



Harbour Safety

We have been busy working closely with relevant stakeholders – including the Harbourmaster, Northport and North Tugz – to figure out the best possible channel design

How did we go about assessing navigational risk?

Independent experts commissioned by Refining NZ have been through a significant risk assessment process to make sure the proposed channel can be safely navigated by vessels. This process was informed by:

- Extensive work leading to a preferred channel design (see relevant information sheet)
- Navigation simulations of the proposed channel designs
- An expert stakeholder risk workshop and supporting research



Identify and mitigate navigational risks

One issue identified by the independent experts is the need for pilots to navigate vessels within a narrower outer channel than present. This is because Refining NZ is looking to minimise the impact on the environment by keeping dredging to a minimum and not making the channel any wider than it needs to be.

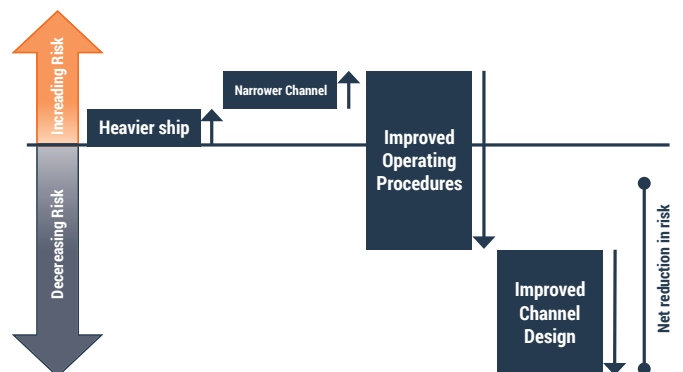
This can be mitigated by adopting best practise operational measures such as the mandatory use of special tools e.g. portable pilot units (PPU) and the installation of other aids to navigation such as lead lights.

Adopting these operational processes will ensure the channel can be navigated safely while avoiding further dredging that may have a negative environmental impact

Lowest risk channel design

The navigational risk assessment concluded the preferred channel design offers the lowest navigational risk of the options considered.

It is the closest to full compliance with best practise international guidelines and it offers safety improvements on the existing channel - beneficial for pilots navigating the harbour.



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How did we go about assessing the environmental risk posed by potential oil spills?

The independent experts also carried out a specific environmental risk assessment to look at the net environmental impact of the proposed changes. This process drew on the navigational risk assessment and looked at oil spill case studies from elsewhere. It also drew on the expertise of other key experts considering the social and ecological impacts of the construction works associated with the proposed engineered channel.

Identifying environmental risks and mitigating them

The navigational safety improvements offered by the new channel design and operational measures significantly reduce the likelihood of a spill per tanker visit.

There is also a reduced chance of a spill because, overall, there will be fewer tankers visiting Marsden Point.

There is potential for a larger spill, by nature of the tankers carrying greater volumes of oil. A larger spill could result in further oil spread and longer persistence in the environment.

However, these factors would most likely increase to a lesser degree than the increase in cargo carried. If the vessel spilled 25 per cent more oil, this does not necessarily mean the spill area would increase by 25 per cent.

Whilst any large scale spill would have profound effects on the environment over the short to medium term, the increase in cargo size will not make the potential environmental consequences disproportionately worse. When this is balanced with the reduced likelihood of a spill, there is a reduction in risk when compared with the risk today.

Lower environmental spill risk

The independent experts concluded that the combination of fewer tanker visits plus improved navigational safety will significantly outweigh the risk posed by the greater volumes of oil carried on fully loaded Suezmax vessels.

Overall, the environmental risk will be significantly lower with the proposed channel design and operational measures.

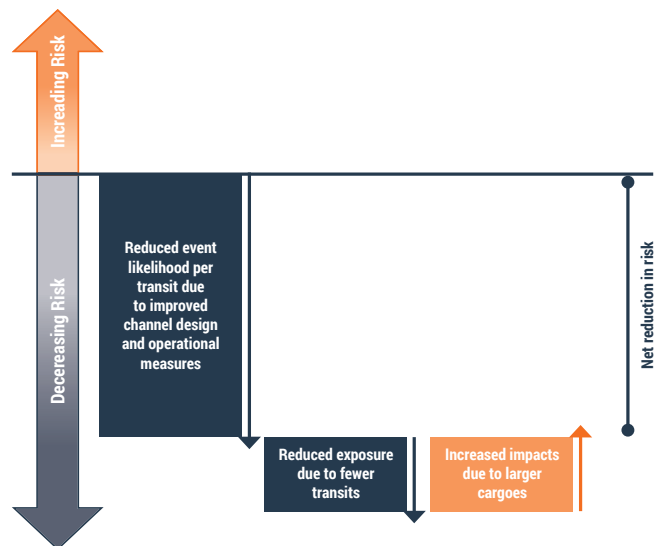
Existing Harbour Safety Measures

Ship movements are governed by a regional harbour safety management system. Key to this is the Dynamic Under Keel Clearance (DUKC) system which monitors a range of factors (i.e. ship dimensions, load, swell, tidal movement) to determine whether a ship has sufficient clearance under the keel to enter the harbour safely.

The refinery employs many measures of its own to ensure ship safety:

- Crude ships are double hulled to provide an extra layer of protection for the cargo.
- Electronic aids on our jetties track the speed and direction of a crude ship so it can berth safely.
- Jetty hoses and pipes for transferring crude from ship to shore are regularly maintained, with pressure testing of hoses every six months.
- Ship tanks are fitted with high level alarms to prevent discharges.

In the event of a spill our trained oil spill responders have access to oil spill equipment and are part of a bigger regional response, co-ordinated by the Northland Regional Council (NRC). Regular exercises with the NRC, Maritime NZ and other agencies ensure our oil spill response remains effective.



If you'd like to know more of the nuts and bolts of how our proposed changes affect harbour safety, you can get a copy of the assessment reports from the independent experts here