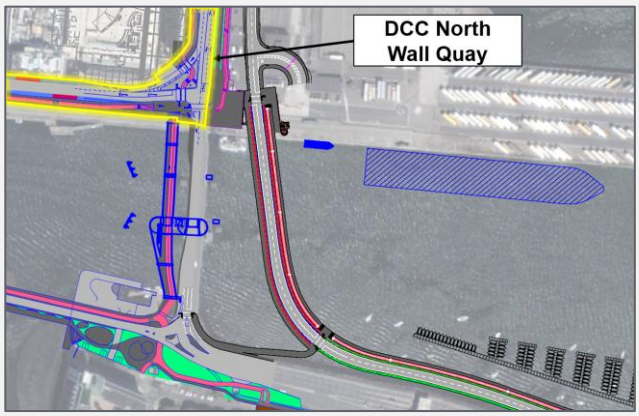
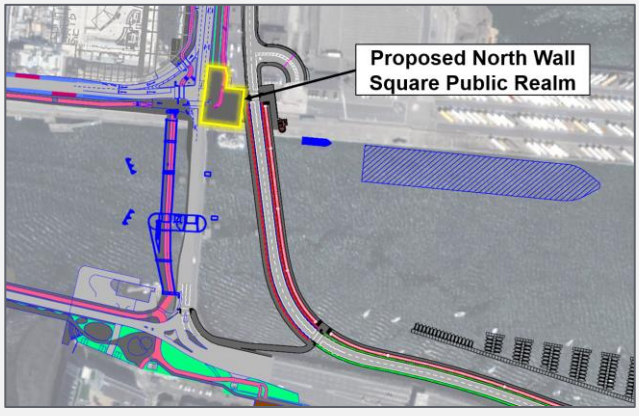
The active travel paths will also have permeability into the Glass Bottle site and into the environs of the Port Park.

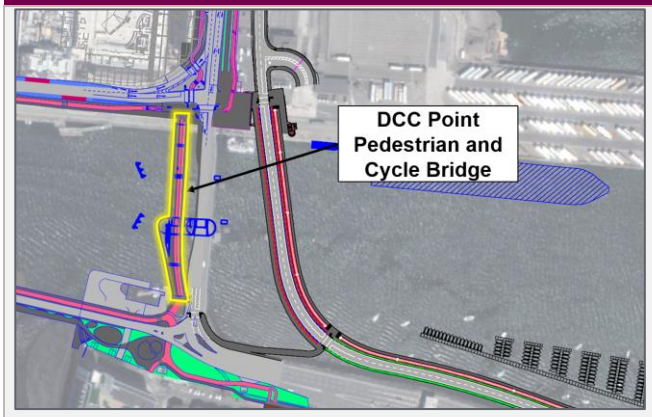
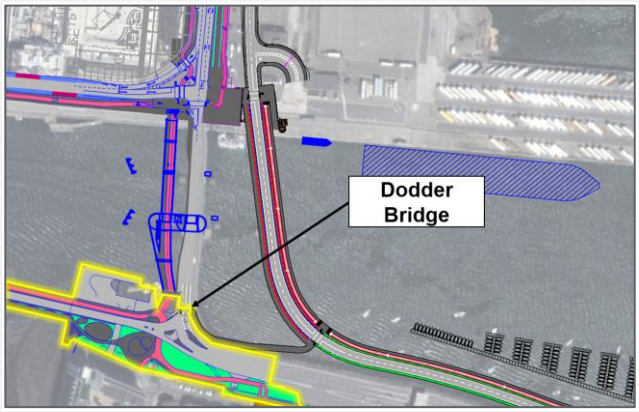
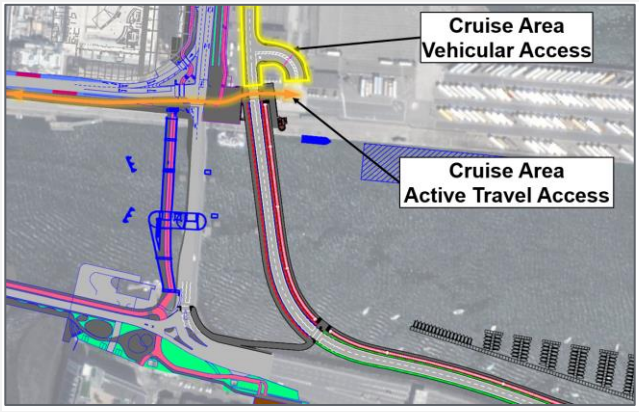
North Wall Quay and North Quay Extension Area

A number of active travel and road improvement schemes intersect in this area as indicated in the following Table 14.4.. The realisation of the following proposed schemes will contribute to enhancing the active travel and public transport connections to the 3FM Project and the wider Dublin Port.

DPC are cognisant of the various schemes in the vicinity of the 3FM proposals, and have liaised with NTA, TII and DCC to ensure that the detailed planning drawings for all projects and policies are compatible.

Table 14.4 Summary of Schemes Relevant to 3FM in the North Wall Quay & North Quay Extension Area

Scheme	Description
North Wall Quay and Point Junction Improvement Scheme 	The Point Junction Improvement Scheme is a DCC proposal to replace the existing Point roundabout with a signalised junction and provide improved pedestrian and cycling facilities along East Wall Road. It requires the removals of u-turning vehicles which DPC are facilitating with the closure of left-out movements from the North Port Estate to East Wall Road. (Note that the T3 port accesses with East Wall Road was closed in January 2023). An additional northbound traffic lane is also proposed.
North Wall Square Public Realm 	Scheme proposed by DPC as part of the Liffey-Tolka Project. Enhance public realm area at North Wall Square in conjunction with active travel and public realm improvements on East Wall Road as part of Liffey-Tolka Project.
Point Pedestrian and Cycle Bridge	This bridge will provide a new pedestrian and cycle crossing of the River Liffey, just west of the existing Tom Clarke Bridge. It aims to tie in with the following schemes: – The Dodder Greenway; – The Dodder Bridge; and – The Point Junction Improvement Scheme.

Scheme	Description
	
Dodder Bridge 	The Dodder Public Transportation Opening Bridge scheme comprises: – A new public transportation opening bridge over the River Dodder. – Construction of a new control building. – Provision of a new club house and facilities for St Patrick's Boat Club. – Reclamation of land to the west of Tom Clarke Bridge to facilitate the build. – Landscaping of the area between York Road/Thorncastle street and the R131 over the extents of the project. The 3FM Project includes a proposed active travel route to connect this area to the active travel facilities on the SPAR with a proposed demand controlled (i.e. signalised) crossing of the SPAR.
Cruise Area Vehicular and Active Travel Access 	The proposed Berth 18 Access Road will give vehicular access to the Cruise berth, and active travel users will access the berth via a proposed demand controlled (i.e. signalised) crossing of the SPAR and through the North Wall Square public realm area.

14.7.2 NTA Greater Dublin Area Cycle Network Plan

The NTA Greater Dublin Area (GDA) Transport Strategy is accompanied by the updated GDA Cycle Network. In January 2023, GDA Cycle Network Plan, consisting of the Urban Network, Inter-Urban Network and Green Route Network was adopted as part of the GDA Transport Strategy 2022-2042.

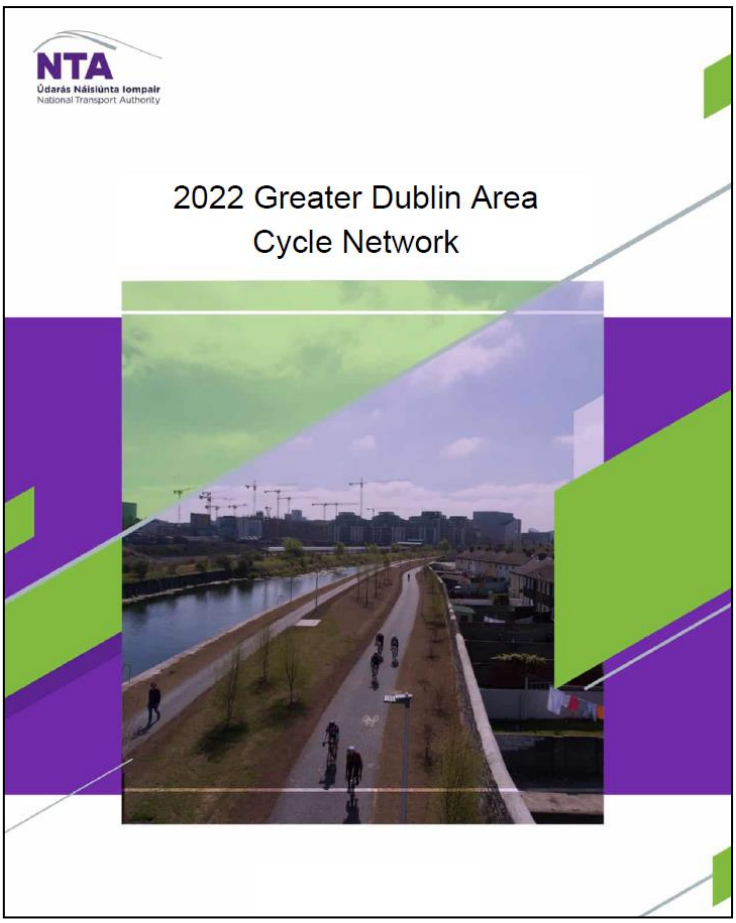


Figure 14.30 Greater Dublin Area Cycle Network Plan 2022

In their pre-application response, NTA expressed interest in how the cycling elements of the 3FM Project tie-in to the wider GDA Cycle Network. Figure 14.31 below shows how the North Port Estate and the 3FM Project are located within the context of an extract from the NTA 2022 GDA Cycle Network Plan drawings for Dublin City Centre.

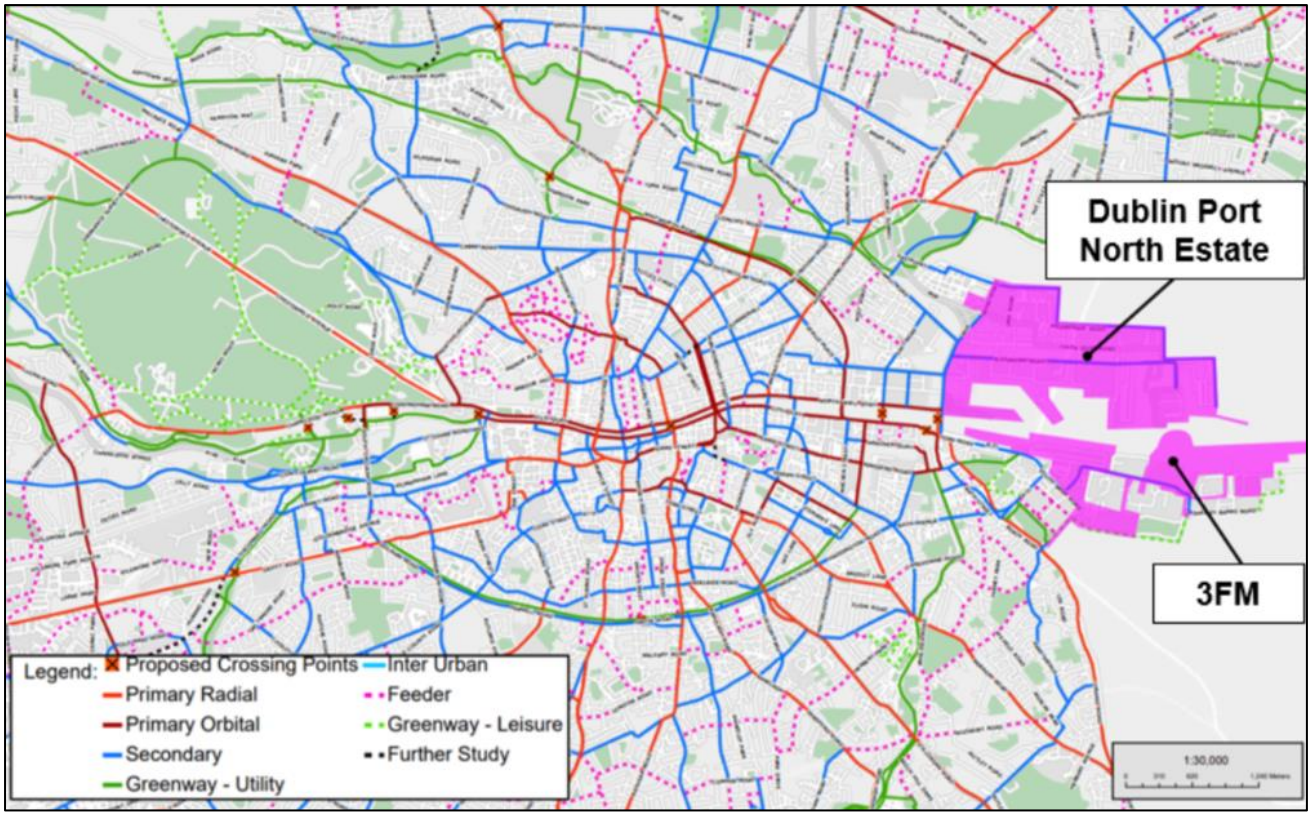


Figure 14.31 Greater Dublin Area Cycle Network Plan – Dublin City Centre and 3FM Project Location

The following Figure 14.32 shows how the active travel proposals for the 3FM Project tie into the GDA Cycle Network.

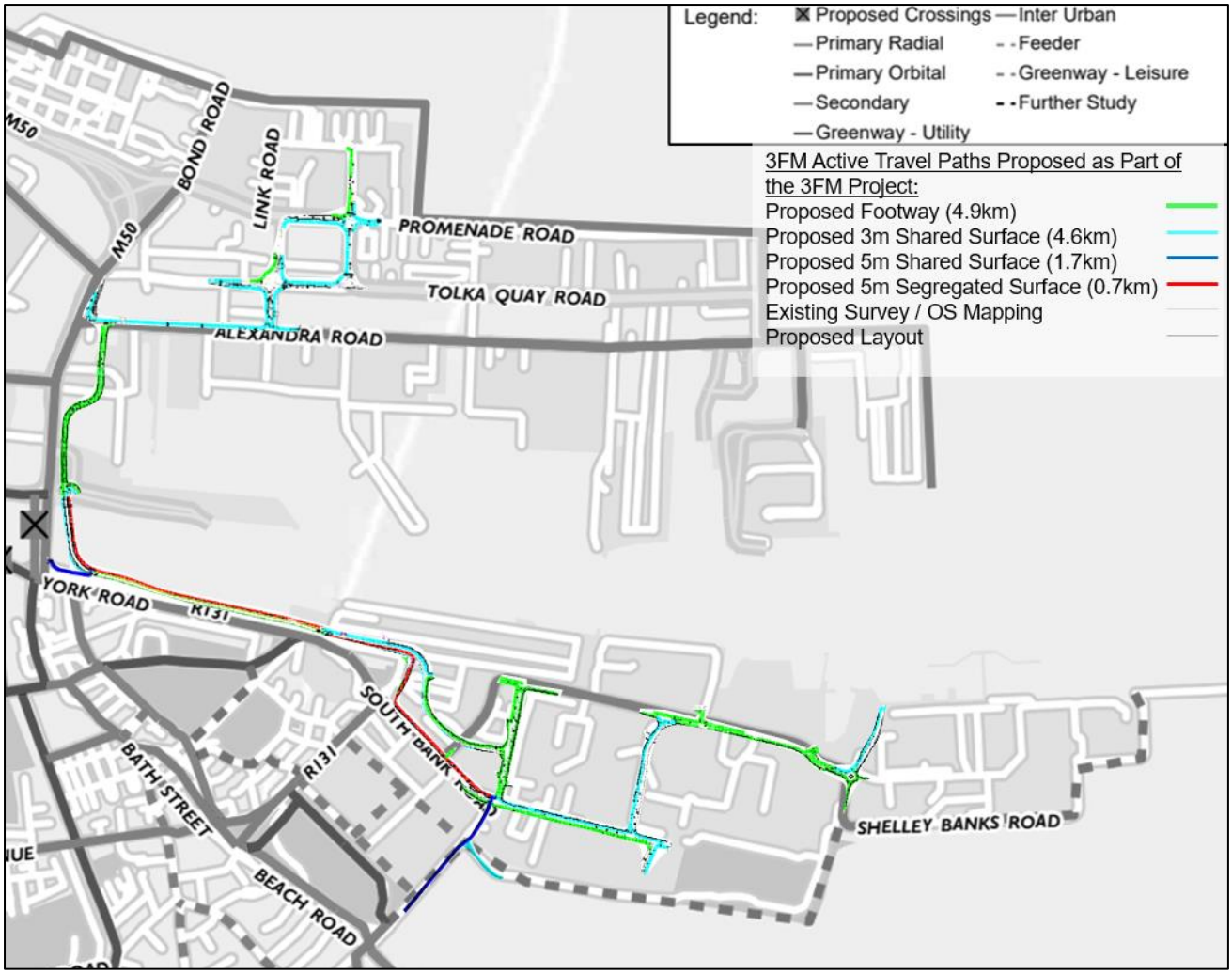


Figure 14.32 Greater Dublin Area Cycle Network Plan – Dublin City Centre and 3FM Project Location

14.8 Mobility Management Plan & Smarter Travel

14.8.1 Mobility Management Plan

A Mobility Management Plan (MMP) for the 3FM Project is included in Appendix 14.2. The MMP sets out the type of measures which will progressed by DPC to ensure that the sustainable transport facilities are made available and are utilised by the users of the 3FM Project.

14.8.2 Port-Wide Dublin Port Travel Plan

One of the aspirations of the Revised Masterplan is to create a Transport/Travel Plan for the port. Progression of 3FM and the SPAR completes the last aspiration of the Dublin Port Travel Plan as outlined on page 59 of the DPMP2040. The initiatives are laid out in Table 14.5 below alongside the progress made so far with the ongoing elements highlighted green.

This put an emphasis on safe access throughout the port estate for cyclists and pedestrians and efficient links with local public transport networks serving the needs of workers in Dublin Port, ferry passengers and recreational visitors to the port.

Table 14.5 Summary of Schemes Relevant to 3FM in the North Wall Quay & North Quay Extension Area

Initiative ***(Dublin Port Masterplan 2040, Reviewed, 2018, page 59)***	**Progress**
• *Provision of cycle lockers at Port Centre (as part of the Opening Up Port Centre project) to facilitate workers in the Port to use public transport.*	Completed in 2018 as part of the Opening Up Port Centre project.
• *Development of an innovative and environmentally friendly (e.g. electric or hydrogen fuelled) bus operation to service the Port estate, including passenger ferry terminals, and to link the port to Dublin City's public transport networks.*	As progressed in parallel with the MP2 Project, DPC is prepared to provide an annual financial subsidy of up to €100,000 for a period of five years (total €500,000) to a shuttle service operating to create a connection between the MP2 Project, the DART in Clontarf and the LUAS at the Point. It would link into East Point Business Park, have multiple stops throughout the Dublin Port Estate and connect with the ferry Terminal 1 building.
• *Development of a partnership with DCC and the Irish Nautical Trust to re-establish a Liffey ferry service using Ferry Number 11 (the last remaining ferry).*	The No.11 Ferry was reinstated in 2019 in a joint project between DPC and DCC.
• *Closing of port access along East Wall Road and the opening of a new access at Sheriff Street to service Port Centre and the river berths where cruise ships will berth.*	Terminal 3 (P&O) access to East Wall Road closed in January 2023. Other East Wall Road accesses to close in 2023/2024 as part of the Liffey-Tolka Project.
• *Co-ordination with DCC to complete the Point Roundabout Scheme to improve the public road network at the junction between the Tom Clarke Bridge, East Wall Road, and North Wall Quay*	DPC meet bi-monthly with DCC and ROD in relation to the co-ordination of the delivery of schemes along East Wall Road and North Wall Quay.

Initiative *(Dublin Port Masterplan 2040, Reviewed, 2018, page 59)*	Progress
• *Co-ordination with DCC, NTA and TII to develop the SPAR in a timescale consistent with achieving the objective of the Masterplan to continue to provide port capacity to cater for future growth up to 77m gross tonnes.*	SPAR to be completed as part of the Dublin Port 3FM Project.

14.9 Traffic Impact Assessment

14.9.1 Traffic Impact Assessment

The EIAR is carried out in accordance with the 2017 European Commission EIAR Guidelines and the 2022 EPA (Environmental Protection Agency) EIAR Guidelines. This Section describes the methodology used to assess the impact of the traffic generated by the 3FM Project on the local road network based upon the guidance set out within the TII Traffic and Transport Assessment Guidelines (2014) as specified in the TII response to the scoping letter. (Refer to Section 14.6.3).

14.9.2 TTA Guidance

This TTA refers to the following guidance documents from TII for transportation assessments in Ireland.

- TII Traffic and Transportation Assessment Guidelines, May 2014 (PE-PDV-02045)
- TII Project Appraisal Guidelines for National Roads Unit 5.2 – Data Collection, October 2016 (PE-PAG-02017)
- TII Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, October 2021 (PE-PAG-02017).

Figure 14.33 TTA Guidance Documents Relevant to 3FM TTA

14.10 Existing Traffic Flows

This section of the report explains the derivation of the existing traffic flows.

14.10.1 Existing Traffic Surveys

To determine the existing traffic flows in the vicinity of the proposed 3FM Project development site, new 24-hour traffic surveys were conducted by IDASO on Tuesday 24 October 2023. The traffic surveys comprised:

- Classified Turning Counts at 38 junctions within the North Port Estate and Poolbeg Peninsula.
- Associated Queue Surveys.
- Automatic Number Plate Recognition (ANPR) Survey at eight locations that formed a closed cordon around the Port accesses and the approach roads to the port. This allows for an Origin Destination Matrix to be established for the port and allow the port traffic to be separated from the non-port traffic.
- The details of the traffic surveys are provided in the following sections.

14.10.1.1 Cruise at Berth 18

Tuesday 24 October 2023 was selected as a typical day of activity relating to Port activities. There was no cruise at Dublin Port on the day of survey in October 2023 so arrival and departure data has been extracted for Cruise Bert 18 from previous traffic survey (with the same specification as outlined above) that was conducted by MHC on Wednesday the 25 May 2022. Just one cruise vessel visited the Port on this day (Le Dumont D'Urville with 184 passengers) and was berthed at Cruise Berth 18.

14.10.1.2 Classified Turning Counts and Queue Surveys

A total of 38 junctions were surveyed to cover the extent of the selected road network. Of the 35 surveyed junctions, 28 are located in the north area of the port and 10 are located in the southern area of the port. The junction locations are shown in Figure 14.34 and Figure 14.35.

The junction counts and associated queue surveys were conducted from 00:00 to 24:00 on Tuesday 24 October 2023.

Figure 14.34 Locations of Junction Count and Queue Surveys in vicinity of North Port Estate October 2023

Figure 14.35 Locations of Junction Count and Queue Surveys in vicinity of South Port Estate October 2023

At priority/roundabout controlled junctions, the queues were recorded every five minutes and for traffic signal-controlled junctions the queues were recorded at the start of each green period. This information is used to understand the existing traffic issues and validate the traffic models.

Camera footage of the traffic survey is retained. It provides the opportunity to validate the data/models and collect additional data.

Figure 14.36 Examples of Camera Footage from Traffic Surveys October 2023

14.10.1.3 ANPR Survey

The ANPR survey was specifically conducted during the same period as the junction counts and queue surveys, for 24-hours on Tuesday 24 October 2023. The ANPR survey was undertaken to determine the origin-destination (O-D) and journey time matrices between the routes 'A' to 'L' shown in Figure 14.37.

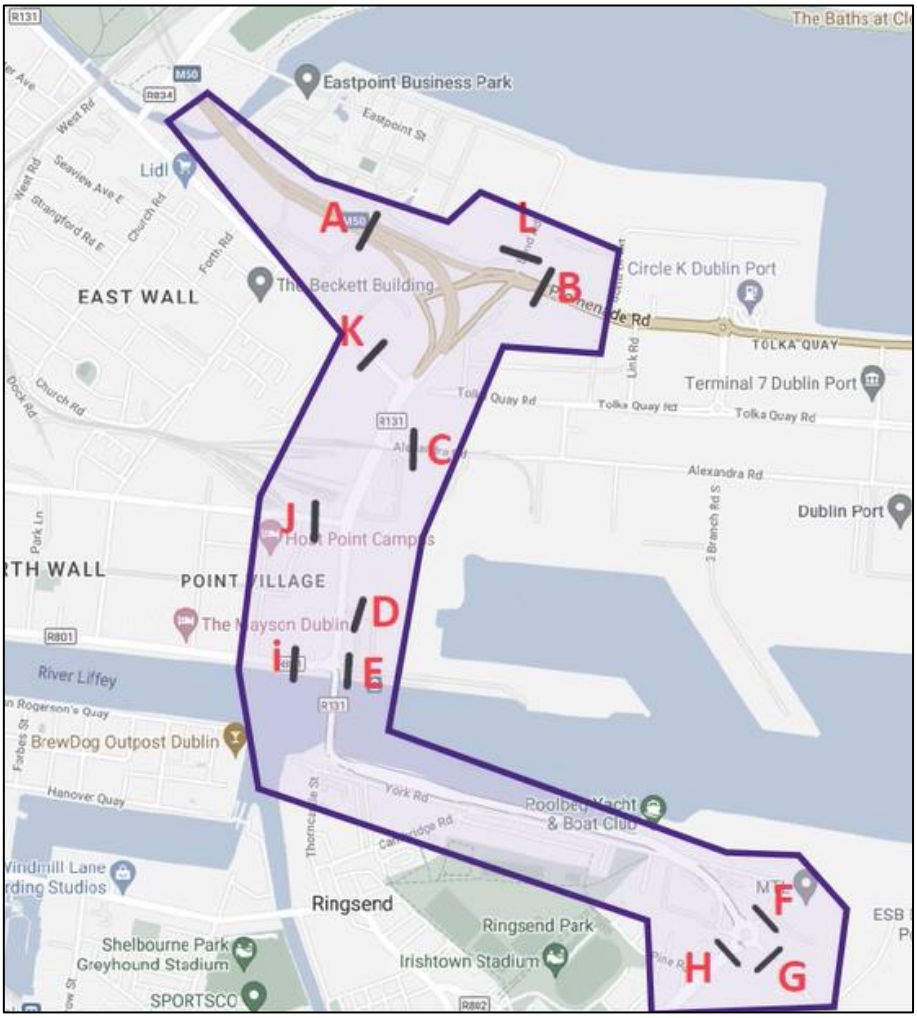


Figure 14.37 ANPR Survey Cordon October 2023

The O-D information provided by the ANPR survey was used to determine the port-related traffic and non-port traffic coming in and out of the port's accesses.

14.10.2 Traffic Signal Controller Specifications from DCC

The SCATS specifications from the traffic signal controller at each of the signalised junctions for the day of the traffic survey was procured from DCC. The information received was specific to the day of the traffic surveys i.e. 24 October 2023. This information gives the following details from each of the traffic signals as illustrated in Figure 14.38. This information is used to assess the traffic network and validate the traffic models.

- Stage times;
- Intergreen table;
- Phase type and conditions;
- Traffic detector volumes;
- Cycle time;
- Staging diagrams.

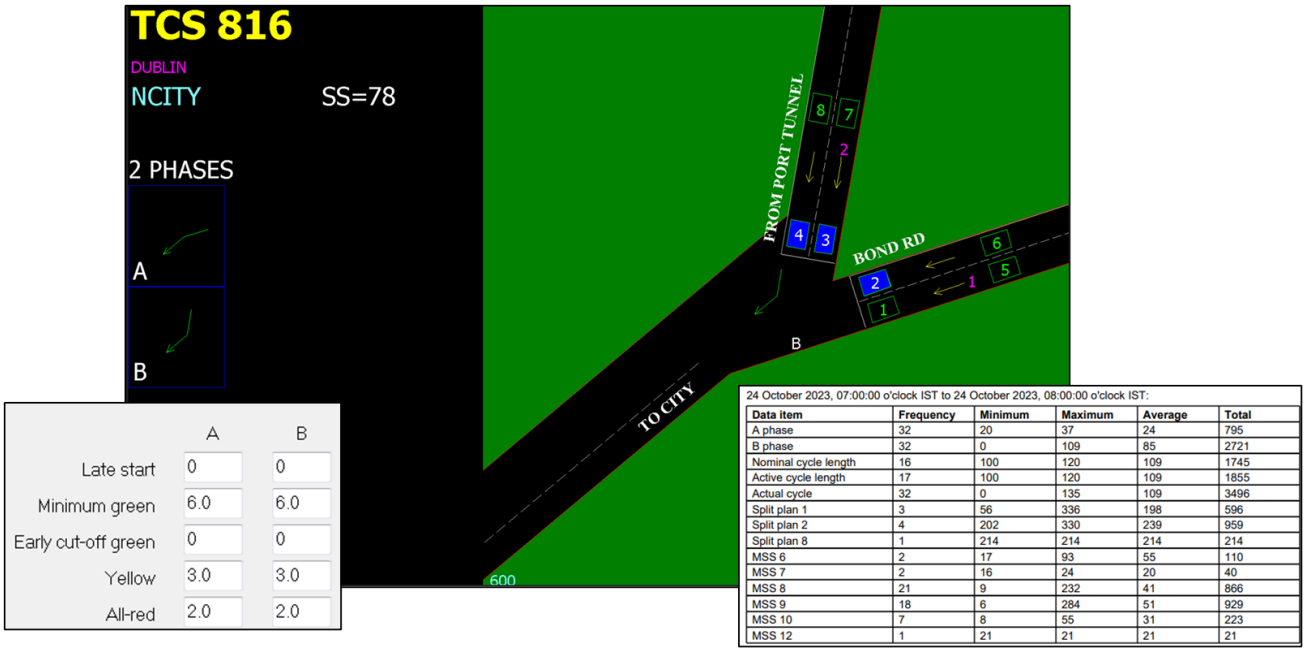


Figure 14.38 Example of DCC Data from the Traffic Signal Controller at Junction 8

DCC provided the SCATS specification information for all the signalised junctions captured in the traffic surveys in 15-minute breakdowns.

14.10.3 Daytime, Night-time & Daily Assessment Periods

This TTA provides detailed traffic flows for daytime, night-time and daily periods as summarised in Table 14.6.

Table 14.6 Daytime, Night-time & Daily Flows, Time Periods

Reference Name	Time Period
Nighttime	**8-hour, 23:00 to 07:00**
Daytime	**16-hour, 07:00 to 23:00**
24-hour	**00:00 to 00:00**

The 16hr/8hr/24hr (in vehicles and HGVs proportions) allows an assessment of the daily impact of the proposed 3FM Project on the road network and detailed assessment within the EIAR and engineering designs for following disciplines.

- Air Quality,
- Climate Change
- Noise & Vibrations
- Carbon Calculations
- Human Health
- Road Engineering, including pavement design calculations.

14.10.4 Determining of Peak Hours for Assessment

Different analysis methods were used to determine the existing peak hour periods at Dublin Port for the external road network and the internal road network of the port.

These methods are outlined in the following sections.

14.10.4.1 External Morning and Evening Peak Hours

Peak conditions on the public road network have been identified from ANPR journey time data. The peak tidal flow is southbound in the AM peak and northbound in the PM peak.

Assessing the ANPR journey time can determine how congested the road network is. Longer journey times are indicative of the road network being more congested.

Figure 14.39 shows the northbound external journey times. This graph shows that the most congested hour in the AM peak is 08:00-09:00.

Figure 14.40 shows the southbound external journey times. This graph shows that the most congested hour in the PM peak is 17:00-18:00.

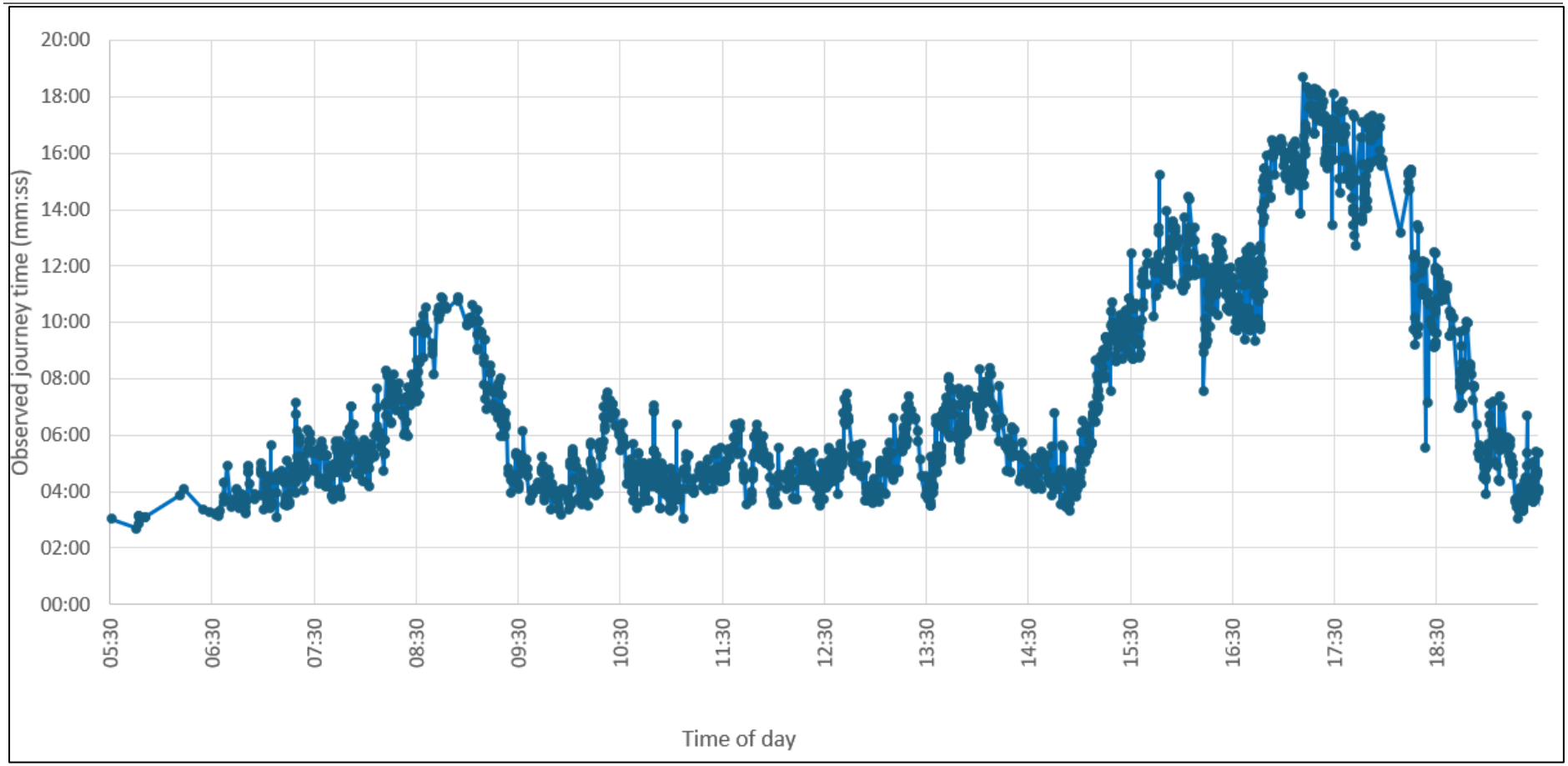


Figure 14.39 Northbound External Journey Time Graph from Sean Moore Road to East Wall Road

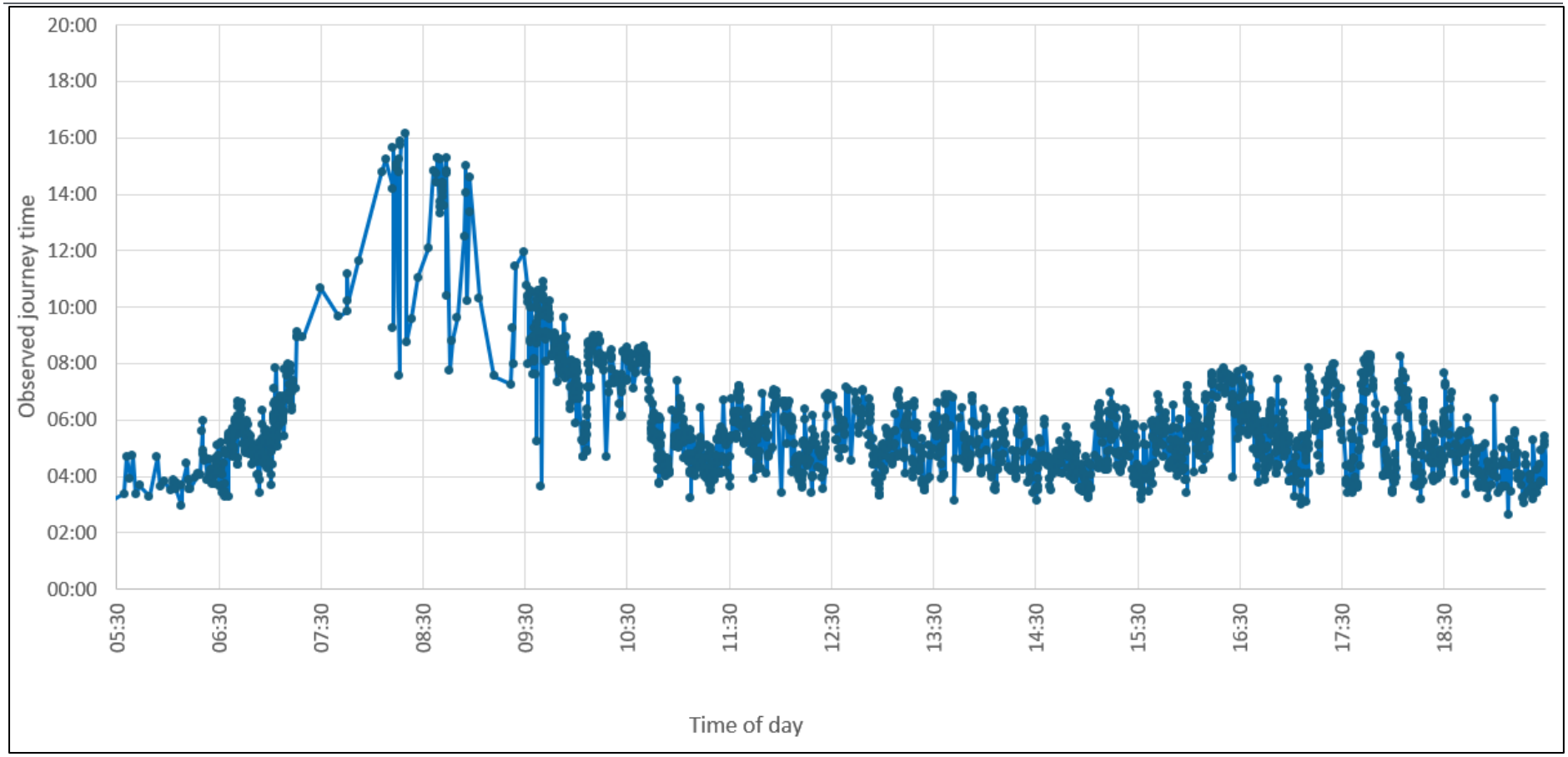


Figure 14.40 Southbound External Journey Time Graph from East Wall Road to Sean Moore Road

14.10.4.2 Internal Peak Hour for the North Port Estate

Dublin Port has a unique set of circumstances that create an early internal traffic peak hour as a result of specific port operations and the Dublin City Centre HGV Management Strategy.

This results in the period between 05:15 and 08:15 being the worst case for traffic generation at Dublin Port throughout the day, peaking at 06:15 to 07:15 as outlined below.

In the North Port Estate, using junction turning count data, daily profiles have been drawn for traffic at Circle K Roundabout (existing Junction 10 in the IDASO survey as shown in Figure 14.34). In Figure 14.41 below is Arm A is Bond Drive (north), Arm B is Promenade Road (east), Arm C is Bond Drive (south), and Arm D is Promenade Road (west). The daily profiles include movements on all arms except U-turns to / from the western arm (D-D).

Figure 14.41 Circle K Roundabout – Site 10 Junction Count Data from IDASO, Arms A-D

Figure 14.42 shows that there is an early AM peak, and the highest levels of traffic are occurring in the middle of the day.

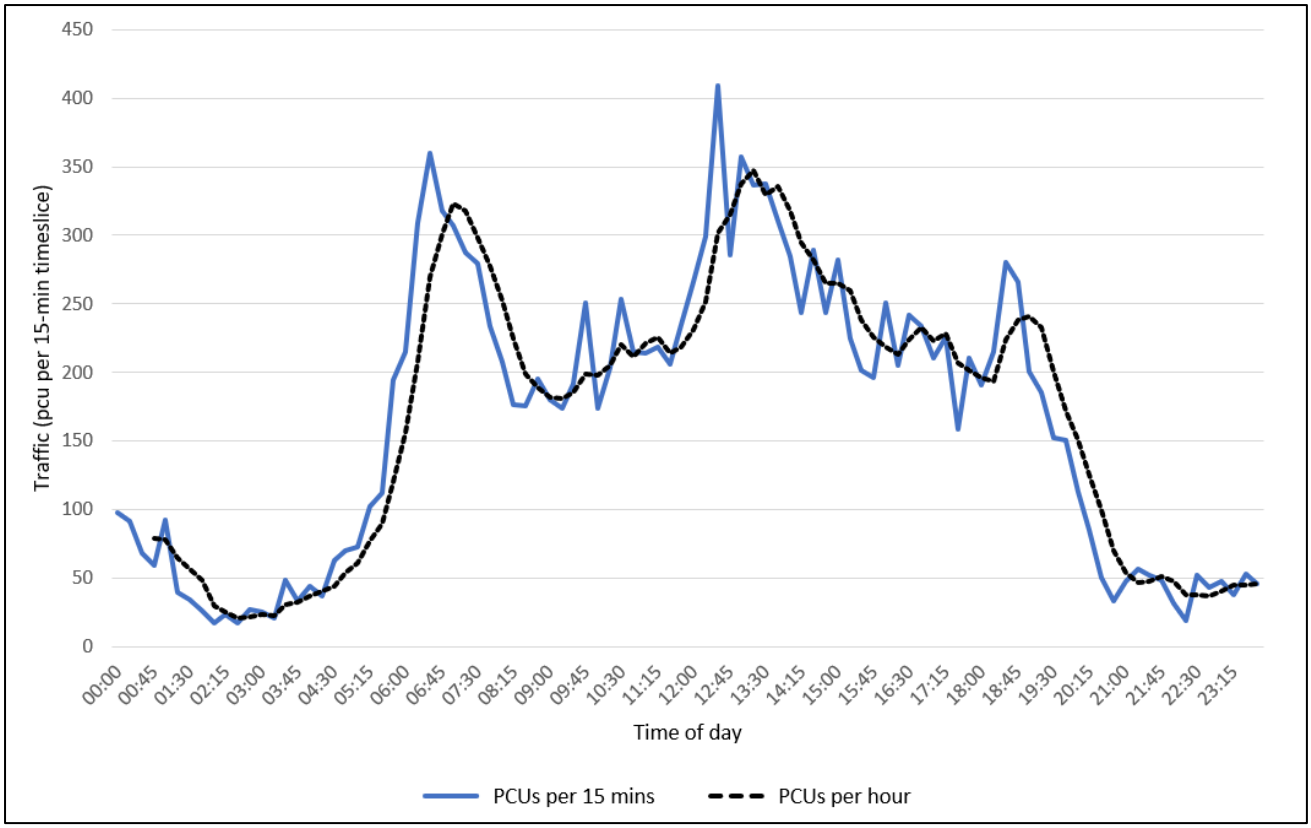


Figure 14.42 Existing Circle K Roundabout Daily Profile of the total turning movements

The junction count data at junction 10, received from IDASO with PCU figures count each OGV2 as 2.9 PCUs, the AM peak hour is between 06:15-07:15, with a total of 1,294 PCUs counted at the junction this hour. The midday peak hour is between 12:30-13:30, with a total of 1,389 PCUs counted at the junction between this hour.

14.10.4.3 Peak Hour Summary

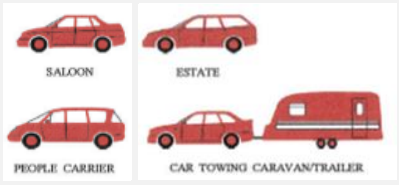
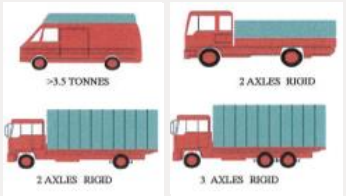
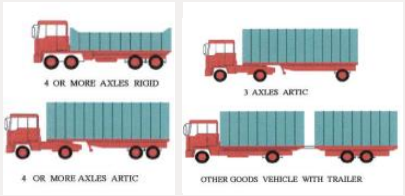
From the peak hour assessments, the following four peak hours were determined and have been taken forward for detailed traffic impact assessment:

- Internal AM Port Peak Hour 06:15 to 07:15 referred to as AM1
- External Network AM Peak Hour 08:00 to 09:00 referred to as AM2
- Internal Midday Port Peak Hour 12:30 to 13:30 referred to as MD
- External Network PM Peak Hour 17:00-18:00 referred to as PM

14.10.5 PCU Conversion Rates

The surveyed traffic flows were converted to Passenger Car Units (PCUs). A full detailed PCU Conversion Table is included in Appendix 14.3 for reference and a summary provided in Table 14.7 below.

Table 14.7 Summary of Vehicle to PCU Conversion Factors and Relevant Guidance Documents

Class	Image	PCU Factor
Traffic Modelling Guidelines, TfL 2021	*Traffic Flow Input to COBA, Figure 8/1: COBA Vehicle Categories*	*TII PAG for National Roads Unit 5.2 – Page 8, PCU Conversion* *1 PCU = 5.75m as per the industry standard*
Push Cycle		0.2
Motorcycle		0.4
Car/Taxi		1.0
Light Goods Vehicle (LGV)		**1.0**
Other Goods Vehicle Type One (OGV1)		**1.5**
Other Goods Vehicle Type Two (OGV2)		**2.3**
Bus /Coach (PSV - Passenger Service Vehicle)		**2.0**

The conversion of vehicles to PCU values is explained as follows:

- 1 PCU is equal to 5.75m of road space.
- Therefore, an OVG2 with a PCU conversation rate of 2.3 considers that each OGV2 occupies 13.2m of road space.
- 2.3 PCU * 5.75m = 13.2m.

Dublin Port has a high proportion of unitised freight or containerisation. Trailers and vehicles loaded with containers are normally longer than 13.2m. Therefore, despite the TII approved conversation rate for OGV2 being 2.3 (see red circle identified in Table 14.7 above), this TTA has provided an additionally robust assessment which increases the PCU conversion rate for OGV2 from 2.3 to 2.9. This results in each OVG2 being assigned 16.7m of road space within this assessment:

- OGV2 = 2.9 * 5.75m = 16.7m

Hence each OGV2 in the assessment occupies the road spaces nearly equating to 3 cars as illustrated in Figure 14.43. *Cat/taxi = 5.75m * 3 = 17.25m.*

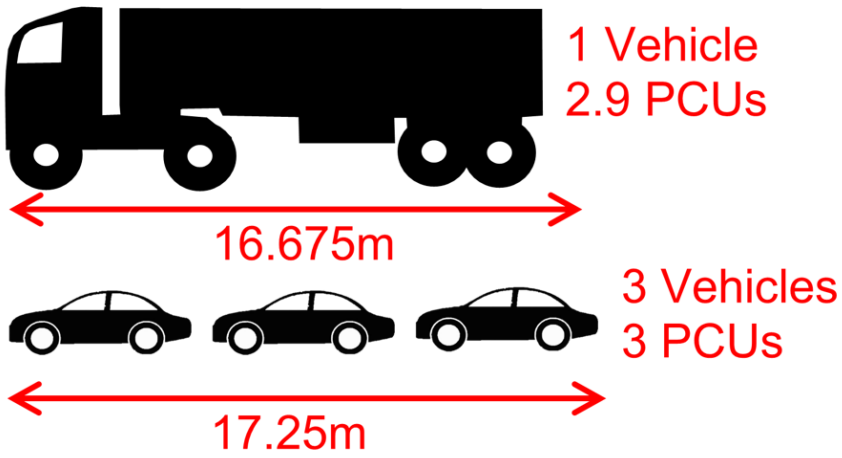


Figure 14.43 Illustration of OGV2 at 2.9PCU Conversion Rate

14.10.6 Existing 2023 Traffic Flows Diagrams

The existing 2023 traffic flows diagrams for the four peak hours and 16hr/8hr/24hr periods are in Appendix 14.4. Table 14.8 and Table 14.9 provide the details for each traffic flow diagram. The subsequent Table 14.10 and Table 14.11 detail the unique reference numbers for each diagram for ease of reference.

Table 14.8 –Existing Traffic Flow Diagrams for Peak Hours 2023 Explained

Existing 2023 – Peak Hours		
Time Period	**Diagram Title**	**Unique Reference Number**
AM1 06:15-07:15	Existing Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2023 Total Traffic flows in PCU Units	**AM1-EX-23-PCU**
	Existing Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2023 Total Traffic flows. The unit is the number of VEHICLES	**AM1-EX-23-VEH**
	Existing Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2023 HGV Traffic flows. The unit is the number of VEHICLES	**AM1-EX-23-HV**
AM2 08:00-09:00	Existing Traffic Flow Diagram AM Peak Hour for the External Road Network 2023 Total Traffic flows in PCU Units	**AM2-EX-23-PCU**
	Existing Traffic Flow Diagram AM Peak Hour for the External Road Network 2023 Total Traffic flows. The unit is the number of VEHICLES	**AM2-EX-23-VEH**
	Existing Traffic Flow Diagram AM Peak Hour for the External Road Network 2023 HGV Traffic flows. The unit is the number of VEHICLES	**AM2-EX-23-HV**
MD 12:30-13:30	Existing Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2023 Total Traffic flows in PCU Units	**MD-EX-23-PCU**
	Existing Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2023 Total Traffic flows. The unit is the number of VEHICLES	**MD-EX-23-VEH**
	Existing Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2023 HGV Traffic flows. The unit is the number of VEHICLES	**MD-EX-23-HV**
PM 17:00-18:00	Existing Traffic Flow Diagram PM Peak Hour for the External Road Network 2023 Total Traffic flows in PCU Units	**PM-EX-23-PCU**
	Existing Traffic Flow Diagram	**PM-EX-23-VEH**

	PM Peak Hour for the External Road Network 2023 Total Traffic flows. The unit is the number of VEHICLES	
	Existing Traffic Flow Diagram PM Peak Hour for the External Road Network 2023 HGV Traffic flows. The unit is the number of VEHICLES	**PM-EX-23-HV**

Table 14.9 –Existing Traffic Flow Diagrams for 8/16/24-Hour 2023 Explained

Existing 2023 – Peak Hours		
Time Period	**Diagram Title**	**Unique Reference Number**
16-Hour 07:00-23:00	Existing Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2023 Total Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-PCU**
	Existing Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2023 HGV Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-VEH-HV**
	Existing Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2023 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-VEH-HV%**
8-Hour 23:00-07:00	Existing Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2023 Total Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-PCU**
	Existing Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2023 HGV Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-VEH-HV**
	Existing Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2023 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-VEH-HV%**
24-Hour 00:00-00:00	Existing Traffic Flow Diagram 24-hour Period from 00:00 to 00:00 2023 Total Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-PCU**
	Existing Traffic Flow Diagram 24-hour Period from 00:00 to 00:00 2023 HGV Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-VEH-HV**
	Existing Traffic Flow Diagram 24-hour Period from 00:00 to 00:00 2023 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**16HR-EX-23-VEH-HV%**

Table 14.10 – Reference Numbers for Existing Traffic Flow Diagrams – Peak Hour 2023

Existing 2023 – Peak Hours			
Time Period	**All PCUs**	**All Vehicles**	**Heavy Vehicles**
AM1 06:15-07:15	AM1-EX-23-PCU	AM1-EX-23-VEH	AM1-EX-23-HV
AM2 08:00-09:00	AM2-EX-23-PCU	AM2-EX-23-VEH	AM2-EX-23-HV
MD 12:30-13:30	MD-EX-23-PCU	MD-EX-23-VEH	MD-EX-23-HV
PM 17:00-18:00	PM-EX-23-PCU	PM-EX-23-VEH	PM-EX-23-HV

Table 14.11 – Reference Numbers for Existing Traffic Flow Diagrams – 8/16/24-Hour 2023

Existing 2023 – 8/16/24-Hour			
Time Period	**All Vehicles**	**Heavy Vehicles**	**Percentage Heavy Vehicles**
24HR 00:00:24:00	24HR-EX-23-VEH	24HR-EX-23-VEH-HV	24HR-EX-23-VEH-HV%
16HR 07:00-23:00	16HR-EX-23-VEH	16HR-EX-23-VEH-HV	16HR-EX-23-VEH-HV%
8HR 23:00-07:00	8HR-EX-23-VEH	8HR-EX-23-VEH-HV	8HR-EX-23-VEH-HV%

14.10.7 Existing Traffic Flows at Dublin Port Tunnel

The Dublin Port Tunnel has two northbound lanes and two southbound lanes. There are 11 toll lanes at Dublin Port Tunnel - five dedicated northbound, four dedicated southbound and two that can be bi-directional, as illustrated below in Figure 14.44.

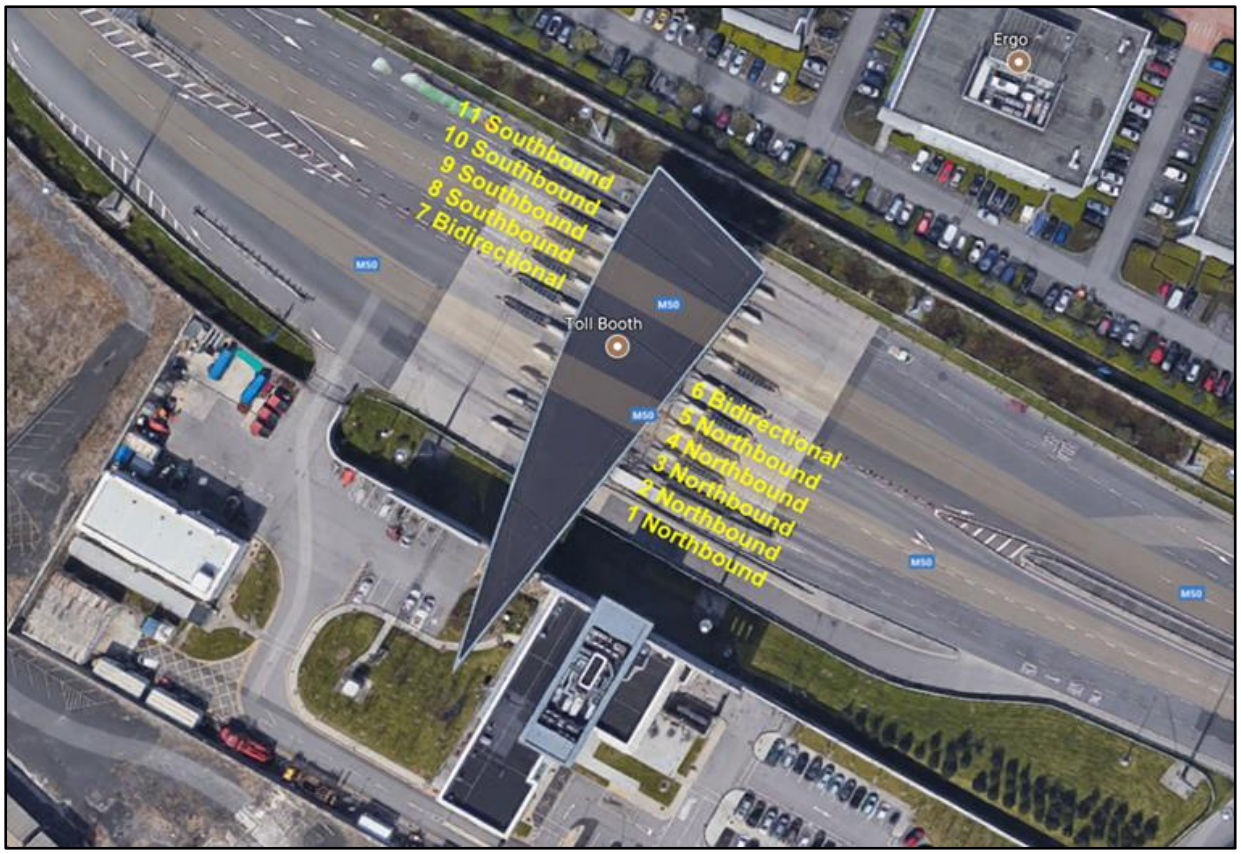


Figure 14.44 Toll Lanes at Dublin Port Tunnel Toll Plaza

Table 14.12 Existing 2023 Traffic Flows To/From Dublin M50 Tunnel in PCUs

Scenario	PCUs									
	Northbound					Southbound				
	AM1	AM2	MD	PM	24hr	AM1	AM2	MD	PM	24hr
2023 Existing	1,258	1,436	1,829	1,708	25,153	1,742	1,987	1,876	1,111	25,410

Within the NTA Regional Transport Model for the Greater Dublin Area, the Port Tunnel is coded with a capacity of 3,800 PCUs per hour per direction. This may be an underestimation of the capacity with two-lane motorways elsewhere in Ireland have observed flows exceeding 4,000 PCU/hour.

Table 14.12 above shows that the worst-case peak hour in the northbound direction is 1,829 PCUs during the MD peak, and for southbound has a peak hour at AM2 of 1,987 PCUs. Therefore, this shows that the Tunnel is operating at approximately half of its modelled capacity (i.e. half the modelled capacity being 1,900 PCUs per hour per direction).

14.11 Do-Nothing Future Year Traffic Flows

This section explains the derivation of the Do-Nothing traffic flows for the year 2040. In this scenario the 3FM Project is not constructed.

14.11.1 Assessment Years

The key assessment years for the TTA are 2023 and 2040. There are three assessment scenarios explained as follows:

- **2023 Existing** – 2023 is the survey year and therefore reflects the existing traffic.
- **2040 Do Nothing** – 2040 in this scenario, 3FM Project is not built however granted permission developments and schemes progress alongside the projected growth of Dublin Port.
- **2040 Proposed** – 2040 is the end of the Revised Masterplan for Dublin Port. Therefore, in this scenario, the 3FM Project is complete and operational alongside committed developments.

Note that the Cumulative Impact in Section 14.16, provides an assessment along the South Bank Road in the years 2026-2038, prior to the opening of the SPAR in 2039.

14.11.2 Traffic Growth Rates for 'Do Nothing' 2040

The growth rates for the Do-Nothing 2040 scenario are summarised in the following Table 14.13 and explained in the paragraphs that follow.

Table 14.13 – Applied 2022-2040 Growth Rates for Do Nothing Scenario

Land Use	Source	Traffic Growth Rate for 2023-2040
External Traffic i.e. Non-Port **HGVs**	TII PAG Unit 5.3 HV	**1.487**
External Traffic i.e. Non-Port **Non-HGVs**	TII PAG Unit 5.3 LV	**1.245**
North Port Estate Traffic **All Traffic**	Tonnage difference between 2023 & 2040	**1.722**
Mollasses, Ecocem, Coal Quay, Scrap Yard **All Traffic**	DPMP2040 1.8% pa for Bulk Solid	**1.354**
MTL, Rushfleet & Nolan **All Traffic**	Tonnage difference between 2023 & 2040	**1.727**
Do-Nothing Area O - Port-related Elements **All Traffic**	DPMP2040 1.8% pa for Bulk Solid	**1.354**
Do-Nothing Area O - Non-Port Elements **HGVs**	TII PAG Unit 5.3 HV	**1.487**
Do nothing Area O - Non-Port Elements **Not HGVs**	TII PAG Unit 5.3 LV	**1.245**
Existing Maritime Village **All Traffic**	No growth is the Do-Nothing Scenario	**1.000**

14.11.2.1 Traffic Growth for Non-Port Traffic

The use of growth rates from TII's Project Appraisal Guidance (PAG) for National Roads Unit 5.3 – Travel Demand Projections (October 2021) have been applied to the non-port traffic on the road network.

Table 6.1 of the PAG guidelines set out the criteria for projecting traffic growth for non-port traffic.

Figure 14.45 shows an extract from the PAG guidelines for the proposed development within the Dublin Metropolitan Area.

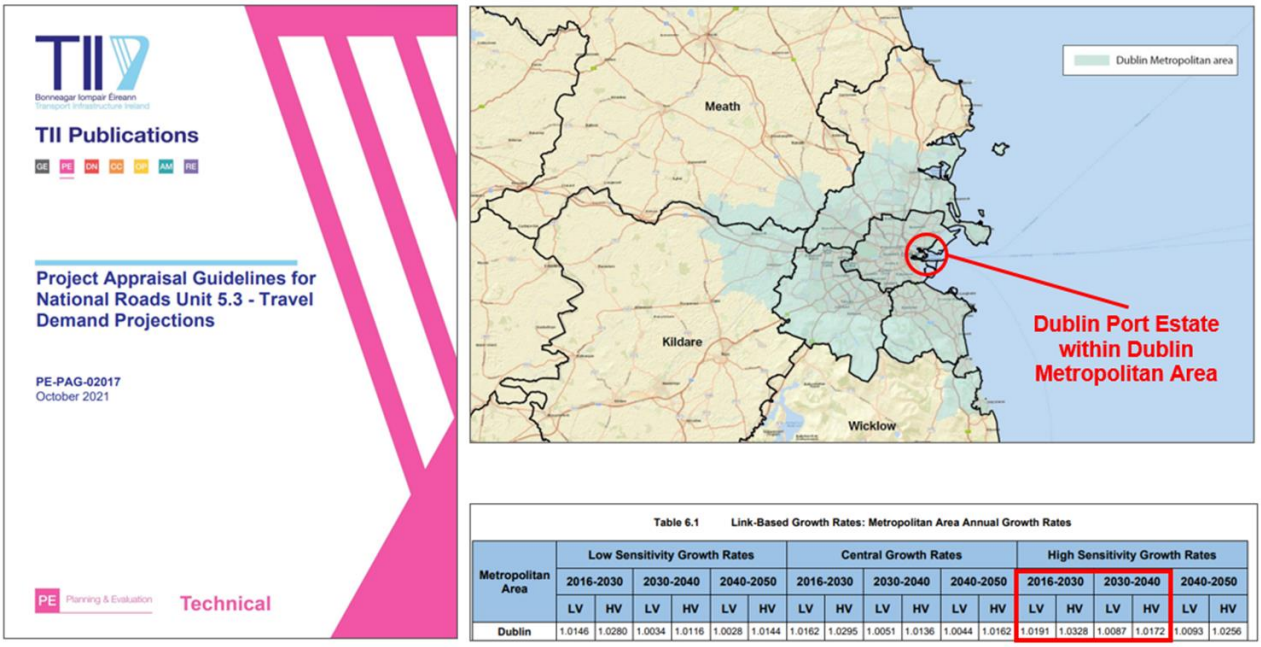


Table 6.1 Link-Based Growth Rates: Metropolitan Area Annual Growth Rates

Metropolitan Area	Low Sensitivity Growth Rates						Central Growth Rates						High Sensitivity Growth Rates					
	2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050		2016-2030		2030-2040		2040-2050	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Dublin	1.0146	1.0280	1.0034	1.0116	1.0028	1.0144	1.0162	1.0295	1.0051	1.0136	1.0044	1.0162	1.0191	1.0328	1.0087	1.0172	1.0093	1.0256

Figure 14.45 Extracted PAG Table 6.1 Link-Based Growth Rates: Metropolitan Area Annual Growth Rates

For the purposes of this traffic assessment, it is proposed to use PAG growth rates 'High Sensitivity Growth' in order to provide a more robust assessment of the non-port traffic on the external road network.

Using the origin-destination traffic distribution derived from the ANPR survey, the port traffic and non-port traffic was separated.

The growth factors where then calculated for the future assessment years, centred on the 2023 surveyed base year, using these calculated annual growth rates. See Table 14.14.

Table 14.14 PAG Growth Factor for Non-Port Traffic

Growth Factor	Base Year	Future Year	Factor
High Sensitivity Growth	2023	2040	LV 1.245
			HV 1.487

14.11.2.2 Traffic Growth on the Dublin Port North Estate

The North Port Estate had a throughput of 32.57m Tonnes in 2023. In 2040 it is expected to have a throughout of 56.10m Tonnes, which equate to a growth rate of 1.722 for the traffic growth in the North Port Estate between 2023 and 2040.

As identified in section 14.10 the existing traffic surveys from Oct 2023 show shows that there is currently a significant decrease in traffic entering the Port during the night-time hours compared to daytime hours,

plateauing to under 200 PCUs per hour between 20:00 and 04:00 , with the busiest period for entering the North Port Estate being c06:00. It is proposed that the that current diurnal traffic patterns entering the port get multiplied up on a pro-rata basis to establish the proposed traffic flows in 2040. This provides a robust assessment of the proposed road and junction improvements within the North Port Estate as there may be trend towards the spreading of peak hours and night-time running through the Dublin Tunnel (M50) especially towards the end of the DPMP2040. If this peak hour spreading or night-time running trend happens, it will lessen the daytime peak hour flows that have been modelled in this TTA.

14.11.2.3 Bulk Solid Traffic Growth Rates

The DPMP2040 has growth rate of 1.8% pa, which equates to a factor of 1.354 between 2023 to 2040 Table 14.13 shows that Mollasses, Ecocem, Coal Quay, Scrap Yard and the port-related elements within the existing Area O will have this growth rate applied in the Do-nothing scenario.

14.11.2.4 Traffic Growth Rate for MTL, Rushfleet & Nolan in the Do-Nothing Scenario

MTL had a throughput of 2.238m Tonnes in 2023. In the Do-nothing scenario, without the benefit of any additional planning permission, MTL is expected to have a throughput of 3.864m Tonnes in 2040. This provides a growth rate of 1.727 between 2023-2040 if the 3FM Project did not proceed. The same rate is applicable to Rushfleet and Nolan.

14.11.2.5 Traffic Growth for existing Maritime Village in the Do-Nothing Scenario

It has been assumed that the existing Maritime Village will have no future year growth in the Do-Nothing scenario. Hence the growth rate is 1.000 in Table 14.13 above.

14.11.3 Committed Development Traffic Flows

There are several committed and proposed schemes that will be considered in this TTA are:

- NTA BusConnects & Dodder Bridge
- ESB Ringsend OCGT
- ESB Poolbeg OCGT
- Glass Bottle scheme
- Ecocem Extension

The construction and operational traffic associated with the following schemes between the years 2023 to 2040 has been identified as detailed in Section 14.16.

Of the schemes listed, only the Glass Bottle Scheme and the NTA BusConnects & Dodder Bridge will generate traffic in 2040.

14.11.3.1 Glass Bottle Residential Site

There are a number of planning applications in the DCC online system pertaining to the Glass Bottle Residential development. The Glass Bottle site is a part of the Poolbeg West Planning Scheme

The planning application reference for the full masterplan is Ref. 3270/19. This application is the foundation of the infrastructure required to facilitate the development of future phases (roadways and utilities, etc).

Within the TTA for the ‘Phase A Commercial’ of the Glass Bottle development (Ref. 3480/22), has a Transport Statement for the Glass Bottle masterplan appended (i.e. 3270/19). This Transport Statement details the traffic generation for the full quantum of development at the Glass Bottle site.

Figure 14.46 Pembroke Quarter – Phase A Commercial, Traffic and Transport Assessment 2022

Table 4.3 of the above Transport Statement provides the proposed development trips generated by the Glass Bottle site when the overall development is complete and operational. This is shown in Figure 14.47below.

Table 4.3: Development Trips

Phase	AM Peak		PM Peak	
	Trips In	Trips Out	Trips In	Trips Out
Phase 1 (2021)	16	240	120	83
Full Development (2036)	170	570	306	310

Figure 14.47 Development Trips Into/ Out of Glass Bottle, Table 4.3 p.29 *Former IGB and Fabrizia Sites Poolbeg West Transport Statement 2019* (Planning Application Ref. 3270/19)

The figure above shows that the Glass Bottle Site is proposed to be fully complete in 2036 and the proposed total trips during the AM peak hour will be 740, and during the PM will be 616.

The distribution of the development traffic is also explained on page 29 of the Transport Statement:

Trip Distribution: Car driver trips associated with the proposed development were assigned to the road network based on likely traffic patterns. It was assumed that 50% of traffic would travel towards the Thomas Clarke Bridge to the north, 30% towards Strand Road to the south east, 15% towards Ringsend to the west, and 5% towards Ballsbridge and the south city centre to the south west.

Figure 14.48 Distribution of Glass Bottle Development Traffic, p.29 *Former IGB and Fabrizia Sites Poolbeg West Transport Statement 2019* (Planning Application Ref. 3270/19)

Therefore, the distribution of development traffic for the full Glass Bottle site is:

- 50% North towards Tom Clarke Bridge
- 30% Southeast towards Strand Road
- 15% West towards Ringsend
- 5% Southwest towards Ballsbridge and the south city centre.

This information has been included in the Do-Nothing 2040 scenario for 2040 and remains unchanged for the Proposed 2040 scenario.

14.11.3.2 BusConnects Ringsend CBC

Traffic generated by the NTA BusConnects has been taken account of in the Do-Nothing 2040 scenario for 2040 and remains unchanged for the Proposed 2040 scenario.

14.11.4 Derivation of the Do-Nothing Traffic Flows 2040

The information described above and throughout this Chapter has been used to derive the Do-Nothing Traffic Flows for 2040 for each of the selected assessment periods. The software package SATURN has been used to assist in the derivation of the traffic flows and Table 14.15 below summarises the process. SATURN was selected due to its origin-destination optimisation abilities and ability to separate different traffic types and streams in order to apply differing growth rates and route assignment restrictions.

Table 14.15 Process to Derive the Do-Nothing Traffic Flows 2040

Step	Process to Derive the Do-Nothing Traffic Flows 2040
1	The SATURN model was calibrated for the base year (2023) based on the surveyed traffic flows.
2	The ANPR Origin-Destination data was used to: • separate port traffic and non-port traffic • Separate HGV from non-HGVs • to isolate the traffic from each land use as required in order to assign the differing growth rates between 2023 to 2040 as identified in Table 14.13 above.
3	The road network in the Dublin Port North Estate was built into the model for the Do-nothing scenario which includes: • an upgraded left slip entry from East Wall Road onto Alexandra Road for HGV entry to Terminal 4 (currently Seatruck) and Alexandra Quay East (currently DSG). • Closure of all other traffic movements at the East Wall Road / Alexandra Road junction and reassignment to the Promenade Road access. • The construction of the T10 Link Road south.
4	Committed traffic flows for the Glass Bottle site and the NTA BusConnects scheme was added.
5	The resultant flows represent the Do-nothing traffic scenario for the year 2040 for each of the assessment periods.

14.11.5 Do-Nothing Traffic Flow Diagrams for 2040

The resultant Do-Nothing Traffic Flows for 2040 are included in Appendix 14.5 for each of the four peak hours and the 16hr daytime, 8hr night-time and 24-hour periods. For ease of reference each diagram has a unique reference number.

Table 14.16 and Table 14.17 provide the details for each traffic flow diagram. The subsequent Table 14.18 and Table 14.19 detail the unique reference numbers for each diagram for ease of reference.

Table 14.16 Do-Nothing Traffic Flow Diagrams for Peak Hours Explained

Do-Nothing 2023 – Peak Hours		
Time Period	**Diagram Title**	**Unique Reference Number**
AM1 06:15-07:15	Do-nothing Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2040 Total Traffic flows in PCU Units	**AM1-DN-40-PCU**
	Do-nothing Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**AM1-DN-40-VEH**
	Do-nothing Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2040 HGV Traffic flows. The unit is the number of VEHICLES	**AM1-DN-40-HV**
AM2 08:00-09:00	Do-nothing Traffic Flow Diagram AM Peak Hour for the External Road Network 2040 Total Traffic flows in PCU Units	**AM2-DN-40-PCU**
	Do-nothing Traffic Flow Diagram AM Peak Hour for the External Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**AM2-DN-40-VEH**
	Do-nothing Traffic Flow Diagram AM Peak Hour for the External Road Network 2040 HGV Traffic flows. The unit is the number of VEHICLES	**AM2-DN-40-HV**
MD 12:30-13:30	Do-nothing Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2040 Total Traffic flows in PCU Units	**MD-DN-40-PCU**
	Do-nothing Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**MD-DN-40-VEH**
	Do-nothing Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2040 HGV Traffic flows. The unit is the number of VEHICLES	**MD-DN-40-HV**
PM 17:00-18:00	Do-nothing Traffic Flow Diagram PM Peak Hour for the External Road Network	**PM-DN-40-PCU**

	2040 Total Traffic flows in PCU Units	
	Do-nothing Traffic Flow Diagram PM Peak Hour for the External Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**PM-DN-40-VEH**
	Do-nothing Traffic Flow Diagram PM Peak Hour for the External Road Network 2040 HGV Traffic flows. The unit is the number of VEHICLES	**PM-DN-40-HV**

Table 14.17 Do-Nothing Traffic Flow Diagrams for 8/16/24-Hour Explained

Do-Nothing 2023 – Peak Hours		
Time Period	**Diagram Title**	**Unique Reference Number**
16-Hour 07:00-23:00	Do-nothing Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2040 Total Traffic flows. The unit is the number of VEHICLES	**16HR-DN-40-VEH**
	Do-nothing Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2040 HGV Traffic flows. The unit is the number of VEHICLES	**16HR-DN-40-VEH-HV**
	Do-nothing Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2040 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**16HR-DN-40-VEH-HV%**
8-Hour 23:00-07:00	Do-nothing Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2040 Total Traffic flows. The unit is the number of VEHICLES	**8HR-DN-40-VEH**
	Do-nothing Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2040 HGV Traffic flows. The unit is the number of VEHICLES	**8HR-DN-40-VEH-HV**
	Do-nothing Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2040 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**8HR-DN-40-VEH-HV%**
24-Hour 00:00-00:00	Do-nothing Traffic Flow Diagram 24-hour Period from 00:00 to 00:00 2040 Total Traffic flows. The unit is the number of VEHICLES	**24HR-DN-40-VEH**
	Do-nothing Traffic Flow Diagram 24-hour Period from 00:00 to 00:00 2040 HGV Traffic flows. The unit is the number of VEHICLES	**24HR-DN-40-VEH-HV**
	Do-nothing Traffic Flow Diagram	**24HR-DN-40-VEH-HV%**

	24-hour Period from 00:00 to 00:00 2040 Proportion of HGV Traffic flows. The unit is the number of VEHICLES

Table 14.18 Reference Numbers for Do-Nothing Traffic Flow Diagrams – Peak Hour 2040

Do Nothing 2040 – Peak Hours			
Time Period	**All PCUs**	**All Vehicles**	**Heavy Vehicles**
AM1 06:15-07:15	AM1-DN-40-PCU	AM1-DN-40-VEH	AM1-DN-40-HV
AM2 08:00-09:00	AM2-DN-40-PCU	AM2-DN-40-VEH	AM2-DN-40-HV
MD 12:30-13:30	MD-DN-40-PCU	MD-DN-40-VEH	MD-DN-40-HV
PM 17:00-18:00	PM-DN-40-PCU	PM-DN-40-VEH	PM-DN-40-HV

Table 14.19 Reference Numbers for Do-Nothing Traffic Flow Diagrams – 8/16/24-Hour

Do Nothing 2040 – 8/16/24-Hour			
Time Period	**All Vehicles**	**Heavy Vehicles**	**Percentage Heavy Vehicles**
24HR 00:00:24:00	24HR-DN-40-VEH	24HR-DN-40-VEH-HV	24HR-DN-40-VEH-HV%
16HR 07:00-23:00	16HR-DN-40-VEH	16HR-DN-40-VEH-HV	16HR-DN-40-VEH-HV%
8HR 23:00-07:00	8HR-DN-40-VEH	8HR-DN-40-VEH-HV	8HR-DN-40-VEH-HV%

14.12 Proposed Future Year Traffic Flows

This section explains the derivation of the proposed traffic flows for the year 2040. In this scenario the 3FM project is constructed and is complete and operational in 2040.

14.12.1 Restricted Use of the SPAR

In previous discussions with NTA and DCC regarding use of the SPAR, it has been accepted by all parties that private cars should not use the route. It is proposed by DPC that the following categories of vehicles will have free access to the SPAR:

- Commercial vehicles going to and from Dublin Port facilities.
- Dublin Port Company vehicles
- OGV1 Commercial Goods Vehicles going to and from the Poolbeg Peninsula. This includes all rigid vehicles over 3.5 tonnes gross vehicle weight with two or three axles.
- OGV2 Commercial Goods Vehicles going to and from the Poolbeg Peninsula. This includes all rigid vehicles with four or more axles and all articulated vehicles.
- Public transport buses of 25+ passenger capacity.
- Emergency Services vehicles

The summary below explains how these suggested restrictions have been applied within the detailing of the TTA:

Traffic movements assessed in the TTA as permitted the use the SPAR:

- Any HGV vehicle that has an origin or destination on the Poolbeg Peninsula. This includes Port HGV traffic, Encyclis HGVs and any HGV generated by the other users on the Peninsula such as ESB, Irish Water etc.
- All vehicles for Areas K, N, O & L. This includes cars for staff and visitors.
- Public Transport buses of 25+ passenger capacity.
- Traffic with an origin or destination at Harbour Operations Centre situated within the Maritime Village.
- Any HGV traffic generated by the North Port Estate that has an origin or destination south of the Sean Moore Roundabout. (Noting the 24-hour HGV ban on the southern arm of the Sean Moore Roundabout in any case).
- To satisfy the request from NTA during pre-application discussions, in this assessment it has been considered that non-Port HGVs travelling between Sean Moore Road and the Dublin Tunnel (M50) can use the SPAR.

Traffic movements not permitted on the SPAR in the TTA:

- External (i.e. non-Port) vehicles that are not HGVs.
- Non-HGVs with an origin or destination on the Poolbeg Peninsula such as staff & visitors for non-Port users of Encyclis, ESB, Irish Water, etc.

- Users of the Maritime Village.
- Any vehicle that is not a HGV generated by the Dublin Port North Estate that has an origin or destination south of the Sean Moore Roundabout i.e. they must use the Tom Clarke Bridge.
- Taxis.

14.12.2 Proposed Generated HGVS for the Lo-Lo Terminal

A proposed daily breakdown of the HGVs generated by the Lo-Lo terminal (Areas N & L) is presented below. The calculations are based on the throughputs, proposed operations and vehicle routing that will occur at Areas N & L (entry, exit and between Areas) in liasion with DPC and based on port simulatons.

14.12.2.1 Assessment Periods

The assessment periods required are:

- Worst case peak hour.
- Daytime hours 0700-2300;
- Nighttime hours 2300-0700;

14.12.2.2 Proposed Daily Traffic Flow Profile & Peaks

It is proposed that the Lo-Lo terminal will generate traffic evenly over the 24 hours. However, for assessment purposes port simulations introduce peaks for the week, day, and hour to provide robust assessments for operations and traffic flows. These peak values are summarised in Table 14.20 below.

Table 14.20 Peak Periods Assumptions for Port Operation Simulations

Time Period	Average for comparison	Peak values used in TTA
Seasonal	*1.14 of the average week*	1.15 of the average week
Peak Day	*14% of the weekly volume*	18% of the weekly volume
Peak Hourly Volume	*4% of the daily volume*	6% of the daily volume

14.12.2.3 Throughput for the Lo-Lo Terminal

The proposed Lo-Lo Terminal will deliver an annual throughput capacity of approximately 550,000 Twenty-foot equivalent units (TEU) or 5.34m tonnes.

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

- Lo-Lo Terminal - Area N: Annual throughput capacity of 350,000 TEU pa. Handles 100% of exports & 40% of imports. Entry & exit HGV movements are via a single access road, Area N Access Road.
- Lo-Lo Terminal - Area L: Annual throughput capacity of 200,000 TEU pa. Handles 60% of imports. HGVs enter by the western access and exit via the eastern access.

For both areas the site will be operational and the gates will be open for third party hauliers 24 hours per day as summarised below in Table 14.21.

Table 14.21 Area N & Area L Throughput and Gate Opening

	Area N	Area L
Throughput	**550,000 TEU per annum**	
Operational & Gate Opening Time	**24-hour, 00:00 to 00:00**	**24-hour, 00:00 to 20:00**
Cargo Handled	**100% Exports, 40% Imports**	**60 % Imports**

The 550,000 TEU throughput capacity per year for Area N and Area L can be translated to the number of Units using the conversion factor of 1.7, and applying the established 60/40 import/export ratio:

- TEU to Units Per Year: 550,000 / 1.7 = 323,529 Units pa
- Imports 323,529 * 60% = 194,118 Units pa
- Exports 323,529 * 40% = 129,412 Units pa

As shown in Table 14.21 above, Area N will handle 100% Exports in addition to 40% Imports; Area L will handle the remaining 60% Imports. Therefore, the breakdown of throughput handled at Area N and Area L is split further into these divisions as shown below:

- Exported Units handled at Area N Per Year: 129,412 * 100% = 129,412 Units pa
- Imported Units handled at Area N Per Year: 194,118 * 40% = 77,647 Units pa
- Imported Units handled at Area L Per Year: 194,118 * 60% = 116,471 Units pa

Table 14.22 summarises the number of units handled by each Area for each time period when the stress test are considered.

Table 14.22 Area N & Area L Number of Units Handled per Assessment Period

Area	No of Units	
	Average for comparison	**Stress test values used in TTA**
Area N	*3,982 Units per week* *569 Units per day* *24 Units per hour*	4,579 Units per week 824 Units per day 49 Units per hour
Area L	*2,240 Units per week* *320 Units per day* *13 Units per hour*	2,579 Units per week 464 Units per day 28 Units per hour

14.12.2.4 Shunting at the Lo-Lo Terminal

The shunting activity between Areas N & L comes from port simulation calculations. Four STS cranes can import 110 units per peak hour at the quayside, of which 60% (66) will need to be shunted from Area N to

Area L within an hour. The shunting vehicles are included in each assessment period to provide a robust assessment. Note that all port shunting vehicles will be electrically powered or similar to provide lower carbon & reduced noise benefits.

14.12.2.5 MTs at the Lo-Lo Terminal

For operational need, Empty Units (MTs) will be required to be delivered to Area N directly from the SPAR. The MTs are 30% of the exports

- Exported Units handled at Area N Per Year: 129,412 * 30% = 38,824 MTs pa

Table 14.23 summarises the number of MTs arriving at Area N for each time period when the stress test are considered.

Table 14.23 Number of MTs arriving at Area N

Area	No of MTs	
	Average for comparison	**Stress test values used in TTA**
Area N	*747 MTs per week* *107 MTs per day* *4 MTs per hour*	859 MTs per week 155 MTs per day 9 MTs per hour

14.12.2.6 HGV Routing for the Lo-Lo terminal (Areas N & L)

Appendix 14.1 contains details of the proposed HGV routing (entry, exit and between Areas) for Areas N & L (the Lo-Lo terminal) for the units, the shunters and the MTs. Notably HGVs are routed away from the Glass Bottle site during the nighttime hours of 23:00-07:00 to minimise any potential inconvenience to residents.

14.12.2.7 Proposed Generated HGVS for the Lo-Lo Terminal

The figures that follow provide a tabulated summary of the HGV traffic movements described above for the assessment periods.

- Worst case peak hour.
- Daytime hours 0700-2300;
- Nighttime hours 2300-0700;

Schematics are also provided to display the resultant HGV movements for each assessment period on the local proposed road network connecting Areas N & L to the SPAR.

THIRD PARTY HAULIERS for N & L - Worst-Case Peak Hour						
			VEHICLES			
	Arrivals		Departures		Total	
Area N	31	HGVs Loaded with Containers for Export	19	HGVs Loaded with Containers for Import		
			12	Empty HGVS travelling from N to L		
			31	Total Departues	62	HGVs
	Arrivals		Departures		Total	
Area L	12	Empty HGVS travelling from N to L	12	HGVs Loaded with Containers for Import		
	15	Empty HGVS travelling from the SPAR to L	15	HGVs Loaded with Containers for Import		
	28		28	Total Departues	56	HGVs

SHUNTING BETWEEN N & L - Worst-case Peak Hour						
			VEHICLES			
	Arrivals		Departures		Total	
Area N	66	Empty Shunters arrive back at N	66	Loaded Shunters Depart N and head to L	132	HGVs
	Arrivals		Departures		Total	
Area L	66	Loaded Shunters arrive from N to L	66	Empty Shunters depart L and head back to N	132	HGVs

MTs for Operational Need at Plot N - Worst-case Peak Hour						
			VEHICLES			
	Arrivals		Departures		Total	
Area N	9	Loaded MTs arriving at N from SPAR	9	Unladen HGV departing N and travelling to SPAR	19	HGVs
	Arrivals		Departures		Total	
Area L						HGVs

Total Vehicles for N and L - Worst-case Peak hour					
		VEHICLES			
	Arrivals	Departures		Total	
Area N	106	106		212	HGVs
	Arrivals	Departures		Total	
Area L	94	94		188	HGVs

Figure 14.49 HGV Traffic Flows for Lo-Lo Terminal – Worst Case Peak Hour

Figure 14.49 shows that 106 HGVs will arrive and depart at Area N in a worst-case peak hour, and 94 HGVs will arrive and depart at Area L in the same period.

Figure 14.50 that follows shows the resultant HGV movements for the worst-case peak hour on the local proposed road network connecting Areas N & L to the SPAR in Vehicles.

The resultant HGV movements for the worst-case peak hours is also shown in Figure 14.51 in PCUs. PCUs take account of the laden (PCU conversion rate of 2.9) and unladen (PCU conversion rate of 1.5) HGVs.

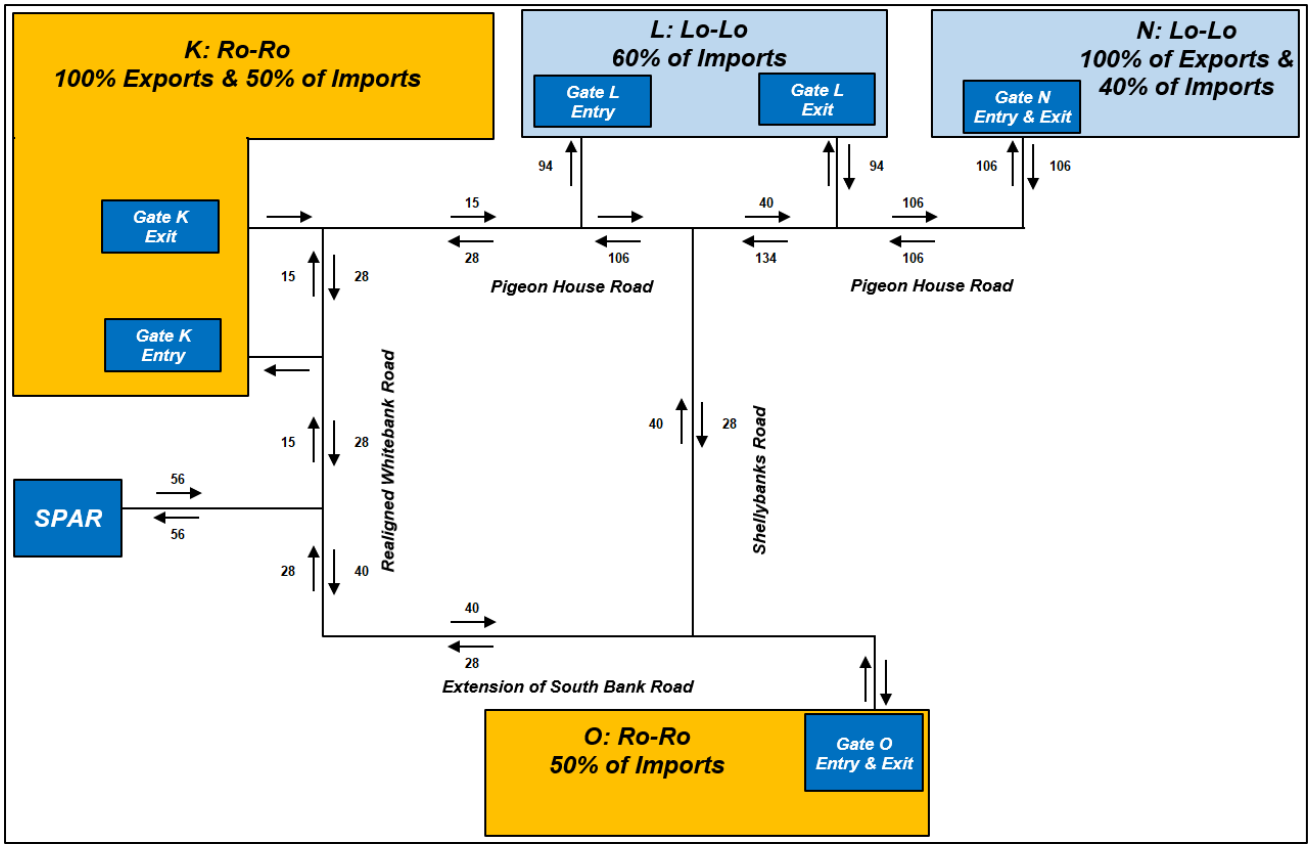


Figure 14.50 Schematic of HGV Traffic Flows for Lo-Lo Terminal – Worst Case Peak Hour – Unit Vehicles

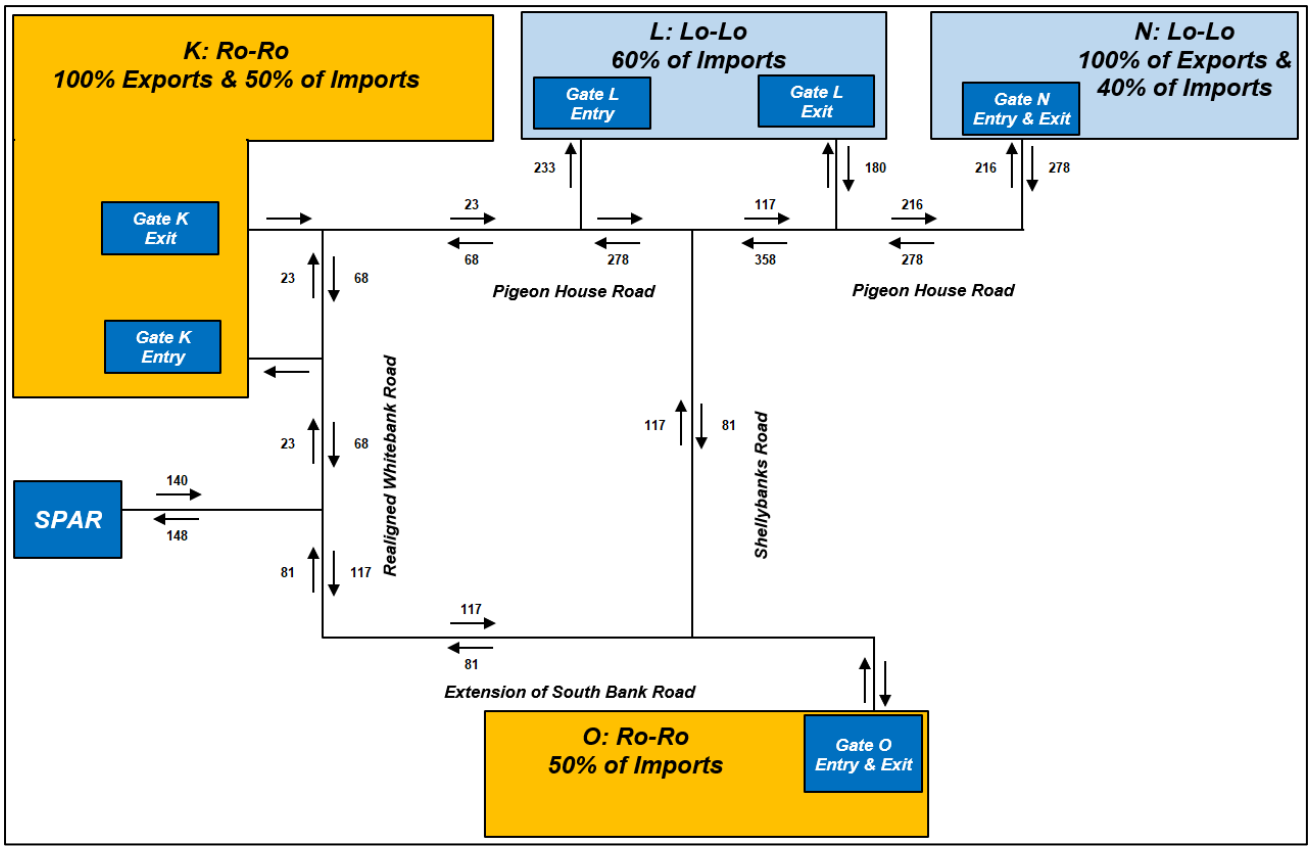


Figure 14.51 Schematic of HGV Traffic Flows for Lo-Lo Terminal – Worst Case Peak Hour – Unit PCUS

THIRD PARTY HAULIERS for N & L - 16 Hour (0700-2300)						
	VEHICLES					
	Arrivals		Departures		Total	
Area N	343	HGVs Loaded with Containers for Export	206	HGVs Loaded with Containers for Import		
			137	Empty HGVS travelling from N to L		
			343	Total Departues	687	HGVs
	Arrivals		Departures		Total	
Area L	137	Empty HGVS travelling from N to L	137	HGVs Loaded with Containers for Import		
	172	Empty HGVS travelling from the SPAR to L	172	HGVs Loaded with Containers for Import		
	309		309	Total Departues	618	HGVs

SHUNTING BETWEEN N & L - 16 Hour (0700-2300)						
	VEHICLES					
	Arrivals		Departures		Total	
Area N	66	Empty Shunters arrive back at N	66	Loaded Shunters Depart N and head to L	132	HGVs
	Arrivals		Departures		Total	
Area O	66	Loaded Shunters arrive from N to L	66	Empty Shunters depart L and head back to N	132	HGVs

MTs for Operational Need at Plot N - 16 Hour (0700-2300)						
	VEHICLES					
	Arrivals		Departures		Total	
Area N	103	Loaded MTs arriving at N from SPAR	103	Unladen HGV departing N and travelling to SPAR	206	HGVs
	Arrivals		Departures		Total	
Area L						HGVs

Total Vehicles for N and L - 16 Hour (0700-2300)			
	VEHICLES		
	Arrivals	Departures	Total
Area N	512	512	1025 HGVs
	Arrivals	Departures	Total
Area O	375	375	750 HGVs

Figure 14.52 HGV Traffic Flows for Lo-Lo Terminal – 16 Hour (07:00-23:00)

Figure 14.52 shows that 512 HGVs will arrive and depart at Area N during the 16 hours (07:00-23:00), and 375 HGVs will arrive and depart at Area L in the same period.

Figure 14.53 that follows shows the resultant HGV movements for the 16 hours (07:00-23:00) on the local proposed road network connecting Areas N & L to the SPAR in Vehicles.

The resultant HGV movements for the 16 hours (07:00-23:00) is also shown in Figure 14.54 in PCUs.

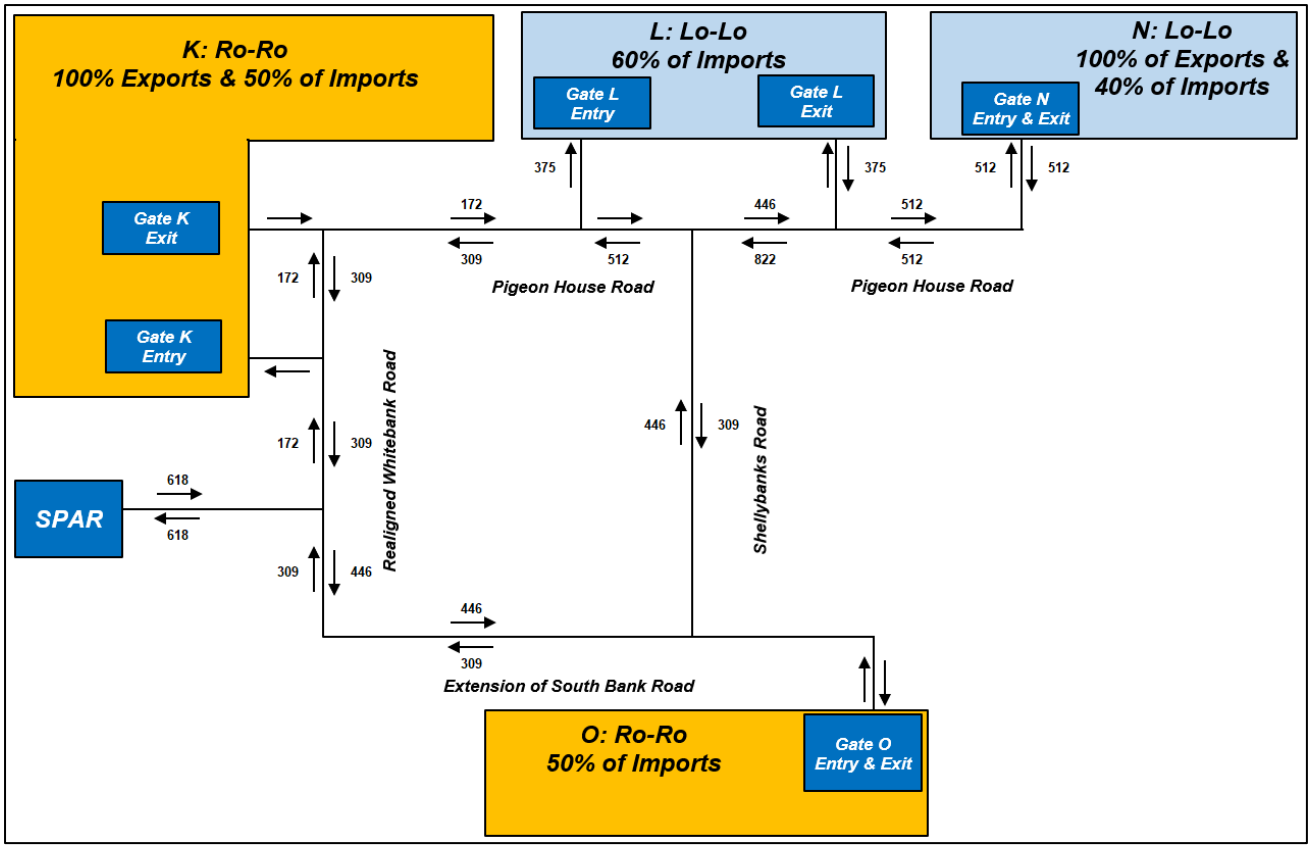


Figure 14.53 Schematic of HGV Traffic Flows for Lo-Lo Terminal –16 Hour (07:00-23:00) – Unit Vehicles

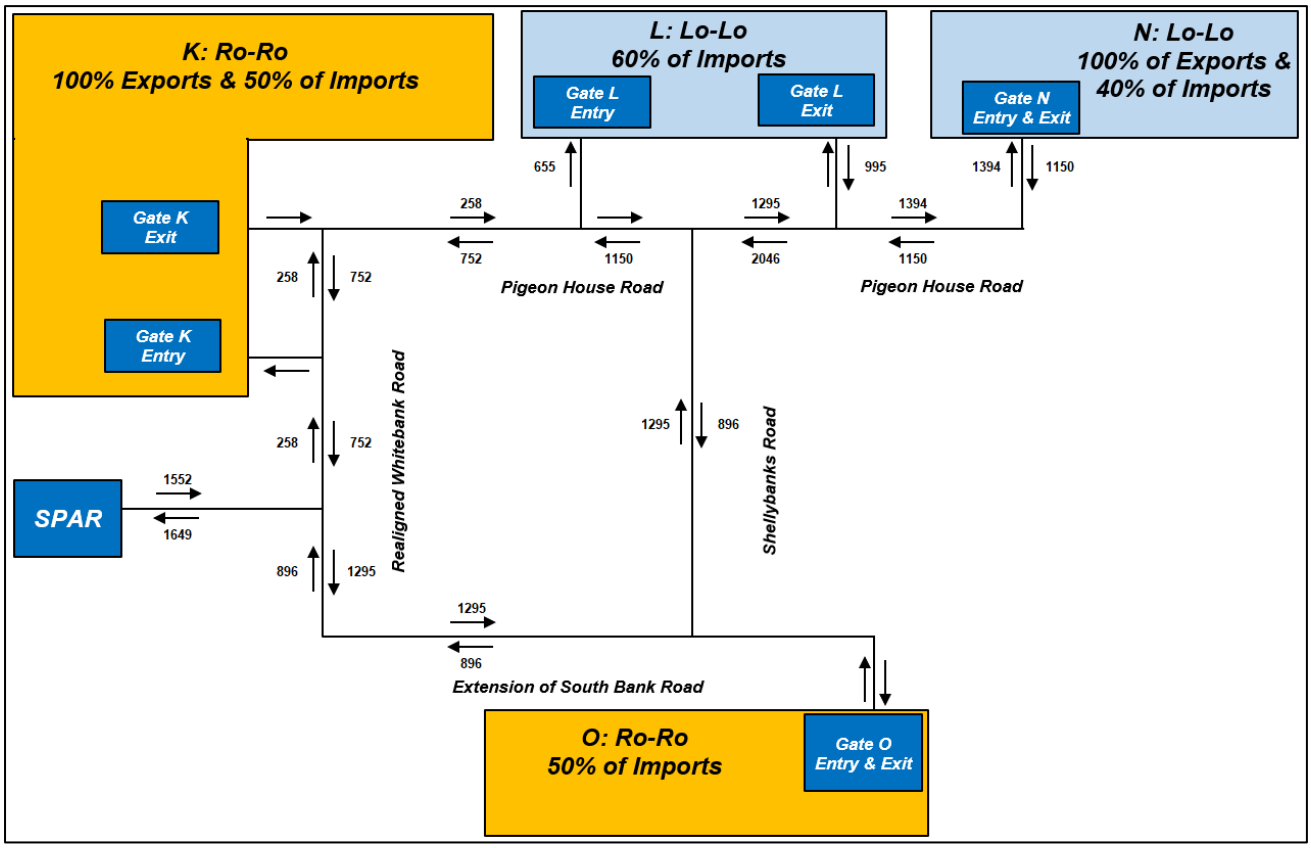


Figure 14.54 Schematic of HGV Traffic Flows for Lo-Lo Terminal – 16 Hour (07:00-23:00)– Unit PCUS

THIRD PARTY HAULIERS for N & L - 8 Hour Nighttime (2300-0700)

VEHICLES

	Arrivals		Departures		Total	
Area N	**172**	HGVs Loaded with Containers for Export	103	HGVs Loaded with Containers for Import		
			69	Empty HGVS travelling from N to L		
			172	Total Departues	**343**	HGVs
	Arrivals		**Departures**		**Total**	
Area L	69	Empty HGVS travelling from N to L	69	HGVs Loaded with Containers for Import		
	86	Empty HGVS travelling from the SPAR to L	86	HGVs Loaded with Containers for Import		
	155		**155**	Total Departues	**309**	HGVs

SHUNTING BETWEEN N & L - 8 Hour Nighttime (2300-0700)

VEHICLES

	Arrivals		Departures		Total	
Area N	66	Empty Shunters arrive back at N	66	Loaded Shunters Depart N and head to L	**132**	HGVs
	Arrivals		**Departures**		**Total**	
Area L	66	Loaded Shunters arrive from N to L	66	Empty Shunters depart L and head back to N	**132**	HGVs

MTs for Operational Need at Plot N - 8 Hour Nighttime (2300-0700)

VEHICLES

	Arrivals		Departures		Total	
Area N	52	Loaded MTs arriving at N from SPAR	52	Unladen HGV departing N and travelling to SPAR	**103**	HGVs
	Arrivals		**Departures**		**Total**	
Area L						HGVs

Total Vehicles for N and L - 8 Hour Nighttime (2300-0700)

VEHICLES

	Arrivals	Departures	Total	
Area N	289	289	**578**	HGVs
	Arrivals	**Departures**	**Total**	
Area L	221	221	**441**	HGVs

Figure 14.55 HGV Traffic Flows for Lo-Lo Terminal – 8 Hour Nighttime (23:00-07:00)

Figure 14.55 shows that 289 HGVs will arrive and depart at Area N during the 8 nighttime hours (23:00-07:00), and 221 HGVs will arrive and depart at Area L in the same period.

Figure 14.56 that follows shows the resultant HGV movements for the 8 nighttime hours (23:00-07:00) on the local proposed road network connecting Areas N & L to the SPAR in Vehicles.

The resultant HGV movements for the 8 nighttime hours (23:00-07:00) is also shown in Figure 14.57 in PCUs.

In both diagrams the South Bank Road / Realigned White Bank Road Junction (location indicated by a red circle) shows that there are no traffic flows routed to or from Areas N & L during the nighttime period.

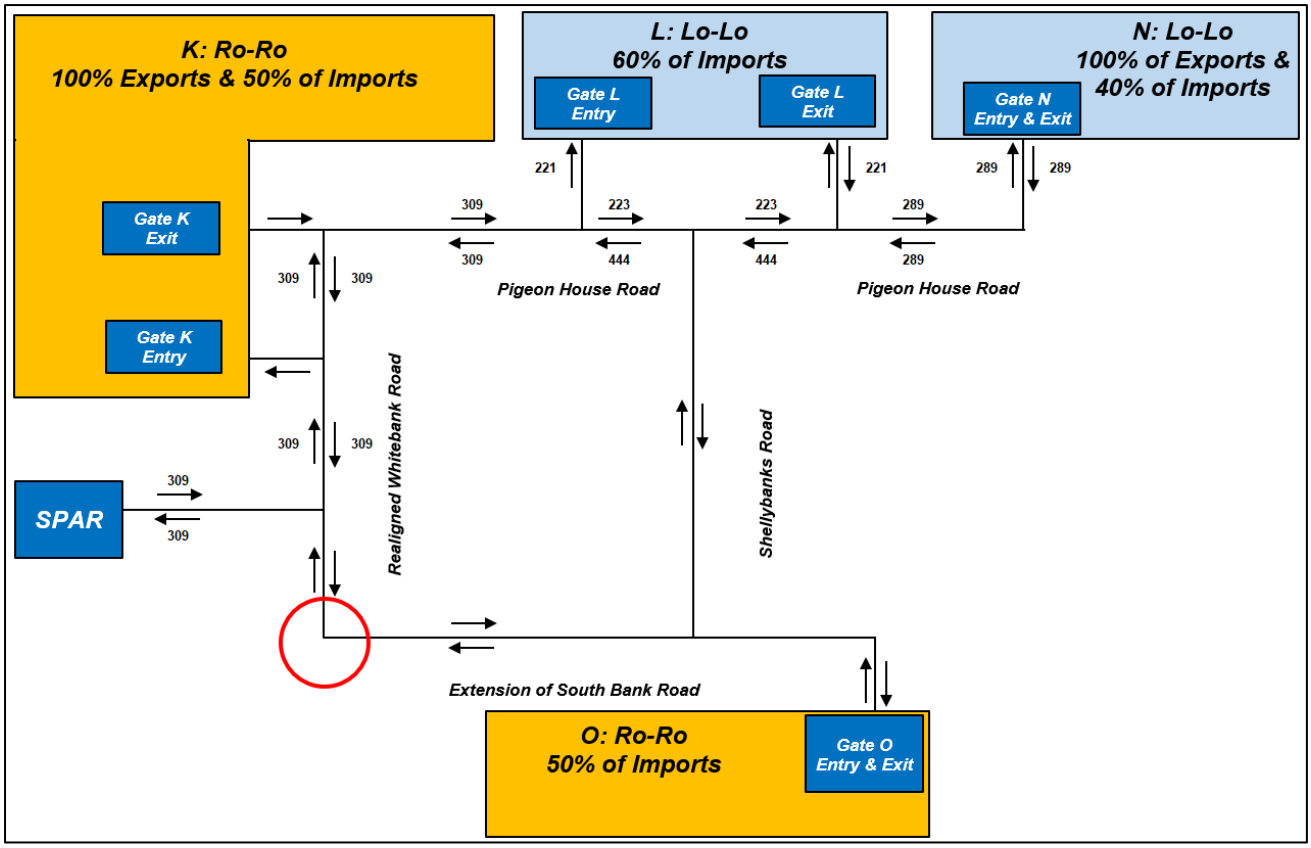


Figure 14.56 Schematic of HGV Traffic Flows for Lo-Lo Terminal –8 Hour (23:00-07:00) – Unit Vehicles

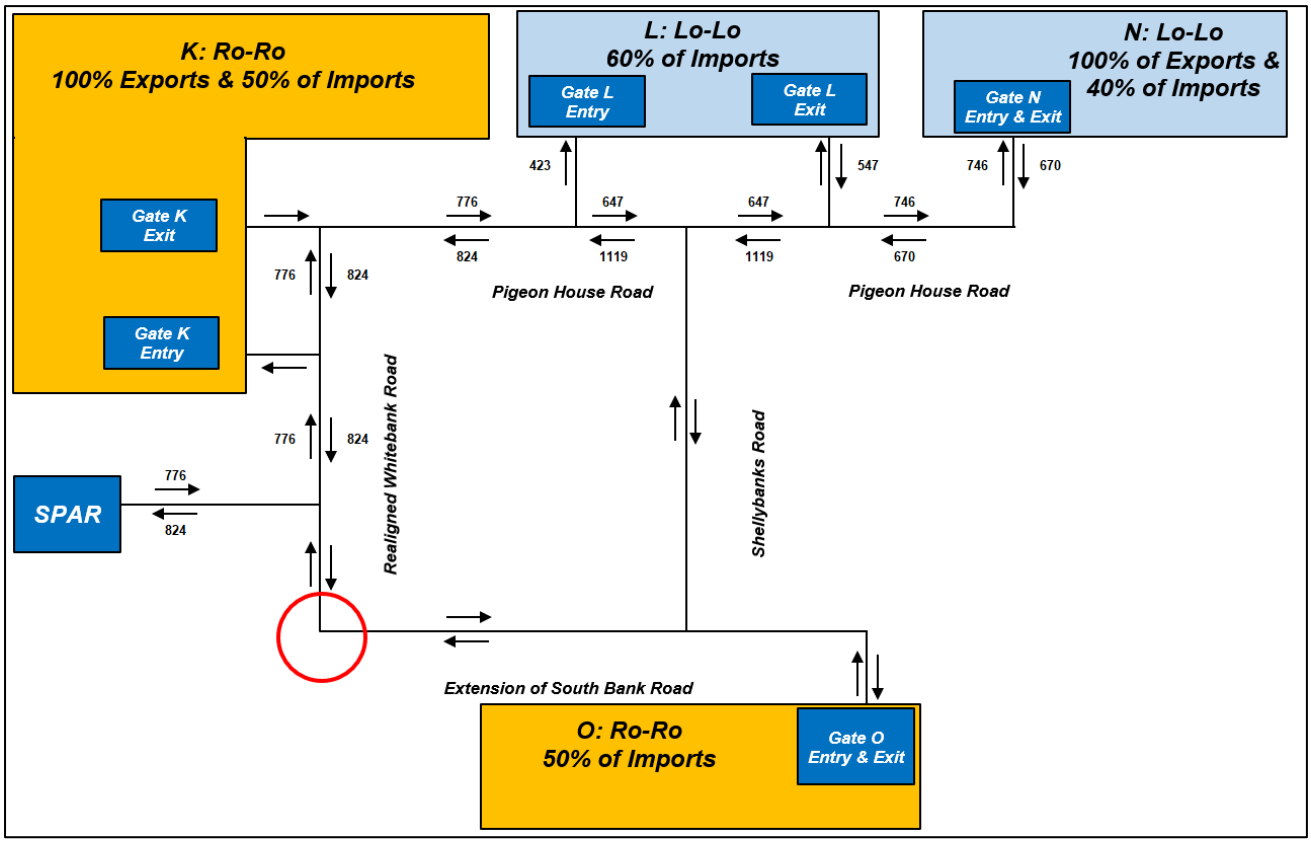


Figure 14.57 Schematic of HGV Traffic Flows for Lo-Lo Terminal – 8 Hour (23:00-07:00)– Unit PCUS

14.12.3 Proposed Generated HGVS for the Ro-Ro Terminal

A proposed daily breakdown of the HGVs generated by the Ro-Ro terminal (Areas K & O) is also presented below based on the same methodology as described above for the Lo-Lo Terminal.

14.12.3.1 Proposed Daily Traffic Flow Profile & Peaks

It is proposed that the Ro-Ro terminal will generate traffic evenly over the 24 hours. However, for assessment purposes port simulations introduce peaks for the week, day, and hour to provide robust assessments for operations and traffic flows as summarised in Table 14.20 above.

14.12.3.2 Throughput for the Ro-Ro Terminal

The proposed Ro-Ro Terminal will deliver an annual throughput capacity of approximately 360,000 Ro-Ro units or 8.69m tonnes.

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

- Ro-Ro Terminal - Area K: Annual throughput capacity of 252,000 Units pa. Handles 100% exports and 50% imports. HGV movements enter via a left-in only from the Realigned Whitebank Road. HGVs exit via the western exit arm of the proposed Pigeon House Road / Realigned Whitebank Road signalised junction.
- Ro-Ro Terminal – Area O: Annual throughput capacity of 108,000 Units pa. Handles 50% of imports. Entry & exit HGV movements are via a single access road located at the eastern side of the site.

For both Areas the site will be operational and the gates will be open for third party hauliers 24 hours per day as summarised below in Table 14.24.

Table 14.24 Area K & Area O Throughput and Gate Opening

	Area K	Area O
Throughput	**360,000 Units per annum**	
Operational & Gate Opening Time	**24-hour, 00:00 to 00:00**	**24-hour, 00:00 to 20:00**
Cargo Handled	**100% Exports, 50% Imports**	**50 % Imports**

The established 60/40 import/export ratio is applied to the 360,000 Ro-Ro Units throughput capacity per year for Area K and Area O:

- Units Per Year: = 360,000 Units pa
- Imports 360,000 * 60% = 216,000 Units pa
- Exports 360,000 * 40% = 144,000 Units pa

As shown in Table 14.24 above, Area K will handle 100% Exports in addition to 50% Imports; Area O will handle the remaining 50% Imports. Therefore, the breakdown of throughput handled at Area K and Area O is split further into these divisions as shown below:

- Exported Units handled at Area K Per Year: 144,000 * 100% = 144,000 Units pa
- Imported Units handled at Area K Per Year: 216,000 * 50% = 108,000 Units pa
- Imported Units handled at Area L Per Year: 216,000 * 50% = 108,000 Units pa

Table 14.25 summarises the number of units handled by each Area for each time period when the stress test are considered.

Table 14.25 Area K & Area O Number of Units Handled per Assessment Period

Area	No of Units	
	Average for comparison	**Stress test values used in TTA**
Area K	*4,846 Units per week* *692 Units per day* *29 Units per hour*	5,573 Units per week 1003 Units per day 60 Units per hour
Area O	*2,077 Units per week* *297 Units per day* *12 Units per hour*	2,388 Units per week 430 Units per day 26 Units per hour

14.12.3.3 Shunting at the Ro-Ro Terminal

The shunting activity between Areas K & O will be the same value as the number of laden HGVs that leave Area O and exit directly via the SPAR.

14.12.3.4 HGV Routing for the Ro-Ro terminal (Areas K & O)

Appendix 14.1 contains details of the proposed HGV routing (entry, exit and between Areas) for Areas K & O (the Ro-Ro terminal) for the units and the shunters. Notably HGVs are routed away from the Glass Bottle site during the night-time hours of 23:00-07:00 to minimise any potential inconvenience to residents. The only exception is port shunting vehicles returning unladen from Area O to Area K, however all port shunting vehicles will be electrically powered or similar to provide lower carbon & reduced noise benefits.

14.12.3.5 Proposed Generated HGVs for the Ro-Ro Terminal

The figures that follow provide a tabulated summary of the HGV traffic movements described above for the assessment periods.

- Worst case peak hour.
- Daytime hours 0700-2300;
- Nighttime hours 2300-0700;

Schematics are also provided to display the resultant HGV movements for each assessment period on the local proposed road network connecting Areas K & O to the SPAR.

THIRD PARTY HAULIERS for K & O - Worst Case Peak Hour

VEHICLES

	Arrivals		Departures		Total	
Area K	**34**	HGVs Loaded with Containers for Export	26	HGVs Loaded with Containers for Import		
			9	Empty HGVS travelling from K to O		
			34	Total Departues	**69**	HGVs
	Arrivals		**Departures**		**Total**	
Area O	9	Empty HGVS travelling from K to O	9	HGVs Loaded with Containers for Import		
	17	Empty HGVS travelling from the SPAR to O	17	HGVs Loaded with Containers for Import		
	26		**26**	Total Departues	**52**	HGVs

SHUNTING BETWEEN K & O - Worst Case Peak Hour

VEHICLES

	Arrivals		Departures		Total	
Area K	26	Empty Shunters arrive back at K	26	Loaded Shunters Depart K and head to O	**52**	HGVs
	Arrivals		**Departures**		**Total**	
Area O	26	Loaded Shunters arrive from K to O	26	Empty Shunters depart O and head back to K	**52**	HGVs

Total Vehicles for K and O - Worst Case Peak Hour

VEHICLES

	Arrivals	Departures	Total	
Area K	60	60	**120**	HGVs
	Arrivals	**Departures**	**Total**	
Area O	52	52	**103**	HGVs

Figure 14.58 HGV Traffic Flows for Ro-Ro Terminal – Worst Case Peak Hour

Figure 14.58 shows that 60 HGVs will arrive and depart at Area K in a worst-case peak hour, and 52 HGVs will arrive and depart at Area O in the same period.

Figure 14.59 that follows shows the resultant HGV movements for the worst-case peak hour on the local proposed road network connecting Areas K & O to the SPAR in vehicles.

The resultant HGV movements for the worst-case peak hours is also shown in Figure 14.60 in PCUs. PCUs take account of the laden (PCU conversion rate of 2.9) and unladen (PCU conversion rate of 1.5) HGVs.

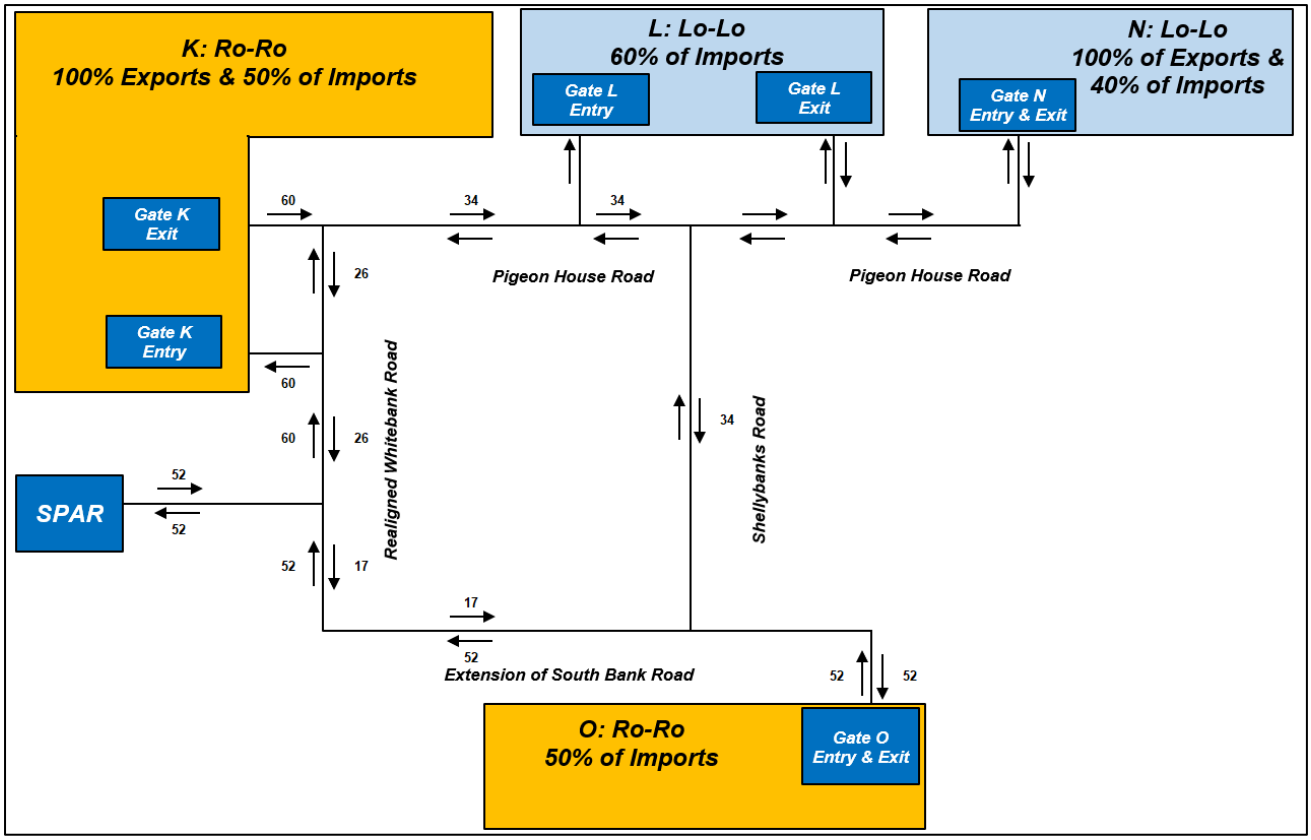


Figure 14.59 Schematic of HGV Traffic Flows for Ro-Ro Terminal – Worst Case Peak Hour – Unit Vehicles

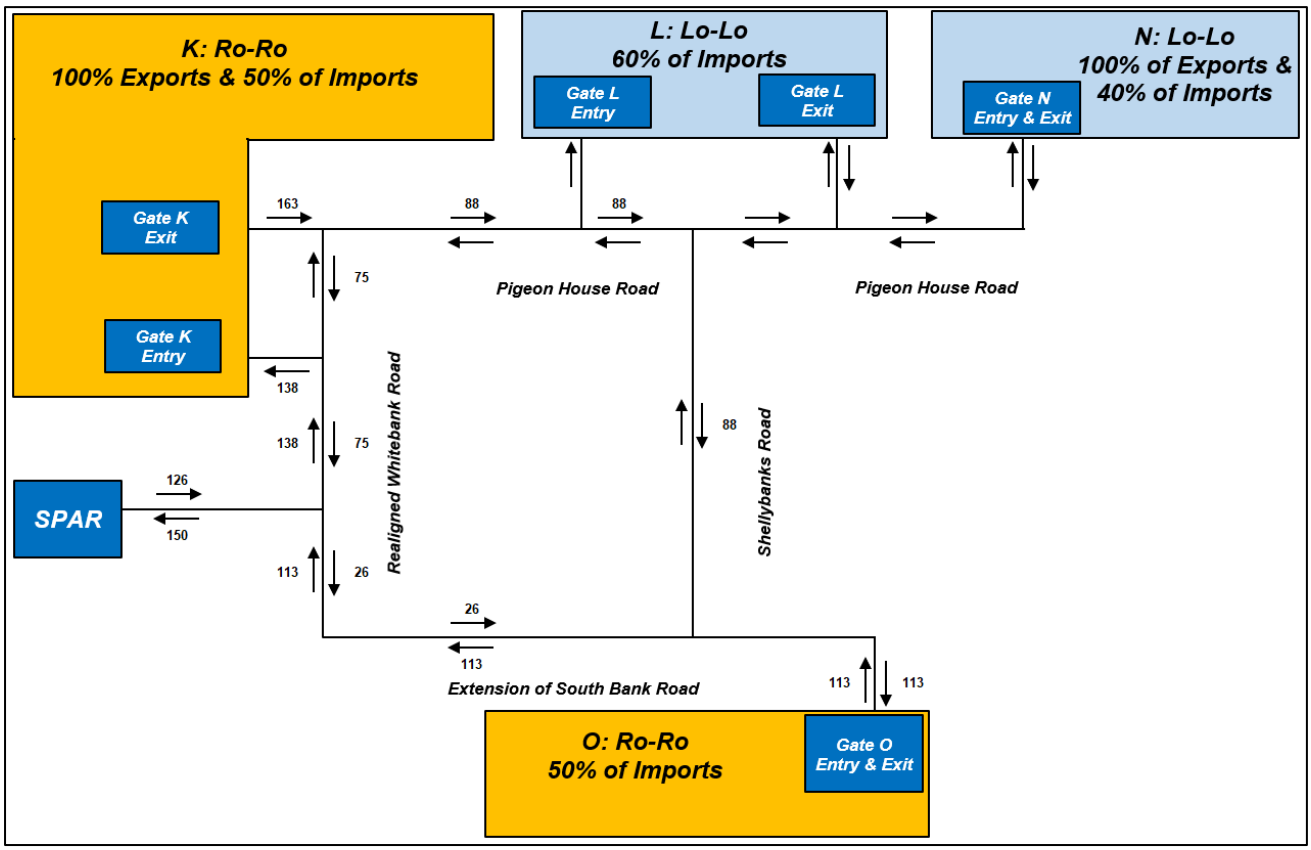


Figure 14.60 Schematic of HGV Traffic Flows for Ro-Ro Terminal – Worst Case Peak Hour – Unit PCUS

THIRD PARTY HAULIERS for K & O - 16 Hour (0700-2300)						
			VEHICLES			
	Arrivals		Departures		Total	
Area K	382	HGVs Loaded with Containers for Export	287	HGVs Loaded with Containers for Import		
			96	Empty HGVS travelling from K to O		
			382	Total Departues	764	HGVs
	Arrivals		Departures		Total	
Area O	96	Empty HGVS travelling from K to O	96	HGVs Loaded with Containers for Import		
	191	Empty HGVS travelling from the SPAR to O	191	HGVs Loaded with Containers for Import		
	287		287	Total Departues	573	HGVs

SHUNTING BETWEEN K & O - 16 Hour (0700-2300)						
			VEHICLES			
	Arrivals		Departures		Total	
Area K	287	Empty Shunters arrive back at K	287	Loaded Shunters Depart K and head to O	573	HGVs
	Arrivals		Departures		Total	
Area O	287	Loaded Shunters arrive from K to O	287	Empty Shunters depart O and head back to K	573	HGVs

Total Vehicles for K and O - 16 Hour (0700-2300)					
	VEHICLES				
	Arrivals	Departures	Total		
Area K	669	669	1338	HGVs	
	Arrivals	Departures	Total		
Area O	573	573	1146	HGVs	

Figure 14.61 HGV Traffic Flows for Ro-Ro Terminal – 16 Hour (07:00-23:00)

Figure 14.61 shows that 1,338 HGVs will arrive and depart at Area K during the 16 hours (07:00-23:00), and 573 HGVs will arrive and depart at Area O in the same period.

Figure 14.62 that follows shows the resultant HGV movements for the 16 hours (07:00-23:00) on the local proposed road network connecting Areas K & O to the SPAR in vehicles.

The resultant HGV movements for the 16 hours (07:00-23:00) is also shown in Figure 14.63 in PCUs.

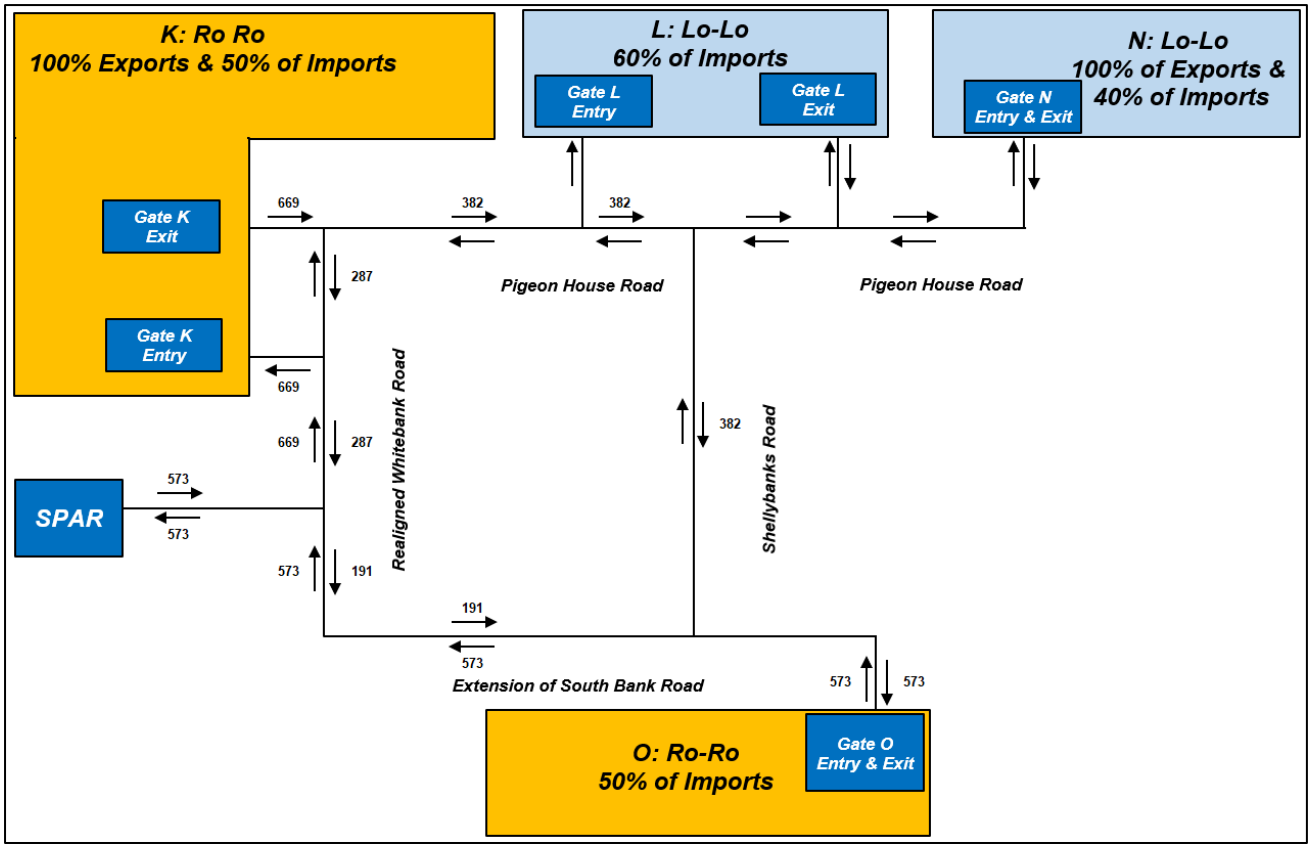


Figure 14.62 Schematic of HGV Traffic Flows for Ro-Ro Terminal –16 Hour (07:00-23:00) – Unit Vehicles

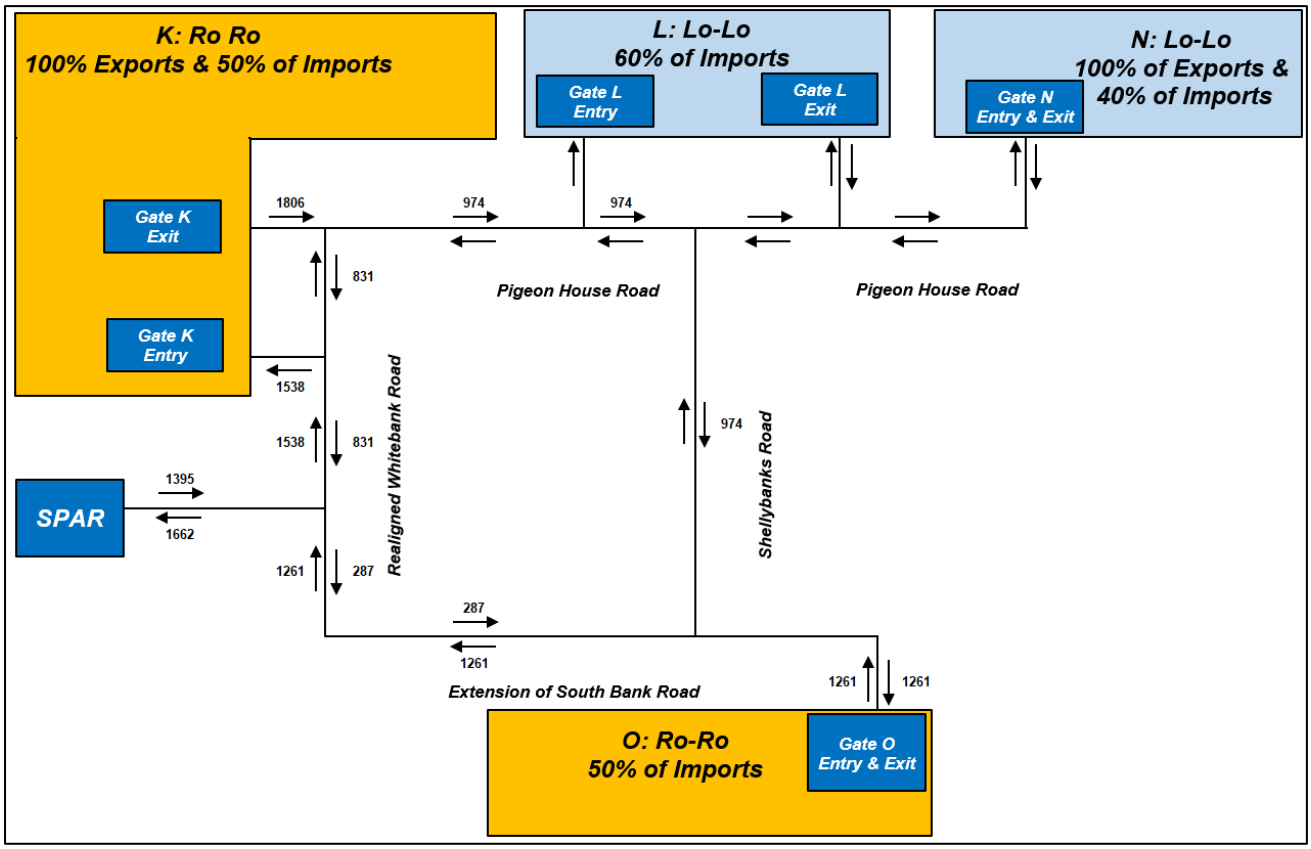


Figure 14.63 Schematic of HGV Traffic Flows for Ro-Ro Terminal – 16 Hour (07:00-23:00)– Unit PCUS

THIRD PARTY HAULIERS for K & O - 8 Hour Nighttime (2300-0700)						
	VEHICLES					
	Arrivals		Departures		Total	
Area K	191	HGVs Loaded with Containers for Export	143	HGVs Loaded with Containers for Import		
			48	Empty HGVS travelling from K to O		
			191	Total Departues	382	HGVs
	Arrivals		Departures		Total	
Area O	48	Empty HGVS travelling from K to O	48	HGVs Loaded with Containers for Import		
	96	Empty HGVS travelling from the SPAR to O	96	HGVs Loaded with Containers for Import		
	143		143	Total Departues	287	HGVs

SHUNTING BETWEEN K & O - 8 Hour Nighttime (2300-0700)						
	VEHICLES					
	Arrivals		Departures		Total	
Area K	143	Empty Shunters arrive back at K	143	Loaded Shunters Depart K and head to O	287	HGVs
	Arrivals		Departures		Total	
Area O	143	Loaded Shunters arrive from K to O	143	Empty Shunters depart O and head back to K	287	HGVs

Total Vehicles for K and O - 8 Hour Nighttime (2300-0700)					
	VEHICLES				
	Arrivals	Departures	Total		
Area K	334	334	669	HGVs	
	Arrivals	Departures	Total		
Area O	287	287	573	HGVs	

Figure 14.64 HGV Traffic Flows for Ro-Ro Terminal – 8 Hour Nighttime (23:00-07:00)

Figure 14.64 shows that 334 HGVs will arrive and depart at Area K during the 8 nighttime hours (23:00-07:00), and 287 HGVs will arrive and depart at Area O in the same period.

Figure 14.65 that follows shows the resultant HGV movements for the 8 nighttime hours (23:00-07:00) on the local proposed road network connecting Areas K & O to the SPAR in Vehicles.

The resultant HGV movements for the 8 nighttime hours (23:00-07:00) is also shown in Figure 14.66 in PCUs.

In both diagrams the vehicles using the South Bank Road / Realigned White Bank Road Junction are Port shunting vehicles returning unladen from Area O to Area K which will be will be electrically powered or similar to provide lower carbon & reduced noise benefits.

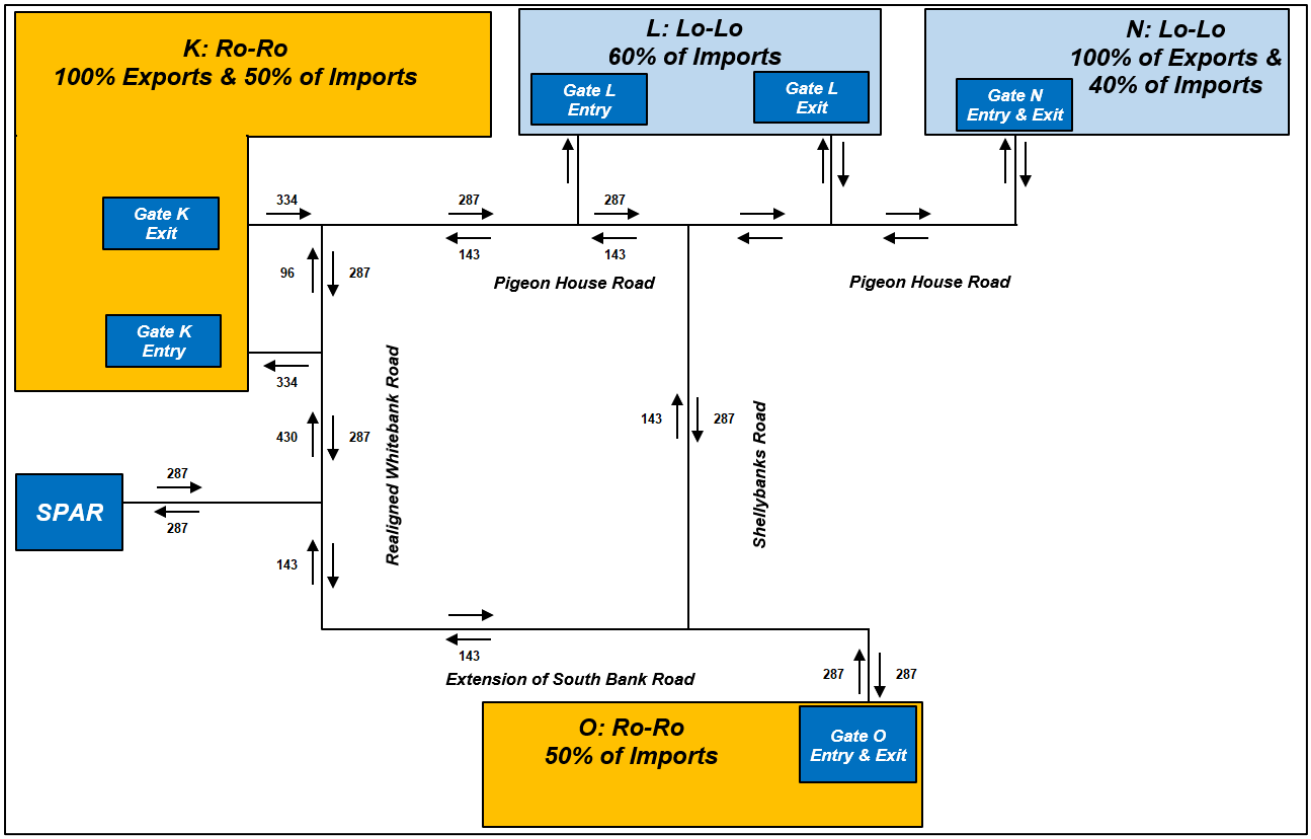


Figure 14.65 Schematic of HGV Traffic Flows for Ro-Ro Terminal –8 Hour (23:00-07:00) – Unit Vehicles

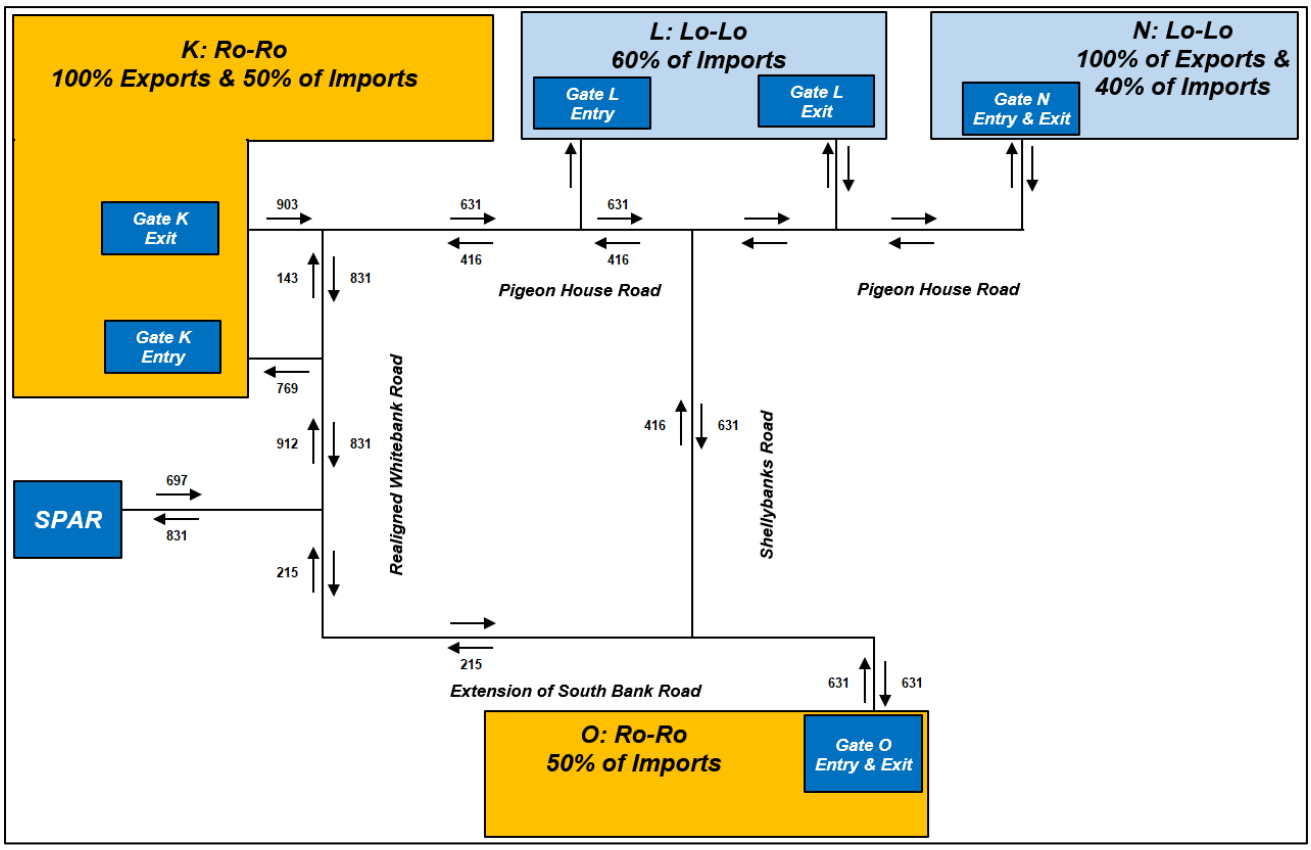


Figure 14.66 Schematic of HGV Traffic Flows for Ro-Ro Terminal – 8 Hour (23:00-07:00)– Unit PCUS

14.12.4 Proposed Multi-modal Trip Generation & Parking Provision for Lo-Lo and Ro-Ro Terminals Staff & Visitors

A 24-hour multi-modal trip breakdown and parking provision for staff and visitors at the proposed Areas K, N, L and O has been derived based on the staff numbers and surveyed conditions at the existing MTL site in 2022 as directed in the DCC Development Plan 2022-2028. The details are presented below.

14.12.4.1 Parking Standards

The DCC Development Plan 2022-2028 provides maximum cycle and car parking standards for different land uses. *(Appendix 5 Transport and Mobility: Technical Requirements. Chapter 4.0, Table 1: Bicycle Parking Standards for Various Land Uses and Table 2: Maximum Car Parking Standards for various Land Uses).* As theses standard do not specifically refer to parking provision for Lo-Lo or Ro-Ro land use in port environs, the following guidance applies (contained within the notes accompanying Table 1 and Table 2):

> 'For any land use not outlined in Table 1 Bicycle Parking & Table 2 Car Parking, the default parking rate will be calculated based on those of a comparable use and/or determined as part of a Transport and Traffic Assessment and/or Mobility Management Strategy.'

Therefore, the proposed car and cycling parking provision for the proposed Areas K, N, O & L has been calculated based on the existing MTL site as this site is comparable i.e. it is an existing Lo-Lo operation located on the Poolbeg Peninsula. It is the only a large scale containerisation operation located partially on part of the same footprint as the 3FM Project.

14.12.4.2 Existing MTL

Figure 14.67 shows the location of the existing MTL site on the Poolbeg Peninsula.

Figure 14.67 The Existing MTL Site

The existing MTL site details are as follows:

- The existing opening hours for the gates at MTL are 06:00 to 18:30 Monday to Friday, and 08:00 to 12:00 Saturday; closed on Sundays.
- Maximum of 50 staff on duty during the day when the gates are open.
- 23 on duty at night when the gates are closed.
- Total of 40 existing parking spaces available.

14.12.4.3 Multi-modal Survey at the existing MTL

Various modes of travel are used by the existing MTL staff & Visitors when entering/exiting the site. These include entry/exit by foot, push cycle, scooter, motorbike, and car. RPS interrogated the camera footage from the traffic surveys, carried out on Wednesday 25 May 2022 to determine the multi-modal existing trip to and from the site.

Figure 14.68 below shows extracts from the footage of various travel modes from the existing camera footage.

Figure 14.68 Extracts from the footage of various travel modes at the existing MTL site

14.12.4.4 Existing MTL Modal Breakdown

Figure 14.69 displays multimodal data collected on 25 May 2022 over a 24-hour period.

Existing Modal Breakdown for MTL 2022

Entries/Exits	Enter Via Foot	Exit Via Foot	Enter Via Car	Exit Via Car	Enter Via Push	Exit Via Push	Enter Via M'Cycle	Exit Via M'Cycle	Enter Via Scooter	Exit Via Scooter	Totals	Total Arrivals	Total Departures	Car Park Occupancy Cumulative
Time														10
04:00-05:00	1		1	1							3	2	1	10
05:00-06:00	1		5								6	6	0	15
06:00-07:00	2		16	7	6						31	24	7	24
07:00-08:00			7	2							9	7	2	29
08:00-09:00	2		3	1	1						7	6	1	31
09:00-10:00			6	1							7	6	1	36
10:00-11:00			4	7							11	4	7	33
11:00-12:00			5	2	1		1	1			10	7	3	36
12:00-13:00				1							1	0	1	35
13:00-14:00			3	3							6	3	3	35
14:00-15:00			5	3	1						9	6	3	37
15:00-16:00			2	3		1					6	2	4	36
16:00-17:00		1	1	3		1					6	1	5	34
17:00-18:00		2	1	6	1	5			1		16	3	13	29
18:00-19:00		5	7	15	1	1			1		30	9	21	21
19:00-20:00	1		2							1	4	3	1	23
20:00-21:00											0	0	0	23
21:00-22:00											0	0	0	23
22:00-23:00	2		3	4							9	5	4	22
23:00-00:00	1		3	1							5	4	1	24
00:00-01:00											0	0	0	24
01:00-02:00				4							4	0	4	20
02:00-03:00											0	0	0	20
03:00-04:00											0	0	0	20
	Foot		Car		Cycle		M'Cycle		Scooter					
Totals	10	8	74	64	11	8	1	1	2	1	180	98	82	
	18		138		19		2		3					
	10%		77%		12%		1%							

Figure 14.69 Existing Multi-modal trip data at MTL 2022

Figure 14.69 shows that 18 (10%) of staff & visitors enter/exit by foot, 138 (77%) enter/exit by private car, 2 (1%) enter/exit by motorcycle and 22 (12%) by cycle/scooter.

There is a total of 180 arrivals and departures combined over the 24-hour period. Peak trips occur during the staff shift turnover times as expected, with 24 trips arriving at the site between 06:00-07:00 and 7 departures which aligns with the 06:00 shift start time. Between 18:00-19:00 there are 9 trip arrivals and 21 departures which aligns with the shift turnover at 18:30.

The cumulative car parking calculation shows that a maximum of 37 staff and visitor vehicles are on the site at any one time. This occurs between 14:00-15:00 and aligns with the existing provision of 40 parking spaces.

14.12.4.5 Proposed Operational Staffing Levels at Areas N, L, K & O

Table 14.26 shows the proposed staff levels required for each Area per shift once for areas are complete & operational.

Table 14.26 Proposed Staff Levels at Areas N, L, K & O per shift

Proposed Terminal	Area	Total Number of Proposed Staff in 2040 per shift
Lo-Lo Terminal	**N**	108
	L	28
Ro-Ro Terminal	**K**	55
	O	6

As Table 14.26 shows there will 108 staff per shift at Area N and 28 as Area L. Area K will have 55 staff per shift with 6 at Area O. The full breakdown of the staff per Area is included in the MMP, included in Appendix 14.2.

14.12.4.6 Proposed Modal Breakdown & Parking Provision for Areas N, L, K &O

A 24-hour multi-modal breakdown and parking (car & cycling) provision for the proposed Ro-Ro and Lo-Lo Terminals (Areas K&O and N&L respectively) have been derived based on comparing the staff numbers for the proposed terminals with the staff numbers and existing multi-modal survey at the MTL site.

The figures that follow display the proposed modal split for staff & visitors at each of the Areas N, L, K & O over a 24hr period based on each shift lasting 12 hours, with a shift changeover at 06:00 and 18:00. The proposed modal breakdown for the Lo-Lo and Ro-Ro Terminals assumes a modal split of 60% for private car use, a modal shift compared to the surveyed levels at MTL of 77% private car use in 2022. The Figures below also display the cumulative parking occupancy calculation that has been carried out to derive the number of car and cycle parking spaces required.

Proposed Modal Breakdown for Area N 2040												Parking Occupancy Cumulative	
Trip Mode	Enter Via Foot	Exit Via Foot	Enter Via Car	Exit Via Car	Enter Via Push Cycle / Scooter	Exit Via Push Cycle / Scooter	Enter Via M'Cycle	Exit Via M'Cycle	Totals	Total Arrivals	Total Departures	CAR	CYCLE
Time													
04:00-05:00	0	3	2	4	0	3	0	0	11	2	9	48	17
05:00-06:00	0	6	2	14	6	14	0	0	42	8	35	36	9
06:00-07:00	12	15	29	36	17	9	0	0	**117**	58	59	29	17
07:00-08:00	6	0	12	4	0	3	0	0	25	18	6	37	14
08:00-09:00	6	0	5	2	3	0	0	0	16	14	2	41	17
09:00-10:00	0	0	11	2	0	0	0	0	12	11	2	50	17
10:00-11:00	0	0	7	12	0	0	0	0	20	7	12	45	17
11:00-12:00	0	0	9	4	3	0	8	8	31	20	11	50	20
12:00-13:00	0	0	0	2	0	0	0	0	2	0	2	48	20
13:00-14:00	0	0	5	5	0	0	0	0	11	5	5	48	20
14:00-15:00	0	0	9	5	3	0	0	0	17	12	5	52	23
15:00-16:00	0	0	4	5	0	3	0	0	12	4	8	50	20
16:00-17:00	0	3	2	4	0	3	0	0	11	2	9	48	17
17:00-18:00	0	6	2	14	6	14	0	0	42	8	35	36	9
18:00-19:00	12	15	29	36	17	9	0	0	**117**	58	59	29	17
19:00-20:00	6	0	12	4	0	3	0	0	25	18	6	37	14
20:00-21:00	6	0	5	2	3	0	0	0	16	14	2	41	17
21:00-22:00	0	0	11	2	0	0	0	0	12	11	2	50	17
22:00-23:00	0	0	7	12	0	0	0	0	20	7	12	45	17
23:00-00:00	0	0	9	4	3	0	8	8	31	20	11	50	20
00:00-01:00	0	0	0	2	0	0	0	0	2	0	2	48	20
01:00-02:00	0	0	5	5	0	0	0	0	11	5	5	48	20
02:00-03:00	0	0	9	5	3	0	0	0	17	12	5	52	23
03:00-04:00	0	0	4	5	0	3	0	0	12	4	8	50	20
	Foot		Car		Cycle		M'Cycle						
Totals	47	47	189	189	63	63	16	16	631	315	315		
	15.0%	15.0%	60.0%	60.0%	20.0%	20.0%	5.0%	5.0%					
	95		378		126		32						
	15%		60%		20%		5%						

Figure 14.70 Proposed Multi-modal Trip Breakdown for Proposed & Cumulative Parking Calculations, Area N 2040

Figure 14.70 shows that during each shift changeover at Area N there will be 58 staff and visitor arrivals and 59 departures. There will be 631 staff & visitor trips per day with 378 travelling by private car, 32 by motorcycle and 221 by sustainable and active travel modes.

The cumulative parking occupancy calculation has determined that 52 car parking spaces and 23 cycle parking spaces are required at Area N.

Proposed Modal Breakdown for Area L 2040												Parking Occupancy Cumulative	
Trip Mode	Enter Via Foot	Exit Via Foot	Enter Via Car	Exit Via Car	Enter Via Push Cycle / Scooter	Exit Via Push Cycle / Scooter	Enter Via M'Cycle	Exit Via M'Cycle	Totals	Total Arrivals	Total Departures	CAR	CYCLE
Time													
04:00-05:00	0	1	0	1	0	1	0	0	3	0	2	12	4
05:00-06:00	0	2	0	4	1	4	0	0	11	2	9	9	2
06:00-07:00	3	4	7	9	4	2	0	0	**30**	15	15	7	4
07:00-08:00	2	0	3	1	0	1	0	0	6	5	2	10	4
08:00-09:00	2	0	1	0	1	0	0	0	4	4	0	11	4
09:00-10:00	0	0	3	0	0	0	0	0	3	3	0	13	4
10:00-11:00	0	0	2	3	0	0	0	0	5	2	3	12	4
11:00-12:00	0	0	2	1	1	0	2	2	8	5	3	13	5
12:00-13:00	0	0	0	0	0	0	0	0	0	0	0	12	5
13:00-14:00	0	0	1	1	0	0	0	0	3	1	1	12	5
14:00-15:00	0	0	2	1	1	0	0	0	4	3	1	13	6
15:00-16:00	0	0	1	1	0	1	0	0	3	1	2	13	5
16:00-17:00	0	1	0	1	0	1	0	0	3	0	2	12	4
17:00-18:00	0	2	0	4	1	4	0	0	11	2	9	9	2
18:00-19:00	3	4	7	9	4	2	0	0	**30**	15	15	7	4
19:00-20:00	2	0	3	1	0	1	0	0	6	5	2	10	4
20:00-21:00	2	0	1	0	1	0	0	0	4	4	0	11	4
21:00-22:00	0	0	3	0	0	0	0	0	3	3	0	13	4
22:00-23:00	0	0	2	3	0	0	0	0	5	2	3	12	4
23:00-00:00	0	0	2	1	1	0	2	2	8	5	3	13	5
00:00-01:00	0	0	0	0	0	0	0	0	0	0	0	12	5
01:00-02:00	0	0	1	1	0	0	0	0	3	1	1	12	5
02:00-03:00	0	0	2	1	1	0	0	0	4	3	1	13	6
03:00-04:00	0	0	1	1	0	1	0	0	3	1	2	13	5
	Foot		Car		Cycle		M'Cycle						
Totals	12	12	49	49	16	16	4	4	164	82	82		
	15.0%	15.0%	60.0%	60.0%	20.0%	20.0%	5.0%	5.0%					
	25		98		33		8						
	15%		60%		20%		5%						

Figure 14.71 Proposed Multi-modal Trip Breakdown for Proposed & Cumulative Parking Calculations, Area L 2040

Figure 14.71 shows that during each shift changeover at Area L there will be 15 staff & visitor arrivals and 15 departures. There will be 164 staff and visitor trips per day with 98 travelling by private car, 8 by motorcycle and 58 by sustainable and active travel modes.

The cumulative parking occupancy calculation has determined that 13 car parking spaces and 6 cycle parking spaces are required at Area L.

Proposed Modal Breakdown for Area K 2040												Parking Occupancy Cumulative	
Trip Mode	Enter Via Foot	Exit Via Foot	Enter Via Car	Exit Via Car	Enter Via Push Cycle / Scooter	Exit Via Push Cycle / Scooter	Enter Via M'Cycle	Exit Via M'Cycle	Totals	Total Arrivals	Total Departures	CAR	CYCLE
Time													
04:00-05:00	0	2	1	2	0	1	0	0	6	1	5	25	9
05:00-06:00	0	3	1	7	3	7	0	0	21	4	18	18	4
06:00-07:00	6	8	15	18	9	4	0	0	59	29	30	15	9
07:00-08:00	3	0	6	2	0	1	0	0	13	9	3	19	7
08:00-09:00	3	0	3	1	1	0	0	0	8	7	1	21	9
09:00-10:00	0	0	5	1	0	0	0	0	6	5	1	25	9
10:00-11:00	0	0	4	6	0	0	0	0	10	4	6	23	9
11:00-12:00	0	0	5	2	1	0	4	4	16	10	6	25	10
12:00-13:00	0	0	0	1	0	0	0	0	1	0	1	25	10
13:00-14:00	0	0	3	3	0	0	0	0	5	3	3	25	10
14:00-15:00	0	0	5	3	1	0	0	0	9	6	3	26	12
15:00-16:00	0	0	2	3	0	1	0	0	6	2	4	25	10
16:00-17:00	0	2	1	2	0	1	0	0	6	1	5	25	9
17:00-18:00	0	3	1	7	3	7	0	0	21	4	18	18	4
18:00-19:00	6	8	15	18	9	4	0	0	59	29	30	15	9
19:00-20:00	3	0	6	2	0	1	0	0	13	9	3	19	7
20:00-21:00	3	0	3	1	1	0	0	0	8	7	1	21	9
21:00-22:00	0	0	5	1	0	0	0	0	6	5	1	25	9
22:00-23:00	0	0	4	6	0	0	0	0	10	4	6	23	9
23:00-00:00	0	0	5	2	1	0	4	4	16	10	6	25	10
00:00-01:00	0	0	0	1	0	0	0	0	1	0	1	25	10
01:00-02:00	0	0	3	3	0	0	0	0	5	3	3	25	10
02:00-03:00	0	0	5	3	1	0	0	0	9	6	3	26	12
03:00-04:00	0	0	2	3	0	1	0	0	6	2	4	25	10
	Foot		Car		Cycle		M'Cycle						
Totals	24	24	96	96	32	32	8	8	321	161	161		
	15.0%	15.0%	60.0%	60.0%	20.0%	20.0%	5.0%	5.0%					
	48		193		64		16						
	15%		60%		20%		5%						

Figure 14.72 Proposed Multi-modal Trip Breakdown for Proposed & Cumulative Parking Calculations, Area K 2040

Figure 14.72 shows that during each shift changeover at Area K there will be 29 staff & visitor arrivals and 30 departures. There will be 321 staff and visitor trips per day with 193 travelling by private car, 16 by motorcycle and 112 by sustainable and active travel modes.

The cumulative parking occupancy calculation has determined that 26 car parking spaces and 12 cycle parking spaces are required at Area K.

Proposed Modal Breakdown for Area O 2040												Parking Occupancy Cumulative	
Trip Mode	Enter Via Foot	Exit Via Foot	Enter Via Car	Exit Via Car	Enter Via Push Cycle / Scooter	Exit Via Push Cycle / Scooter	Enter Via M'Cycle	Exit Via M'Cycle	Totals	Total Arrivals	Total Departures	CAR	CYCLE
Time													
04:00-05:00	0	0	0	0	0	0	0	0	1	0	1	3	1
05:00-06:00	0	0	0	1	0	1	0	0	2	0	2	2	0
06:00-07:00	1	1	2	2	1	0	0	0	6	3	3	2	1
07:00-08:00	0	0	1	0	0	0	0	0	1	1	0	2	1
08:00-09:00	0	0	0	0	0	0	0	0	1	1	0	2	1
09:00-10:00	0	0	1	0	0	0	0	0	1	1	0	3	1
10:00-11:00	0	0	0	1	0	0	0	0	1	0	1	2	1
11:00-12:00	0	0	0	0	0	0	0	0	2	1	1	3	1
12:00-13:00	0	0	0	0	0	0	0	0	0	0	0	3	1
13:00-14:00	0	0	0	0	0	0	0	0	1	0	0	3	1
14:00-15:00	0	0	0	0	0	0	0	0	1	1	0	3	1
15:00-16:00	0	0	0	0	0	0	0	0	1	0	0	3	1
16:00-17:00	0	0	0	0	0	0	0	0	1	0	1	3	1
17:00-18:00	0	0	0	1	0	1	0	0	2	0	2	2	0
18:00-19:00	1	1	2	2	1	0	0	0	6	3	3	2	1
19:00-20:00	0	0	1	0	0	0	0	0	1	1	0	2	1
20:00-21:00	0	0	0	0	0	0	0	0	1	1	0	2	1
21:00-22:00	0	0	1	0	0	0	0	0	1	1	0	3	1
22:00-23:00	0	0	0	1	0	0	0	0	1	0	1	2	1
23:00-00:00	0	0	0	0	0	0	0	0	2	1	1	3	1
00:00-01:00	0	0	0	0	0	0	0	0	0	0	0	3	1
01:00-02:00	0	0	0	0	0	0	0	0	1	0	0	3	1
02:00-03:00	0	0	0	0	0	0	0	0	1	1	0	3	1
03:00-04:00	0	0	0	0	0	0	0	0	1	0	0	3	1
	Foot		Car		Cycle		M'Cycle						
Totals	3	3	11	11	4	4	1	1	35	18	18		
	15.0%	15.0%	60.0%	60.0%	20.0%	20.0%	5.0%	5.0%					
	5		21		7		2						
	15%		60%		20%		5%						

Figure 14.73 Proposed Multi-modal Trip Breakdown for Proposed & Cumulative Parking Calculations, Area O 2040.

Figure 14.73 shows that during each shift changeover at Area O there will be 3 staff & visitor arrivals and 3 departures. There will be 35 staff and visitor trips per day with 21 travelling by private car, 2 by motorcycle and 12 by sustainable and active travel modes.

The cumulative parking occupancy calculation has determined that 3 car parking spaces and 1 cycle parking spaces are required at Area O.

14.12.4.7 Summary of parking requirements for Lo-Lo and Ro-Ro Terminals

Table 14.27 summarises the breakdown of the proposed car parking provision (car, EV & cycle) for staff & visitors at Areas N&L (Lo-Lo Terminal) and K&O (Ro-Ro Terminal)

Table 14.27 Proposed Staff & Parking (Car, EV & Cycle) Levels at Areas N, L, K & O

Proposed Terminal	Area	Total Number of Proposed Staff in 2040 per shift	Total Number car parking spaces	Number of car parking spaces that are EV	Minimum Number of Cycle parking spaces required
Lo-Lo Terminal	**N**	108	52	26	23
	L	28	13	7	6
Ro-Ro Terminal	**K**	55	26	13	12
	O	6	3	2	1

14.12.5 Traffic Generation Maritime Village and Harbour Operations Centre

14.12.5.1 Traffic Generation at Maritime Village

DPC appointed Roughan & O'Donovan (ROD) to carry out a parking and access statement for the proposed Maritime Village taking into consideration its future use, access and parking arrangements. The traffic generation for Maritime Village is replicated in Figure 14.75 below.

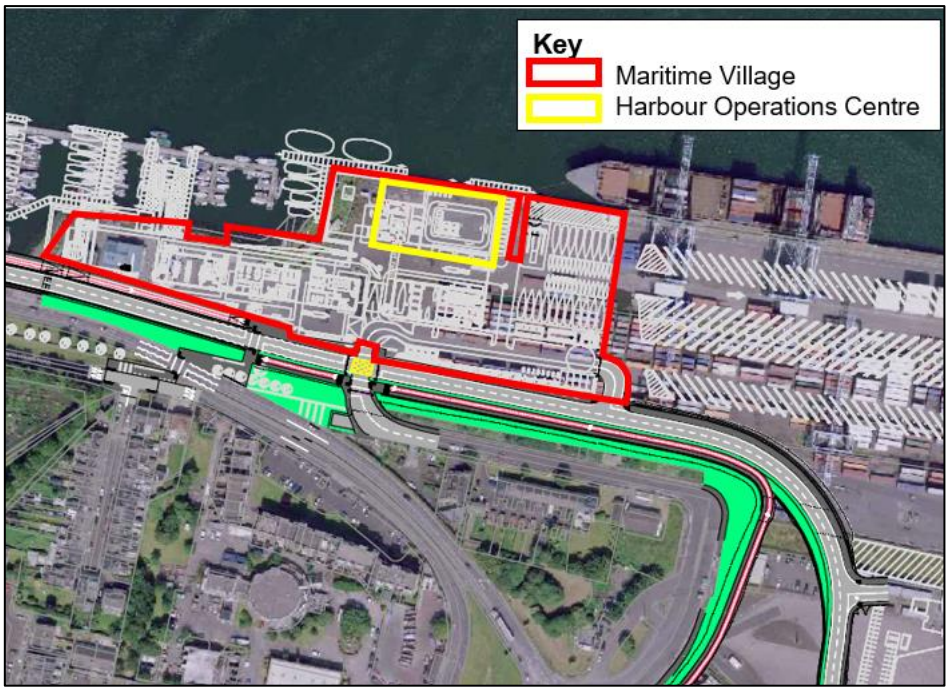


Figure 14.74 Proposed Site Location of Maritime Village and Harbour Operations Centre

The following Figure 14.75 summarises the expected traffic generation for the entire Maritime Village site, for the weekday AM Peak Hour (09:00 to 10:00), PM Peak Hour (17:00 to 18:00) and combined two-way total.

Building / Facility	Weekday AM Peak	Weekday PM Peak
Combined Rowing, Yacht & Boating Club	20	40
Harbour Operations Centre	10	10
Maritime Training Centre	10	10
Boat Maintenance Facility	5	5
Public Amenity	5	5
Combined Total	**50**	**70**

Figure 14.75 'Table 7-1: Traffic Generation Estimates – Two-way Hourly Numbers'

Figure 14.75 above shows that traffic accessing Maritime Village to make use of the rowing and yacht club facilities, the training centre, boat maintenance facility and public amenity space, will be a total 40 vehicles two-way during the AM peak hour, and 60 vehicles two-way during the PM peak hour.

ROD provided the 24-hour, 16-hour (07:00 to 23:00) and 8-hour (23:00 to 07:00) traffic generation for Maritime Village and Harbour Operations Centre. The information provided is shown in Figure 14.76 below.

Typical weekday traffic volumes	24 Hour			16 hr (07:00 - 23:00)	8hrs (23:00 - 07:00
Building / Facility	inbound	outbound	two-way	two-way	two-way
Harbour Operations	37	37	74	68	6
Combined Rowing, Yacht & Boating Club	163	163	327	302	24
Maritime Training Centre	10	10	20	19	2
Boat Maintenance Facility	5	5	10	9	1
Public Amenity	40	40	80	74	6
Combined Total	**255**	**255**	**511**	**472**	**38**

Figure 14.76 Traffic Generation for Maritime Village and Harbour Operations Centre from ROD

14.12.5.2 HGV Generation at Maritime Village and Harbour Operations Centre

ROD advised that the HGV content is 3% of the total traffic for the full site. From this, the number of HGV 's can be identified. To provide a robust assessment, HGVs are assumed to be OGV2 and the PCU value of 2.9 is applied. Therefore, the HGV generation for Maritime Village and Harbour Operations Centre is as follows:

Table 14.28 HGV Generation for Maritime Village and Harbour Operations Centre

	24-Hour			16-Hour (07:00-23:00)	8-Hour (23:00-07:00)
	Inbound	Outbound	Two-way	Two-way	Two-way
HGVs in Vehicles	8	8	15	14	1
HGVs in PCU*	22	22	45	41	3

**Assume HGVs are OGV2 and PCU value of 2.9 applied*

The following table provides a summary of the generated traffic for Maritime Village and Harbour Operations Centre in Vehicles and PCUs.

As explained above, HGVs are assumed to be OGV2 (PCU value 2.9). The remaining Non-HGVs are assigned a PCU value of 1.

Table 14.29 Summary of Traffic Generation for Maritime Village and Harbour Operations Centre in Vehicles and PCU

Typical Weekday Traffic Volumes	24-Hour			16-Hour (07:00-23:00)	8-Hour (23:00-07:00)
Building Facility	**Inbound**	**Outbound**	**Two-way**	**Two-way**	**Two-way**
Harbour Operations	37	37	74	68	6
Combined Rowing, Yacht & Boating Club	163	163	327	302	24
Maritime Training Centre	10	10	20	19	2
Boat Maintenance Facility	5	5	10	9	1
Public Amenity	40	40	80	74	6
Total Vehicles	255	255	511	472	38
HGV PCU	22	22	45	41	3
Non-HGV PCU	247	247	496	458	37
Total PCU	270	270	540	499	40

14.12.5.3 Proposed Traffic at Harbour Operations Centre

As per Figure 14.75 above, the proposed Harbour Operations Centre is anticipated to generate 10 vehicle movements two-way during the AM and PM peak hours respectively.

The daily, 16-hour and 8-hour traffic generation figures are provided in Table 14.29 above. The HGV generation is 3% of the entire Maritime Village and Harbour Operations Centre site.

Traffic accessing the Harbour Operations Centre is permitted on the SPAR.

14.12.5.4 Traffic Associated with Events at Maritime Village

Event management for the regattas and large events held by the clubs will be coordinated on a case-by-case basis with the event organisers, DCC and DPC.

14.12.6 Traffic Generation at Port Park

As advised by DCC Parks Department, Port Park will be a car-free scheme and has no generated traffic movements.

14.12.7 Public Transport on the SPAR

In order to provide further planning gain, it is proposed that public transport buses of 25+ passenger capacity are permitted on the SPAR. During pre-application discussions NTA indicated that the existing local bus services need to be adjacent to the communities they serve and didn't suggest any specific existing bus service that would use the SPAR. Five buses per direction per hour have been added to the SPAR in the transport modelling to allow for their inclusion within the proposed traffic flows.

14.12.8 Derivation of the Proposed Traffic Flows 2040

The information described above and throughout this Chapter has been used to derive the Proposed Traffic Flows for 2040 for each of the selected assessment periods as summarised in Table 14.30 below.

Table 14.30 Process to Derive the Proposed Traffic Flows 2040

Step	Process to Derive the Proposed Traffic Flows 2040
1	The SATURN model was calibrated for the base year (2023) based on the surveyed traffic flows.
2	The ANPR Origin-Destination data was used to: • separate port traffic and non-port traffic • Separate HGV from non-HGVs • to isolate the traffic from each land use as required in order to assign the differing growth rates between 2023 to 2040 as identified in Table 14.13 above.
3	External traffic will be grown in accordance with TII PAG Unit 5.3 for HV and LV.
4	Existing Port uses on the South Port Estate are being retained remain within the model and the applicable traffic growth rate for 2023-2040 is applied. These are: • Mollasses • Ecocem
5	Traffic flows from the existing port land uses on the South Port Estate that are required to construct the 3FM Project are removed. These are: • Coal Quay; • Scarp Yard; • Existing Area O – Port and non-port uses; • MTL, Rushfleet & Nolan. • Existing Maritime Village.
6	The Dublin Port North Estate traffic will be increased by a factor of 1.722 to reflect traffic growth between 2023 and 2040. It is proposed that the that current diurnal traffic patterns entering the Port for the North Port Estate get multiplied up on a pro-rata basis to establish the proposed traffic flows in 2040. This provides a robust assessment of the proposed road and junction improvements within the North Port Estate as there may be trend towards the spreading of peak hours and night-time running through the Dublin Tunnel (M50) especially towards the end of the DPMP2040. If this peak hour spreading or night-time running trend happens, it will lessen the daytime peak hour flows that have been modelled in this TTA.
7	The model is based on the proposed road network as described in Section 14.5 including the SPAR, and the North and South Port Estates and the Poolbeg Peninsula. The elements below that formed part of the Do-nothing network are retained in the proposed scenario. • an upgraded left slip entry from East Wall Road onto Alexandra Road for HGV entry to Terminal 4 (currently Seatruck) and Alexandra Quay East (currently DSG). • Closure of all other traffic movements at the East Wall Road / Alexandra Road junction and reassignment to the Promenade Road access. • The construction of the T10 Link Road south.

8	Committed traffic flows for the Glass Bottle site and the NTA BusConnects Ringsend scheme are added.
9	The proposed traffic flows for the 3FM Project are added. These are: • HGVs, staff & visitors for the Lo-Lo terminal (Areas N &L) • HGVs staff & visitors for the Ro-Ro terminal (Areas K &O) • Proposed Maritime Village • Proposed Port Operations • Five buses per hour per direction to allow for Public Transport of 25+ passengers. The access and routing of these traffic flows are as described in Section 14.5.
10	The model permits the traffic movements listed below to use the SPAR: • Any HGV vehicle that has an origin or destination on the Poolbeg Peninsula. This includes Port HGV traffic, Encyclis HGVs and any HGV generated by the other users on the Peninsula such as ESB, Irish Water etc. • All vehicles for Areas K, N, O & L. This includes cars for staff and visitors. • Public Transport buses of 25+ passenger capacity. • Traffic with an origin or destination at Harbour Operations Centre situated within the Maritime Village. • Any HGV traffic generated by the North Port Estate that has an origin or destination south of the Sean Moore Roundabout. (Noting the 24-hour HGV ban on the southern arm of the Sean Moore Roundabout in any case). • To satisfy the request from NTA during pre-application discussions, in this assessment it has been considered that non-port HGVs travelling between Sean Moore Road and the Dublin Tunnel (M50) can use the SPAR.
11	The model does not allow the traffic movements listed below onto the SPAR: • External (i.e. non-port) vehicles that are not HGVs. • Non-HGVs with an origin or destination on the Poolbeg Peninsula such as staff & visitors for non-Port users of Encyclis, ESB, Irish Water, etc. • Users of the Maritime Village. • Any vehicle that is not a HGV generated by the North Port Estate that has an origin or destination south of the Sean Moore Roundabout i.e. they must use the Tom Clarke Bridge. • Taxis.
12	The resultant flows represent the proposed traffic scenario for the year 2040 for each of the assessment periods.

14.12.9 Proposed Traffic Flows Diagrams 2040

All of the proposed changes to the external road layout, the Port Estate Accesses, the internal road layout, the proposed 3FM Project & SPAR, and the future year traffic growth rates have been progressed to produce Proposed Traffic Flow Diagrams.

The resultant Proposed Traffic Flows Diagrams are included in Appendix 14.6 for each of the four peak hours the 16hr daytime, 8hr night-time and 24-hour periods. For ease of reference each Diagram has a unique reference number. Table 14.31 and Table 14.32 provide the details for each traffic flow diagram. The subsequent Table 14.33 and Table 14.34 detail the unique reference numbers for each diagram for ease of reference.

Table 14.31 Proposed Traffic Flow Diagrams 2040 for Peak Hours Explained

Do-Nothing 2023 – Peak Hours		
Time Period	**Diagram Title**	**Unique Reference Number**
AM1 06:15-07:15	Proposed Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2040 Total Traffic flows in PCU Units	**AM1-PR-40-PCU**
	Proposed Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**AM1-PR-40-VEH**
	Proposed Traffic Flow Diagram AM Peak Hour for the Internal Road Network 2040 HGV Traffic flows. The unit is the number of VEHICLES	**AM1-PR-40-HV**
AM2 08:00-09:00	Proposed Traffic Flow Diagram AM Peak Hour for the External Road Network 2040 Total Traffic flows in PCU Units	**AM2-PR-40-PCU**
	Proposed Traffic Flow Diagram AM Peak Hour for the External Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**AM2-PR-40-VEH**
	Proposed Traffic Flow Diagram AM Peak Hour for the External Road Network 2040 HGV Traffic flows. The unit is the number of VEHICLES	**AM2-PR-40-HV**
MD 12:30-13:30	Proposed Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2040 Total Traffic flows in PCU Units	**MD-PR-40-PCU**
	Proposed Traffic Flow Diagram MD Peak Hour for the Internal Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**MD-PR-40-VEH**
	Proposed Traffic Flow Diagram MD Peak Hour for the Internal Road Network	**MD-PR-40-HV**

	2040 HGV Traffic flows. The unit is the number of VEHICLES	
PM 17:00-18:00	Proposed Traffic Flow Diagram PM Peak Hour for the External Road Network 2040 Total Traffic flows in PCU Units	**PM-PR-40-PCU**
	Proposed Traffic Flow Diagram PM Peak Hour for the External Road Network 2040 Total Traffic flows. The unit is the number of VEHICLES	**PM-PR-40-VEH**
	Proposed Traffic Flow Diagram PM Peak Hour for the External Road Network 2040 HGV Traffic flows. The unit is the number of VEHICLES	**PM-PR-40-HV**

Table 14.32 Proposed Traffic Flow Diagrams 2040 for 8/16/24-Hour Explained

Do-Nothing 2023 – Peak Hours		
Time Period	**Diagram Title**	**Unique Reference Number**
16-Hour 07:00-23:00	Proposed Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2040 Total Traffic flows. The unit is the number of VEHICLES	**16HR-PR-40-VEH**
	Proposed Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2040 HGV Traffic flows. The unit is the number of VEHICLES	**16HR-PR-40-VEH-HV**
	Proposed Traffic Flow Diagram 16-hour Period from 07:00 to 23:00 i.e. Daytime 2040 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**16HR-PR-40-VEH-HV%**
8-Hour 23:00-07:00	Proposed Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2040 Total Traffic flows. The unit is the number of VEHICLES	**8HR-PR-40-VEH**
	Proposed Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2040 HGV Traffic flows. The unit is the number of VEHICLES	**8HR-PR-40-VEH-HV**
	Proposed Traffic Flow Diagram 8-hour Period from 23:00 to 07:00 i.e. Nighttime 2040 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**8HR-PR-40-VEH-HV%**
24-Hour 00:00-00:00	Proposed Traffic Flow Diagram 24-hour Period from 00:00 to 00:00 2040 Total Traffic flows. The unit is the number of VEHICLES	**24HR-PR-40-VEH**
	Proposed Traffic Flow Diagram	**24HR-PR-40-VEH-HV**

	24-hour Period from 00:00 to 00:00 2040 HGV Traffic flows. The unit is the number of VEHICLES	
	Proposed Traffic Flow Diagram 24-hour Period from 00:00 to 00:00 2040 Proportion of HGV Traffic flows. The unit is the number of VEHICLES	**24HR-PR-40-VEH-HV%**

Table 14.33 – Reference Numbers for Proposed Traffic Flow Diagrams – Peak Hour 2040

Proposed 2040 – Peak Hours			
Time Period	**All PCUs**	**All Vehicles**	**Heavy Vehicles**
AM1 06:15-07:15	AM1-PR-40-PCU	AM1-PR-40-VEH	AM1-PR-40-HV
AM2 08:00-09:00	AM2-PR-40-PCU	AM2-PR-40-VEH	AM2-PR-40-HV
MD 12:30-13:30	MD-PR-40-PCU	MD-PR-40-VEH	MD-PR-40-HV
PM 17:00-18:00	PM-PR-40-PCU	PM-PR-40-VEH	PM-PR-40-HV

Table 14.34 – Reference Numbers for Proposed Traffic Flow Diagrams – 8/16/24-Hour 2040

Proposed 2040 – 8/16/24-Hour			
Time Period	**All Vehicles**	**Heavy Vehicles**	**Percentage Heavy Vehicles**
24HR 00:00:24:00	24HR-PR-40-VEH	24HR-PR-40-VEH-HV	24HR-PR-40-VEH-HV%
16HR 07:00-23:00	16HR-PR-40-VEH	16HR-PR-40-VEH-HV	16HR-PR-40-VEH-HV%
8HR 23:00-07:00	8HR-PR-40-VEH	8HR-PR-40-VEH-HV	8HR-PR-40-VEH-HV%

14.13 Percentage Impact

14.13.1 Percentage Impact, HGVs per day

The Proposed traffic flows for 2040 have been compared with the Do-Nothing traffic flows in 2040 for 24-hour HGVs. The results are presented in Table 14.35 below.

Table 14.35 Do-Nothing HGVs 2040 v Proposed HGVs 2040, External Road Network

24 HR												
			HVs			HVs			HVs			Percentage Impact
			Do Nothing 2040			Proposed 2040			Difference			
			Northbound	Southbound	Total	Northbound	Southbound	Total	Northbound	Southbound	Total	
East Wall Road	5	North	4434	7629	12063	2615	5558	8173	-1819	-2071	-3890	-32.2%
	5	South	4261	7440	11701	2441	5374	7815	-1820	-2066	-3886	-33.2%
	4	North	4261	7440	11701	2441	5374	7815	-1820	-2066	-3886	-33.2%
	4	South	4261	4142	8403	2441	2076	4517	-1820	-2066	-3886	-46.2%
	3	North	4261	4142	8403	2441	2076	4517	-1820	-2066	-3886	-46.2%
	3	South	4047	3944	7991	2209	1754	3963	-1838	-2190	-4028	-50.4%
	2	North	4047	3944	7991	2209	1754	3963	-1838	-2190	-4028	-50.4%
	2	South	4047	3944	7991	2209	1754	3963	-1838	-2190	-4028	-50.4%
	1	North	4047	3944	7991	2209	1754	3963	-1838	-2190	-4028	-50.4%
Tom Clarke	1	South	2272	2333	4605	212	67	279	-2060	-2266	-4326	-93.9%
	29	West	2392	2453	4845	332	187	519	-2060	-2266	-4326	-89.3%
Pigeon House Road	29	North	1183	954	2137	13	11	24	-1170	-943	-2113	-98.9%
South Bank Road	29	East	1666	1322	2988	857	561	1418	-809	-761	-1570	-52.5%
Sean Moore Road	29	South	703	877	1580	754	900	1654	51	23	74	4.7%

Table 14.35 shows that SPAR removes up to 94% of HGVs from the Tom Clarke Bridge and up to 50% of HGVs from the East Wall Road per day.

14.13.2 Percentage Impact, PCUs per day

In the Do-Nothing scenario for 2040, the Tom Clarke Bridge has a two-way flow of 38,946 PCUs per day. This is reduced to 27,208 PCUs in the Proposed traffic flows per day in 2040, a reduction of 30%.

East Wall Road has 52,779 PCUs per day in the Do-Nothing scenario for 2040, which is reduced by 20% to 42,187 in the Proposed scenario.

Therefore, the SPAR reduces daily traffic flows on the Tom Clarke Bridge by 30% and the daily traffic on the East Wall Road by 20% (Units PCUs).

This aligns with the SEA in that was carried out in 2017 for the DPMP2040 which found that the SPAR removes a third of the traffic from the Tom Clarke and 25% from East Wall Road.

14.13.3 Percentage Impact at peak hours

The Proposed traffic flows for 2040 have been compared with the Do-Nothing traffic flows in 2040 for each of the four peak periods assessed. (Units PCUs)

Table 14.36 below summarises the percentage impacts along the external road network to demonstrate the benefit of the SPAR. In all four peaks, AM1. AM2, MD and PM, there is a negative percentage impact at each location, indicating that traffic is being removed from the external road network onto the SPAR. The full calculations are included in Appendix 14.7 and Figure 14.77 to Figure 14.80 show the percentage impacts on the external road network diagrammatically.

Table 14.36 Summary Table showing the Percentage Impact on the External Road Network (All Traffic PCUs)

Location			Percentage Impact (All Traffic PCUs)			
			AM1	AM2	MD	PM
			PCUs	PCUs	PCUs	PCUs
East Wall Road	5	North	-21%	-19%	-22%	-8%
	5	South	-22%	-19%	-21%	-7%
	4	North	-22%	-19%	-21%	-7%
	4	South	-27%	-21%	-25%	-9%
	3	North	-27%	-21%	-25%	-9%
	3	South	-30%	-23%	-29%	-11%
	2	North	-30%	-23%	-29%	-11%
	2	South	-30%	-23%	-29%	-11%
	1	North	-30%	-23%	-29%	-11%
Tom Clarke	1	South	-41%	-30%	-40%	-15%
	29	West	-41%	-29%	-40%	-15%
Pigeon House Road	29	North	-94%	-91%	-92%	-68%
South Bank Road	29	East	-39%	-24%	-57%	-5%
Sean Moore Road	29	South	-2%	-1%	-4%	-2%

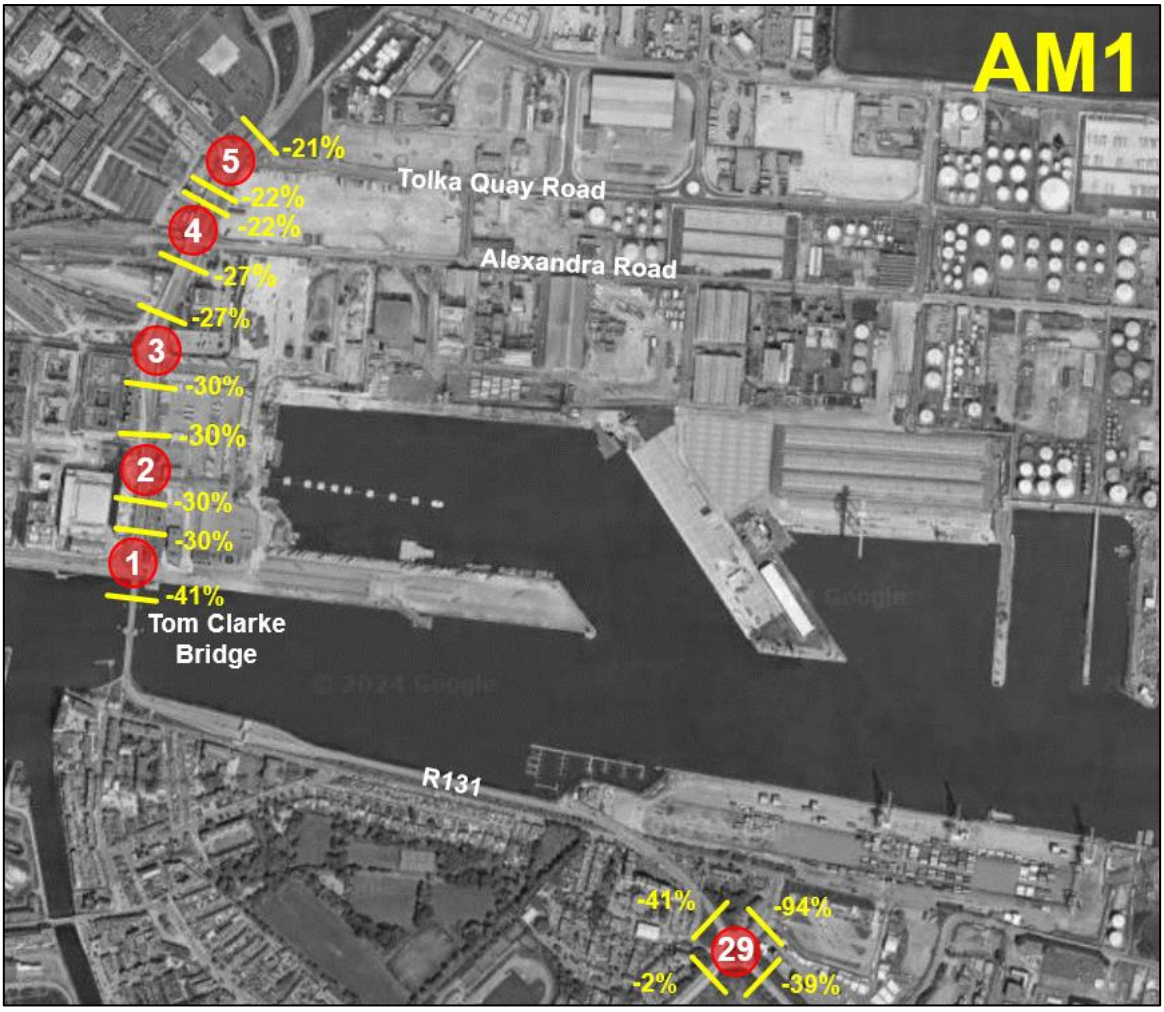


Figure 14.77 Percentage Impact on External Road Network, AM1 Peak Hour

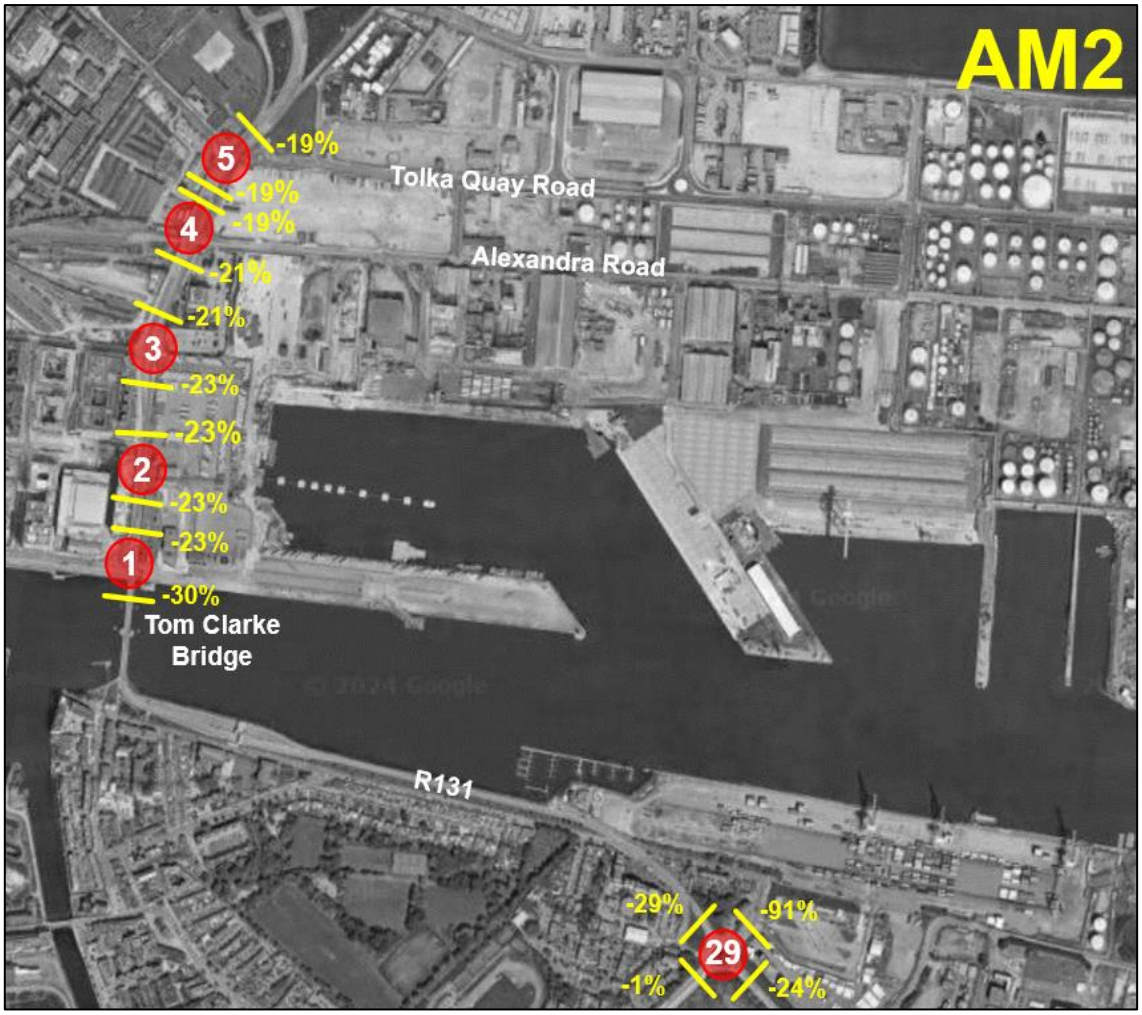


Figure 14.78 Percentage Impact on External Road Network, AM2 Peak Hour

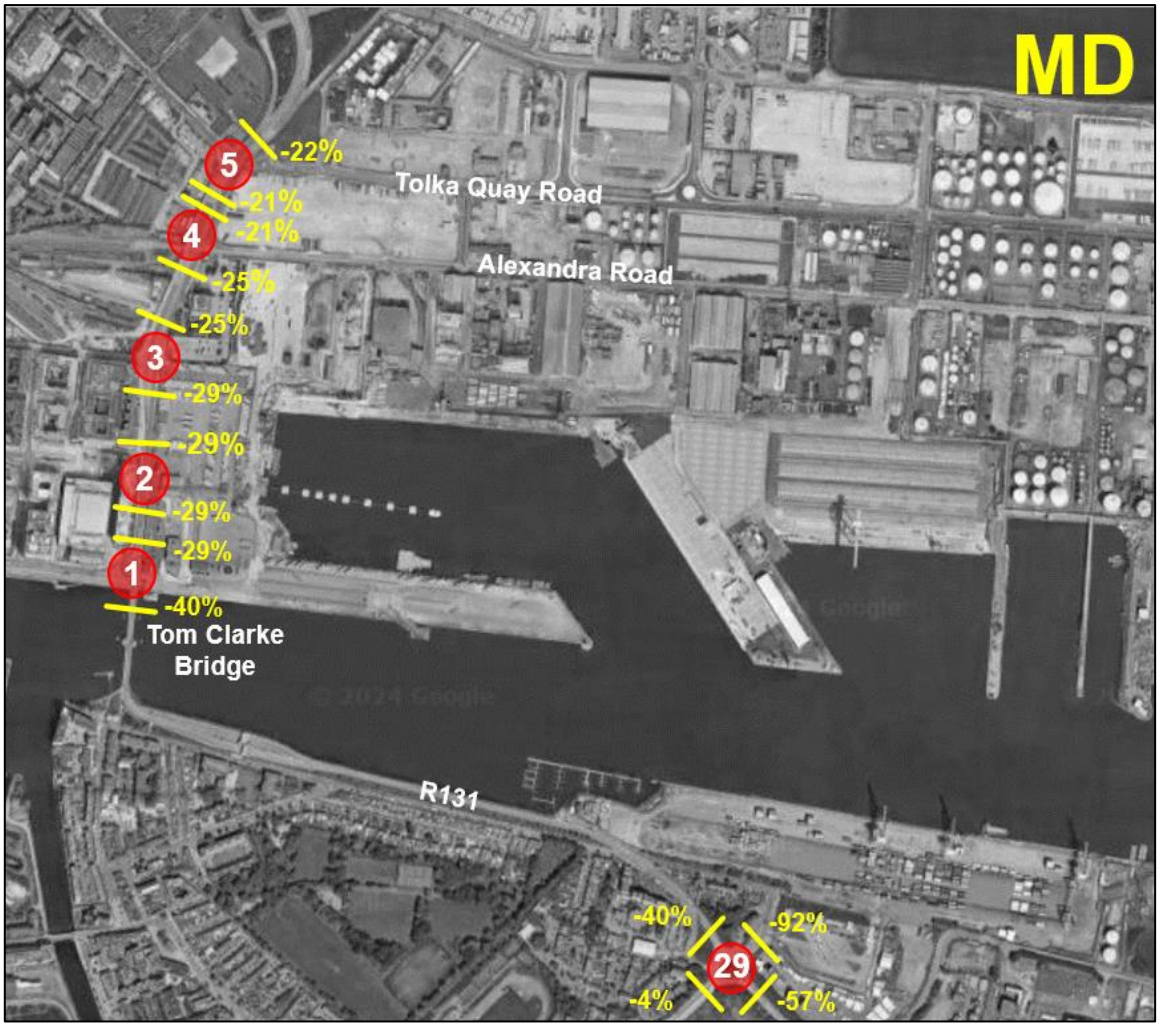


Figure 14.79 Percentage Impact on External Road Network, MD Peak Hour

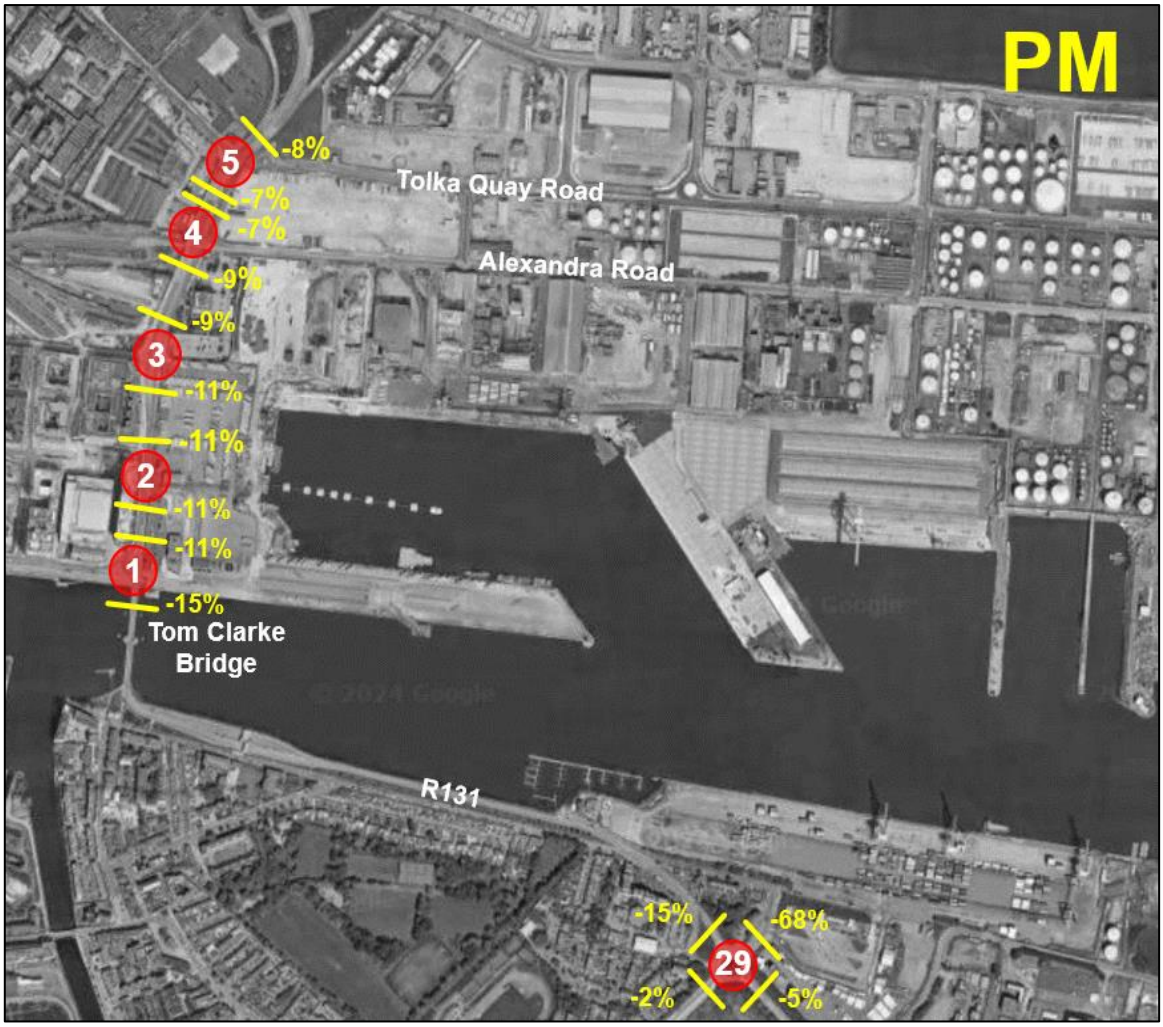


Figure 14.80 Percentage Impact on External Road Network, PM Peak Hour

14.14 Junction Modelling

This section of the report carries out capacity analysis of the following junctions using computer software.

14.14.1 South Port Estate Road Network - Junction Modelling

- **J1:** Pigeon House Road / Realigned White Bank Road / Area K signalised junction (new junction)
- **J2:** Realigned White Bank Road / SPAR signalised junction (new junction)
- **J3:** Realigned White Bank Road / South Bank Road signalised junction (new junction)
- **J4:** Pigeon House Road / Area L (entrance) priority junction (existing junction)
- **J5:** Pigeon House Road / Shellybanks Road signalised junction (existing junction upgraded)
- **J6:** Pigeon House Road / Covanta / Area L (exit) priority junction (existing junction upgraded)
- **J7:** Pigeon House Road / Poolbeg Park / ESB Poolbeg / Area N roundabout junction (existing junction upgraded); and
- **J8:** South Bank Road / Shellybanks Road signalised junction (new junction).

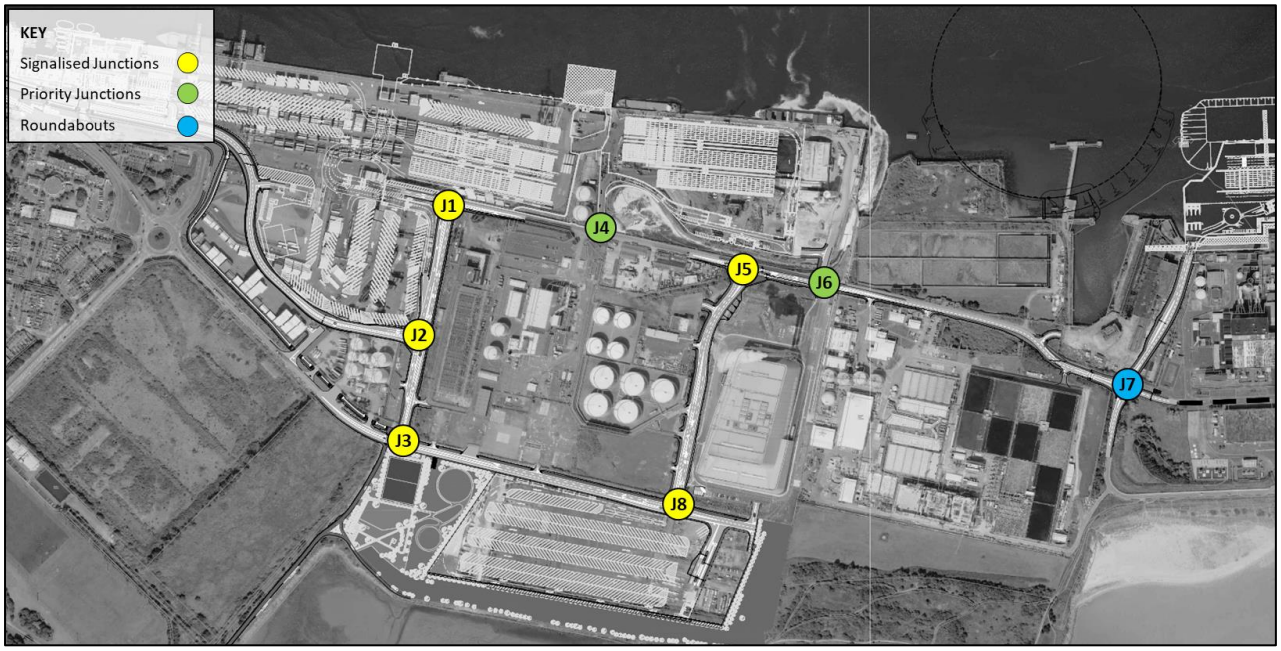


Figure 14.81 South Port Estate Road Network – Modelled Junction Locations

14.14.2 North Port Estate Road Network – Junction Modelling

- **J9:** East Wall Road Off-Slip to Dublin Port / Dublin Port to Port Tunnel signalised junction (existing junction)
- **J10:** Port Tunnel Off-Slip to Dublin Port / Promenade Road signalised junction (existing junction)
- **J11:** Promenade Road / Bond Road / East Wall Road off-slip priority junction (existing junction)
- **J12:** Promenade Road / Bond Drive Extension priority junction (existing junction)
- **J13:** Promenade Road / T10 Link Road priority junction (existing junction upgraded)
- **J14:** Promenade Road / Bond Drive North / Bond Drive signalised junction (existing roundabout upgraded)

- **J15:** Tolka Quay Road / Bond Drive roundabout junction (existing roundabout upgraded)
- **J16:** Tolka Quay Road / T10 Link Road / T4 Access / Alexandra Road Link roundabout junction (existing priority upgraded)
- **J17:** Alexandra Road / Alexandra Road Link signalised junction (new junction)
- **J18:** Alexandra Road / 1 Branch Road priority junction (existing junction)
- **J19:** Alexandra Road / T4 Access priority junction (existing junction)
- **J20:** Alexandra Road / SPAR priority junction (new junction); and
- **J21:** East Wall Road Off-Slip / Alexandra Road signalised junction (existing junction upgraded)

Figure 14.82 North Port Estate Road Network – Modelled Junction Locations

14.14.3 Assessment Scenarios

In order to assess the operation of the road network in relation to the proposals, the 2040 Proposed Scenario (existing flows growth to 2040, and including committed and development traffic) was considered within the traffic impact assessment for the following peak periods:

- AM1: 0615-0715 (associated with the morning peak port traffic)
- AM2: 0800-0900 (associated with the external road network peak)
- MP: 1230-1330 (associated with the afternoon port peak traffic)
- PM: 1700-1800 (associated with the evening peak traffic)

14.14.4 Detailed Assessment Methodology

Analysis of the performance of the signalised and priority junctions was undertaken using the JCT and Transport Research Laboratory's (TRL) industry standard software LinSig v.3 and JUNCTIONS 9 respectively, which are

the standard software packages for predicting capacity and queuing at signal and priority-controlled junctions. The results of the analysis are presented in terms of percentage Degree of Saturation (DoS% - within LinSig) maximum Ratio of Flow to Capacity (RFC - within JUNCTIONS 9) with the corresponding vehicle queues reported as Mean Maximum Queue (MMQ).

A signalised junction is considered to be operating within capacity when all approach arms record a DoS% below 100%. A priority junction is considered to be operating within capacity when all approach arms record an RFC of 1.0 (100%) and below.

14.14.5 South Port Estate Road Network Modelling Results

14.14.5.1 J1 - J6 (Linked LinSig), J7 (JUNCTIONS 9) and J8 (LinSig).

These junctions include the core route through the South Port Estate from the new SPAR and to access the 3FM development plots, and which include realignments/upgrades to White Bank Road and South Bank Road, and new and upgraded accesses along the way. The results of the capacity analysis for these junctions are presented in Table 14.37 to Table 14.39.

Table 14.37 J1-6 Linked LinSig Modelling Results

Junction			2040 Proposed Scenario							
No.	Link Description	Movement	2040 AM1		2040 AM2		2040 MD		2040 PM	
			DoS%	MMQ	DoS%	MMQ	DoS%	MMQ	DoS%	MMQ
J1	Pigeon House Road	Left	35.9%	4	22.3%	2	29.8%	2	21.1%	2
	Realigned White Bank Road	Right	35.5%	1	18.3%	0	14.8%	4	12.4%	0
	Area K Access	Ahead	24.9%	2	14.7%	2	18.1%	2	17.9%	2
		Right	23.5%	2	17.3%	2	20.8%	2	21.3%	2
	PRC		**150.7%**		**303.1%**		**202.4%**		**322.8%**	
J2	SPAR	Left	58.2%	7	59.9%	7	54.2%	5	43.5%	4
	Realigned White Bank Road (SB)	Ahead	7.2%	1	6.7%	1	12.1%	1	14.9%	1
		Right	56.9%	7	59.6%	5	54.8%	6	58.1%	4
	Realigned White Bank Road (NB)	Left / Ahead	57.9%	3	58.1%	1	55.8%	1	53.6%	1
	PRC		**54.8%**		**50.2%**		**61.4%**		**54.8%**	
J3	Area O Access Road	Right Ahead	27.4%	1	59.5%	5	55.2%	5	59.5%	7
	South Bank Road	Left Ahead	54.8%	7	58.8%	4	55.5%	3	61.1%	4
	Realigned White Bank Road	Right / Left	49.8%	2	60.1%	3	55.4%	4	61.4%	3
			64.3%		**49.7%**		**62.2%**		**46.5%**	
J4	Pigeon House Road (E)	Ahead / Left	30.8%	1	27.1%	0	27.0%	0	26.7%	0
J5	Pigeon House Road (E)	Ahead / Left	34.1%	5	38.6%	6	45.6%	8	39.5%	6
	Shellybanks Road	Left Right	48.9%	2	51.4%	4	54.4%	4	51.4%	3
	Pigeon House Road (W)	Ahead / Right	39.4%	5	21.5%	3	19.5%	1	23.8%	2
	PRC		**84.1%**		**75.0%**		**65.4%**		**75.1%**	
J6	Pigeon House Road (W)	All	0.9%	0	8.5%	0	2.9%	0	3.0%	0
	Pigeon House Road (E)	All	0.9%	0	0.9%	0	1.0%	0	1.0%	0
	Area L (Exit)	All	37.6%	0	34.2%	0	34.3%	0	33.5%	0
	Covanta Access	All	0.0%	0	7.5%	0	13.6%	0	3.0%	0

14.14.5.2 J1: Pigeon House Road / Realigned White Bank Road / Area K signalised junction

The modelling results presented in Table 14.37 demonstrate that J1 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 35.9% was observed on Pigeon House Road in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 4 PCUs.

Figure 14.83 J1 Proposed Layout

14.14.5.3 J2: Realigned White Bank Road / SPAR signalised junction

The modelling results presented in Table 14.37 demonstrate that J2 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 59.6% was observed on White Bank Road in the 2040 Proposed AM2 scenario, with a corresponding MMQ of 5 PCUs.

Figure 14.84 J2 Proposed Layout

14.14.5.4 J3: Realigned White Bank Road / South Bank Road signalised junction

The modelling results presented in Table 14.37 demonstrate that J3 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 59.5% was observed on South Bank Road (E) in the 2040 Proposed AM2 scenario, with a corresponding MMQ of 5 PCUs.

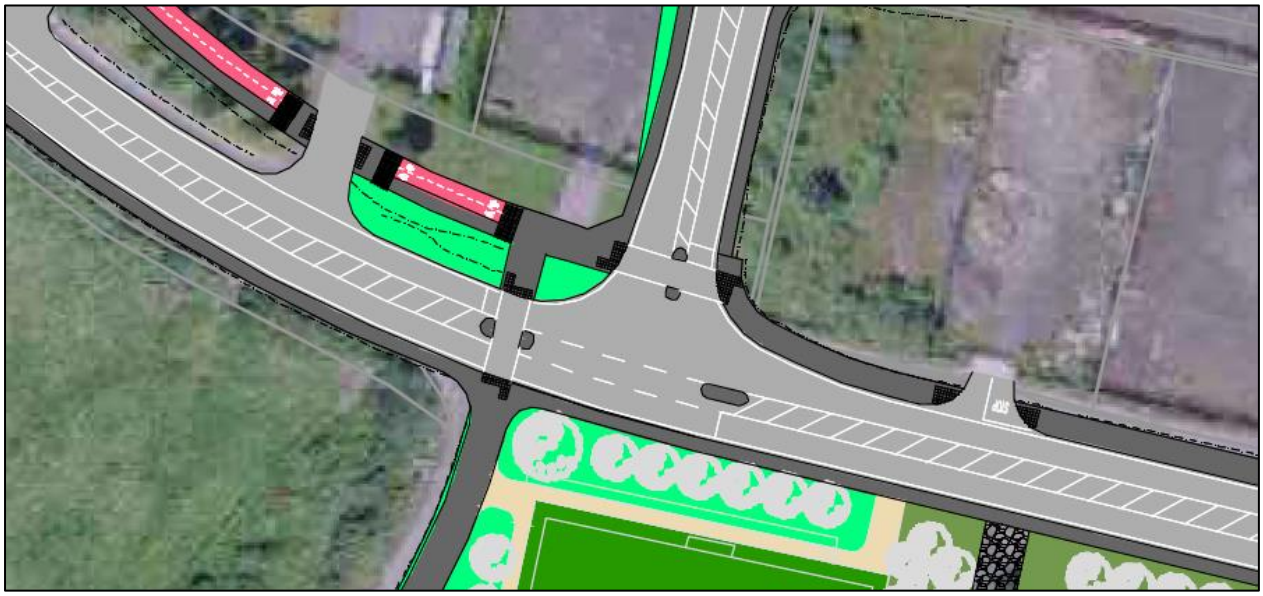


Figure 14.85 J3 Proposed Layout

14.14.5.5 J4: Pigeon House Road / Area L (entrance) priority junction

The modelling results presented in Table 14.37 demonstrate that J4 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 30.8% was observed on Pigeon House Road (E) in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 1 PCU.

14.14.5.6 J5: Pigeon House Road / Shellybanks Road signalised junction

The modelling results presented in Table 14.37 demonstrate that J5 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 51.4% was observed on Shellybanks Road in the 2040 Proposed AM2 scenario, with a corresponding MMQ of 4 PCUs.

Figure 14.86 J5 Proposed Layout

14.14.5.7 J6: Pigeon House Road / Covanta / Area L (exit) priority junction

The modelling results presented in Table 14.37 demonstrate that J6 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 35.9% was observed on Pigeon House Road in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 4 PCUs.

Figure 14.87 J6 Proposed Layout

14.14.5.8 J7: Pigeon House Road / Poolbeg Park / ESB Poolbeg / Area N roundabout junction

The modelling results presented in Table 14.38 demonstrate that J7 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum RFC of 0.25 was observed on the Area N Site Access in the 2040 Proposed PM scenario, with a corresponding MMQ of 1 PCU.

Table 14.38 J7 JUNCTIONS Modelling Results

Junction		2040 Proposed Scenario							
No.	Link Description	2040 AM1		2040 AM2		2040 MD		2040 PM	
		RFC	MMQ	RFC	MMQ	RFC	MMQ	RFC	MMQ
J8	ESB Access	0.00	0	0.01	0	0.01	0	0.01	0
	Poolbeg Park Access	0.00	0	0.02	0	0.04	0	0.04	0
	Pigeon House Road	0.28	1	0.19	1	0.21	1	0.19	1
	Site Access	0.29	1	0.24	1	0.25	1	0.25	1

Figure 14.88 J7 Proposed Layout

14.14.5.9 J8: South Bank Road / Shellybanks Road signalised junction

The modelling results presented in Table 14.39 demonstrate that J8 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 19.6% was observed on South Bank Road (E) in the 2040 Proposed PM scenario, with a corresponding MMQ of 2 PCUs.

Table 14.39 J8 LinSig Modelling Results

Junction			2040 Proposed Scenario							
No.	Link Description	Movement	2040 AM1		2040 AM2		2040 MD		2040 PM	
			DoS%	MMQ	DoS%	MMQ	DoS%	MMQ	DoS%	MMQ
J7	South Bank Road (E)	Ahead / Right	17.3%	2	14.4%	1	15.7%	1	19.6%	2
	Shellybanks Road	Left	16.8%	1	16.2%	1	16.0%	1	12.0%	1
		Right	0.0%	0	14.6%	1	13.7%	1	18.9%	2
	South Bank Road (W)	Left	4.2%	0	15.7%	1	15.6%	1	18.0%	2
		Ahead	4.5%	0	4.5%	0	3.8%	0	4.1%	0
	PRC		**420.3%**		**453.9%**		**462.8%**		**358.2%**	

Figure 14.89 J8 Proposed Layout

14.14.6 North Estate Road Network Modelling Results

14.14.6.1 J9 – J21 (Linked LinSig)

These junctions include the core internal route through the North Estate to access the 3FM development via the new SPAR, and which include proposed realignments/upgrades to Promenade Road, Tolka Quay Road, and Alexandra Road. The results of the capacity analysis for these junctions are presented in Table 14.40.

Table 14.40 J9-21 Linked LinSig Modelling Results

Junction			2040 Proposed Scenario							
No.	Link Description	Movement	2040 AM1		2040 AM2		2040 MD		2040 PM	
			DoS%	MMQ	DoS%	MMQ	DoS%	MMQ	DoS%	MMQ
J9	East Wall Rd to Port	Right	75.5%	9	57.4%	5	65.2%	6	44.9%	3
		Right	75.7%	10	61.0%	5	65.3%	6	46.2%	3
	Exit from Dublin Port to Port Tunnel	Right	70.1%	15	51.3%	8	59.5%	10	33.3%	4
		Right	78.0%	20	65.7%	13	72.1%	16	54.7%	9
	PRC		**15.4%**		**37.0%**		**24.9%**		**64.7%**	
J10	Entrance to Port from East Wall	Right	62.9%	1	43.2%	1	54.8%	1	32.7%	0
		Right	66.0%	1	48.0%	1	57.4%	1	35.3%	0
	Entrance to Port from Port Tunnel	Ahead	49.7%	9	34.7%	5	49.5%	8	31.1%	4
		Ahead	51.0%	10	36.4%	6	50.5%	9	32.4%	5
	PRC		**36.3%**		**87.4%**		**56.7%**		**155.3%**	
J11	Bond Drive	Left	7.3%	0	16.4%	0	8.5%	0	18.1%	0
	Promenade Road OUT	Ahead	59.4%	1	45.8%	0	64.2%	1	46.9%	0

J12	Promenade Road IN	Left / Ahead	7.3%	0	5.6%	0	11.2%	0	6.9%	0
	Bond Drive Exit	Left	45.9%	1	12.0%	0	26.7%	1	20.5%	0
J13	Promenade Road OUT	Ahead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
J14	Bond Drive North	Ahead / Left	73.4%	8	63.7%	6	82.0%	10	59.4%	6
		Ahead	74.1%	8	66.6%	7	83.2%	11	62.4%	7
	Bond Drive South	Ahead / Left	82.9%	11	73.6%	10	89.2%	21	78.1%	12
		Right	7.6%	1	10.2%	1	14.3%	2	9.8%	1
	Promenade Road (west)	Ahead / Left	69.0%	17	27.4%	5	85.2%	21	47.8%	10
		Ahead Right	69.3%	18	59.4%	14	86.2%	22	49.2%	11
		Right	67.3%	16	58.2%	12	84.1%	19	45.2%	8
	PRC		**8.6%**		**22.2%**		**1.0%**		**15.2%**	
J15	Tolka Quay Road IN	Left	11.5%	0	15.3%	0	16.3%	0	16.3%	0
	Bond Drive Ext	Left / Ahead	55.0%	10	53.6%	11	42.8%	8	41.4%	7
		Ahead	55.0%	8	54.6%	10	50.8%	9	40.0%	6
	Tolka Quay Road OUT	Ahead	80.7%	10	65.0%	6	76.8%	9	38.7%	0
		Ahead	85.7%	13	73.1%	8	85.7%	17	53.2%	3
J16	T10 Link	Left Ahead	5.1%	0	9.3%	0	12.2%	0	6.3%	0
	Tolka Quay Road (W)	Left	61.3%	1	37.8%	0	60.7%	1	33.5%	0
		Ahead	61.5%	1	38.0%	0	61.0%	1	32.5%	0
	Tolka Quay Road (E)	Ahead Left	71.6%	1	75.5%	1	79.7%	1	57.6%	1
		Ahead	75.8%	2	64.3%	1	80.9%	2	58.5%	1
	From Alexandra Road	Left Ahead	56.4%	6	49.5%	5	74.1%	12	55.4%	6
		Ahead	35.1%	0	39.4%	3	60.5%	7	41.2%	0
J17	From Tolka Quay Road	Left	21.6%	3	12.5%	1	13.2%	2	1.5%	0
		Right	49.3%	9	47.5%	8	43.0%	8	30.3%	5
	Alexandra Road (W)	Ahead Left	83.4%	17	73.0%	9	88.8%	23	79.0%	15
	Alexandra Road (E)	Ahead Right	71.3%	4	35.7%	2	79.5%	5	57.6%	3
	PRC		**7.9%**		**23.2%**		**1.3%**		**14.0%**	
J18	Alexandra Road (W)	Ahead Right	9.2%	0	6.8%	0	7.8%	0	3.5%	0
	Branch Road N	Right Left	33.6%	0	24.5%	0	42.1%	0	30.6%	0
J19	Alexandra Road (E)	Ahead Right	2.7%	0	1.5%	0	2.2%	0	1.0%	0
	T4 Access	Left Right	10.0%	0	0.0%	0	11.3%	0	1.7%	0
J20	SPAR	Right	65.0%	2	61.2%	1	81.4%	4	81.8%	4
J21	Alexandra Road (E)	Ahead	50.6%	5	24.7%	2	49.0%	5	39.5%	4

14.14.6.2 J9: East Wall Road Off-Slip to Dublin Port / Dublin Port to Port Tunnel signalised junction

The modelling results presented in Table 14.40 demonstrate that J9 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 78.0% was observed on the exit to the Port Tunnel in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 20 PCUs.

14.14.6.3 J10: Port Tunnel Off-Slip to Dublin Port / Promenade Road signalised junction

The modelling results presented in Table 14.40 demonstrate that J10 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 66.0% was observed on East Wall Road Dublin Port Entrance in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 1 PCU.

14.14.6.4 J11: Promenade Road / Bond Road / East Wall Road off-slip priority junction

The modelling results presented in Table 14.40 demonstrate that J11 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 64.2% was observed on Promenade Road (E) in the 2040 Proposed Midday IP scenario, with a corresponding MMQ of 1 PCU.

14.14.6.5 J12: Promenade Road / Bond Drive Extension priority junction

The modelling results presented in Table 14.40 demonstrate that J12 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 45.9% was observed on Bond Drive in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 1 PCU.

14.14.6.6 J13: Promenade Road / T10 Link Road priority junction

The proposed upgraded junction design removes priority-controlled vehicle conflict movements, resulting in a free flow of traffic and therefore, no capacity issues.

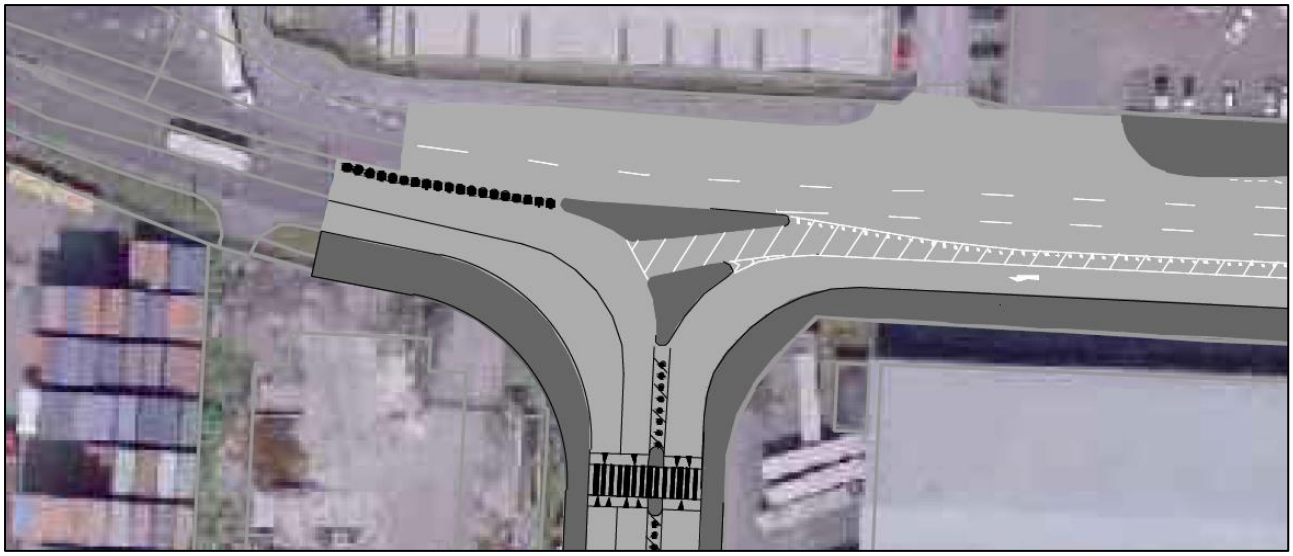


Figure 14.90 J13 Proposed Layout

14.14.6.7 J14: Promenade Road / Bond Drive North / Bond Drive signalised junction

The modelling results presented in Table 14.40 demonstrate that J14 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 89.2% was observed on Bond Drive (S) in the 2040 Proposed Midday IP scenario, with a corresponding MMQ of 21 PCUs.

Importantly, the modelling results shows that the MMQ on Promenade Road approaching J14 is 22 PCUs on the middle lane, which equates to a queue length of 126.5m (22pcus x 5.75m). The queue therefore is comfortably contained within the gyratory, as illustrated in Figure 14.91below. This demonstrates that the back of the queue will be a comfortable distance away from the Dublin Tunnel (M50) southern portals.

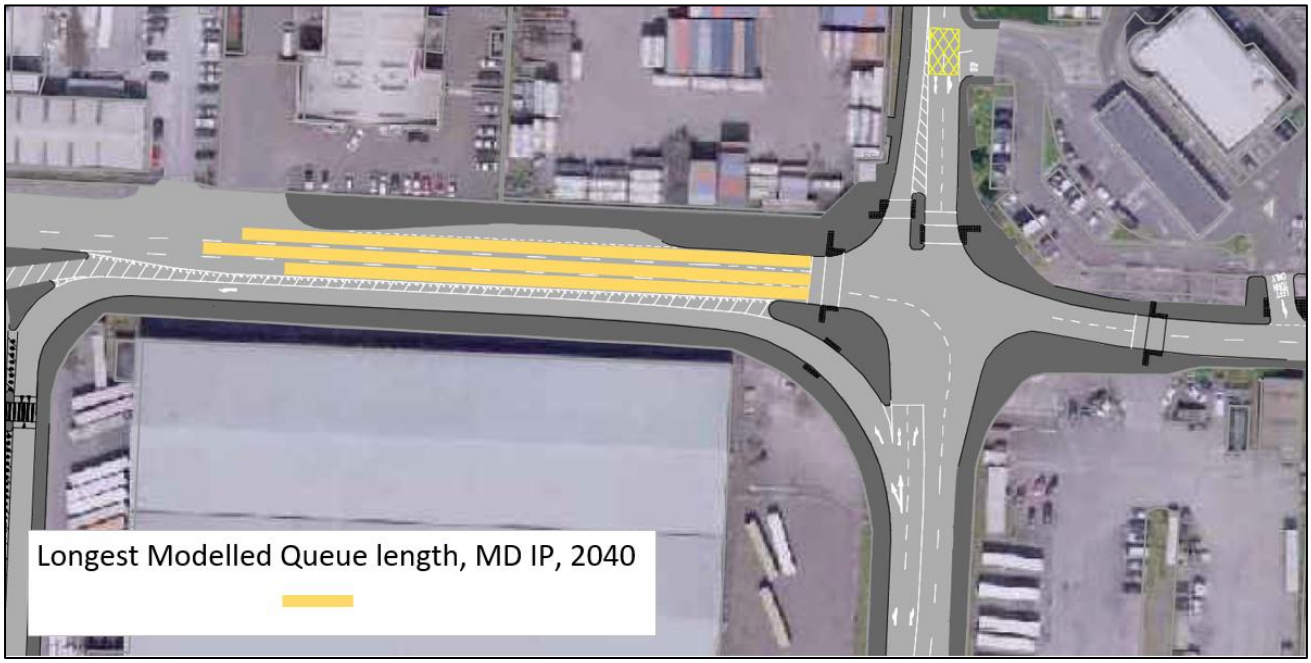


Figure 14.91 J14 Proposed Layout

14.14.6.8 J15: Tolka Quay Road / Bond Drive roundabout junction

The modelling results presented in Table 14.40 demonstrate that J15 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 85.7% was observed on Tolka Quay (E) in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 13 PCUs.

Figure 14.92 J15 Proposed Layout

14.14.6.9 J16: Tolka Quay Road / T10 Link Road / T4 Access / Alexandra Road Link roundabout junction

The modelling results presented in Table 14.40 demonstrate that J16 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 80.9% was observed on Tolka Quay Road (E) in the 2040 Proposed Midday (IP) scenario, with a corresponding MMQ of 2 PCUs.

Figure 14.93 J17 Proposed Layout

14.14.6.10 J18: Alexandra Road / 1 Branch Road priority junction

The modelling results presented in Table 14.40 demonstrate that J18 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 42.1% was observed on 1 Branch Road in the 2040 Proposed Midday (IP) scenario, with a corresponding MMQ of 0 PCUs.

14.14.6.11 J19: Alexandra Road / T4 Access priority junction

The modelling results presented in Table 14.40 demonstrate that J19 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 11.3% was observed on the T4 Access in the 2040 Proposed Midday (IP) scenario, with a corresponding MMQ of 0 PCUs.

14.14.6.12 J20: Alexandra Road / SPAR priority junction

The modelling results presented in Table 14.40 demonstrate that J20 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 81.4% was observed on the SPAR in the 2040 Proposed Midday (IP) scenario, with a corresponding MMQ of 4 PCUs.

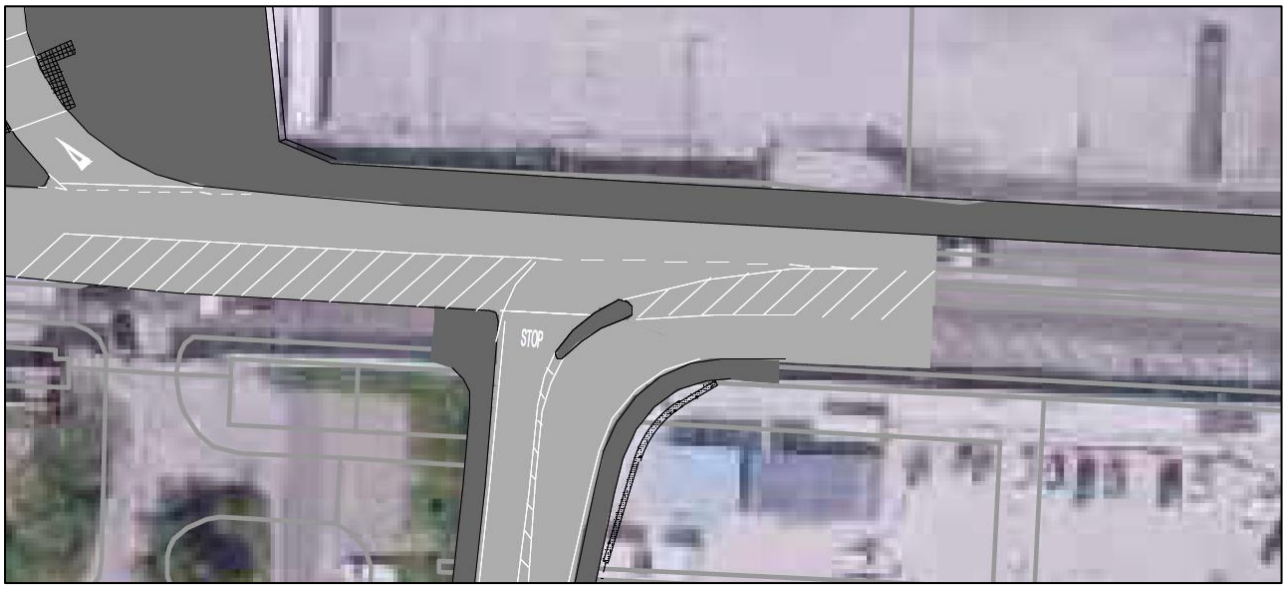


Figure 14.94 J20 Proposed Layout

14.14.6.13 J21: East Wall Road Off-Slip / Alexandra Road signalised junction

The modelling results presented in Table 14.40 demonstrate that J21 is predicted to operate within capacity for the 2040 Proposed scenario and for all peak periods. A maximum DoS% of 50.6% was observed on East Wall Off-Slip in the 2040 Proposed AM1 scenario, with a corresponding MMQ of 5 PCUs.

Figure 14.95 J13 Proposed Layout

14.14.6.14 Junction Modelling Results Summary

The junction modelling results presented in Table 14.37 to Table 14.40 are based on the 2040 Proposed flows, with the corresponding digital modelling files (Appendix 14.8) and junction geometric parameters included in Appendix 14.9. The modelling results demonstrate that with the proposed junction upgrades in place and new junctions constructed as part of the 3FM development, the South & North Estate Road Network is predicted to operate within capacity for all scenarios considered.

Importantly, the modelling results shows that the MMQ on Promenade Road approaching J14 is 22 PCUs on the middle lane, which equates to a queue length of 126.5m (22PCUs x 5.75m). The queue therefore is comfortably contained within the gyratory and demonstrates that the back of the queue will be a comfortable distance away from the Dublin Tunnel (M50) southern portals.

The proposed junction upgrades associated with the traffic modelling results will occur based on the construction sequence as follows:

South Port Estate:

- 2028: Upgrades to South Bank Road, Shellybanks Road and Pigeon House Road to serve Area N (J5-8)
- 2032: Upgrade to Pigeon House Road to serve Aea L (J4)
- 2033: Realignment of White Bank Road (J1-3)
- 2039: Continued realignment of White Bank Road and introduction of the SPAR

North Port Estate:

- 2027: East Wall Road Off-Slip additional lane provision & upgraded pedestrian island (J21)
- 2037: Promenade Road / Bond Drive North / Bond Drive signalised junction introduced (J13 & J14)
- 2038: Tolka Quay Road upgraded (J15 & J16)
- 2039: Introduction of the SPAR at Alexandra Road (J20)

14.14.7 Traffic Impact on Port Tunnel

Table 14.41 summaries the proposed traffic flows in the Tunnel in 2040 for each of the peak hours assessed and for 24 hours.

Table 14.41 Proposed 2040 Traffic Flows, Port Tunnel (All Traffic PCUs)

Scenario	PCUs									
	Northbound					Southbound				
	AM1	AM2	MD	PM	24hr	AM1	AM2	MD	PM	24hr
2040 Proposed	2,281	2,368	2,780	2,677	40,537	2,767	2,940	3,009	2,287	39,656

Within the NTA Regional Transport Model for the Greater Dublin Area, the Port Tunnel is coded with a capacity of 3,800 PCUs per hour per direction. Table 14.41 shows that the 3,800 PCU capacity per direction is not reached during any of the four peak hour scenarios considered, with the maximum peak flow being 3,009 PCUs southbound in the PM peak hour.

Figure 14.96 below shows the daily profile of proposed traffic flows through the Tunnel in 2040. It again demonstrates that the proposed demand for travel through the Tunnel will remain within the nominal capacity of 3,800 PCUs per hour throughout the day.

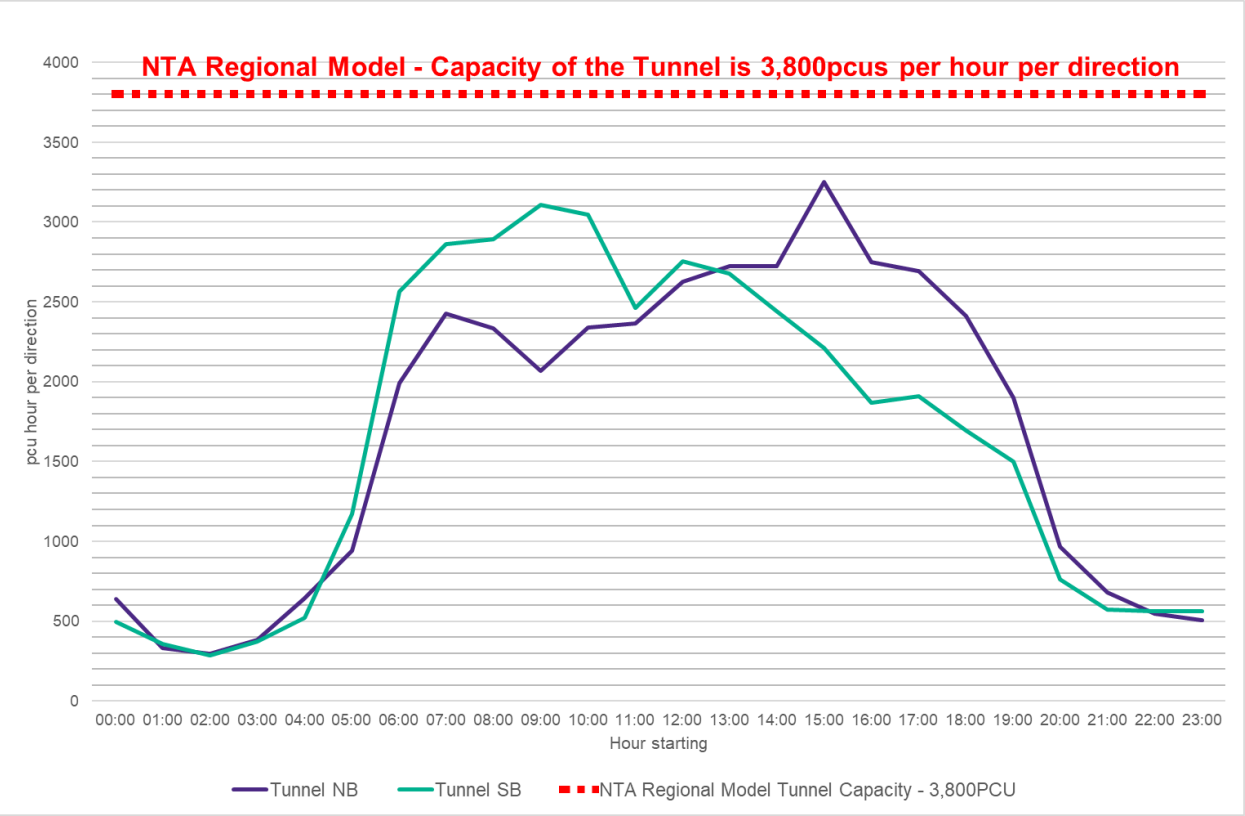


Figure 14.96 Proposed Traffic Flows (PCUs) at Dublin Tunnel (M50), 2040

The total of 80,193 PCUs per day does not exceed the 182,400 daily PCU capacity of the Tunnel, or the capacity of 91,200 PCUs per direction.

14.14.8 Vehicular Capacity of the SPAR

The proposed cross section of the SPAR is illustrated in Figure 14.97 below and has a running carriageway width of 3.5m in each direction.

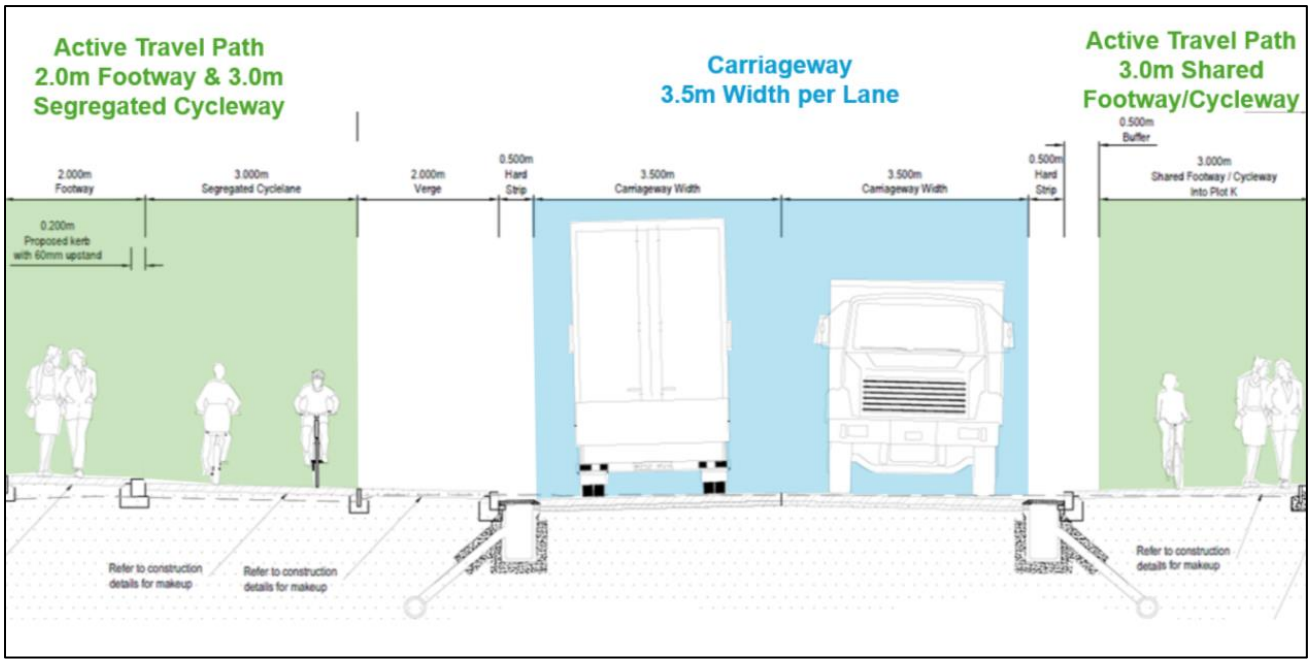


Figure 14.97 Proposed SPAR Cross Section

The capacity of a running carriageway nearside lane with a width of 3.5m is 1,965 PCUs per hour, based on LinSig 3 which bases its calculations on RR67 (guidance used for the calculation of saturation flows of lanes, Department for Transport, Transport and Road Research Laboratory).

Table 14.42 below summarises the proposed traffic flows on the SPAR from the traffic flow diagrams included in Appendix 14.6. Table 14.42 shows that the SPAR will accommodate a total of 14,639 PCUs two-way per day and that the maximum proposed traffic in a peak hour is 463 PCUs (one-way) in northbound AM2.

Table 14.42 Proposed Traffic on SPAR in 2040

PROPOSED 2040	Heavy Vehicles			Vehicles			PCU		
	Northbound	Southbound	Total	Northbound	Southbound	Total	Northbound	Southbound	Total
AM1	123	167	290	149	214	363	359	436	795
AM2	141	203	344	146	214	360	463	377	840
MD	151	159	310	158	163	321	415	372	787
PM	150	123	273	168	128	296	412	303	715
24HR	2,407	2,589	4,996	2,715	2,928	5,643	7,048	7,591	14,639

Therefore, the proposed flows the SPAR are very comfortably below the running carriageway capacity of 1,965 PCUs per hour per direction, and the SPAR will be a free-flowing carriageway.

14.15 Construction Traffic

As explained in Section 5.2.13 of the Chapter 5 Project Description, the construction flows have been calculated for each half-year period in accordance with the Construction Sequence Programme for the 3FM Project. Two aspects of site traffic have been analysed 1) staff vehicles (one-way trip), and 2) construction traffic (one-way trips).

Table 14.43 summaries the predicted number of one-way construction trips per half-year over the duration of the construction period between 2026 to 2040. A factor of 2 for Vehicle Occupancy Rate (VOR) was used when calculating staff vehicles to allow for car sharing, public transport access, cycling, etc given the toll costs and travel at peak times.

Table 14.43 Summary of 3FM Project Construction Flows (Daily, One-way)

3FM PROPOSED CONSTRUCTION FLOWS - NORTHERN ESTATE

	2026		2027		2028		2029		2030	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Daily Staff (One-Way)	0	0	0	15	15	15	15	0	0	0
Daily HGV Movement (One-way)	0	0	0	8	8	8	8	0	0	0
Daily Total	**0**	**0**	**0**	**23**	**23**	**23**	**23**	**0**	**0**	**0**

	2031		2032		2033		2034		2035	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Daily Staff (One-Way)	0	0	0	0	0	0	0	0	0	10
Daily HGV Movement (One-way)	0	0	0	0	0	0	0	0	13	18
Daily Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**28**

	2036		2037		2038		2039		2040	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Daily Staff (One-Way)	10	10	23	38	38	38	28	0	0	0
Daily HGV Movement (One-way)	18	18	27	27	13	13	1	0	0	0
Daily Total	**28**	**28**	**49**	**64**	**51**	**51**	**29**	**0**	**0**	**0**

3FM PROPOSED CONSTRUCTION FLOWS - SOUTHERN ESTATE

	2026		2027		2028		2029		2030	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Daily Staff (One-Way)	0	0	0	28	30	68	65	65	53	53
Daily HGV Movement (One-way)	0	0	0	26	27	35	15	15	10	10
Daily Total	**0**	**0**	**0**	**54**	**57**	**102**	**80**	**80**	**62**	**62**

	2031		2032		2033		2034		2035	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Daily Staff (One-Way)	53	53	35	35	35	35	53	53	38	45
Daily HGV Movement (One-way)	12	12	9	9	9	9	31	31	9	11
Daily Total	**65**	**65**	**44**	**44**	**44**	**44**	**83**	**83**	**46**	**56**

	2036		2037		2038		2039		2040	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
Daily Staff (One-Way)	25	48	48	45	58	70	50	28	0	0
Daily HGV Movement (One-way)	12	38	38	38	56	72	61	36	6	6
Daily Total	**37**	**85**	**85**	**83**	**113**	**142**	**111**	**64**	**6**	**6**

Construction traffic will arrive at and depart from the port via the national road network. All HGV movements will comply with the DCC HGV Management Strategy.

14.15.1 Construction traffic in the North Port Estate

Within the North Port Estate, traffic will be routed through the existing road network to reach the proposed 3FM Project site. Daily traffic flows in the North Port Estate are in the region of 13,700 two-way vehicles in 2023.

Table 14.43 shows that the maximum daily construction flow is 64 one-way vehicles (128 two-way vehicles) in the second half of 2037. This represents about 0.5% of the daily two-way traffic flows and will be imperceivable within the North Port Estate, no more noticeable than the ordinary daily fluctuations in traffic flows.

14.15.2 Construction traffic in the South Port Estate

Table 14.43 shows that the maximum daily construction flow generated by the 3FM Project for the South Port Estate is 142 one-way vehicles (285 two-way vehicles) in the second half of 2038.

During pre-application meetings, DCC TPD raised issues in relation to the construction traffic generated by the 3FM Project accessing the Poolbeg Peninsula via the existing external road network prior to the opening of the SPAR in 2039. They therefore requested consideration be given to the cumulative traffic impact on South Bank Road for construction and operational traffic for existing and committed schemes during the construction of the 3FM Project but prior to the opening of the SPAR (i.e.2026-2038). This has been assessed in Section 14.16 below.

14.16 Cumulative Impacts

14.16.1 Cumulative Impact on the North Port Estate

As the 3FM Project represents the Third and Final Masterplan Project, the traffic flows used in this TTA represent the fulfilment of the full DPMP2040 in the year 2040. Therefore, they inherently include the cumulative impact of all committed and proposed developments within the DPMP2040 including the other SID applications of ABR and MP2. The proposals (road, junction and active travel upgrades) therefore represent the mitigation of the cumulative impact within the North Port Estate.

14.16.2 Cumulative Impacts on the External Road Network

The introduction of the SPAR removes 95% of HGVs from the Tom Clarke Bridge and 50% of HGVs from the East Wall Road per day. It reduces the daily traffic flows on the existing Tom Clarke Bridge & the R131 by 30% and the traffic on East Wall Road by 20% (Units PCUs). This removal of traffic from the external road network provides benefits to the schemes being progressed by others in the port environs including the Point Bridge Active Travel Scheme, the NTA BusConnects & the Dodder Bridge Scheme and the DCC Upgrade of the East Wall Road and the Glass Bottle Scheme. The use of high traffic growth rates in the TTA for non-port traffic flows to derive future year flows inherently incorporates development schemes being delivered in the local environs of the port up to the year 2040.

14.16.3 Cumulative Impact on South Bank Road Prior to the Opening of the SPAR

During the pre-application meetings with the DCC Transport Planning Division (TPD), it was noted that South Bank Road will be the only access to the Poolbeg Peninsula until the opening of the SPAR in 2039. DCC TPD therefore requested consideration be given to the cumulative traffic impact on South Bank Road for construction and operational traffic for existing and committed schemes during the construction of the 3FM Project but prior to the opening of the SPAR (i.e.2026-2038).

The following methodology was used to carry out this assessment. The flows assessed are daily two-way traffic flows (Unit: Vehicles) along South Bank Road.

Identify the construction and operational traffic associated with the following schemes between the years 2023 to 2040

- NTA BusConnects & Dodder Bridge
- ESB Ringsend OCGT
- ESB Poolbeg OCGT
- Glass Bottle scheme
- Ecocem Extension

Establish the 'Do Nothing' cumulative traffic flows between the years 2026 and 2040

- Calculate the 'Do Nothing' future year traffic flows between the years 2026-2040. 'Do Nothing' meaning that the 3FM Project is not constructed.
- Specify the 'Do-Nothing' traffic flows generated by each existing Dublin Port land use and non-Port traffic flows.
- This provides a detailed 'Do Nothing' cumulative traffic flows between the years 2026 and 2040, which is the baseline for the comparison with the Proposed cumulative traffic flows.

Establish the proposed cumulative traffic flows between the years 2026 and 2040.

- The next stage is to establish the Proposed cumulative traffic flows during the construction of the 3FM Project for the same time period.
- Using the proposed Construction Sequence for the 3FM Project, identify the reduction in traffic flows from each parcel of Dublin Port as the construction is progressed during the years 2026 to 2038.
- Establish the proposed worse case construction traffic flows for the 3FM Project traffic flows between the years 2026 to 2038 as identified above in Section 14.15.
- Calculate the traffic generated by the 3FM Project prior to the opening of the SPAR, again in accordance with the Construction Sequence for year to year.
- The sum of these elements establishes the Proposed cumulative traffic flows between the year 2026 and 2038, prior to the opening of the SPAR.

Comparison of the 'Do Nothing' and 'Proposed' cumulative traffic flows between the years 2026 and 2040.

The final stage is to compare the two sets of flows to establish the cumulative impact of the construction of the 3FM Project on South Bank Road prior to the opening on the SPAR in 2039.

Identify the construction and operational traffic associated with the following schemes between the years 2023 to 2040

The derivation of the construction and operational traffic flows for each of the third-party schemes is explained in Table 14.44 overleaf and are summarised in the subsequent Table 14.45. The traffic data, construction periods and operational dates were sourced through meetings with DCC, NTA BusConnects, ESB, the developers of the Glass Bottle Scheme, and interrogation of the DCC online planning system for planning application documents.

Table 14.44 Derivation of Third-Party Construction and Operational Traffic Flows on South Bank 2023-2040

Information Source		*Home - BusConnects Dublin - Ringsend to City Centre (https://ringsendscheme.ie/). Referred to Chap 5 - Construction, Appendix A5.1 CEMP, Chap 6 - Traffic & Transport.*	*Meeting with NTA BusConnects on 12 Feb 2024.*	*Application Ref: 3074/23. Construction flows provided in Table 14.16 (Chap 14, page 321) of EIAR. Operational traffic was not assessed due to 'negligible volumes of traffic generation' during the operational phase - discussed in section 3 and section 14.6.4 of EIAR.*		*Application Ref: 3137/23. Table 5.5 of Request for Further Info doc provides construction flows. Operational traffic discussed in section 3 of EIAR.*		*Within the TTA for the 'Phase A Commercial' of the Glass Bottle development (Ref. 3480/22), the Transport Statement for the Glass Bottle Masterplan is appended (Ref. 3270/19). Table 4.1 and Table 4.3 of the appended Transport Statement provides the construction traffic and operational trips, respectively for the full Glass Bottle development.*		*Planning ref 3041/24 - https://planning.agileapplications.ie/dublincity/application-details/159394*
Construction Year	**Calendar Year**	**Construction of NTA Bus Connects & Dodder Bridge**	**Operation of NTA Bus Connects & Dodder Bridge**	**Construction of ESB Ringsend OCGT**	**Operation of ESB Ringsend OCGT**	**Construction of ESB Poolbeg OCGT**	**Operation of ESB Poolbeg OCGT**	**Construction of Glass Bottle**	**Operation of Glass Bottle**	**Construction & Operation Of Ecocem Extension**
	2023							30 trips in peak hour * 12-hour construction window = 360 trips. South Bank Road affected but no distribution, so assume worst case. Construction: current to 2036.		This application was decided on 04 Mar 2024. Decision was 'Additional Information'. Not considered in this assessment as not a committed development. It may be that the ability for Ecocem to implement its extension is compromised by the Plot L footprint.
	2024			Construction Q2 2024 to Q3 2026. One way daily ave construction flows for South Bank Road. *2 for two-way. So, 2024 = 102, 2025 = 270, 2026 = 207. Note on 2026, took the worse case.		Construction Q2 2024 to Q3 2026. One way daily ave construction flows for South Bank Road. *2 for two-way. So, 2024 = 76, 2025 = 272, 2026 = 272. Note on 2026, took the worse case.				
	2025									
Year 1	2026	Construction 2026 to 2028. Opening Year Q3 2028. Explains that construction traffic is not routed along South Bank Road. So no impact i.e. 0.			From Q3 2026 onwards. Operational traffic was not assessed due to 'negligible volumes of traffic generation' during the operational phase. Development to operate 'unmanned, controlled remotely from another ESB site'. Routine inspections & maintainence only.		From Q3 2026 onwards. Same as ESB Ringsend OCGT. Development to operate 'unmanned, controlled remotely from another ESB site'. Routine inspections & maintainence only. .		Assumed Glass Bottle scheme is rolled out at 9%pa of the daily total trips between the years 2026 and 2035, with full development being in place from 2036 onwards.	
Year 2	2027									
Year 3	2028		Meeting with NTA BusConnects on 12 Feb 2024. Confirmed frequency of services on South Bank Road to be: - 82 one every 20 mins i.e. 3 per hour - S2 one every 15 mins i.e. 4 per hour - Rapid bus service every 15 mins i.e. 4 per hour. Total buses per hour on South Bank Road is 11. So *16-hour = 176.							
Year 4	2029									
Year 5	2030									
Year 6	2031									
Year 7	2032									
Year 8	2033									
Year 9	2034									
Year 10	2035									
Year 11	2036								Peak hour trips derived from application Ref 3270/19. Daily flows derived from comparing proposed peak hour flows to the existing traffic profile on South Bank Road and Sean Moore Road.	
Year 12	2037									
Year 13	2038									
Year 14	2039									
Year 15	2040									

Table 14.45 Third-Party Construction and Operational Traffic Flows on South Bank 2023-2040– Two-way Daily Traffic Flows in Vehicles

Construction Year	Calendar Year	Construction of NTA Bus Connects & Dodder Bridge	Operation of NTA Bus Connects & Dodder Bridge	Construction of ESB Ringsend OCGT	Operation of ESB Ringsend OCGT	Construction of ESB Poolbeg OCGT	Operation of ESB Poolbeg OCGT	Construction of Glass Bottle	Operation of Glass Bottle
	2023							208	
	2024			102		76		208	
	2025			270		272		208	
Year 1	2026	0		270	0	272	0	208	437
Year 2	2027	0			0		0	208	873
Year 3	2028	0	176		0		0	208	1,310
Year 4	2029		176		0		0	208	1,746
Year 5	2030		176		0		0	208	2,183
Year 6	2031		176		0		0	208	2,619
Year 7	2032		176		0		0	208	3,056
Year 8	2033		176		0		0	208	3,492
Year 9	2034		176		0		0	208	3,929
Year 10	2035		176		0		0	208	4,365
Year 11	2036		176		0		0		4,802
Year 12	2037		176		0		0		4,802
Year 13	2038		176		0		0		4,802
Year 14	2039		176		0		0		4,802
Year 15	2040		176		0		0		4,802

Establish the 'Do Nothing' cumulative traffic flows between the years 2026 and 2040

Table 14.46 establishes the 'Do-Nothing' future year cumulative traffic flows between the years 2026-2040. 'Do Nothing' meaning that the 3FM Project is not constructed. Traffic from the third-party schemes as derived in Table 14.45 above are included. A breakdown of the traffic flows that will be generated by each individual existing Dublin Port land use, should the 3FM Project not be constructed, are also included – namely the Coal Yard, the Scrap Yard, Ecocem, Molasses, Rushfleet & Nolan. Finally, traffic flows for non-port uses along South Bank Road in the 'Do-Nothing' scenario between the years 2026 and 2040 are provided.

Table 14.46 'Do Nothing' future year cumulative traffic flows on South Bank Road for the years 2026-2040 – Two-way Daily Traffic Flows in Vehicles

		THIRD PARTY ELEMENTS								PORT-RELATED ELEMENTS							
Construction Year	Calendar Year	Construction of NTA Bus Connects & Dodder Bridge	Operation of NTA Bus Connects & Dodder Bridge	Construction of ESB Ringsend OCGT	Operation of ESB Ringsend OCGT	Construction of ESB Poolbeg OCGT	Operation of ESB Poolbeg OCGT	Construction of Glass Bottle	Operation of Glass Bottle	Coal Quay	Scrap Yard	Existing Ecocem	Molasses	Existing Plot O	Rushfleet & Nolan	All Other Existing Traffic Along South Bank Road	Total Traffic Along South Bank Road
Year 1	2026	0		270	0	272	0	208	437	153	153	102	51	1,176	792	1,360	4,974
Year 2	2027	0			0		0	208	873	157	157	104	52	1,194	815	1,689	5,248
Year 3	2028	0	176		0		0	208	1,310	160	160	106	52	1,214	839	1,313	5,537
Year 4	2029		176		0		0	208	1,746	164	164	108	53	1,233	863	1,127	5,842
Year 5	2030		176		0		0	208	2,183	167	167	110	54	1,253	889	958	6,164
Year 6	2031		176		0		0	208	2,619	171	171	112	55	1,273	915	805	6,504
Year 7	2032		176		0		0	208	3,056	174	174	114	56	1,293	941	669	6,862
Year 8	2033		176		0		0	208	3,492	178	178	116	57	1,314	969	552	7,240
Year 9	2034		176		0		0	208	3,929	182	182	118	58	1,335	997	454	7,639
Year 10	2035		176		0		0	208	4,365	186	186	120	59	1,356	1,027	377	8,060
Year 11	2036		176		0		0		4,802	190	190	122	61	1,378	1,057	529	8,504
Year 12	2037		176		0		0		4,802	194	194	125	62	1,400	1,088	933	8,972
Year 13	2038		176		0		0		4,802	198	198	127	63	1,422	1,120	1,362	9,467
Year 14	2039		176		0		0		4,802	202	202	129	64	1,445	1,152	1,816	9,988
Year 15	2040		176		0		0		4,802	206	206	131	65	1,468	1,186	2,297	10,538

The sum of the elements identified are the 'Do Nothing' cumulative traffic flows between the years 2026 and 2040 along South Bank Road, which is the baseline for the comparison with the Proposed cumulative traffic flows for the same period.

Table 14.46 establishes the Proposed future year cumulative traffic flows between the years 2026-2040. Again, the traffic from the third-party schemes as derived in Table 14.45 above are included. Using the proposed Construction Sequence for the 3FM Project, the impact traffic generated by each Dublin Port land use as the construction progresses between 2026 to 2038 is calculated. As Table 14.46 shows, the Coal Yard and Scrap Yard stop operating in 2031. The existing Ecocem and Molasses developments are unaffected by the construction of the 3FM Project and continue to operate as per the 'Do Nothing' scenario until the opening of the SPAR. The existing Area O operates at two thirds of its capacity between 2027 and 2037, before closing completely in 2038. Rushfleet & Nolan cease operations on the existing site in 2033. Other traffic flows for non-port users along South Bank Road are unaffected by the construction of the 3FM Project and continue to operate as per the 'Do Nothing' scenario.

The next stage is to introduce the proposed 3FM Project elements. The worst case construction traffic flows for the 3FM Project between the years 2026 to 2040 as identified above in Section 14.15 are included. Also included is the traffic generated by the 3FM Project prior to the opening of the SPAR, again in accordance with the Construction Sequence for year to year. This equates to Area N operating in isolation (i.e. without Area L) in 2035 at 30% capacity and at 100% capacity from 2036 until the opening of the SPAR.

The sum of these elements establishes the proposed cumulative traffic flows between the year 2026 and 2038, prior to the opening of the SPAR.

Table 14.47 Proposed future year cumulative traffic flows on South Bank Road for the years 2026-2040 – Two-way Daily Traffic Flows in Vehicles

		THIRD PARTY ELEMENTS								PORT-RELATED ELEMENTS								3FM ELEMENTS			
Construction Year	Calendar Year	Construction of NTA Bus Connects & Dodder Bridge	Operation of NTA Bus Connects & Dodder Bridge	Construction of ESB Ringsend OCGT	Operation of ESB Ringsend OCGT	Construction of ESB Poolbeg OCGT	Operation of ESB Poolbeg OCGT	Construction of Glass Bottle	Operation of Glass Bottle	Coal Quay	Scrap Yard	Existing Ecocem	Molasses	Existing Plot O	Rushfleet & Nolan	All Other Existing Traffic Along South Bank Road	Total Traffic Along South Bank Road	3FM Plot N Usage before opening of SPAR		3FM Construction Flows	Total Traffic along South Bank Road
Year 1	2026	0		270	0	272	0	208	437	153	153	102	51	1,176	792	1,360	4,974			0	4,974
Year 2	2027	0			0		0	208	873	157	157	104	52	796	815	1,689	5,248			108	4,958
Year 3	2028	0	176		0		0	208	1,310	160	160	106	52	809	839	1,313	5,537			204	5,337
Year 4	2029		176		0		0	208	1,746	164	164	108	53	822	863	1,127	5,842			160	5,591
Year 5	2030		176		0		0	208	2,183	167	167	110	54	835	889	958	6,164			124	5,871
Year 6	2031		176		0		0	208	2,619	171	171	112	55	849	915	805	6,504			129	6,209
Year 7	2032		176		0		0	208	3,056			114	56	862	941	669	6,862			87	6,170
Year 8	2033		176		0		0	208	3,492			116	57	876		552	7,240			87	5,564
Year 9	2034		176		0		0	208	3,929			118	58	890		454	7,639			166	5,999
Year 10	2035		176		0		0	208	4,365			120	59	904		377	8,060	401	N operating alone at 30% capacity	112	6,723
Year 11	2036		176		0		0		4,802			122	61	919		529	8,504	1,338	N operating alone at 100% capacity	170	8,117
Year 12	2037		176		0		0		4,802			125	62	933		933	8,972	1,338	N operating alone at 100% capacity	170	8,539
Year 13	2038		176		0		0		4,802			127	63			1,362	9,467	1,338	N operating alone at 100% capacity	285	8,152
Year 14	2039	SPAR Open																			
Year 15	2040																				

The final stage is to compare the two sets of flows in Table 14.46 and Table 14.47 to establish the cumulative impact of the construction of the 3FM Project on South Bank Road prior to the opening on the SPAR in 2039. The total cumulative traffic on South Bank Road in the Do-Nothing and Proposed scenarios is compared in Table 14.48 below.

Table 14.48 Comparison of 'Do Nothing' and Proposed future year cumulative traffic flows on South Bank between the years 2026 to 2038 – Two-way Daily Traffic Flows in Vehicles and Percentage Impact

		Total Traffic Along South Bank Road		
Construction Year	Calendar Year	DO NOTHING 2040	PROPOSED 2040	% Impact
Year 1	2026	4,974	4,974	0%
Year 2	2027	5,248	4,958	-6%
Year 3	2028	5,537	5,337	-4%
Year 4	2029	5,842	5,591	-4%
Year 5	2030	6,164	5,871	-5%
Year 6	2031	6,504	6,209	-5%
Year 7	2032	6,862	6,170	-10%
Year 8	2033	7,240	5,564	-23%
Year 9	2034	7,639	5,999	-21%
Year 10	2035	8,060	6,723	-17%
Year 11	2036	8,504	8,117	-5%
Year 12	2037	8,972	8,539	-5%
Year 13	2038	9,467	8,152	-14%
Year 14	2039	SPAR Open		
Year 15	2040			

Table 14.48 shows that the cumulative impact of construction activities related the 3FM Project reduces daily traffic flows on South Bank Road every year between 2026 to 2038 prior to the opening of the SPAR as represented by the negative percentage impacts in two-way traffic flows. The least impact is a 4% reduction in two-way daily flows in 2028 and 2029. The largest reduction is 23% in 2033. Post 2038, any construction traffic associated with the 3FM Project will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR.

This assessment has therefore demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes (NTA BusConnects & Dodder Bridge, ESB Ringsend OCGT, ESB Poolbeg OCGT, Glass Bottle scheme & Ecocem Extension) along with the construction of the 3FM Project and the continuation of existing Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2038 prior to the opening of the SPAR in 2039.

14.17 Construction Management Plans

14.17.1 Construction Environmental Management Plan

The 3FM Project construction works will be undertaken in compliance with a Construction Environmental Management Plan (CEMP) which will include all conditions of planning and mitigation measures brought forward from the environmental assessments undertaken during the preparation of this EIAR. A CEMP has been provided (under a separate cover) to enable a comprehensive assessment of the construction phase of the 3FM Project. It is proposed that the CEMP will be finalised subject to planning permission, and to incorporate any additional requirements pursuant to planning conditions attached to any permission granted.

14.17.2 Construction Traffic Management Plan

The construction-related vehicles will be controlled as set out in the Construction Traffic Management Plan (CTMP), that has been included within the hierarchy of the CEMP (Section 3.51). The CTMP will contain a detailed suite of traffic management measures in relation to:

- Operational organisation of the construction site and the construction site compound;
- Management of haulage route to access the construction site/compound;
- Expected numbers and nature of the construction vehicles;
- Site construction times and details of any time restrictions relating to construction vehicles on the in-charge road network;
- Details of temporary warning signage that may be required; and
- Provision for wheel washing, roadside cleaning, load checking and general maintenance of larger vehicles.

14.18 Interactions

Traffic and transportation considerations have been an integral part of the 3FM Project and the SPAR since the initial development of the concept scheme in 2016, through incorporation of the concept into the Dublin Port Masterplan 2040, Revised 2018 and now as a scheme for planning submission. Transportation is interlinked with the planning & policy, land use, road designs, construction strategy and has had years of iterative interaction with the planning, environmental (noise, vibration, air quality & heritage) and engineering teams to ensure the inherent layout of the proposed scheme maximises Port throughout whilst minimises the impact on the environment and local residents and provides planning gain for active travel provision and road capacity.

A key interaction was with the DPC's planning consultants to ensure adherence with transport related planning policies relating the SPAR and its restricted use, active travel provision and the futureproofing of the scheme for the LUAS and rail freight.

There has been a strong interaction with the road engineering teams, through iterative detailed assessment to ensure the 3FM Project will provide roads and junctions that have adequate future year capacity and can be delivered on the ground. A key consideration was HGV vehicle routing and detailed signage strategy.

An equally strong interaction was required with the planning and engineering teams for the proposed active travel provision with regard to design, policy, routing, ensuring connectivity with existing and future active travel schemes and users.

Minimising the impact on heritage within the port environs for the transportation elements has been a key consideration requiring years of iterative interaction with the heritage team, particularly along East Wall Road, North Quay Extension and Pigeon House Road.

Transportation has interacted with the engineering teams to derive the construction vehicle calculations and the construction vehicle haulage routing haulage route, including the off-site removal of contaminated material.

Detailed traffic flows (16hr/8hr/24hr in vehicles and HGVs proportions) have been provided to allow detailed assessment within the EIAR and engineering designs for following disciplines.

- Air Quality,
- Climate Change
- Noise & Vibrations
- Carbon Calculations
- Human Health
- Road Engineering, including pavement design calculations.

14.19 Summary and Conclusions

A Traffic and Transportation Assessment (TTA) has been carried out within Chapter 14 of the EIAR for which has demonstrated the planning gain that will be provided by the 3FM Project in the context of traffic and transportation effects:

- The SPAR (Southern Port Access Route) removes up to 95% of HGVs from the Tom Clarke bridge and up to 50% of HGVs from the East Wall Road per day. The provision of the SPAR reduces the overall daily traffic on the Tom Clarke by 30% and by 20% on East Wall Road (Units PCUs). In addition to providing capacity benefits to the external road network, there are additional benefits associated with noise, vibration & air quality, and reduction in the wear & tear of the in-charge carriageway. **This is a significantly positive and permanent effect.**
- The reductions are consistent with the original findings of the Strategic Transportation Study carried out for the Strategic Environmental Assessment in 2018 when the SPAR concept was first introduced as part of the revision to the Dublin Port Masterplan. The SPAR is relatively lightly trafficked and is free-flowing, contributing to the air quality / emissions in the local environs and has been future proofed to accommodate a Luas extension, as well as being designed to provide a high standard of active travel provision. **This is a significantly positive and permanent effect.**
- The road and junction amendments being proposed as part of the 3FM Project on the Poolbeg Peninsula have sufficient capacity to comfortably accommodate traffic generated by Dublin Port and the other users on the Peninsula. **This is a significantly positive and permanent effect.**
- There are a suite of road and junction improvement measures proposed on the North Port Estate that ensure the traffic generated by the fulfilment of the entire Dublin Port Masterplan 2040, Revised 2018 can be accommodated within the port's internal road network, even for the most robust assessment which considers that the existing traffic daily profile is maintained in future years. Importantly, the road works ensure that the traffic queue does not extend on Promenade Road to block the Dublin Tunnel (M50). **This is a significantly positive and permanent effect.**
- The Dublin Port Tunnel will have sufficient capacity at 2040 when the 3FM Project is complete and operational. **This is a significantly positive and permanent effect.**
- The 3FM active travel proposals are significant and provide planning gain to Port users and the public. They have been carefully designed to take cognizance of the surrounding existing, committed, and potential surrounding schemes, and provide connectivity between the public realm areas, the port's operational plots and the external active travel network. Inter-modal connectivity between public transport and end-users using active travel is demonstrated, and the NTA BusConnects Ringsend scheme provides enhanced services to the area. The 3FM Project includes 7km of new or upgraded Active Travel Path (cycle, pedestrian, wheelers etc.) and 4.9km of new or upgraded footway across the North Port, SPAR and Poolbeg Peninsula, which will link with the 1.4km Liffey-Tolka Greenway in the North Port Estate, and from there to the 3.2km Tolka Estuary Greenway currently under construction by Dublin Port. DPC will also provide Dublin City Council with a €5 million contribution for future

upgrading of the existing coastal path along the southern perimeter of the Poolbeg Peninsula. **This is a significantly positive and permanent effect.**

- The SPAR will allow the 3FM Project to be rail enabled through rapid road shunting of freight by electrically powered shunting vehicles from the South Port, across the Liffey, to rail intermodal facilities in the North Port vicinity. This is the preferred option for rail freight considered by DPC. In this TTA, it has been assumed that no other modes other than road vehicles have been used for transporting material from the port for a robust assessment. **This is a positive and permanent effect.**
- A Mobility Management Plan (MMP) has been appended which sets out the measures which will be adopted by DPC, in liaison with the operators, to ensure that the sustainable transport facilities are made available and are utilised by the users of the 3FM Project. The modal breakdown for the proposed Lo-Lo and Ro-Ro Terminals within the 3FM Project assumes a modal split of 60% for private car use in 2040, a modal shift compared to the surveyed levels at MTL of 77% private car use in 2022. **This is a positive and permanent effect.**
- The cumulative assessment found that the construction activities related the 3FM Project reduces daily traffic flows on South Bank Road every year between 2026 to 2038 prior to the opening of the SPAR. Construction vehicles will be managed in accordance with the Construction Environmental Management Plan and Construction Traffic Management Plan. **This is a positive and temporary effect.** Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR.
- Details of the proposed HGV routing for the 3FM Project have been provided. It has been demonstrated that all third party haulier HGVs are routed away from the Glass Bottle site duing the nighttime hours of 23:00-07:00 to minimise any potential inconvenience to residents. **This is a positive and permanent effect.**
- All port shunting vehicles will be electrically powered or similar to provide lower carbon & reduced noise benefits. **This is a positive and permanent effect.**

Methodology

The Traffic and Transportation Chapter of this EIAR summarises the existing conditions relevant to the transportation assessment for the 3FM Project.

The Chapter considers several schemes and transportation infrastructure improvements, both within the port and its environs, which are of particular relevance to the EIAR TTA for the 3FM Project.

Scoping correspondence and meetings took place with the bodies listed below, and the received comments have been considered within the assessment set out in this Chapter:

- National Transport Authority (NTA);
- Transport Infrastructure Ireland (TII);
- Transportation Planning Division, Dublin City Council (DCC).

The methodology for the EIAR TTA was described in detail at a pre-application meeting with DCC, including members from the Transportation Planning Division, and the method seemed to be received positively.

Existing Traffic Flows & Assessment periods

38 junctions were surveyed for 24 hours on 24 October 2023 in order to assess traffic flows over a typical day. Classified traffic turning count surveys were carried out, and supplemented with the following existing information:

- Existing queue length surveys;
- Camera footage of each junction;
- Traffic signal controller information from DCC for each signalised junction;
- NMU Surveys.

The surveyed traffic flows were converted to Passenger Car Units (PCUs) using the conversion factors from the TII Project Appraisal Guidelines, with the exception of OGV2 for which the PCU conversion rate of 2.3 has been increased to 2.9 to provide an additionally robust assessment.

Peak hour assessments have been taken forward for detailed traffic impact assessment:

- Internal AM Port Peak Hour 06:15 to 07:15 referred to as AM1
- External Network AM Peak Hour 08:00 to 09:00 referred to as AM2
- Internal Midday Port Peak Hour 12:30 to 13:30 referred to as MD
- External Network PM Peak Hour 17:00 to 18:00 referred to as PM

Do-Nothing Traffic Flows

Do-Nothing Traffic Flows were derived for the year 2040 based on the following methodology:

- A SATURN model was calibrated for the based year (2023) based on the surveyed traffic flows.
- The ANPR Origin-Destination data was used to:
    - separate port traffic and non-port traffic;
    - Separate HGV from non-HGVs.
    - to isolate the traffic from each land use as required in order to assign the differing growth rates between 2023 to 2040.
- The road network in the Dublin Port North Estate was built into the model for the Do-nothing scenario which includes:
    - an upgraded left slip entry from East Wall Road onto Alexandra Road for HGV entry to Terminal 4 (currently Seatruck) and Alexandra Quay East (currently DSG).
    - Closure of all other traffic movements at the East Wall Road / Alexandra Road junction and reassignment to the Promenade Road access.
    - The construction of the T10 Link Road south.
- Committed traffic flows for the Glass Bottle site and the NTA BusConnects scheme was added.
- The resultant flows represent the Do-nothing traffic scenario for the year 2040 for each of the assessment periods.
-

Proposed Traffic Flows

Proposed Traffic Flows were derived for the year 2040 based on the following methodology:

- A SATURN model was calibrated for the based year (2023) based on the surveyed traffic flows.
- The ANPR Origin-Destination data was used to:
    - separate port traffic and non-port traffic
    - Separate HGV from non-HGVs
    - to isolate the traffic from each land use as required in order to assign the differing growth rates between 2023 to 2040
- External traffic will be grown in accordance with TII guidelines.
- Existing port uses on the South Port Estate are being retained remain within the model and the applicable traffic growth rate for 2023-2040 was applied
- Traffic flows from the existing port land uses on the South Port Estate that are required to construct the 3FM Project are removed.
- The Dublin Port North Estate traffic will be increased by a factor of 1.722 to reflect traffic growth between 2023 and 2040. It is proposed that the that current diurnal traffic patterns entering the port for the North Estate get multiplied up on a pro-rata basis to establish the proposed traffic flows in 2040. This provides a robust assessment of the proposed road and junction improvements within the North Port Estate as there may be trend towards the spreading of peak hours and night-time running through the Dublin Tunnel (M50) especially towards the end of the DPMP2040. If this peak hour spreading or night-time running trend happens, it will lessen the daytime peak hour flows that have been modelled in this TTA.
- The model is based on the proposed road network including the SPAR, and the North and South Port Estates and the Poolbeg Peninsula. The elements below that formed part of the Do-Nothing network are retained in the proposed scenario.
- Committed traffic flows for the Glass Bottle site and the NTA BusConnects Ringsend scheme are added.
- The proposed traffic flows for the 3FM Project are added. These are:
    - HGVs, staff & visitors for the Lo-Lo terminal (Areas N &L)
    - HGVs staff & visitors for the Ro-Ro terminal (Areas K &O)
    - Proposed Maritime Village
    - Proposed port Operations
    - Five buses per hour per direction to allow for Public Transport of 25+ passengers.
- The model assigned traffic flows based on the restricted use assessed for the SPAR.
- The resultant flows represent the proposed traffic scenario for the year 2040 for each of the assessment periods.

Planning Gain of the SPAR to the External Road Network

Comparing Do-Nothing to proposed traffic flows for 2040 revealed that the proposed SPAR removes up to 95% of HGVs from the Tom Clarke Bridge and up to 50% of HGVs from the East Wall Road per day. The provision

of the SPAR reduces the overall daily traffic on the Tom Clarke Bridge by 30% and by 20% on East Wall Road (Units PCUs). In addition to providing capacity benefits to the external road network, there are additional benefits associated with noise, vibration & air quality, and reduction in the wear & tear of the in-charge carriageway.

HGV Routing to the 3FM Project

The proposed HGV routing between the Dublin Tunnel (M50) and the 3FM Project will be via Promenade Road connecting to the SPAR via the Berth 18 Access Road within the North Port Estate.

The 3FM Project proposes an upgraded slip entry from East Wall Road onto Alexandra Road for HGV entry to Terminal 4 and Alexandra Quay East - there is no access to the SPAR from the Alexandra left slip road. Other traffic movements will not be permissible at the Alexandra Road access except for blue light access emergency use should an incident occur within the port.

Details of the proposed HGV routing (entry, exit and between Areas) for Areas N & L (the Lo-Lo terminal) and Areas K & O (the Ro-Ro terminal) have been provided. Notably HGVs are routed away from the Glass Bottle site duing the nighttime hours of 23:00-07:00 to minimise any potential inconvenience to residents. The only exception are port shunting vehicles returning unladen from Area O to Area K which will be electrically powered or similar to provide lower carbon & reduced noise benefits.

Mobility Management Plan

A Mobility Management Plan (MMP) has been appended which sets out the measures which will be adopted by DPC, in liaison with the operators, to ensure that the sustainable transport facilities are made available and are utilised by the users of the 3FM Project. The modal breakdown for the proposed Lo-Lo and Ro-Ro terminals within the 3FM Project assume a modal split of 60% for private car use in 2040, a modal shift compared to the surveyed levels at MTL of 76% private car use in 2022. This target will be achieved using the suite of active and sustainable travel infrastructure provision proposed within the 3FM Project along with the suite of management measures provided within the MMP.

Dublin Tunnel (M50)

The TTA has demonstrated that proposed demand for travel through the Dublin Tunnel (M50) will remain within the nominal capacity of 3,800 PCUs per hour throughout the day, with a maximum of 3,009 PCUs occurring the midday peak hour in 2040. The total of 80,193 PCUs per day does not exceed the 182,400 daily PCU capacity of the Tunnel, or the capacity of 91,200 PCUs per direction.

18hr/6hr/24hr in vehicles and HGVs proportions

Detailed traffic flows (16hr/8hr/24hr in vehicles and HGVs proportions) have been provided to allow detailed assessment within the EIAR and engineering designs for following disciplines.

- Air Quality,
- Climate Change
- Noise & Vibrations
- Carbon Calculations
- Human Health

- Road Engineering, including pavement design calculations.

Modelling Results for the South & North Port Estate Road Network

The modelling results demonstrate that with the proposed junction upgrades in place and new junctions constructed as part of the 3FM Project, the Dublin Port Road Network is predicted to operate within capacity for all scenarios considered.

Importantly, the modelling results shows that the queue on Promenade Road contained within the gyratory, less than 127m from the proposed signalised Circle K junction, for the worst-case scenario in 2040. This demonstrates that the back of the queue will be a comfortable distance away from the Dublin Tunnel (M50) southern portals.

Details of the rolling out of the upgraded road and junction works have been provided with the construction sequence and show that the upgrades are delivered on the ground from the year 2027 until 2039.

Rail Freight

A detailed consideration was given to rail freight enabling of the 3FM Project. DPC have reviewed options for rail connectivity for the 3FM Project and the port more generally. DPC considers that the preferred option, which is most beneficial from a cost, sustainability and environmental perspective is the servicing of rail freight for the port from a dedicated intermodal rail freight depot at North Wall, accessed by a dedicated bridge over East Wall Road, with 3FM terminals accessing the terminal via shunting through the SPAR.

This would ensure the full access to the national rail network of cargo landed at the proposed new 3FM terminals in the South Port Estate, without necessitating the construction of a further, dedicated rail bridge across the Liffey with the associated financial and carbon costs of such a significant piece of construction. Through the envisaged intermodal freight depot at North Wall, freight from the proposed 3FM facilities will access the national rail network by being shunted across the newly proposed SPAR by electrically powered shunting vehicles, resulting in the proposed 3FM facilities being fully rail-accessible in the most sustainable and economic fashion.

In the TTA all of the proposed throughput for the operational plots have been assessed as travelling by road to provide a robust assessment of the road network capacity.

Proposed Car Parking at the 3FM Project & EV Requirements

A 24-hour multi-modal trip breakdown and parking provision for staff & visitors at the proposed Areas K, N, L and O has been derived based on the surveyed conditions at the existing MTL site in 2022 as directed in the DCC Development Plan 2022-2028. In accordance with policy SMT29, 'Expansion of the EV Charging Network' on page 257 of the Dublin City Development Plan 2022-2028, 50% of car parking spaces included within the 3FM Project will be equipped with EV Charging Points.

Construction Traffic

Construction traffic in the North Port Estate

The maximum daily construction flow within the North Port Estate is 64 one-way vehicles (128 two-way vehicles) in the second half of 2037 which represents about 0.5% of the daily two-way traffic flows and will be imperceivable, no more noticeable than the ordinary daily fluctuations in traffic flows.

Construction traffic in the South Port Estate

The maximum daily construction flow generated by the 3FM Project for the South Port Estate is 142 one-way vehicles (285 two-way vehicles) in the second half of 2038. During pre-application meetings, DCC TPD raised concerns that the construction traffic generated by the 3FM Project would be accessing the Poolbeg Peninsula via the existing external road network prior to the opening of the SPAR in 2039. The planning authority therefore requested a cumulative assessment on South Bank Road for construction and operational traffic for existing and committed schemes during the construction of the 3FM Project but prior to the opening of the SPAR (i.e.2026-2038). This was provided, as detailed in the Cumulative Impact section below, and found that traffic flows along the South Bank Road in the years 2026-2028, prior to the opening of the SPAR, are reduced due to the phased closure of existing operations as the construction sequence progresses to refunction Port lands.

The 3FM Project construction works will be undertaken in compliance with a Construction Environmental Management Plan (CEMP) and a Construction Traffic Management Plan (CTMP) containing a suite of appropriate and effective traffic management measures (such as haulage routes, expected numbers of construction vehicles for each phase, details of temporary warning signage, provision for wheel washing, roadside cleaning, load checking and general maintenance of larger vehicles).

Cumulative Impact

An assessment has been carried out of the cumulative impact of the consented schemes within the environs of the 3FM Project. It has been demonstrated that:

Cumulative Impact on the North Port Estate

As the 3FM Project represents the Third and Final Masterplan Project, the traffic flows used in this TTA represent the fulfilment of the full DPMP2040 in the year 2040. Therefore, they inherently include the cumulative impact of all committed and proposed developments within the DPMP2040 including the other SID applications of ABR and MP2. The proposals (road, junction, and active travel upgrades) therefore represent the mitigation of the cumulative impact within the North Port Estate.

Cumulative Impacts on the External Road Network

The introduction of the SPAR reduces the daily traffic on the existing Tom Clarke Bridge & the R131 by 30% and the traffic on East Wall Road by 20% (Units PCUs). The SPAR removes 95% of HGVs from the Tom Clarke and 50% of HGVs from the East Wall Road per day. This removal of traffic from the external road network provides benefits to the schemes being progressed by others in the Port environs including the Point Bridge Active Travel Scheme, the NTA Bus Connects & the Dodder Bridge Scheme and the DCC Upgrade of the East Wall Road and the Glass Bottle Scheme. The use of high traffic growth rates in the TTA for non-port traffic flows to derive future year flows inherently incorporates development schemes being delivered in the local environs of the Port up to the year 2040.

Cumulative Impact on South Bank Road Prior to the Opening of the SPAR

During the pre-application meetings with the DCC Transport Planning Division (TPD), it was noted that South Bank Road will be the only access to the Poolbeg Peninsula until the opening of the SPAR in 2039. DCC TPD therefore requested consideration be given to the cumulative traffic impact on South Bank Road for construction and operational traffic for existing and committed schemes during the construction of the 3FM Project but prior

to the opening of the SPAR (i.e.2026-2038). The TTA provides a detailed assessment to address this request based on daily two-way traffic flows (Unit: Vehicles) along South Bank Road.

The cumulative assessment found that the construction activities related the 3FM Project reduces daily traffic flows on South Bank Road every year between 2026 to 2038 prior to the opening of the SPAR with a minimum 4% reduction in two-way daily flows in 2028 and 2029 and a maximum reduction of 23% in 2033. Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR.

The assessment therefore demonstrated that when the construction and operational cumulative traffic impact is considered from third party schemes (e.g. NTA Bus Connects & Dodder Bridge, ESB Ringsend OCGT, ESB Poolbeg OCGT, Glass Bottle scheme & Ecocem Extension) along with the construction of the 3FM Project and the continuation of the Dublin Port activities (at a reduced level due to the construction activities) there is a reduction in traffic flows along the South Bank Road in the years 2026-2028 prior to the opening of the SPAR in 2039.

Interactions

Traffic and transportation considerations have been an integral part of the 3FM Project and the SPAR since the initial development of the concept scheme in 2016, through incorporation of the concept into the Dublin Port Masterplan 2040, Revised 2018 and now as a scheme for planning submission. Transportation is interlinked with the planning & policy, land use, road designs, construction strategy and has had years of iterative interaction with the planning, environmental (noise, vibration, air quality & heritage) and engineering teams to ensure the inherent layout of the proposed scheme maximises port throughput whilst minimising the impact on the environment and local residents and provides planning gain for active travel provision and road capacity.

Conclusion

In summary, the 3FM Project provides significant planning gain in traffic and transportation terms. During the operational stage the Project will provide substantially increased vehicular capacity by providing the SPAR and a significantly enhanced road network connecting the proposed port operational areas located on the Poolbeg Peninsula to the SPAR and through the North Port Estate to connect directly to the Dublin Tunnel. The SPAR removes up to 95% of HGVs from the Tom Clarke bridge and up to 50% of HGVs from the East Wall Road per day. The provision of the SPAR reduces the overall daily traffic on the Tom Clarke bridge by 30% and by 20% on East Wall Road (Units PCUs) delivering the additional benefits associated with noise, vibration and air quality and reduction in the wear and tear of the in-charge carriageway. The Project provides a substantial amount of high-quality active travel facilities carefully designed to provide connectivity between the public realm areas, the port's operational plots and the external active travel network, with end user facilities and a Mobility Management Plan to encourage use. The cumulative assessment found that the construction activities related the 3FM Project reduces daily traffic flows on South Bank Road every year between 2026 to 2038 prior to the opening of the SPAR. Post 2038, any construction traffic associated with 3FM will be routed onto the SPAR, relieving South Bank Road of construction vehicles generated by the 3FM Project and providing the planning gain to the external road network provided by the SPAR. Construction vehicles will be managed in accordance with the Construction Environmental Management Plan and Construction Traffic Management Plan.