

From: [REDACTED]
To: [post2040](#)
Subject: Alternative Viewpoint - Is it time to start planning an Irish Sea Tunnel?
Date: 05 July 2021 00:31:10
Attachments: [Dublin Port Submission Roy Harford.pdf](#)

Hello,

My name is Roy Harford and I am a private-sector transport planner living and working in Dublin. I would like to make the attached personal submission to the Dublin Port Post 2040 Dialogue.

Thank you,

Kind Regards,

Roy

Alternative viewpoint - Why assume that new sea ports are the only solution to handle a future increase in cargo traffic? Is it time to start planning for a future tunnel under the Irish Sea to handle this traffic instead?

Hello,

My name is Roy Harford and I am a private-sector transport planner living and working in Dublin. I would like to make this personal submission to the Dublin Port Post 2040 Dialogue. I welcome that Dublin Port is starting to plan for its future development post 2040, and that it has taken the initiative to start this dialogue on its future long term options. The planning and development of any new port facilities will take a long number of years to complete and Dublin Port is right to start planning for this now.

I have reviewed the seven dialogue papers, and I would strongly agree with Dublin Port's opinions that Dublin Port should not be expanded any further into Dublin Bay, that Dublin Port should not be relocated to a new location, and that the ideal scenario is that the need to build new additional greenfield port facilities does not arise. The environmental impacts of the DP1.5 and DP2.0 facilities envisaged and the physical impact they would have on the Irish coastline would be huge, and this should be avoided if at all possible.

However, I would like to question the basic assumption within the dialogue papers that future cargo capacity, if it is required, should be provided through new sea port facilities. The long term cargo projections provided in paper 5 show that the bulk of the increased capacity would be in Ro-Ro traffic. Currently, 85% of all Ro-Ro traffic in Irish Ports is with the UK (predominantly Holyhead and Liverpool), so assuming that this proportion remains the same, the majority of our future increase in cargo traffic is likely to be with Holyhead and Liverpool.

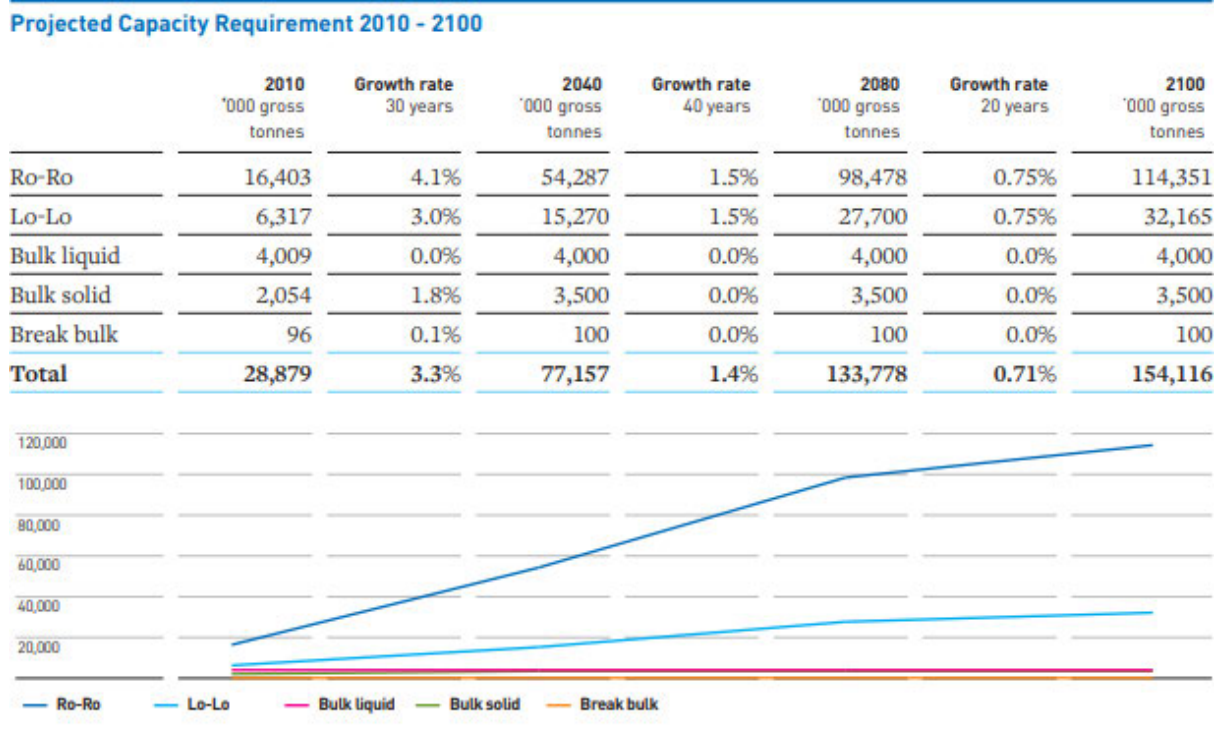
I would like to provide an alternative viewpoint. Holyhead is just 104 kilometres from Dublin Port. If the bulk of our future cargo traffic will be to and from the UK, is sea the most appropriate mode to cater for this traffic? Should we be building new greenfield port facilities on either side of this 104 kilometres, or is it time for us to start planning for a potential tunnel under the Irish Sea to cater for this traffic?

Cargo Traffic and Projections

The long term cargo projections outlined in dialogue paper 5 (see Figure 1) show that for the baseline year in 2010, Ro-Ro traffic accounted for 16 million gross tonnes, or 57% of the total 29 million tonnes of cargo handled. This Ro-Ro traffic is projected to more than triple to 54 million tonnes by 2040, increasing its share to 70% of the total 77 million tonnes of cargo in 2040. And it is further projected to nearly double again to 98 million tonnes by 2080, reaching a share of nearly 75% of the total 134 million tonnes in 2080.

While Lo-Lo traffic is also projected to increase significantly over this period, it is clear that under these projections that it is the growth in Ro-Ro traffic which is driving the need for additional cargo capacity at Dublin into the future, and it is Ro-Ro traffic which will account for the vast majority of port capacity in the future.

Figure 1: Long term projections by cargo mode (DPC Paper 5, p.4, <https://www.dublinportpost2040dialogue.ie/wp-content/uploads/2020/09/Paper-5-The-conundrum-of-planning-for-long-term-growth.pdf>)



CSO Port Traffic Statistics show that 85% or 14 million of the 16 million tonnes of Ro-Ro traffic in Irish ports in 2019 was with the UK (see Figure 2). Assuming that this 85% proportion remains the same, this would mean that in 2040, Ro-Ro traffic between Dublin Port and the UK would reach 46 million tonnes, and in 2080, would reach 84 million tonnes.

For comparison, this is 40% more than the 60 million tonnes of capacity envisaged for DP1.5, and is four times the 21.3 million tonnes of freight transported through the Channel Tunnel in 2017. It is clear from these figures that there would be more than enough traffic to utilise a potential tunnel under the Irish Sea, and that such a tunnel, depending on its capacity, could potentially remove the need for additional sea port capacity on the east coast of Ireland up to 2100 and beyond.

Figure 2a: Goods Handled at Irish Ports 2019, by thousand tonnes (CSO, Table TBA03, <https://data.cso.ie/>)

Type of Cargo	All regions	UK	Other EU	Non-EU Europe	Outside Europe	Coastal trade
All types of cargo	53240	21297	19499	2193	7910	2341
Roll-on/roll-off traffic	16183	13778	2399	4	2	
Lift-on/lift-off traffic	8009	713	6953	17	115	212
Liquid bulk	11736	4501	1904	755	3042	1533
Dry bulk	15633	1919	7345	1200	4672	496
Break bulk and all other goods	1680	386	898	216	79	100

Figure 2b: Goods Handled at Irish Ports 2019, by % share (CSO, Table TBA03, <https://data.cso.ie/>)

Type of Cargo	All regions	UK	Other EU	Non-EU Europe	Outside Europe	Coastal trade
All types of cargo	100%	40%	37%	4%	15%	4%
Roll-on/roll-off traffic	100%	85%	15%	0%	0%	0%
Lift-on/lift-off traffic	100%	9%	87%	0%	1%	3%
Liquid bulk	100%	38%	16%	6%	26%	13%
Dry bulk	100%	12%	47%	8%	30%	3%
Break bulk and all other goods	100%	23%	53%	13%	5%	6%

Financial Costs

A tunnel under the Irish Sea would be a significantly larger and more expensive megaproject than any new greenfield sea port. A technical briefing produced by the Institution of Civil Engineers' Engineering Knowledge team in 2020, with input from independent bridge and tunnel consultants, estimated the cost of a Dublin to Holyhead bored tunnel at around £15 billion, although with associated infrastructure including new rail links the total cost would probably be closer to around £30 billion (*Institution of Civil Engineers*, https://www.ice.org.uk/getattachment/knowledge-and-resources/briefing-sheet/the-irish-sea-crossing-conundrum/irish_sea_crossings.pdf).

This is multiple times more than the €3.9 billion to €4.2 billion cost estimated to construct DP1.5. However, this needs to be viewed in context. The projected increase in cargo traffic which would be handled by DP1.5 will also need to be handled at the other end of its journey, so it is likely that a similar investment in new port facilities will also be required at sea ports in Great Britain to handle this projected increase in traffic into the future. And an additional multi-billion euro investment will also be required to purchase and replace the numerous ships which will be transporting this freight into the future.

In addition to handling freight, a potential tunnel would also cater for a significant amount of passenger traffic currently handled by air, which is also likely to rise significantly into the future. The multi-billion euro investment which will be required in aviation infrastructure in both Ireland and Great Britain into the future, if all this passenger traffic was to continue being catered for by air, also needs to be taken into account. So while the cost of a potential tunnel may at first appear very high, it is certainly not prohibitive when you add together all of the various future costs which would be offset by the existence of such a tunnel.

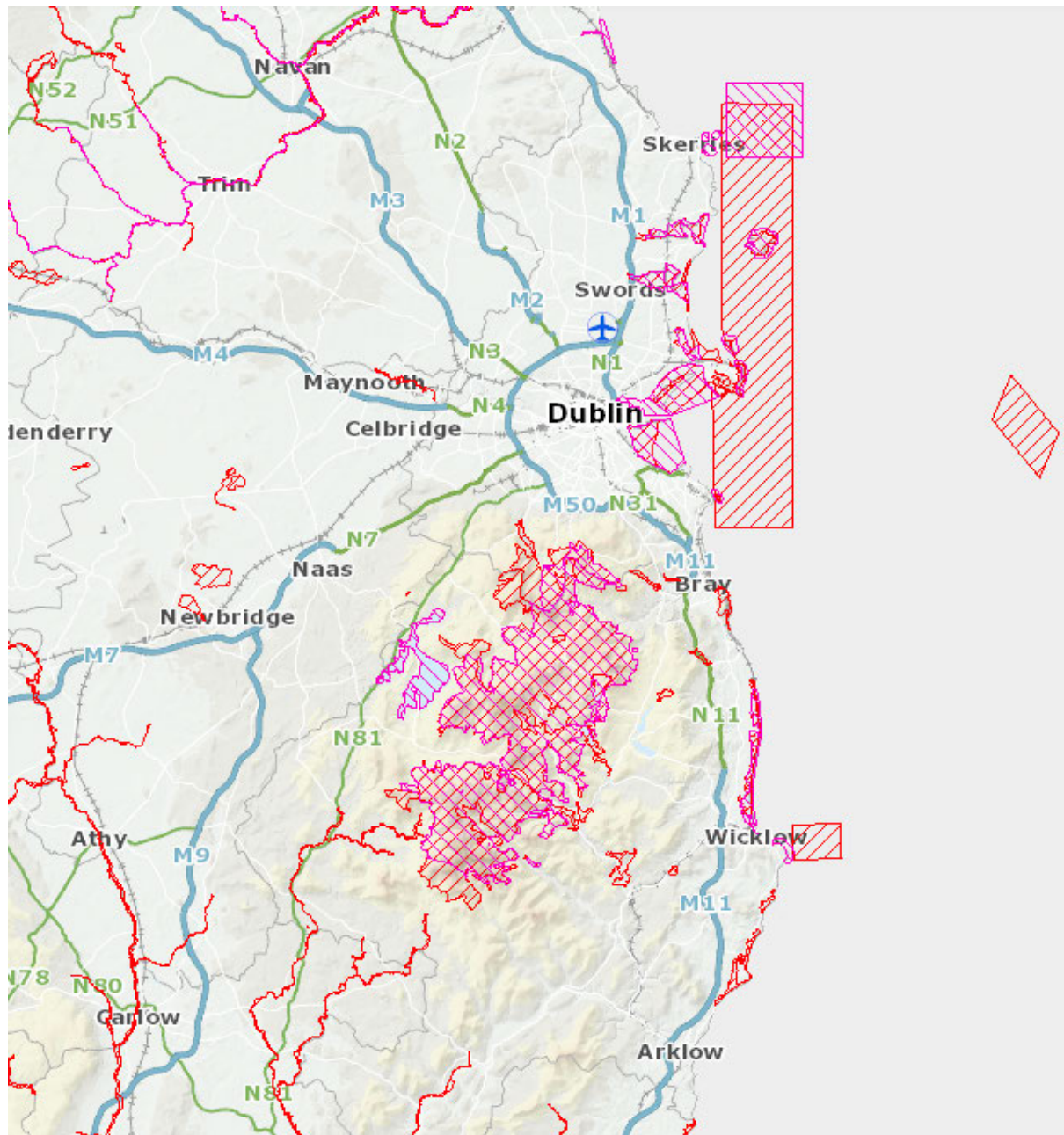
Environmental Impacts

When deciding on the optimal solution to cater for a future increase in cargo traffic, the environmental considerations are probably an even more important factor than the financial costs. The construction of a new sea port facility of the scale of DP1.5 would have huge environmental impacts and would result in a major physical change to the Irish coastline, as illustrated in the dialogue papers. It will almost certainly result in the destruction of parts of some EU protected coastal habitats, and as acknowledged in dialogue paper 7, it would be very difficult to secure the necessary consents, requiring acceptance of an IROPI argument, which has never been permitted in Ireland before.

In contrast to this, a bored undersea rail tunnel of a similar type to the Channel Tunnel could be constructed with significantly less direct environmental impacts. The construction portals and compounds could be located further inland, in locations well away from any protected habitats and in a much less sensitive environment. Similarly, the terminal facilities required to handle the freight off trains could also be located in a more suitable inland location, avoiding any impact on the highly sensitive coastline where there is a large concentration of EU protected habitats.

As can be seen in Figure 3, EU Designated Sites (Special Protection Areas and Special Areas of Conservation) are predominantly concentrated along the coastline or in mountainous areas. The coastal sites are particularly sensitive to damage, because the movement of water along the coast can result in a disturbance in one location overspilling and causing damage to nearby sites further along the coast. In contrast to this, it can be seen that there are many inland locations around the outskirts of Dublin City and adjoining counties where construction compounds and terminal facilities could be located with no likely impact to protected habitats.

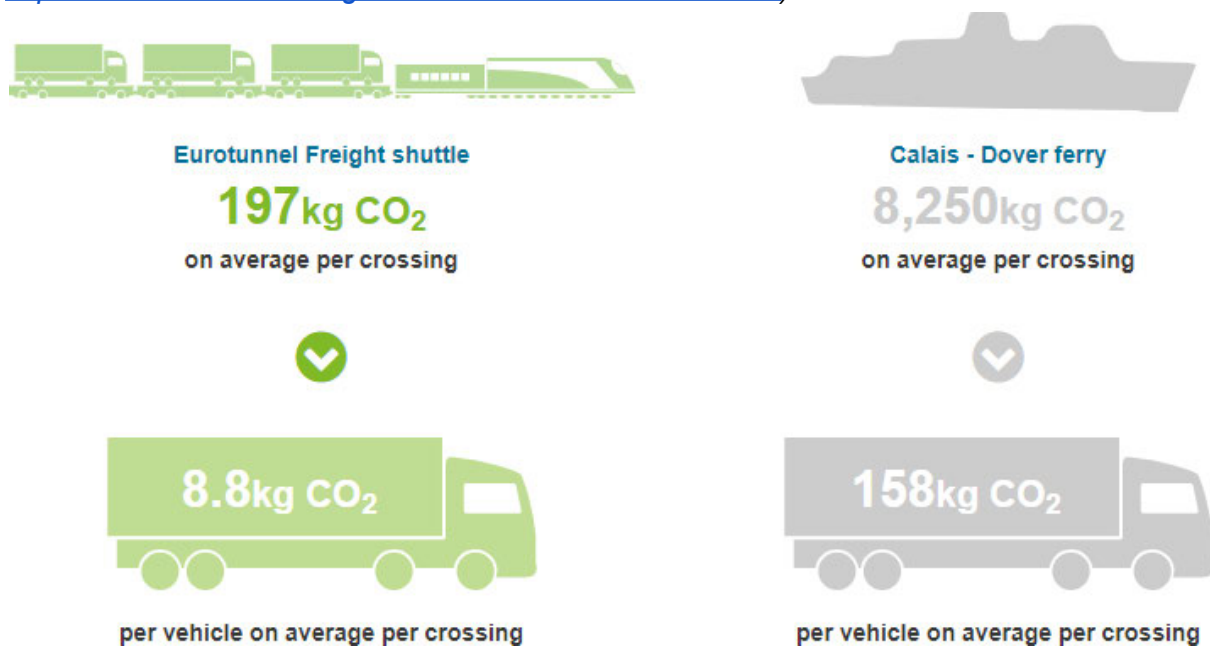
Figure 3: EU Designated Protected Sites along Greater Dublin Coastline (National Parks & Wildlife Service, NPWS Protected Sites map-viewer, <https://www.npws.ie/maps-and-data>)



In addition to the environmental impacts of construction, the environmental impacts during the operational phase also need to be considered. While sea is one of the most environmentally efficient modes for long distance cargo transport, it is not as efficient as other modes for shorter distances. A study carried out by a specialist consultancy JMJ Conseil for Eurotunnel in 2018 found that the carbon emissions generated by transporting freight by ferry between Dover and Calais was nearly 18 times the carbon emissions generated by transporting the same freight on a Eurotunnel Freight Shuttle Train (see Figure 4).

Assuming that it would be a similar case between Dublin and Holyhead, shifting future cargo traffic from Ro-Ro ferries to a potential tunnel under the Irish Sea would dramatically reduce the carbon emissions associated with overseas freight to and from Ireland. With up to an 18-fold decrease in emissions compared to transport by sea, despite the significant increase in cargo traffic projected between now and 2100, we would still be capable of reducing our carbon emissions significantly from their current levels.

Figure 4: Comparison of CO₂ Emissions to Transport Freight across the English Channel, by Eurotunnel Freight Shuttle Train and by Calais-Dover Ferry (Eurotunnel Carbon Counter, <https://www.eurotunnelfreight.com/uk/about/carbon-counter/>)



However, an even larger environmental benefit of having a tunnel would probably be the opportunity to generate a significant modal shift from air to rail for passenger journeys. A study carried out by Paul Watkiss Associates Ltd in 2017 for Eurostar found that an average of 90% less greenhouse gas emissions per passenger was produced on a Eurostar train from London to Paris or Brussels in comparison to the same journeys on an equivalent short-haul flight.

Currently, the journey by sea and land between any of the main cities in Ireland and Great Britain is long and uncompetitive in comparison to air. For example, a journey by ferry and train between Dublin and London takes a minimum of 7 hours at present, compared to around 1.5 hours by air. However, with an undersea rail tunnel and associated high-speed rail connections into the UK's HS2 scheme, such a journey could be reduced to around 3 hours, making rail a very competitive option against air, and quicker than air for city centre to city centre journeys.

Figure 5: Comparison of Greenhouse Gas Emissions per Passenger from London to Paris and Brussels, by Eurostar Train and an Equivalent Short-Haul Flight (Eurostar, All About Emissions, <https://www.eurostar.com/rw-en/carbon-footprint>)



But the significance that such a modal shift from air to rail could have is only seen when you look at the passenger numbers between Ireland and Great Britain. In total, 19.6 million passengers travelled between the islands of Ireland and Great Britain in 2019. The city pair between Dublin and London alone carried 5.1 million passengers in 2019 (*Civil Aviation Authority*, <https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2019/>), making it the busiest passenger air route in Europe and the second busiest international passenger air route in the world. It is not a surprise that the busiest air route in Europe also happens to be the only major city pair without a direct rail alternative.

Traffic to Great Britain accounts for 30% of all passengers from Dublin Airport, while the London route alone accounts for 15% of all passengers from Dublin Airport. It is clear that short-haul traffic between Ireland and Great Britain accounts for a significant proportion of Ireland's air traffic, and also accounts for a significant proportion of Ireland's carbon emissions from aviation. And similar to the significant increase in cargo traffic which Dublin Port has projected up to 2100, it is likely that a significant increase in passenger traffic will also occur into the future.

Taking into account that Eurostar has been able to achieve a 75% market share of London to Paris journeys, a potential tunnel under the Irish Sea is likely to result in a significant modal shift from air to rail for journeys between Ireland and Great Britain, and a corresponding significant decrease in carbon emissions through the use of more sustainable transport modes. In the absence of such a tunnel, these journeys will continue to take place by air, and the amount of carbon emissions produced by the aviation sector in Ireland into the future will be significantly higher than they potentially could be.

The decision on whether to continue investing in new sea port facilities into the future, or whether to take the bold step and start planning for a future tunnel under the Irish Sea will have a major impact on the amount of carbon emissions which will be produced by the transport sector in Ireland from now until the end of this century and beyond. This impact needs to be a core consideration when making this decision.

Conclusion

Dublin Port's long term projections show that the bulk of the future increases in traffic will be Ro-Ro traffic, and most likely with the ports of Holyhead and Liverpool in Great Britain, if current trends continue. With such a large proportion of future cargo growth likely to take place over such a short distance, there is significant merit to exploring the option of a potential tunnel under the Irish Sea, as an alternative to any new sea port facilities on the east coast of Ireland.

Such a tunnel could significantly reduce the environmental costs of additional cargo traffic, by allowing new cargo facilities to be located in less sensitive inland locations away from any protected habitats, instead of along the highly sensitive Irish coastline where damage to protected habitats is inevitable. In addition to serving cargo traffic, such a tunnel could also serve passenger traffic between Ireland and Great Britain, and provide wider environmental benefits by promoting a modal shift from air to land-based modes for short-distance passenger traffic.

I would like to request that a potential tunnel under the Irish Sea be considered as an additional option to provide for future increases in freight, as an alternative to new sea port facilities on the east coast of Ireland. Before any decision is taken to progress a new greenfield sea port facility, a full feasibility study should be carried out into the construction of a potential tunnel under the Irish Sea and the benefits it could provide over continuing to cater for future cargo increases by sea alone.

Thank you for your consideration.

Kind Regards,

Roy Harford

