Appendix C: Technical Experts Required

Economist:

Assess regional economic effects of the construction and operation of the proposed marina.

Marine Ecologist:

Undertake an ecological assessment of the marine intertidal area, subtidal zone and coastal area within and adjacent to the footprint of the proposed marina. Record occurrence of edible shellfish and at-risk benthic species. Record occurrence of marine pest species (eg Caulerpa). Assess potential effects from construction and operational activities. Provide advice on avoidance and mitigation of effects, including effects on cetaceans. Prepare construction and operation biosecurity protocols in consultation with regional council biosecurity manager.

Avian Ecology:

Undertake an assessment of the marine intertidal area and riparian margin within and adjacent to the footprint of the Marina for avian habitat values and presence of indigenous species. Provide advice on avoidance and mitigation measures (including relocation of at risk species if necessary) for management of construction and operation activities as required.

Herpetology:

Assess habitat values of terrestrial margins to be used for access, construction and operation of proposed marina. Prepare a lizard management plan and carry out recovery and release of indigenous species as required. Apply for an authority under the Wildlife Act for relocation of lizards if necessary.

Landscape Architect:

Prepare a full assessment of landscape and visual effects which addresses the landscape and natural character effects of the proposed marina. In accordance with the NZILA Te Tangi a te Manu Aotearoa New Zealand Landscape Guidelines 202.2 Assessment to include a suite of photo-simulations illustrating the marina as viewed from the perspective of the viewing audience overlooking the marina site. These should be prepared to evidential standard. The report to include advice as to the avoidance and/or mitigation of adverse effect through the design process, including preparation of planting plans, and advice on cladding materials for buildings, planting and hard protection structures.

Urban Design:

In conjunction with landscape architect, architect and engineers prepare overall design of facility including location and arrangement of parking, location of buildings on site.

Coastal Process Scientist:

Prepare an assessment of the effects on the coastal physical processes of Waipiro Bay resulting from the proposed marina development at Waipiro Bay. This should include an assessment of the effects on the adjacent shores of the dredging and reclamation activities. Assess and advise on projected sea level rise. Provide advice on the effects of wave and tidal action on the completed marina and vice versa.

Archaeologist:

Research historical occupation of the site and locality. Undertake a site survey. Make application for authority under Heritage New Zealand Puohere Taonga Act if necessary.

Acoustician:

Prepare an assessment of acoustic effects based on the proposed engineering design including particular consideration of the piling methodology proposed. Provide input into the management of construction noise including, in particular piling. Give consideration to operational noise and any attenuation that may be necessary.

Traffic Engineer:

Assess current traffic volumes on Manawaora Road in consultation with council traffic engineers. Design vehicle access to site from Manawaora Road based on projected construction and operational requirements. Design on-site traffic circulation, parking and loading.

Geotechnical:

Conducting thorough site investigations to assess soil conditions and stability. This includes drilling, in-situ ground testing, land lab analyses to evaluate soil strength and other properties. Identify geohazards such as seismic risks and erosion, recommending mitigation strategies and ensuring compliance with environmental regulations. This is crucial for designing a robust reclamation, foundation systems and waterfront structures like quay walls and jetty piles, guaranteeing the marina's safety and durability against local environmental conditions.

Marine Engineering:

Design and construction of marine structures such as docks, jetties, and breakwaters. Responsible for planning the layout of marina basins, ensuring optimal water circulation and berth configuration. Also overseeing the installation of mooring systems and utilities, ensuring all structures are resilient to local marine conditions. This involves consideration of analysis of tidal flows, wave dynamics, and potential impacts of climate change provided by coastal scientist. Their expertise ensures that the marina operates efficiently, safely, and sustainably, with minimal environmental impact.