

Application for Resource Consent for Māpua Boat Ramp – Navigation Safety Assessment

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Purpose of this Report

This report was prepared to respond to points raised in public submissions regarding the navigation safety effects, if any, of the resource consent application (the Application) for the construction and operation of a boat ramp in a new position at Māpua, as well as discussing any potential mitigation measures that are available for navigation safety. This report does not address any concerns that are outside the scope of navigation safety (as defined below). This report also only addresses the navigation safety implications for a boat ramp at the site proposed in the Application and does not comment on the unsuitability or otherwise of alternate sites.

The Proposal

The Māpua Community Boat Ramp Trust (the Applicant) have submitted a resource consent application (the Application) to the Tasman District Council for the construction of a boat ramp in the coastal marine area within the foreshore, and access from the Māpua Waterfront Park and associated consents for access, parking, signage, storm water and earthworks. The relevant consents with possible regard to navigation safety are:

- To construct a boat ramp in the Coastal Marine Area (CMA) and Open Space zone together with access off Tahi Street, Māpua.
- To occupy the CMA for the purpose of operating a boat ramp.
- To conduct earthworks in the CMA as part of the construction of the boat ramp.

The boat ramp is proposed to be 11 m width with a gradient of 1V:8H. The boat ramp is proposed to extend 38–40 m out into the Waimea Estuary to facilitate good ‘all tide’ access for trailering boats into the water.



Figure 1. Aerial map of Māpua showing the site of the proposed boat ramp



Figure 2. View of the proposed boat ramp site



Figure 3. View of proposed boat ramp location from Māpua Wharf



Figure 4. Proposed boat ramp location looking south

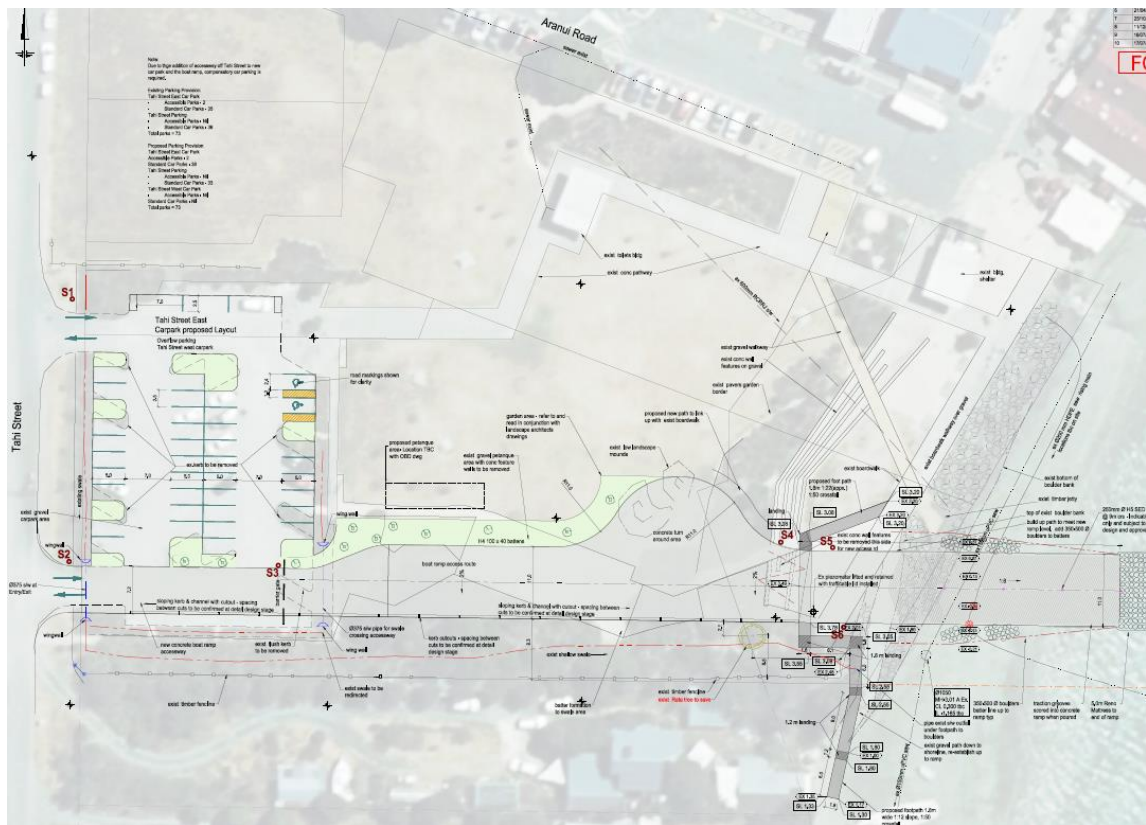


Figure 5. Revised plan of proposed boat ramp

Navigation Safety

The term navigation safety refers to the safety of a vessel or vessels interacting with: another vessel or vessels; the seabed; a structure; a natural object, such as rock or the foreshore; or an activity such as swimming or surfing; or any combination of the above. As such, as soon as one vessel is operating in an area, there will be navigation safety effects. Navigation safety effects may be minimized or reduced to an acceptable level but cannot be completely resolved if vessels are operating in an area.

Assessment of Perceived Navigation Safety Effects of the Proposed Boat Ramp

During the consultation process for the proposed boat ramp, the following general concerns, real or perceived, that could actually or potentially relate to navigation safety were raised¹.

- Effect of the tidal nature of the waters in the vicinity of the boat ramp on users during launching and retrieval, particularly in relation to the potential for vessels to be swept against the Māpua Wharf.
- Interaction of users of the boat ramp with vessels moored in the Māpua river.
- Effect of debris washed down the river on the boat ramp.
- Interaction of vessels approaching or departing the boat ramp.
- Effect of users of the boat ramp on other users in the general area, such as other boaters and small craft operators, kayakers and swimmers.
- Effect of users of the boat ramp on swimmers and wharf jumpers at Māpua Wharf.
- Risks associated with crossing the Māpua Bar.

¹ Māpua boat ramp submissions summary

Effect of the tidal nature of the waters in the vicinity of the boat ramp on users during launching and retrieval, particularly in relation to the potential for vessels to be swept against the Māpua Wharf

As part of the Application, the Māpua Community Boat Ramp Trust commissioned a report by OCEL – Offshore & Coastal Engineering Limited² into the effects of tidal flow on vessels using the boat ramp. This assessment states:

“that the current close to the waterline is relatively slow, of the order of 0.2–0.3 m/sec 5 m out from the waterline the speed picks up to 0.5–0.6 m/sec, 1–1.2 knots. The slow flow area moves down the ramp with tide so that it is possible to put a boat trailer in the water without being subject to strong currents at all stages at the tide. The weaker currents in the shallow water close to the waterline as it drops down the ramp are the result of bottom friction effects at the shore.”

This assessment would appear to indicate that the tidal flow is not significant at the site where a vessel will be launched/retrieved, i.e., the point just seaward of where the boat ramp meets the water (which will vary depending on the tide) so that vessels should be able to be launched/retrieved without appreciably any more issues than occur at other boat ramp sites.

At times, particularly during spring ebb tidal conditions, there is the potential that once a vessel is launched and in the tidal stream, an inexperienced operator losing situational awareness or an operator experiencing technical (mechanical, electrical or fuel-related) issues may be swept downstream. The OCEL report states;

“This in itself is not a problem unless there is an obstruction in the form of a moored vessel or buoy in the way...”

Thus, in times of strong tidal conditions, there is a risk that when something goes wrong, either through the inexperience or negligence of the vessel operator or through technical difficulties, that a vessel may come into conflict with a moored vessel or buoy or the Māpua Wharf. This situation is found, to a greater or lesser extent, at many other boat ramps around New Zealand.

² Appendix 15 and 15A of the Application B03

Vessels launching from ramps in any location have the potential to come in conflict with other vessels, buoys, structures and geographical features in the event of a problem occurring.

Figure 6 shows an aerial view of the site of the proposed boat ramp and potential hazards nearby. The distance from the proposed boat ramp to the wharf is approximately 57 m³. Figures 7 and 8 show aerial views of two other boat ramps at Half Moon Bay and Whitianga, respectively. At these boat ramps, the distances to the nearest wharves are approximately 15 and 32 m⁴. Both of these sites are busy ramps from which vessels are launched into areas of strong tidal flows (as at Māpua, these ramps are located adjacent to river channels). In these figures, it can be seen that the distance from the boat ramp to the Māpua Wharf is greater than the distances from the other boat ramps to the nearest wharf. Both the Half Moon Bay and Whitianga sites have been in operation for many years without significant problems occurring.



Figure 6. Māpua Wharf

³ Indicative approximate distances only

⁴ Indicative approximate distances only



Figure 7. Half Moon Bay boat ramp

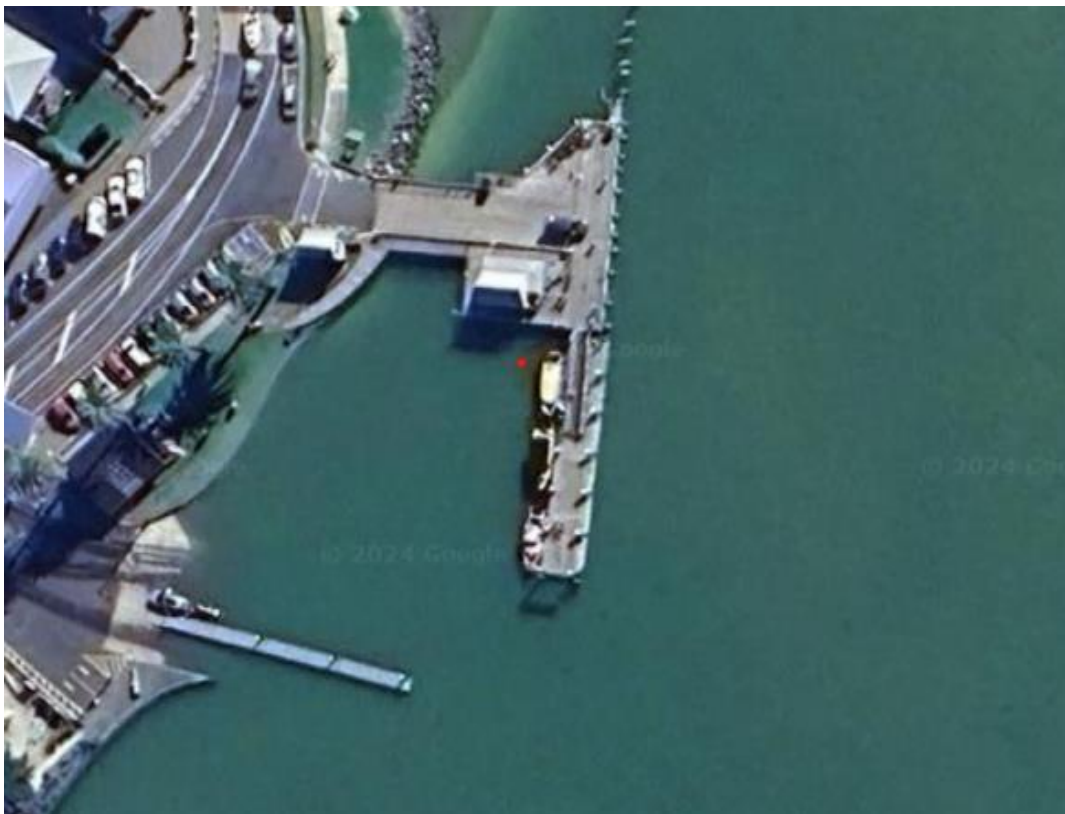


Figure 8. Whitianga boat ramp

Some risk will always exist in situations where vessels are manoeuvring in proximity to structures, such as wharves. To mitigate the risk of interaction between vessels using the boat ramp and the Māpua Wharf and users of the wharf, the Applicant may use a floating barrier (see Figure 9 below). Such barriers are used successfully in other areas of New Zealand to prevent conflict between different user groups. For example, such barriers are used in hydro lakes to prevent lake users (e.g., boaters, swimmers and kayakers) from being swept onto hydro intakes. A similar barrier is also used at Whakatāne to prevent conflict between vessels using the boat ramp and swimmers. The pontoon in the bottom left of the image provides an access for swimmers so that the swimmers are not in conflict with vessels using the ramp (which is to the left of the pontoon). The floating barrier prevents any conflict between swimmers and vessels using the channel.



Figure 9. Floating barrier at Whakatāne

In the Application, it was identified that:

“There are probably at least two boat moorings that will need to be moved once the boat ramp is operation. The TRMP rules allow the moving of the boat mooring within the mooring area if they have enough swing area. The applicant will work with the nearby mooring owners to ensure that moored boats do not interfere with the operation of the boat ramp.”

Hence, efforts will be made to mitigate any potential conflict with boat ramp users and moored vessels and/or buoys by moving the mooring sites further away from the boat ramp.

In addition, there will be signage advising of the Mapua Channel including a QR code link to information on the use of the boat ramp and any channel hazards. The Mapua Boat Club website will provide information on any tidal hazards at the boat ramp site.

Interaction of users of the boat ramp with vessels moored in the Māpua river

The potential interaction of boat ramp users with vessels moored in the Māpua river caused by effects of the tidal stream on vessels having just launched from the boat ramp have been discussed above. Any other interactions will be the same for any vessels navigating the channel that have launched from any other site (such as Grossi Point), and in any channel in New Zealand, and are addressed by the navigation safety laws and bylaws already in place.

Effect of debris washed down the river on the boat ramp

As with any other location in New Zealand, after a major storm or spring tide there may be debris in the area that may get caught by the ramp structure. The Māpua Boat Club will be responsible for checking on the boat ramp regularly and ensuring that any debris is removed. However, it should be standard practice for any mariner wishing to use a facility, especially after a weather event, to check the safety of any operation that they wish to perform. This would include not launching a vessel when the ramp is obstructed by debris or when there is debris present in the channel. This situation occurs at many other boat ramps around New Zealand, many of which are also sited in river channels.

Interaction of vessels approaching or departing the boat ramp

The area in the immediate vicinity of the ramp will experience increased traffic density as vessels that use the boat ramp, which had previously navigated up and down the channel to access Grossi Point, will now all have to navigate in the area to approach or depart from the boat ramp. The number of vessels in the area will be limited in part by the time taken to launch a vessel, i.e., ten vessels will not all immediately be launched at once, allowing time for vessels to navigate clear of the area. In any case, the potential interactions of these vessels will be the same as for any vessels navigating in the area that have launched from any other site, which are also the same for vessels in any similar channel throughout New Zealand. These interactions are adequately addressed by the navigation safety laws and bylaws already in

place. There are many busier boat ramps operating safely around New Zealand, including Half Moon Bay shown in Figure 7.

Effect of users of the boat ramp on other users in the area, such as other boaters and small craft operators, kayakers and swimmers

Except in the immediate vicinity of the ramp, the effect on other users, such as other boaters and small craft operators, kayakers and swimmers, will be the same as for vessels launched at sites other than the proposed boat ramp (e.g., Grossi Point).

As mentioned above, the area in the immediate vicinity of the ramp will experience increased traffic density as vessels that use the boat ramp, having previously navigated up and down the channel to access Grossi Point, will now all have to navigate in the area adjacent to the boat ramp. As the users in the area will mainly be those operating vessels that are using the ramp, they will be well aware of the possible presence of other vessels. The construction and presence of the new ramp will be well promulgated and signage will in place near the ramp so that any other users in the vicinity, such as kayakers passing close to the boat ramp side of the channel, are likely to well aware of the possibility of vessels operating from the boat ramp. Any conflict should be able managed, as in other New Zealand waters, by the existing navigation safety laws and bylaws. There are many busier boat ramps operating safely around New Zealand, including Half Moon Bay shown in Figure 7 where the boat ramp is situated adjacent to a busy ferry terminal.

Any effect on users away from the immediate vicinity of the ramp will be the same for vessels launched at the proposed boat ramp as for vessels launched at sites other than the proposed boat ramp (e.g., Grossi Point). However, there is the possibility that the overall volume of traffic may be increased with the proposed boat ramp. Because of the improved facilities, vessel operators may choose to launch there, rather than at distant sites (Motueka or Nelson). A greater overall volume of traffic may increase the risk of conflict with other users, similar to the situation on a calm sunny summer day when a lot of people have decided to go out on the water. Again, any conflict should be able managed, as in other New Zealand waters, by the existing navigation safety laws and bylaws.

Effect of users of the boat ramp on swimmers and wharf jumpers at Māpua Wharf

Several submissions in the public consultation for the Application expressed concern that the operation of the boat ramp would interfere with the current practise of swimming and jumping from Māpua Wharf. There appeared concern that the new boat ramp would make this activity unsafe and potentially result in this activity being banned.

The effect of a vessel using the boat ramp that has lost control because of the effects of the tide have been discussed above.

In Figure 9, it can be seen that at all times in the Māpua Channel vessels are within 200 m of the shore so must proceed at a speed < 5 knots according to Maritime Rule 91. Currently, vessels that launch at Grossi Point make use of a transit lane where the 5-knot speed has been uplifted allowing vessels to proceed at a speed < 15 knots. According to the Tasman District bylaw⁵:

“This transit lane provides a reserved area for vessels travelling between Grossis Point and the Mapua Bar, and is located generally within 50 metres of the eastern shore of the Mapua Channel. While in this channel, vessels may travel at any safe speed of 15 knots or less for the purpose of transiting through the Mapua Channel. Other activities such as waterskiing, anchoring and swimming are prohibited in this area if it is in use by any vessel as a transit lane. The speed limit within 50m of any other vessel underway or a person in the water remains as 5 knots, or where 5 knots is not practicable, the slowest practicable speed.”

Most vessels that will use the proposed boat ramp are likely to make use of this transit lane and thus will leave the ramp at right angles to the channel to access the transit lane so that the vessel can travel more quickly out to sea. This will mean that most vessels will be navigating away from the Māpua Wharf. Vessels that choose to navigate within 200 m of the wharf must travel at a speed < 5 knots. This speed restriction is designed to provide vessel operators time to avoid collision with other vessels, structures and swimmers. Conversely, this slow speed will also provide swimmers and jumpers adequate time to exit, or not enter, the water prior to a vessel approaching close to the wharf. The Tasman District Council bylaw 3.16.2 states:

⁵ Tasman District Council Consolidated Bylaw, Chapter 5: Navigation Safety Bylaw 2015.

“... no person may dive, swim or undertake other related activities; in the vicinity of any wharf, jetty, boat ramp, recognised boat launching area or area reserved under these Bylaws as a transit lane or for the purpose of accessing a beach; in such a manner as to obstruct any vessel manoeuvring to or from the wharf or jetty, or launching from or retrieving to a trailer, or legitimately using the transit or access area.”

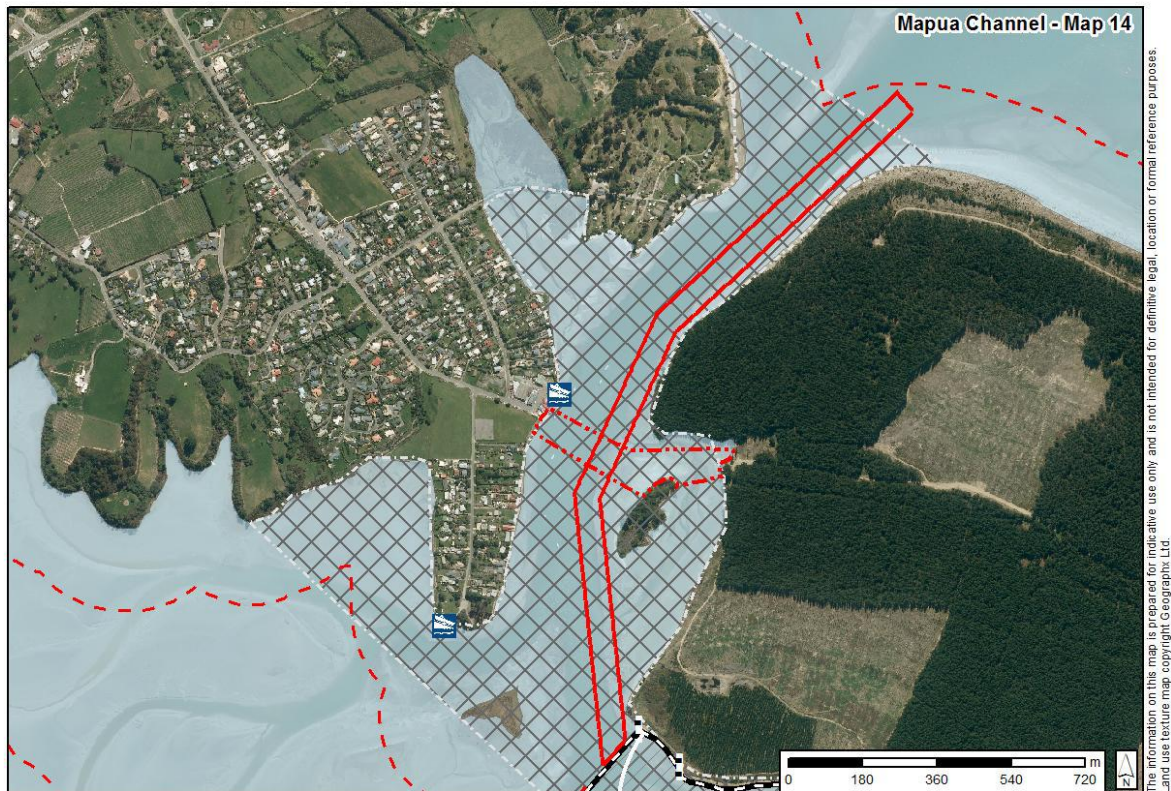


Figure 10 Mapua Channel showing access lane

Access lane, reserved area, zone or feature shown	Refer to Schedule or Bylaw Clause Shown
- - - 200m from shore (at high tide)	Bylaw 3.3
⋯ Infrastructure Corridor (Anchoring Prohibited)	Schedule 2.2
▭ Transit Lane (15 Knots speed limit)	Schedule 2.5e
▨ Sea Plane Landing/Take-off Prohibited	Schedule 2.1
▨ Water Skiing Area	Schedule 2.5a

The proposed boat ramp is > 50 m away from the wharf. The launching and recovery of vessels at the ramp will not prevent people from swimming and jumping from Māpua Wharf.

There is no reason to suggest that vessels that launch at the proposed boat ramp will come into more conflict with swimmers and jumpers, compared with vessels that have launched from Grossi Point, i.e., the current situation.

Risks associated with increased crossings of the Māpua Bar

It is well known that there are risks associated with crossing bars, and this is no different for the Māpua bar. These risks have been well promulgated by agencies, such as the Tasman District Harbourmaster Office, Maritime New Zealand and the NZ Coastguard. The risk for a particular vessel crossing the bar is the same for a vessel that was launched at the proposed boat ramp as for a vessel launched elsewhere. The risk associated with crossing the bar is not caused by the presence of the new boat ramp and should be managed, as at other locations in New Zealand, by appropriate education and signage. The Applicant intends to put appropriate signage regarding the risks of the bar crossing at the site. There will be signage advising of the Mapua Channel including a QR code link to information on the use of the boat ramp and any channel hazards. The Mapua Boat Club website will provide information on the crossing of the Mapua Channel Bar. Users of the boat ramp can be provided with information sheets regarding the bar crossing, as are provided for the Motueka Bar. This information should allow for a more effective education of vessel users than the current situation.

Conclusion

This report only addresses the navigation safety implications of the proposed boat ramp and not the many risks associated with operating a vessel. As stated above, navigation safety effects may be minimized or reduced to an acceptable level but cannot be completely resolved if vessels are operating in an area. In most cases where risk exists, the risk can be mitigated by the decisions made by the vessel operator. For example, there is heightened risk of an incident (e.g., collision, capsize, grounding) occurring during bad weather (e.g., strong winds, poor visibility and conditions of wind against tide) and strong tidal flows. A prudent mariner will assess the current and forecast conditions (e.g., the potential for deteriorating conditions) and decide whether it is sensible to launch their vessel. Once a vessel has been launched, there are many issues that may occur, but these are outside of the scope of the consent for a boat ramp. There are many existing navigation safety rules and bylaws that are designed to help manage situations on the water. The Application addresses providing a means of practicable access to the Māpua channel. The presence of the proposed boat ramp should have no greater effect on navigation safety than an increase in traffic from any other reason, such as that may currently be observed on a calm sunny summer day. The new boat ramp will provide signage and other increased opportunities for the promulgation of information regarding hazards, such as the bar crossing, than are currently available. While submitters have raised some matters, it is my opinion that these have been addressed within the amended Application to an acceptable level.

Biographies

Captain JV Dilley, Master Mariner

Capt. Jim Dilley is a harbourmaster and maritime contractor. He holds a certificate of Competence as Master Mariner and following 21 years of service in the Merchant Navy, including 8 years as master, he has spent 21 years as a harbourmaster in New Zealand.

As harbourmaster, he has implemented the New Zealand Port and Harbour Safety Code for the Auckland and Canterbury regional councils, Chatham Islands Council and the NZ Subantarctic and Kermadec Islands for the Department of Conservation. He is currently a Regional Harbourmaster for Environment Canterbury managing the NZ Subantarctic and Kermadec Islands (under contract to the Department of Conservation).

Capt. Dilley has provided expert advice and services to Maritime New Zealand, the Department of Internal Affairs, Whakatane District Council, Environment Bay of Plenty, Tasman District Council, Whanganui District Council, Auckland Council and Otago Regional Council. He has also been a National on Scene Commander for Maritime New Zealand.

As a recreational boater, Capt. Dilley has voyaged over 250,000 nautical miles on small craft including in the Southern Ocean, Atlantic and Pacific Oceans and all New Zealand coastal waters. He holds an Ocean Yachtmaster certificate.

Capt. Dilley has provided technical advice and maritime support for many consent applications including marina re-development, new recreational vessel facilities, large cruise ship facilities and operations, and shared use facilities for recreational and small commercial vessel users.

Dr VJ Muir, PhD

Dr Muir is a maritime contractor and technical and science writer and editor who has worked on several maritime projects, including preparing technical reports on port and marina developments (navigation safety), including at Raglan, Whakatane and Whanganui, and the review and editing of navigation safety reports, including on the anchoring/positioning of large cruise ships within the Waitemata Harbour, installation of a dolphin, mooring of large cruise ships, upgrades to the Auckland Ferry Terminal and Waitemata seaplane operations. She holds an Inshore Launchmaster - ringfenced (also transferred to Skipper Restricted Limits endorsed to 500 GT and passenger), a National Certificate in Maritime (Commercial Inshore Vessel Operations), Square Rig Masters certificate, and Ocean Yachtmaster (NZ) blue water endorsed, as well as a PgDip in legal studies.