Kaikōura Harbour
Detailed Business Case

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FOR CONSIDERATION ➤ V1.1 ➤ 19 JULY 2022

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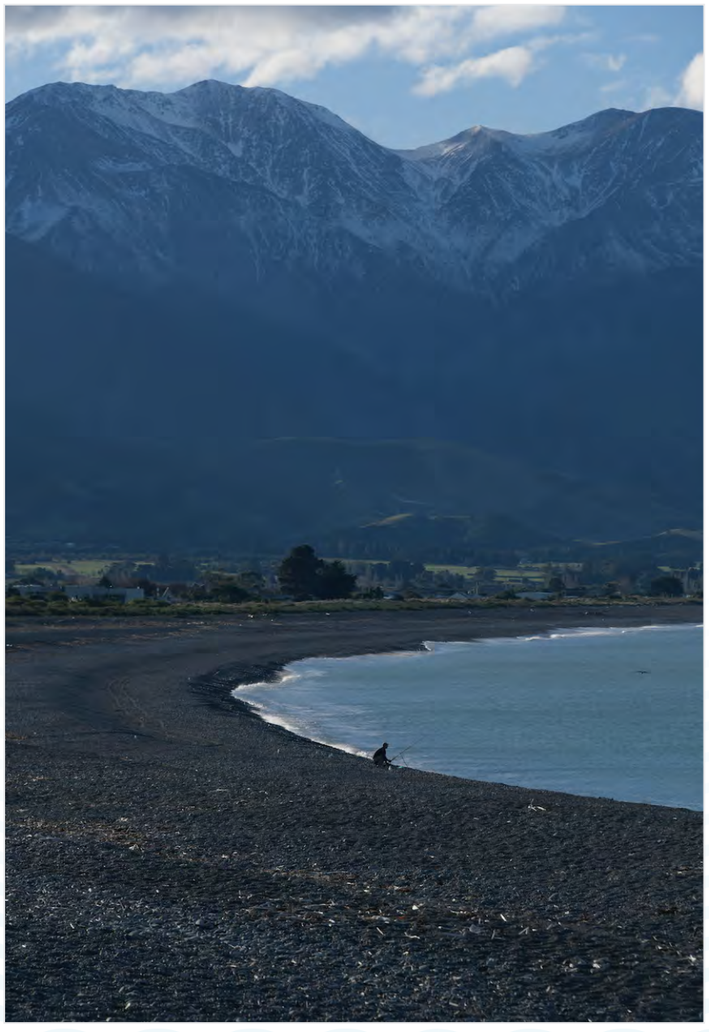
1.0 Executive Summary

1.0 | Executive Summary
Business Case Overview

This Business Case has been developed to illustrate the costs, benefits, options and possibilities of how investment in a harbour can help build the future.



Overview

A business case can explain the rational considerations for decision makers to chart a path forward. At the same time, a business case should also show something of the communities and environments it has been created for; to tell their stories and highlight their aspirations.

In this case, a new harbour is significantly more than an economic opportunity. It is a cornerstone of a community, particularly one as marine-based as Kaikōura. The place their harbour sits within is one the community is deeply attached to; held fondly by many in their memories of gathering kai.

This business case has involved many workshops and extensive engagement with key stakeholders within the community, to hear and incorporate their concerns into the design of and consensus for, the preferred option that this case presents.

Purpose

This business case has been developed for Kaikōura District Council to provide the rationale necessary for decision-makers to provide the funding for this vital piece of infrastructure.

Approach & next steps

It is important to note at the outset that this business case has been designed with a staged approach; there are multiple decision points where Council and Government may consider the progression of the project. The purpose of this approach is to illustrate a clear path toward a successful outcome, whilst providing waypoints that offer additional certainty.

Thus, rather than seeking to secure funding for the investment as a whole, **this business case recommends that the Government:**

1. **Approve in principle** the harbour development
2. **Approve funding for the next stage,** which includes the parallel completion of the Feasibility Study and Developed Design components.

1.0 | Executive Summary
The South Bay context and current state

The harbour is a key piece of infrastructure for Kaikōura and the wider region; it's current state presents risks and constrains economic activities.

The South Bay Harbour facility is Kaikōura's primary hub for marine-based activities in the region. There are a range of operators actively using the harbour on a daily basis. There are the tourism operators with the largest vessels (up to 30m in length), the local commercial fishing fleet, the Coastguard, and of course, a multitude of recreational boaties that flock to the harbour from across the region.

The harbour was extensively damaged in the 2016 earthquake and was rebuilt to the original specification, with some improvements to accommodate the four larger Whale Watch boats. There are a series of ongoing challenges however, including a lack of space in the water for all operators, an increased level of silting due to the geotechnical impacts of the earthquake, a change in wave patterns and ocean currents, and substandard onshore facilities for commercial and recreational users – not least of which includes the current jetty that is unsafe and too small to be fit for purpose. The harbour is poorly configured and inflexible, contributing to ongoing concerns regarding congestion, health and safety, and severely constrains the potential for both the expansion of existing operations, and alternative uses in future – such as marine berth hire, aquaculture, or marine research.

Another important point to note is that at present, there is no safe harbour between Picton and Christchurch; the lack of berths in South Bay prevents locals and visitors alike from hiring berths, and there is no space for harbouring rescued vessels.

Kaikōura's economy is strongly linked to the marine and coastal ecosystems, and the health and wellbeing of the moana is an integral part of Kaikōura's identity. The South Bay Harbour plays a vital role in connecting land and sea, as it has in the past and will continue to do into the future.

The purpose of this business case is to ensure the region has a harbour that is fit-for-purpose, for both the near future and in the decades to come. The document places the proposed investment within its regional and national context, identifies the current and anticipated challenges, illustrates the preferred path forward, and maps out how this can be achieved in such a way that will deliver significant local, regional, and national, benefits.

The remainder of this executive summary describes the conclusions of this business case at a high level.

1.0 | Executive Summary
The preferred option for South Bay

A development of the existing South Bay harbour has been identified as the preferred option for a high-value investment into Kaikōura's future.

Following numerous chapters of specialist consultation and stakeholder engagement, a preferred option for a new harbour development has been identified.

Multiple sites were considered as potential locations for a new harbour. Ultimately, it was determined that an expansion and redevelopment of the existing harbour made the best sense. This business case details the series of events and consultations that led to this conclusion.

The design of the preliminary concept plan pictured on the right has been developed through a series of consultations, technical assessments, and workshops with stakeholders.

The next few pages summarise the benefits of this proposed investment, and how the desired outcomes of the project will be achieved. The Strategic Case then details the challenges of the harbour in its current state and provides further context in terms of the role and significance of the harbour in Kaikōura in both present and future.

The Economic Case illustrates how the development options were assessed to refine the harbour configuration, and summarises the reports provided by the engineers, archaeologist, and ecologists. The second part of this section explores the roles of on-shore facilities, describing a potential on-shore development. The overall benefits of the proposed development are then explored in relation to Wellbeing, environmental and economic sustainability.

The Financial, Commercial, and Management cases that follow, altogether provide a guide to the implementation for the project.

Illustration adapted from: Fig. 09. 'Option 2b South Bay Marina Expansion'. Tonkin + Taylor

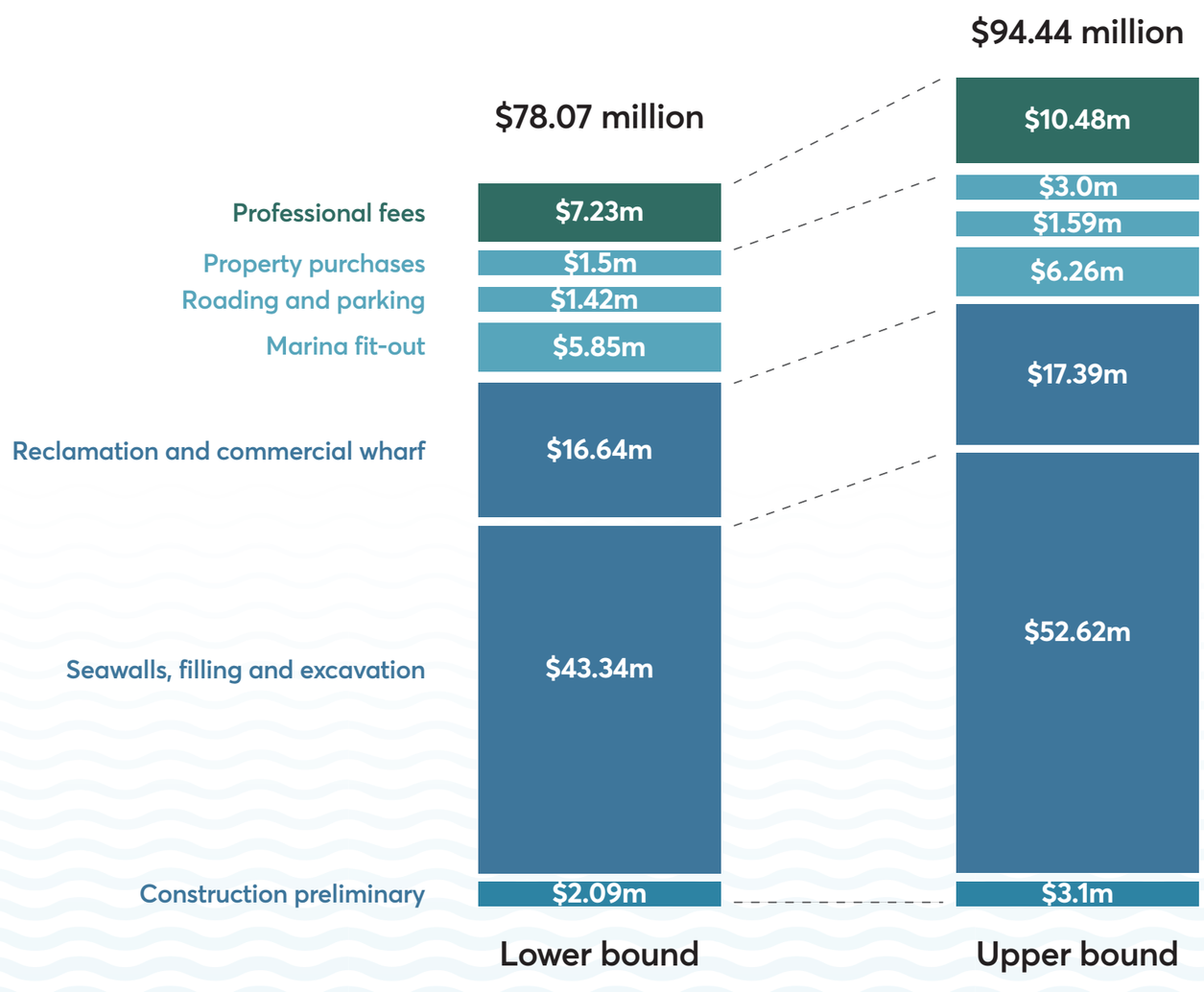
1.0 | Executive Summary
Investment requirements

Initial assessments indicate an investment range of $78-$94 million.

As part of the concept design process, engineers WSP and Tonkin + Taylor were asked to provide ranged estimates for construction of the preferred option, using a Rough Order of Cost (ROC) methodology. The summary of the analysis is shown at right, and the breakdown for both the low range and high range estimates is contained in the appendix.

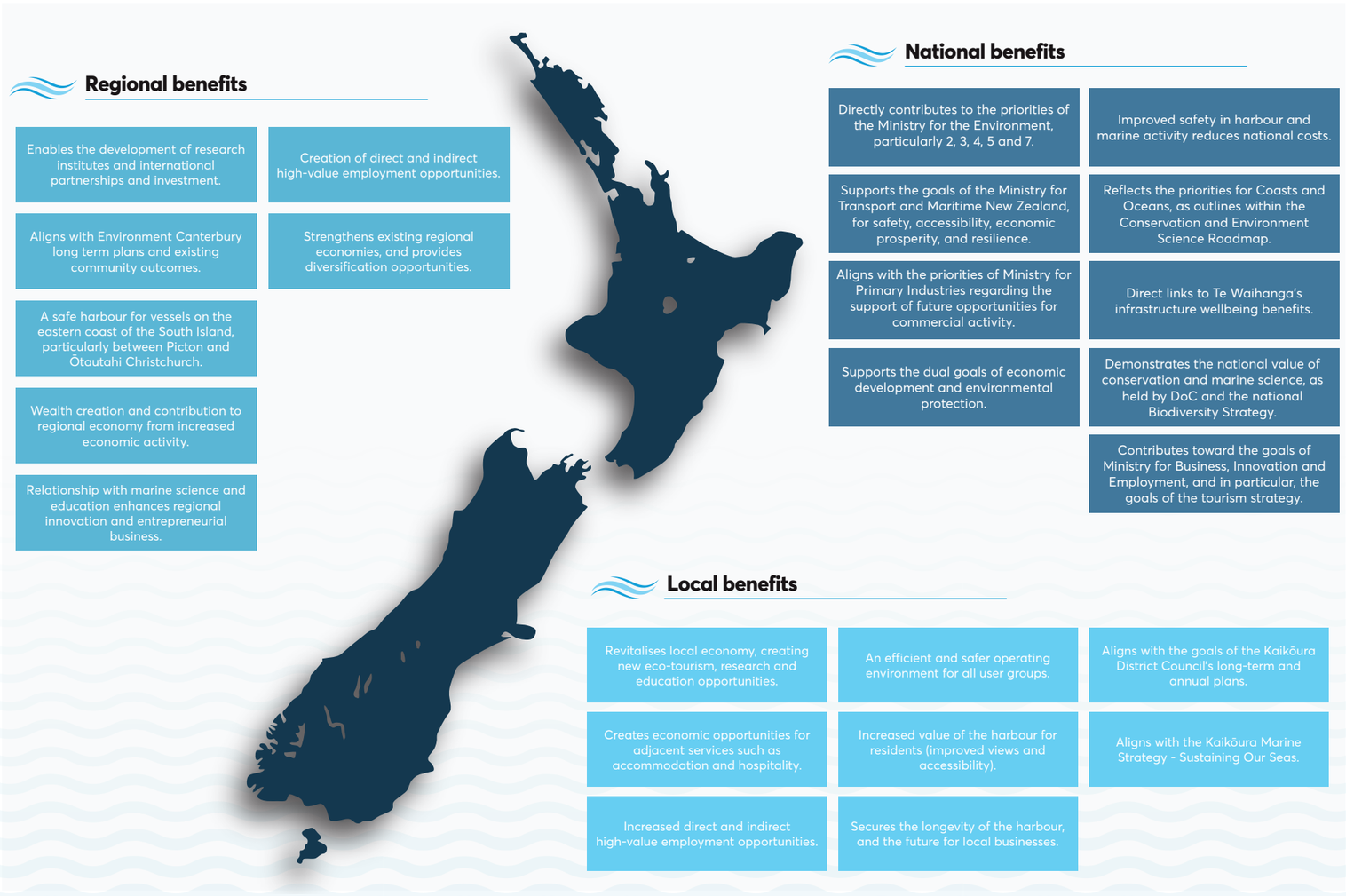
There are a number of underlying assumptions for the cost estimates, as follows:

- Construction is costed in 2022 dollars, and construction cost inflators will need to be added to these figures to account for likely increases during the design phase before construction tenders are called.
- Construction costs are based on ROC guidelines for harbours of similar construction methods, such as at Ōpōtiki in the Eastern Bay of Plenty. These comparators are the most up-to-date available, given the Ōpōtiki harbour is currently under construction.
- Construction estimates are also informed by the major civil engineering works undertaken after the Kaikōura earthquake in 2016, so are likely to be robust.
- Industry-standard contingencies have been allowed for in the construction estimates, and these will be further refined during the detailed design process. As part of that process, quantity surveyors will provide P90 and P95 construction estimates for greater assurance of project delivery costs.



1.0 | Executive Summary
Investment benefits

An investment into Kaikōura's harbour infrastructure will create benefits spanning the local, regional, and national.



This illustration, presented in the Strategic Case, highlights some of the national, regional, and local benefits of an investment into Kaikōura's harbour infrastructure.

The value of a harbour is not always easy to see. In part, this is because it's benefits can be so diverse and wide-ranging, and indeed, include those that stem from the spin-off investments that hinge upon the harbour itself.

In Kaikōura's case, it is easiest to see at the local level, where a new harbour creates a safer and more efficient operating environment for its varied user groups. For the recreational users in particular, it becomes a safer environment. For the commercial fishers, efficiency is key. Similarly for the tourism operators, efficiency is important, though having room to grow and the opportunity to provide new alternative offerings is highly valuable.

A new harbour in Kaikōura, and the additional marine-based activities it could support, will also in turn enable the investment into on-shore facilities. These might include accommodation and hospitality services for the increased number of users and visitors.

The greater size of a new harbour would accommodate larger vessels, such as those used by marine research institutions. In turn, on-shore research and educational facilities would attract investments into national and international research and development. All of the above contribute to economic and social benefits for the Canterbury region, and the nation.

At a national level, the proposed investment is also closely aligned with economic, social and environmental aspirations that are enshrined across the strategic plans of multiple Ministries.

1.0 | Executive Summary
Investment benefits

Co-locating tourism and marine research creates a central hub of economic activity.

Redevelopment of the harbour allows for the expansion of existing operations in South Bay – such as tourism and fishing – and it also provides opportunities for new functions, such as marine education and improved marine research.

While expansion in some areas (such as marine engineering) is catered for in the design of the new harbour, it is apparent that new on-shore facilities are needed to provide the engine for economic development in Kaikōura, facilities such as:

- **Visitor facilities** to allow greater numbers of people to interact with Kaikōura and experience its unique environment, regardless of the weather forecast.
- **Educational facilities** to enable students and other private groups to visit and learn about its geology and ecology, in one-day or multi-day visits with suitable accommodation offerings.
- **Research facilities** to enable local and international institutions to base themselves in Kaikōura and conduct short-term and long-term research initiatives, using the harbour facilities as needed, supplemented by on-shore labs and research facilities, office space, and short-term and long-term accommodation.

These three aspects – tourism, education and research – are synergistic. Tourists benefit from education about the Kaikōura region, educational learning benefits from the depth of knowledge generated by research teams, and researchers benefit from the public outreach and the opportunity to cost-effectively use shared facilities

The diagram below summarises the facilities and infrastructure required to support each component of interaction, research, and education. Many of these are included in the WWK concepts, ready to be further refined. The proposed harbour for South Bay will also provide a great opportunity for other tourism operators to grow their businesses and develop additional on-shore offerings and facilities as well.

INTERACTION

...visitors experience and interact with the Kaikōura environment and are informed about the unique attributes of the land and marine ecology.

EDUCATION

...visitors can learn about the local ecology at a deeper level of engagement; students and researchers can offer high-quality research outputs to inform engagements and other innovations.

ACTION

Interaction and education empowers people, encourages behaviour change, and altogether enables us to make better informed and higher quality decisions as a society.

	INTERACTION	EDUCATION	ACTION
Required facilities	• Visitor information about Kaikōura • Activity information and booking for multiple operators • Information displays • Interactive exhibits	• Dedicated teaching areas • Interactive learning facilities • Remote learning facilities • Field trip capabilities • Accommodation	• Research laboratories and supporting facilities • Dedicated and shared working spaces • Dedicated and shared office and admin spaces • Medium and long term storage areas • Short and medium term accommodation
Supporting infrastructure	• Short term car parking • Coach and bus facilities • Easy access to the harbour	• Car and coach parking • Easy access to the harbour	• Medium and long term vehicle parking • Easy access to the harbour • Dedicated research infrastructure • Dedicated vessel berths • Wharfside working areas

1.0 | Executive Summary
Securing the future of tourism in Kaikōura

There is a community-led vision for development of on-shore tourism and research facilities.

In recent discussions, Whale Watch Kaikōura (WWK) described their Peninsula Development Plans that contributed to the formation of the tourism Zone, and generously shared some internal documentation so that we could detail this section accurately on their behalf. A presentation document, titled 'Kaikōura Peninsula Property/ Development', described the original purpose, drivers and components of the Peninsula Development, and includes several illustrations and renders of ideas and plans, such as the image below (a visitor centre concept).

Important to note at the outset is that the WWK plans were not created in isolation, but in fact were the result of extensive consultation with, and wide support from, the local community. WWK holds the needs and aspirations of its community at its core, alongside steadfast views on the importance of protecting and enhancing the natural resources that surround Kaikōura for future generations. Those core values are reflected in the forward-looking drivers behind the original development plans, such as:

- Providing quality tourism products that are not weather and wildlife dependent
- Enhancing the overall visitor experience
- Providing facilities that can attract and accommodate existing and forecast demand, whilst increasing the length (and spending) of visits
- Enable developments relating to marine research and education
- Creating employment and increased economic returns for the company and community.

WWK's business is in tourism; a predominantly seasonal (November-April) and very weather-dependent business. A fundamental purpose of the on-shore development plans is to provide tourism products that are non-weather dependent and offer attractive activities for visitors outside of the main tourism season.

The plans include concepts for a range of accommodation options and related facilities (hotel, lodges, conference area, restaurants etc.), with a large visitor centre as the main attraction, a.k.a., "The Marae of the Sea".

The visitor centre is envisaged to be of such scale that it could host exhibits, information displays, restaurant, cafe, research and education facilities, offices (for WWK, and potential tenancies for other local tourism operators or others), retail, and a conference area for visiting groups, lectures, and evening shows.

WWK also recognise the valuable role their tourism offerings play in educating visitors about whales and the marine environment. The intention of hosting marine research and educational facilities at the visitor centre is in part to support new research that will inform and increase the value of WWK tourism products, but to also provide other educational opportunities for visitors, locals, and even an international (online) audience.

The case for the harbour

Herein lies the key connections with the South Bay harbour development; Kaikōura is in a very strong position to offer:

1. **High-value marine research opportunities that are sought after by local and international universities and research institutes**
2. **Incorporate research outputs into innovative and high-value eco-tourism and educational products.**

Offering the above would be transformative for Kaikōura's economy, and in turn enable the township to also contribute national returns, as well as towards social and environmental goals. The next pages point to existing relationships and capabilities available to help secure these outcomes, and the role of the harbour in answering the question of capacity.

1.0 | Executive Summary
The next steps

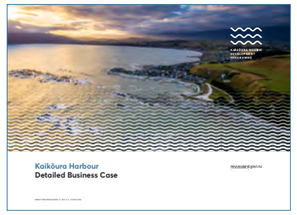
A feasibility study for the onshore facilities will provide development certainty.

As noted on previous pages, the development of the campus goes hand-in-hand with the development of the harbour: both investments are required in order to realise the financial, human, social and environmental benefits to Kaikōura and the nation.

This business case is primarily aimed at assessing the rationale for investing in the harbour; it is not a business case for the multi-use campus. In order for iwi and the private sector to be willing to invest in the campus and help realise the wellbeing benefits, a feasibility study will be required. The purpose of the feasibility study is to:

- To propose a concept design for the multi-user campus, taking into account the likely requirements of the various user groups, resulting in a master plan for the peninsular area
- Propose a staged approach to how the campus could be developed, aligned with the harbour development
- Identify the likely users of the facilities, and engage with them to obtain the indications of interest necessary to give confidence in the investment
- Undertake the financial modelling to demonstrate the financial viability of the campus investment to prospective iwi and private sector interests
- Obtain in-principle commitments from the landowners, funders, developers and prospective users so that the Government has confidence in approving development of the harbour.

The process is shown in the diagram at right, including the interim decision gateways. It is expected development of the feasibility study will take around 12 months and be ready for Council and Government consideration no later than 30 June 2023.



Harbour Business Case
(this document)

The purpose of the Harbour business case is to establish whether there is a need for the further development of the South Bay harbour. The business case sets out the case for change, assesses the options, and provides the rationale for development. It also presents the concept design for the project.

Feasibility Study
(Due June 2023)

The Feasibility Study identifies the opportunities for onshore development and the benefits these will bring to Kaikōura and the nation. The document sets out the development and funding approaches for the facilities, focused on a commercial model, and identifies the participating organisations.

Developed and Detailed Design
(Due June 2023)

The Developed Design confirms the functionality and layout of the harbour, based on the current and future requirements of users. The Detailed Design develops the detailed documentation necessary for consenting, final confirmation of costs and tendering.

1.0 | Executive Summary
The path forward

Approval in principle allows the feasibility study and detailed design to proceed.

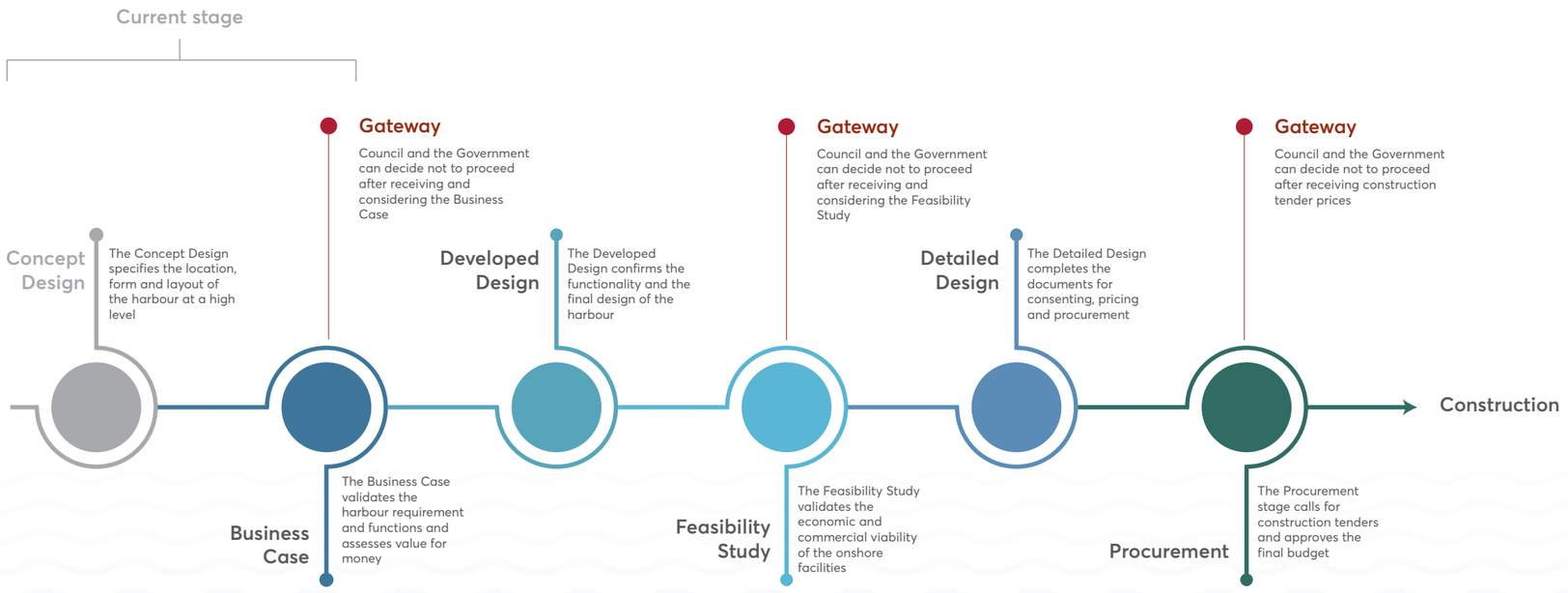
The diagram at right sets out the upcoming decision points for the project. These are:

- Once the business case (this document) has been approved by Council, it is submitted for central Government consideration, seeking approval in principle to develop the harbour.
- A feasibility study for the onshore facilities and the developed design for the harbour are then completed, in order to establish the economic and commercial viability of the project. Council and Government then consider the results of the assessment.
- Once the developed design has been agreed and the benefits and commercial viability of the harbour established, detailed design is undertaken. This process completes the work for consenting and tendering purposes, and tenders are called, with a decision to proceed once final costs are known at the conclusion of procurement.

Each of the decision points is shown as a gateway in the diagram. At these gateway points, Council and the Government can make one of three possible decisions:

1. To continue with the project as planned
2. To revise the project based on the information received and request additional work, at either the design or procurement steps
3. To not proceed with the project.

Advice and appropriate information will be provided to Council and the Government by officials at each of these gateways to enable informed decision making.



2.0 Strategic Assessment

2.0 | Strategic Assessment
Context | The place & the people

Introducing the region and its people, the current state of the harbour and its challenges.

Kaikōura's unique natural landscape and history makes it unlike any other place in the world. A small coastal village on the East coast of the South Island, Kaikōura is home to some of Aotearoa New Zealand's most breathtaking landscapes. Mt Fyffe and the Seaward Kaikōura ranges dominate the skyline, giving a stunning backdrop to the peninsula, as well as offering popular walking and biking tracks.

Hidden from view, only 800m offshore, is an undersea canyon. At 60km in length, and reaching 2,000m in depth, the canyon connects a vast ocean channel system and hosts the meeting of the sub-antarctic Southland Current with the subtropical East Cape Current. The meeting of these ocean currents and the mixing of salinity and nutrients contributes to a complex flow structure and a highly productive ecosystem.

The marine ecosystem supports an abundance of marine life that has in turn sustained local human populations past and present. It was this rich marine life that earned Kaikōura its name. It is said that it was the explorer Tama ki Te Rangi, who arrived tired and hungry and found the area abundant with crayfish. He named the area "Te Ahi Kaikōura a Tama ki Te Rangi" – the fire that cooked the crayfish of Tama ki Te Rangi. Over time, this shortened to Kaikōura; *Kai* meaning food and *Kōura* meaning salt-water crayfish.

Section overview

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2.0 | Strategic Assessment
Context | The place & the people

A brief history of occupation and economy in Kaikōura.

There had been waves of migrations that swept across Kaikōura long before Europeans arrived on these shores. Through generations of migrations, clashes, and intermarriages, Ngāi Tahu became the dominant tribe in the area, forging deep ties to the land[1].

Following Captain Cook's visit to Kaikōura in 1770, European settlers began to arrive. A station was first established by Robert Fyffe in 1842, and whaling activities began in earnest. Whaling grew to be such a bustling industry that over one hundred men in the Kaikōura district alone were employed by the industry. Fyffe later diversified into shipping and farming due to a decline in whale numbers, though whaling did not cease entirely until 1964.

From the 1850s, Government sold land to European settlers who began to farm in the area. Many small blocks of land were sold around the Kaikōura peninsula and in the 1870s roads and bridges were built. The road which became State Highway 1 was started in the 1890s across the Hundalee Hills, with bridges across the rivers completed in 1914. On 15 December 1945 the Christchurch–Picton railway was opened at Kaikōura in front of an enthusiastic crowd of nearly 5,000. From 1962 the roll-on, roll-off ferry between Wellington and Picton brought more freight and passenger traffic, both road and rail.

Between 1945 and 1960, over-fishing led to a decline in crayfish numbers and by 1970 this decline had extended to other fish species. Kaikōura's economy struggled in the 1970s, and also after the election of the Labour government in 1984 when farm revenues incomes dropped and public sector employment was affected badly.

In 1985, a group of locals established a tourist centre and began promoting Kaikōura as a tourist destination. The focus at that stage was on the walking opportunities and the scenery.

Shortly thereafter, Kaikōura's relationship to the environment and ecosystems pivoted from one of exploitation to conservation. Whales were once again a keystone to the economy, but for watching and researching rather than extracting resources.

Iwi leadership seized the opportunity to join conservation and business, and invested in a 6.7m boat to start up a whale watching business, taking visitors to see the local sperm whales. In the first year of business, 3000 tourists took the opportunity to see whales, and this has greatly expanded since then.

Today, Kaikōura's population sits at around 4,000. Approximately 86% identify as European, 18% as Māori, and the remaining 4% as Pacific, Asian, and other ethnicities. The age of the population as a whole is older than the national median (37) sitting around 46 years. The Māori population however, is relatively young with a median of 28, suggesting a future shift in the area's demographics

Iwi presence in Kaikōura

Waves of past migrations across Te Wai Pounamu, and the history of Kaikōura, are recorded and safeguarded by iwi. A website hosted by Ngāi Tahu details pieces of the rich history of Kaikōura, including the rivalry and interconnectedness between Ngāi Tahu, Waitaha and Ngati Mamoe over centuries[1]. The pages detail how Ngati Mamoe and Ngāi Tahu (who migrated Southward some time after moa had become extinct) were attracted to the area for the abundant bird, eel, and fish resources. There were also stories of conflict between tribes that also served as push factors for migration.

The pages also detail how one of the last incursions upon Ngāi Tahu was led by Te Rauparaha of Ngāti Toa in 1828. As the military success was not followed by ahi kā however, Ngāi Tahu retained rangatiratanga. This did not stop the Crown from attempting to purchase land from Ngāti Toa, a move that was subsequently challenged by Ngāi Tahu and eventually recognised after years of protest.

In 1857, the Crown made an offer for land between the Ashley and Waiau rivers for 200 pounds which was signed by Ngāi Tahu. Other land deals were completed in the area leaving small reserves for local Māori. These reserves were reduced after 1900 when the New Zealand government compulsorily acquired further land for the proposed railway and "scenic" purposes.

In 1986 Hēnare Rakiihia Tau filed a claim to the Waitangi Tribunal on behalf of the Ngāi Tahu Māori Trust Board. The claim identified Ngāi Tahu's grievances about the land purchases.The Deed of Settlement signed with the Crown on 21 November 1997 included Ngāi Tahu's right and opportunity to buy certain Crown assets, enabling the tribe to fund its social and cultural development. The financial value of the settlement was $170 million. Like the Tainui settlement signed two years earlier, it included a relativity clause enabling supplementary payments if future settlements with other tribes were large in comparison. The Ngāi Tahu settlement also included an apology from the Crown and opportunities for cultural redress.

In 2013 almost 55,000 people identified themselves as Ngāi Tahu. It was the fourth largest tribe in New Zealand, and with the largest territory. One aspect of the cultural resurgence of Ngāi Tahu was the revival of traditional marae. New buildings have been constructed in Takahanga in Kaikōura and at Bluff.

1 Ngāi Tahu - Kaikōura History', Te Rūnanga o Ngāi Tahu, 2022, https://ngaitahu.iwi.nz/te-runanga-o-ngai-tahu/papatipu-runanga/kaikoura/kaikoura-history/ngai-tahu-kaikoura-history/.

2.0 | Strategic Assessment
Context | The 2016 earthquake

The 2016 earthquake severely impacted local communities, economy, landscape and fauna.

The Kaikōura District is located within one of New Zealand's complex tectonic areas, which is best characterised as a transition zone, from a subduction zone (southern Hikurangi) to a continental convergence zone (central South Island).

At 12.03am on 14 November 2016, Kaikōura experienced a 7.8 magnitude earthquake that caused wide reaching effects across the North and South Islands. The earthquake ran from south to north and spanned an area of roughly 150km from the epicentre. A series of aftershocks followed over the following days.

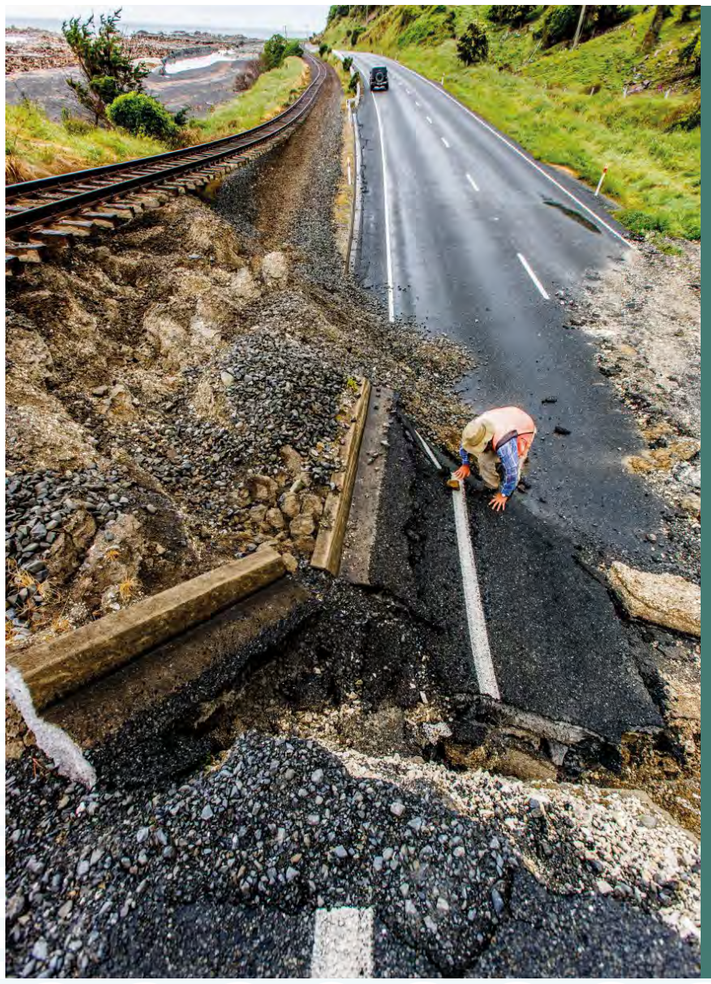
The effects of the event severely impacted the local communities, economy, landscape and the regional fauna. Kaikōura and Hurunui District were considered the worst affected regions and suffered the bulk of the damage.

The earthquake twisted train tracks and ruptured road pavements. Over 100 structures and 20 tunnels were damaged, with over one million cubic metres of rock and other debris coming down onto the road and rail links.

The township and surrounding communities were totally cut off due to the closure of State Highway 1, the Main North Line railway between Picton and Christchurch – the main road and rail routes into and out of the area.

The harbour, where all the town's whale watching boats are moored, also suffered after the sea bed rose up by 1.5 metres in the quake, inhibiting boats from entering or leaving the harbour, leading to a major downturn in the tourist economy for the region.

The total cost of the damage from the earthquake is estimated to fall between $3 - 8 billion.



Source: Rob Suisted, from: https://www.nzgeo.com/stories/in-the-wake-of-the-quake/

The earthquake recovery

The earthquake required an immediate engineering response to rebuild damaged infrastructure in order to reconnect isolated communities and improve and future-proof the road and rail network. This all had to be done quickly but safely in a complex and highly sensitive environment.

In December 2016, the North Canterbury Transport Infrastructure Recovery Alliance (NCTIR) was formed comprising key stakeholders, Waka Kotahi and KiwiRail, and four of New Zealand's largest contractors.

Their task was to quickly restore the road, rail and harbour infrastructure that are critical lifelines to the surrounding communities. With this in mind, the NCITR alliance committed early on to support the goal of reconnecting these communities by the end of 2017.

The critical Main North Line railway between Picton and Christchurch was re-opened less than a year after the earthquake, in early September 2017. While Kaikoura's harbour was re-opened exactly one year after the earthquake on 14th November 2017, and the main coastal State Highway 1 link between Christchurch and Picton followed in December 2017.

More than 1,350 organisations worked with the rebuild alliance, putting in around 6.5 million worker hours on the project.

In addition to the estimated $1.2 billion to repair the South Island transport networks corridor, an $231 million was spent on safety, resilience, access and journey reliability improvements as part of the recovery. $60 million was also invested in a safety and resilience programme for the alternative route. Both of these investments have drastically improved Kaikōura's resilience.

2.0 | Strategic Assessment
Current state | Economy

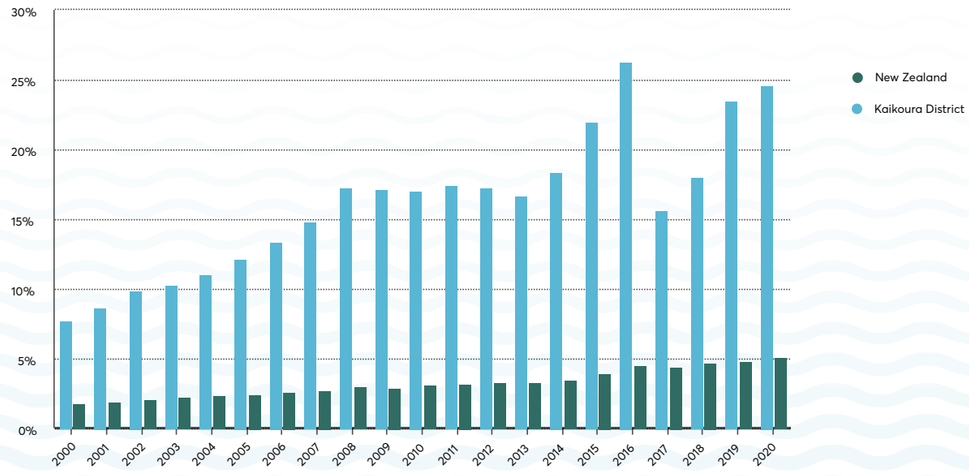
Kaikōura's economy is heavily reliant on tourism.

Kaikōura's economy is heavily reliant on tourism. At its peak in 2016, tourism made up over 25% of the region's GDP, compared with under 5% for New Zealand as a whole. Evident in the graph below, the tourism share of GDP in Kaikōura has grown relatively consistently over time, despite a drop in 2017, which can be attributed to the November 2016 earthquake. Despite the impact of the Covid-19 pandemic on international visitors, the tourism share of GDP in Kaikōura had almost returned to pre-earthquake levels in 2020, which shows that tourism remains a very important industry for the region.

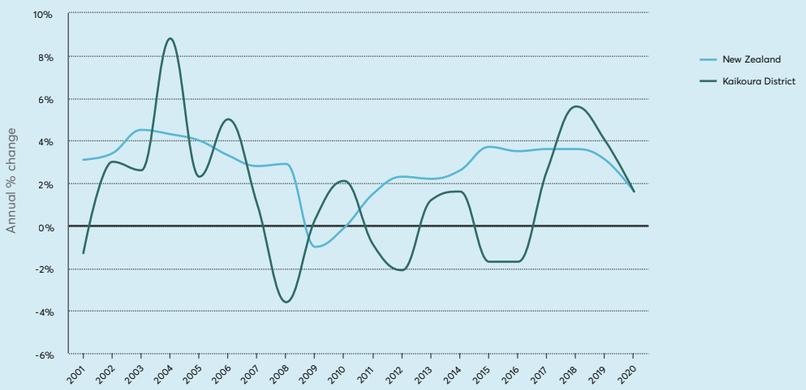
Tourism spending is highly discretionary, so is extremely vulnerable to external disruptions, such as economic circumstances and changes in travel and destination preferences. The nature of tourism spending and Kaikōura's reliance on tourism has resulted in a boom-and-bust economy in the region, shown in the GDP growth graph at right. At times when Kaikōura is an attractive destination the economy thrives, but tourism demand is highly variable and fickle, so Kaikōura is vulnerable to fluctuations widely outside of its control.

The graph at the bottom right showing tourism GDP growth over time shows that Covid-19 has unsurprisingly impacted Kaikōura's tourism growth, which was rising steadily from 2013 to 2016. It then took a big hit in 2017 after the earthquake, and then rose rapidly from 2017 through to 2019.

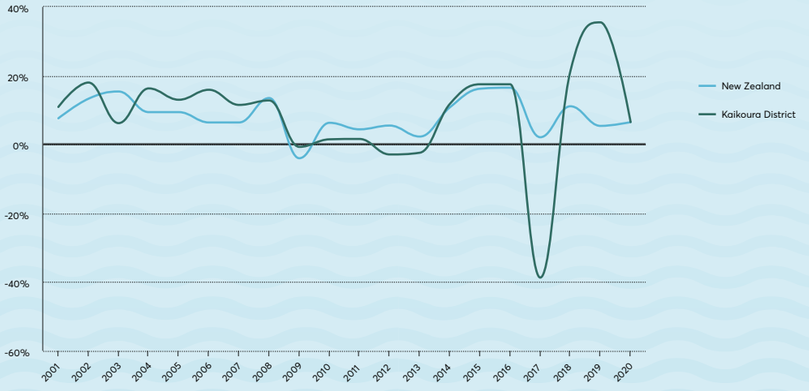
Toursim Share of GDP



GDP Growth



Toursim GDP Growth



2.0 | Strategic Assessment
Current state | Keystone operators

There are several keystone tourism operators in Kaikōura.

As noted above, Kaikōura's economy pivoted toward conservation and tourism in the early 1980s. Since then, several tourism operators have become keystones of the local economy. During the development of this business case, engagement with these key stakeholders has provided strong expressions of support for a harbour development that would support future growth and a diversification of tourism opportunities.

WHALE WATCH®
KAIKOURA • NEW ZEALAND

"Whale Watch is a multiple national and international award winning New Zealand nature-based Tourism Company owned and operated by the indigenous Ngāti Kuri people of Kaikōura, a Māori sub-tribe of the South Island's larger Ngāi Tahu Tribe".[1]

Established in 1987, Whale Watch was one of the first tourism operators in Kaikōura, and began their endeavour with a 6.7m inflatable vessel that could carry 8 passengers at a time. Today, the Whale Watch fleet includes four catamarans with capacity for 48-116 passengers – up to 100, 000 per year.[1]

The success of Whale Watch has contributed to Kaikōura becoming one of New Zealand's leading eco-tourism destinations, and stimulated investment in the region for accommodation, dining, and other experiences.

1 Whale Watch. Source: https://whalewatch.co.nz/our-people/who-we-are/

Source : https://www.dolphinencounter.co.nz/

Source: https://whalewatch.co.nz/our-nature/latest-news/new-waka-wheketere/

dolphin encounter®

Dolphin Encounter, owned and operated by Lynette Buurman, Dennis Buurman, and Ian Bradshaw, was established in 1989. The business grew and was re-branded to Encounter Kaikōura in 2004, supporting the investment in larger premises and hospitality options.

"At the heart of the business lies a commitment to best practice and environmental sustainability and this along with a great love for the marine environment, motivates us to share this passion with our customers in a meaningful and resolute way".[1]

Encounter Kaikōura established the Encounter Foundation in 2009, a charitable trust dedicated to supporting projects to enhance to the natural environment. The funds are created through gifting a percentage of each customer's fare to the trust, and to date has contributed $270, 000 of donations towards projects and programmes.[2]

Other marine-based operators & activities[3]:

- Albatross encounter
- Kaikōura Kayaks
- Seal kayak Kaikōura
- Seal swim
- Fishing charters & tours.

2 Dolphin Encounter. Source: https://www.dolphinencounter.co.nz/discover-kaikoura/about-us/
2 Dolphin Encounter. Source: https://www.dolphinencounter.co.nz/discover-kaikoura/encounter-foundation/
3 https://www.kaikoura.co.nz/what-to-do-in-kaikoura/see-and-do/

2.0 | Strategic Assessment
Current state | The role of tourism in Kaikōura

Tourism makes an outsized contribution to the Kaikōura economy but is vulnerable to weather impacts.

Prior to 2019 and the pandemic, tourism accounted for

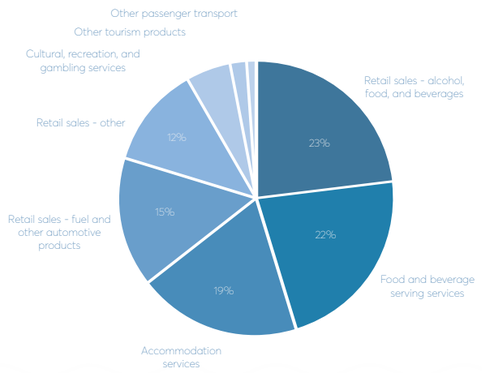
$127m

Total GDP contribution

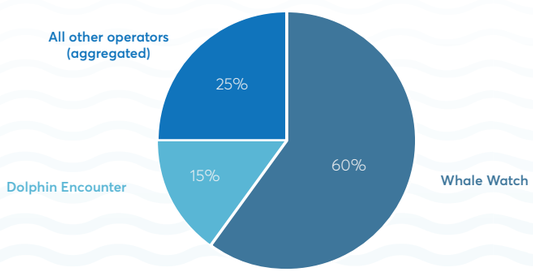
48% Domestic visitors

52% International visitors

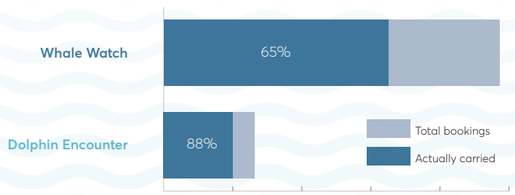
Spending is split across industries, with many parts of the Kaikōura economy benefiting:



Tourism bookings from both domestic and international visitors are dominated by the two major operators:



But weather-based cancellations are a major factor, causing significant revenue losses for the major operators:



The difference between visitor bookings and visitors carried is due mostly from cancellations related to weather, representing a loss of 35% for Whale Watch and 12% for Dolphin Encounter.

Sources

http://webrear.mbie.govt.nz/summary/new-zealand?accessedvia=canterbury

https://teic.mbie.govt.nz/ste/regions/relianceOnTourism/

The ocean and the weather

Kaikōura's tourism industry has been the story of innovation. From early beginnings, both Whale Watch and Dolphin Encounter – and more recent operators – have proven there is a global market for tourism offerings that take visitors onto the open ocean and allow them to interact with whales, dolphins, seals and our unique marine ecology.

Kaikōura's rugged coastline and deep ocean canyon makes this possible – but it is also the constraining factor for operators and visitors. The sea and weather conditions result in high levels of cancellations, with around 35% of Whale Watch trip and 12% of Dolphin Encounter trips unable to proceed due to sea conditions. Whale Watch operates offshore either on or beyond the continental shelf, which means they are more susceptible to sea and weather conditions compared to other operators

Overall, the cancellations result in a significant loss of revenue for the entire tourism sector in Kaikōura – and as the spending chart shows, the costs are spread widely across the local economy.

While directly comparable figures are hard to obtain, it is likely this rate of cancellation is by far the highest in the country. It also underlines the need for additional all-weather tourism products that will prevent the revenue leakage from local industries, and inspire both domestic and international visitors to stay longer in Kaikōura.

2.0 | Strategic Assessment
Current state | South Bay harbour

The harbour is a key facility for the region, with heavy use from tourism operators, commercial fishing, and recreational users.

The South Bay harbour is the primary regional hub for tourism operations, commercial fishing, and recreational users in Kaikōura.

The primary facilities at the South Bay harbour currently include:

- A three-lane concrete launching ramp with adjacent fixed jetty
- Limited car and trailer parking facilities for recreational users
- Trailer parking facilities for the existing commercial users
- Fuel supply facilities for vessels on trailers
- A boat wash area
- Promenade and quayside
- A public toilet and Whale Watch Kaikōura (WWK) staff room building
- A 30 metre wide (one-way) approach channel.
- WWK berthing area incorporating a breakwater and safe berthing for four vessels, fuel supply, water supply and a hose for washing the boats, and coach parking
- Dolphin Encounter (DE) jetty, which enables the concurrent berthing (temporarily – boats can only pull up for the day, but cannot stay in the water / overnight) of two vessels, passenger boarding and the transfer of supplies and equipment
- Public refuelling facilities for vessels (only during high-tide)
- Coastguard launching ramp and administration building (single lane launching ramp for coastguard use only)
- An approach channel to the Coastguard station launching ramp.

2.0 | Strategic Assessment
Current state | Challenges at South Bay

Despite post-earthquake repairs, the harbour still has challenges.

The tectonic uplift of the Kaikōura coastline resulting from the earthquake had serious consequences for the local marine industry. In particular, many new navigation hazards were created and the depth of the water at the existing harbour facilities at South Bay and Wakatu Quay was greatly reduced.

These issues created safety risks and significant operational constraints for the users of the facilities. For example, users of the South Bay harbour and Wakatu Quay launching ramps indicated that these facilities were all but unusable, aside from a two-hour period around high tide. These operational constraints had a significant impact on the Kaikōura region and meant that neither harbour could be used as a route for supplies, people and emergency response support into Kaikōura.

The Coastguard Station is located approximately 180 metres north of the South Bay harbour. Prior to the earthquake, a slipway at the facility enabled rapid launching of the Coastguard vessel during all tide conditions. Following the earthquake, the vessel could not be safely launched from the slipway during times of low water or adverse weather conditions. Instead, it had to be launched from the South Bay harbour. This was considerably difficult and risky and resulted in a 20-minute delay to an off-shore emergency response.

In December 2016, Tonkin+Taylor conducted an assessment of the harbour facilities and proposed a programme of emergency response works to remedy the immediate issues resulting from the earthquake. The scope of the works proposed was limited to the minimum works required to achieve the immediate preventative and remedial measures in the harbours to remove the uplifted seabed and to allow the harbours and ramps to function as safe harbours and as lifeline facilities. There were also some improvements made for the Whale Watch area, to accommodate 4 larger vessels.

Recommended programme of works was completed and the harbour reopened one year after the earthquake on 14th November 2017. Five years on, the harbour still has ongoing issues due to the rise in the sea bed and there are additional concerns to the state of the existing infrastructure i.e., the current jetty is unsafe and unfit for purpose

Many users of the harbour including commercial fishermen, tourism operators, recreational users, and the Coastguard, have reported that since the earthquake, the wave action in the harbour has changed and the waves can be far more aggressive and dangerous than they previously were. This has made entry to the harbour more challenging, even with very skilled skippers.

Whale Watch has reported that on some days when they have been able to get their boats out, the wave action has changed while they are out and this has made it very difficult, and at times unsafe, to get their boats back in – particularly when there are crowds of other users looking to do the same. With the number of recreational users increasing, health and safety is a growing concern.

The harbour is also likely to silt up over time as changes to the natural landscape means it now has insufficient flushing. This is exacerbated by jet units from boats blowing loose material from one side of the harbour to the other.

2.0 | Strategic Assessment
Current state | Challenges at South Bay

Both harbour space and onshore working areas are an issue at South Bay.

Immediately prior to the 2016 Kaikōura Earthquake, tourist and visitor numbers were such that the maximum capacity of the harbour tourism facilities were regularly exceeded, and, the future growth of existing and development of new tourism ventures was severely constrained. The commercial hardstand area was also operating at maximum capacity, and, the launching ramp facilities experienced significant congestion issues at peak times.

As a result of the Covid-19 pandemic, international tourist numbers are not what they once were in Kaikōura and are not likely to return to pre-Covid levels in the near future. Despite a drastic reduction in international tourist numbers, there are still pressures on the existing harbour facilities at South Bay. The harbour is heavily used by tourism operators, commercial fishermen and recreational boaties.

There has been a rise in the number of recreational harbour users, partly due to other areas of the South Island reducing fish quotas. This has increased congestion at the harbour and added to safety concerns, with less experienced users trying to navigate the challenging slipway.

Kaikōura Boating and Recreational Fishing Club has reported that more people are joining their already larger membership (4,000+) due to congestion on the public slipway, which has put pressure on their facility.

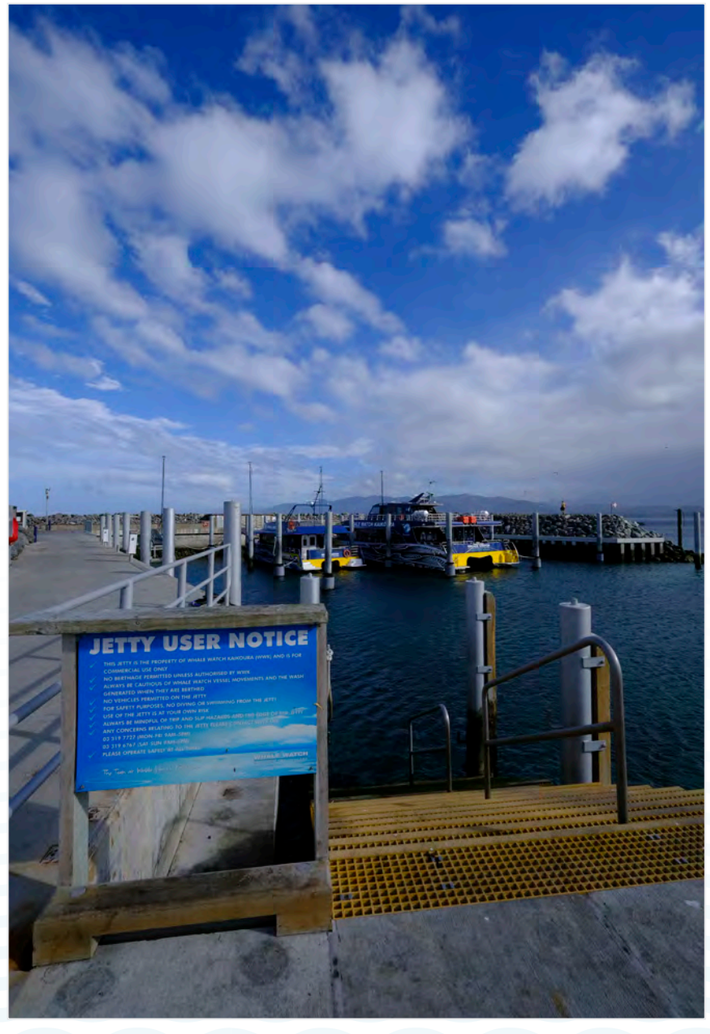
The size of boats is also increasing, which adds to congestion issues on the slipway and further constrains already limited space at the harbour.

Parking is an ongoing issue, which has been further exacerbated by the rise in recreational users. There are large traffic volumes in the area, with insufficient and poorly managed parking. Whale Watch and Dolphin Encounter both bring buses into the harbour area to unload guests. Whale Watch has increased the size of its boat, and now brings in two buses for every boat going out. This has put significant pressure on other buses that use the area, which there are plenty.

The parking that is available is poorly managed, with time limits and fees rarely enforced.

When cruise ships are thrown into the mix, it creates general mayhem, confusion and risk to safety due to people, boats, cars and buses all moving around within a small space. As border restrictions ease, it is anticipated that cruise ships will return; likely with larger vessels and visiting at a greater frequency.

Given the current challenges already outlined, it is easy to understand that during peak use periods or during adverse weather events, the additional people, boats, cars and buses altogether raise serious concerns for health and safety. These concerns are fortunately not backed up with data of incidents, yet, but were shared across all stakeholders during workshops in the development of this business case.



2.0 | Strategic Assessment
Current state | Problem identification

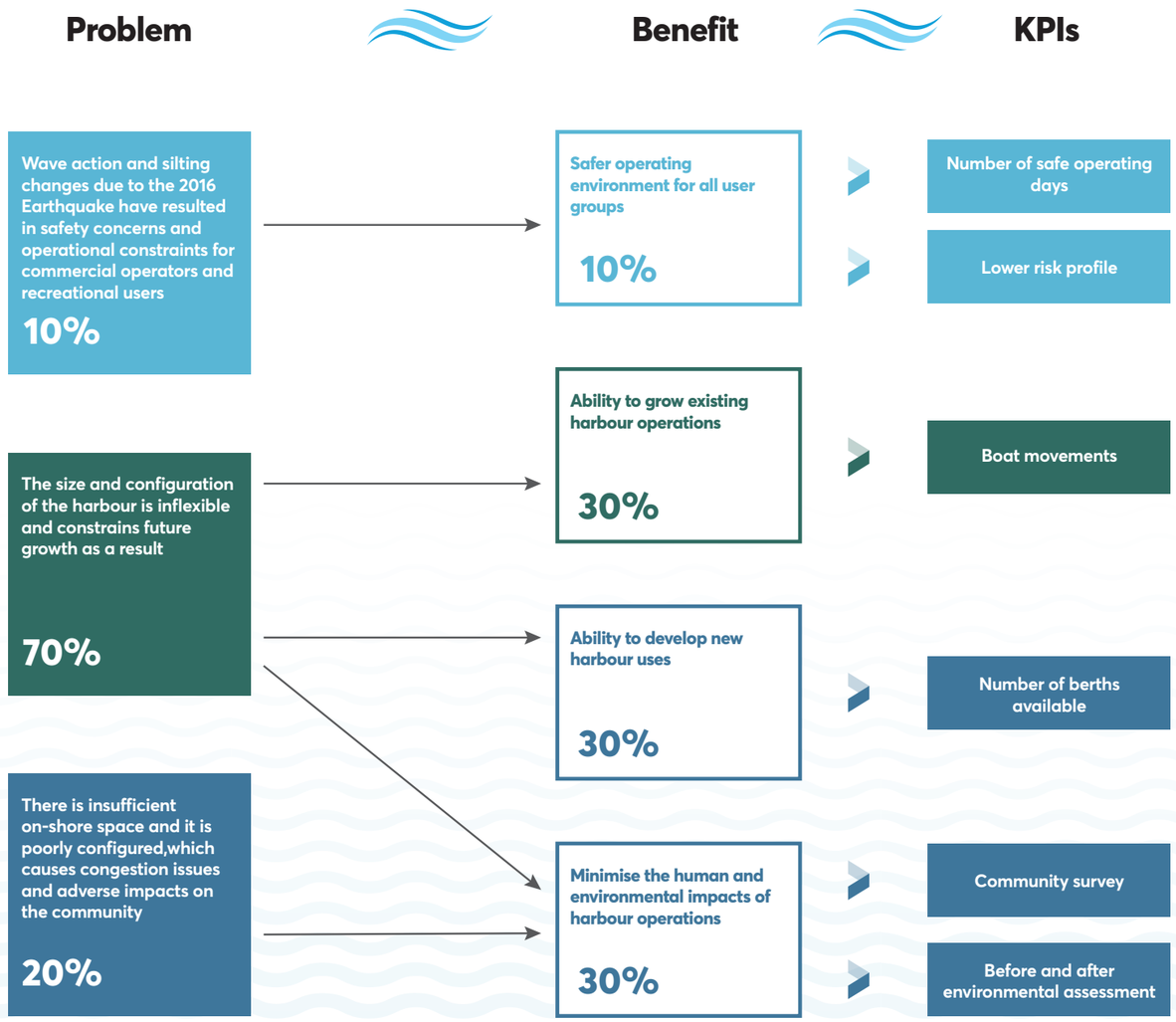
Investment Logic Mapping has been used to assess these issues.

The Investment Logic Mapping methodology requires that the benefits of addressing the problems are identified, and where possible KPIs used to demonstrate how the benefits will be measured. The results of the initial assessment from the ILM workshop for the Kaikōura harbour are shown at right.

The benefits of addressing the problems are broad, ranging from safety and environmental benefits to providing growth opportunities in the decades ahead.

As can be seen from the KPI assessment at right, most indicators are both objective and robust. Some factors – such as the use of community surveys – are subject to external influences that are beyond the scope of the harbour upgrade; however, decision makers can have confidence that the measures will provide an effective framework for benefits tracking over the medium term.

The problem statements have been used to derive the investment objectives, which in turn are used to assess the viability of the options in the Economic Case later in the document.

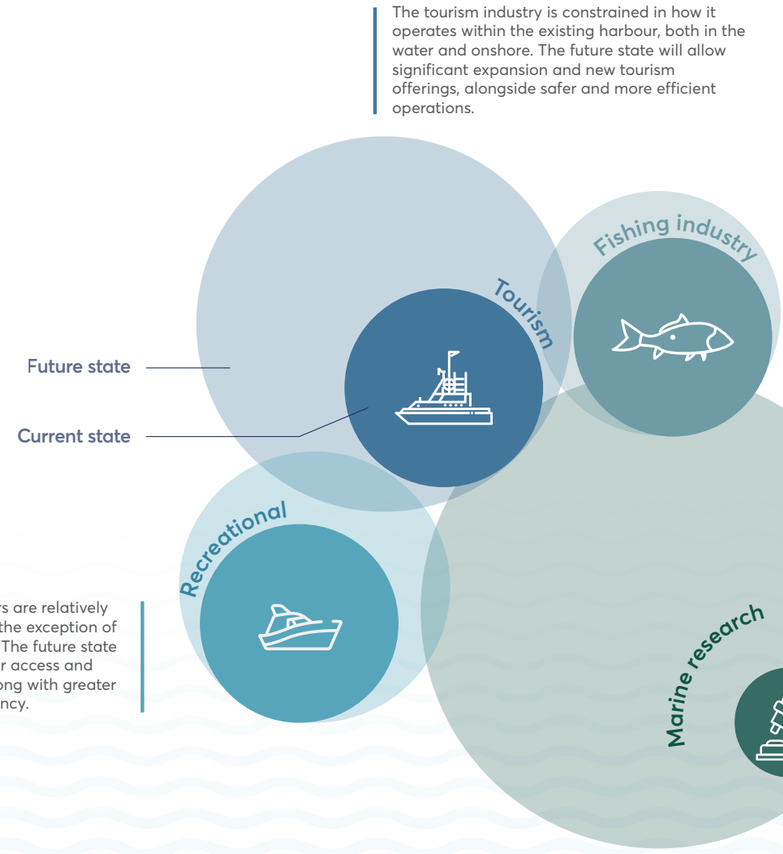


2.0 | Strategic Assessment
Scope & strategic fit | The desired future state

The harbour needs to be developed to help underpin the economy into the future.

The challenges for the existing harbour are interlinked and are affecting all current users to some degree; however, the current configuration is also constraining the ability of Kaikōura to expand existing uses and develop new uses. Redevelopment must therefore address the current challenges whilst enabling new operators to create new opportunities for the region and the country. This is the desired future state for the harbour, and the options assessment in the following section describes how this can be achieved.

The diagram at right shows the scope of the redevelopment and its intended outcomes.



The tourism industry is constrained in how it operates within the existing harbour, both in the water and onshore. The future state will allow significant expansion and new tourism offerings, alongside safer and more efficient operations.

The fishing industry is able to operate relatively effectively in the current harbour, but the future state will bring material operational and safety improvements.

Recreational users are relatively well served, with the exception of onshore parking. The future state will provide better access and management, along with greater safety and efficiency.

Marine education and research is poorly served by the harbour at the moment, with little ability to develop. The future state will allow significant expansion, new capabilities, additional research opportunities and integration with tourism offerings.

Foundational improvements for all users will include

2.0 | Strategic Assessment
Scope & strategic fit | Alignment with local strategies

The proposed investment for the South Bay harbour brings life to Kaikōura District Council's priorities and objectives.

Long-Term and Annual plans

The Kaikōura District Council's (KDC) Annual and Long-Term plans underscore the significance of marine-based activities for the district. The South Bay harbour is noted as hosting resident and visiting recreational users, commercial fishing operators, and is heavily relied upon by tourism operators who are keystones of the local economy.

The Long-Term Plan[1] includes a desire to improved capacity and level of services provided by the South Bay Harbour, given that "harbour facilities need to have sufficient capacity to cater for growing numbers of visitors and slipway users, as well as larger boats" . This Business Case reflects the KDC commitment to achieving this objective.

The proposed development for the South Bay harbour facilities accounts for the noted significance of marine-based activities for the local community, in terms of both economy and recreation. The Long-Term Plan also identifies several opportunities and priorities for the district that are supported by the proposed investment, including:

- Diversification of local economy
- Support tourism and business
- Commercial and industrial activities.

Harbour facilities play a critical role in each of the above and this Business Case illustrates the opportunity for the South Bay development to deliver long-term sustainability and well-being for the economy, environment, and community of Kaikōura.

1 Kaikōura District Council, 'Long-Term Plan 2021 - 2031 | Part 3 Strategies and Policies', 93.

Achieving community outcomes

There are five distinct community outcomes that guide the activities KDC supports.

Listed as a priority among the Major Strategic Projects, this business case for the development of South Bay harbour facilities aligns most closely with the "Development", "Service" and "Future" outcomes. The proposed investment will enhance the capacity and safety of harbour facilities for commercial and recreational users, providing direct benefits in the near- and long-term, for the local community and economy.

*"Helping Kaikōura District move forward as a great place to live with a strong, well connected community, that is **ecologically exemplary** and **economically prosperous**"*

- Kaikōura District Council' vision statement

2.0 | Strategic Assessment
Scope & strategic fit | Alignment with national strategies

The proposed investment aligns with a constellation of national aspirations and strategic priorities held by Ministries of environment, primary industries, business and innovation, and transport.

The Government's overarching policy objectives for our nation's recovery and rebuild from the impacts of COVID-19 are strongly focused on climate change and emphasise the need for sustainability - environmental and economic[1].

The ministries for the environment, primary industries, business, and transport, have each built from these objectives their own strategic priorities. These priorities are important to examine, as they demonstrate the value that the South Bay Harbour investment will return to an array of desired outcomes - at both local and national levels.

The **Ministry for the Environment**[2] present the following priorities:

1. Transform the Environmental Management System
2. The Treaty of Waitangi is reflected in environmental decision making
3. Improve the quality of New Zealand's urban environments
4. Build a sustainable and resilient land and food system
5. New Zealand transitions to a climate-resilient, low-emission, and circular economy
6. Improve how New Zealand's natural resources are allocated
7. Connect people and communities with Te Taiao

These priorities are also reflected in the **Conservation and Environment Science Roadmap**[3], which notes national priorities for science and capability needs. Those related to Coasts and Oceans are highlighted as:

- Identifying key marine habitats that provide for the values we hold for biodiversity, traditional food gathering, recreation, and commercial fisheries.
- Understanding present and future threats to these habitats, including from climate change, and assessing management options.

The national value of conservation and marine science are further emphasised within **Department of Conservation | Te Papa Atawhai** and our national **Biodiversity Strategy | Te Mana o te Taiao**[4].

Objective 3 of Te Mana o te Taiao, "Biodiversity protection is at the heart of economic activity" resonates deeply with the voices of local stakeholders who have shared their concerns around the development of infrastructure and the potential increase of extractive and exploitative activities.

Te Korowai o Te Tai ō Marokua, and the **Kaikōura Marine Strategy – Sustaining Our Seas**[5] (KMS) includes a ranges of objectives that are primarily directed at the management of facilities and resources, with a strong emphasis regarding the protection and restoration of marine ecosystems. The KMS also notes, with regard to the use and development in the coastal environment, support for *"appropriate development and maintenance of facilities such as the boat harbours"*, so long as these structures do not adversely affect surf breaks of significance.

These dual goals of economic activity and development, alongside environmental protection and restoration, are at the heart of this proposed investment for the South Bay Harbour, which seeks to meet the economic aspirations of the Kaikōura community whilst enhancing the mauri of their ecosystems.

The improved accessibility the proposed development will provide, will better position Kaikōura to support future marine science and research investment. In turn, the opportunities to contribute toward both national objectives relating to conservation and environmental science, as well as creating opportunities to meet local objectives for diversifying the economy.

1 The Treasury, 'Budget Policy Statement 2021'.
2 Ministry for the Environment, , 'Statement of Intent | Tauākī Whakamaunga Atu - 2020-2025'.
3 Ministry for the Environment and Department of Conservation, 'Conservation and Environment Science Roadmap'.
4 Department of Conservation, 'Te Mana o Te Taiao - Aotearoa New Zealand Biodiversity Strategy 2020'.
5 Te Korowai o te Tai o Marokura, 'Kaikoura Marine Strategy 2012'.

2.0 | Strategic Assessment
Scope & strategic fit | Alignment with national strategies

The proposed development for the South Bay harbour reflects a nationwide vision for economic and environmental sustainability.

While the proposed development will support additional investments in research and science in the long-term, more pressing are the concerns and impacts for the tourism economy, commercial fishers, and recreational users of the harbour facilities.

The desires of stakeholders and the outcomes of the proposed investment are shown here to be aligned with the strategic priorities of the **Ministry of Primary Industries**, **Ministry for Transport**, **Maritime New Zealand**, and **Ministry for Business, Innovation and Employmen**t, as well as Tourism Industry Aotearoa[1].

MPI's desired outcomes are focused on prosperity and sustainability, and the focus for the fisheries management system are *"to maximise the opportunities and find solutions to the challenges facing the seafood sector and marine environment."*

Stakeholders of the proposed development have shared a desire that Kaikōura not increase commercial fishing activity. Meeting this desired outcome will require management practices out of scope of this business case. The development does however, support future opportunities for commercial activity when deemed appropriate – which may become more desirable as MPI implements new policies and practices for the fishing industry that will support a balance of commercial activity with the protection of marine ecosystems.

The Ministry for Transport, and **Maritime New Zealand** are prioritising safety, better travel options, climate change, and improving freight connections[2]. These priorities have been translated into the following desired outcomes: *Inclusive access, Economic Prosperity, Resilience and security, Healthy and safe people, Environmental sustainability.*

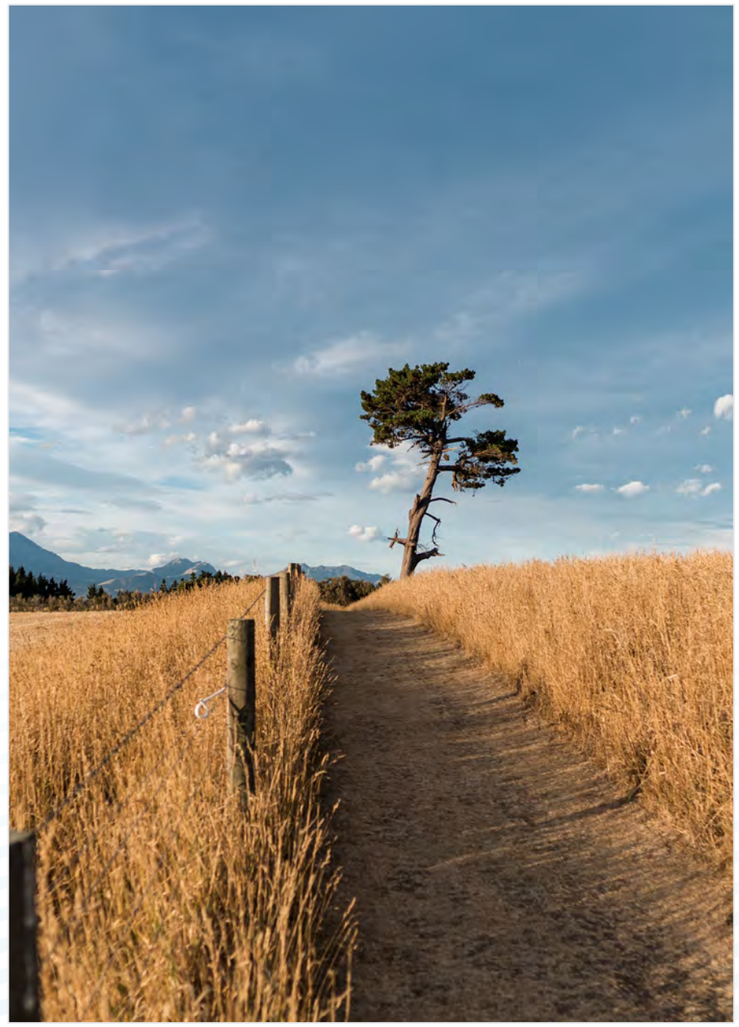
The proposed investment is closely aligned with providing outcomes desired by Maritime New Zealand, for both commercial and recreational harbour users.

The strategic objectives of **MBiE** and those outlined within **The Aotearoa New Zealand Government Tourism Strategy** also highlights the desire for tourism growth to be productive, sustainable, and inclusive, and includes the following goals[3]:

1. Tourism supports thriving and sustainable regions
2. Tourism sector productivity improves
3. New Zealand Aotearoa delivers exceptional visitor experiences
4. Tourism protects, restores and champions New Zealands natural environment, culture and historic heritage
5. New Zealanders' lives are improved by tourism

Marine-based tourism is a well-recognised foundation for Kaikōura's economy. Operators and visitors will benefit directly from the investment in terms of improvements to safety, and enhanced quality of experience.

The proposed development will provide Kaikōura with safe, accessible infrastructure and facilities that will support existing tourism operators, as well as securing future opportunities for new experiences in environmentally sustainable tourism to be developed.



1 Tourism Industry Aotearoa, 'Tourism 2025 and Beyond'.
2 Maritime New Zealand, 'Statement of Intent 2021-25 | Te Tauākī Whakamaunga Atu', 10.
3 Ministry of Business, Innovation, & Employment, 'Strategic Intentions 2021-2025'.

2.0 | Strategic Assessment
The need for change | Engineering & operational challenges

Climate change and sea level rise present additional risks to the longevity of the South Bay harbour and Kaikoūra's economy.

A baseline assessment by WSP provides an overview of the present challenges with the operation in its current form[1].

The assessment also establishes the expected life-span of the harbour, and the steps and high-level costs required for the harbour to remain in its current form for the next 50 years. Included here are some key points for consideration.

Estimated lifespan

The harbour has approximately 45 years remaining (2067), assuming its usage remains within intended design limits and maintenance interventions are timely.

Climate change & Sea Level Rise (SLR)

Projections indicate that the SLR will effectively return the site to pre-2016 conditions by 2079 (12 years beyond the harbour's design lifespan). Climate change will likely bring an increase in the frequency and magnitude of storm tides and high wave conditions.

The result, with the current configuration of the harbour would be an increase in downtime due to weather conditions for both commercial and recreational users of the harbour - a feature that already strains local tourism operators businesses.

Operational challenges

The current configuration and capacity limitations of the harbour contribute to significant operational challenges. For example:

- The 30m width of the approach channel limits safe two-way vessel navigation.
- Licenses for marine mammal tourism limit the number of daily trips for marine mammal tourism operators. Catering for tourist growth will require larger capacity vessels. The dimensions and dredge levels of the current harbour prevents investments in larger vessels.
- Limited berths constrict alternative economic growth opportunities whilst increasing potential health and safety risks and traffic conflicts for all users.

Anticipated maintenance

In the remaining 45 years of its design working life, the anticipated harbour maintenance includes:

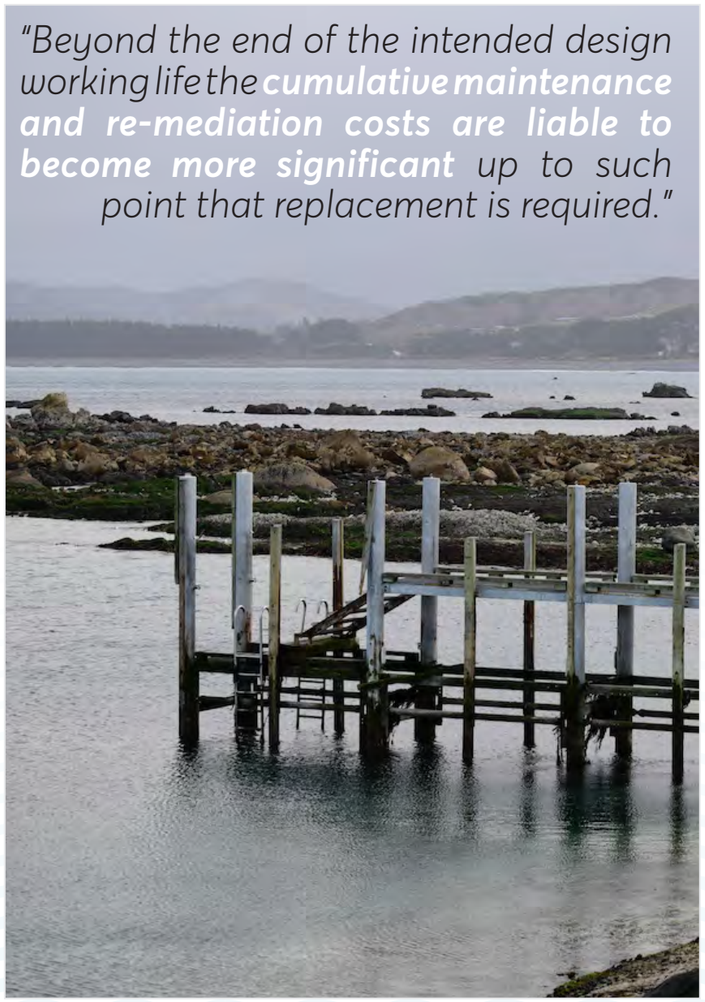
- Surveys and maintenance dredging of the approach channel, harbour basin, and berth pocket.
- Surveys and 'topping up' of the armour-stone breakwater.
- Dive and above-water inspections of the quay walls, jetties, boat ramp, channel marker beacons, mooring piles, gangways, with repair and replacement as required.

Future costs

A high-level 2022 replacement value of the existing harbour is estimated to be in the range of $20-25 million (excl. GST), excluding dredging. An annual maintenance cost estimated around $500-625k (excl. GST); a figure to be escalated if used in financial calculations as appropriate to reflect increasing maintenance costs with time.

*"As marine structures age a trend of **constant and increasing need for inspection and maintenance** obligations can be expected"*

*"Beyond the end of the intended design working life the **cumulative maintenance and re-mediation costs are liable to become more significant** up to such point that replacement is required."*



1 Iain MacDonald (WSP), May 2022, Technical Memorandum, Kaikōura South Bay Harbour Expansion - Existing Harbour Baseline Assessment. Prepared for KMDP.

2.0 | Strategic Assessment
The need for change | Research & education

The earthquake halted a long-standing presence of research and education in Kaikōura.

Research and education has a long tradition in Kaikōura. There are geological and archaeological reports that date right back to 1848. It was in the 1950's that the University of Canterbury's Biology Department began conducting field trips, using the local high school as a base.

Negotiations to install a permanent residence and teaching facilities were initiated by Edward Percival, a Professor of Biology and Zoology, and following his death, continued by his successor Professor George Knox. The Edward Percival Marine Facility opened its doors to researchers and students March 9th, 1963[1].

By the 1970's, the facility had become a base for researchers studying a wide range of subjects, and was thus renamed to the Edward Percival Field Station. In the 1980's the building was expanded to provide additional facilities and accommodation to meet the constant demand.

In 2016 the site was closed by the University of Canterbury following a geotechnical report that advised the buildings were prone to rock slides and a significant risk to life[2]. The closure of the field station has ended a long tradition of researchers and students travelling and staying in Kaikōura - a significant loss to both local and scientific communities.

The University of Canterbury intends to re-establish teaching and research at a new Kaikōura field station in future[3].

Source: Emma Dangerfield/Fairfax NZ

1 Davison, W., & Van Berkel, J. (1985) Kaikoura and the Edward Percival Field Station: a brief overview. Mauri Ora. http://dx.doi.org/10.26021/746

2 Murphy, E. (2016, Sept. 15) Risk to life at University of Canterbury's rock-slide-prone field station in Kaikōura. https://www.stuff.co.nz/the-press/news/84218798/risk-to-life-at-university-of-canterburys-rockslideprone-field-station-in-kaikoura

3 https://www.canterbury.ac.nz/life/facilities/field/kaikoura/

2.0 | Strategic Assessment
The need for change | The future of tourism

Kaikōura's operators are ready to create innovative & high-value experiences in the transforming toursim industry.

Like many countries, New Zealand's tourism industry has been hit hard by the Covid-19 pandemic. Prior to the pandemic, the industry relied heavily on international visitors, with international tourist numbers hitting a peak of 3.86 million in 2019. In the same year, the tourism industry generated $40.9 billion.

When the pandemic hit, international visitor arrivals to New Zealand plummeted to levels not seen since the 1950s. In 2019, arrivals were between 40,000 – 80,000 per week. The equivalent period in April, May, and June of 2020, saw arrivals only in the hundreds.

The cessation of international tourism has threatened the commercial viability of many of New Zealand's tourism-related businesses. International tourists have traditionally accounted for around 40% of all tourism spending in New Zealand. Spending associated with an increase in domestic tourism has made up some of the shortfall, but it seems likely that total tourism spending will still fall significantly overall.

Border restrictions are beginning to ease, set to be fully open by July 31st 2022. Amidst the fallout of the pandemic and inflation, airfares are set to be more costly than they were, and people are likely (and understandably) more apprehensive about travelling. New Zealand's international tourist numbers are unlikely to resume to pre-pandemic levels for some time, and the tourism industry recognises the need to adapt and find new ways to thrive – sustainably and with resilience.

There is broad sentiment that the pre-pandemic tourism industry was not sustainable and consistent advice from within the sector, from small communities, and from external agencies like the Parliamentary Commissioner for the Environment demonstrate we cannot go back to the tourism model that existed prior to Covid-19.

Late in 2019 the Parliamentary Commissioner for the Environment published a report entitled Pristine, popular… imperilled?, an investigation into the environmental pressures resulting from tourism activity in Aotearoa. Two key insights emerged from that work.

First, the persistent growth of New Zealand's tourism industry in recent decades had created a set of increasingly serious environment issues. From the greenhouse gas emissions associated with long-distance travel to the pressure on wastewater networks from seasonal peaks, tourism was found to be less environmentally benign than it had often been made out to be.

Second, the increase in visitor numbers that was – at the time – forecast would only serve to exacerbate those pressures. The report concluded that business-as-usual growth had the potential to undermine the very thing that New Zealand's tourism industry is based on – the quality of our natural environment.

The pressures that have arisen from New Zealand's rapid growth in tourism have brought into question tourism's social licence to operate. Social licence exists when an activity has the ongoing approval of the local community and other stakeholders. It needs to be earned and then retained, which is dependent on active engagement with communities in tourism planning, implementation and operation, including employment.

The 2020 'Mood of the Nation' survey, released just prior to the first impacts of Covid-19, showed that an increasing number of New Zealanders were concerned about tourism growth. The survey, commissioned twice yearly by Tourism New Zealand and Tourism Industry Aotearoa to measure New Zealanders' perceptions of the industry, detailed that while more than 90 per cent of respondents felt that tourism was beneficial for New Zealand, more than 35% felt that international visitation was putting too much pressure on the country. This was a notable increase over the previous four years, up from 18% in December 2015.

Further research by Tourism Industry Aotearoa and Tourism NZ shows a strong sentiment that even within tourism hotspots like Queenstown, as many as 79% of residents felt there was too much pressure from international visitors.

The Parliamentary Commissioner for the Environment's second tourism report urges the government to take advantage of the disruption caused by Covid-19 to transform the tourism industry.

The discontinuity created by Covid-19 offers an opportunity to address some of the long-standing environmental and social issues associated with New Zealand's tourism industry. There is broad support for the idea that protecting tourism livelihoods in the short term should not morph into a slow but inexorable return to the status quo in the long term. That is a view taken by a number of tourism experts in a recently published volume entitled 100% Pure Future: New Zealand Tourism Renewed. It is also the logic underlying the Government's decision to establish the Tourism Futures Taskforce.

In his essay in 100% Pure Future; New Zealand Tourism Renewed, Rod Oram states that for the tourism sector to absolutely thrive,

> *"it needs to radically rethink its role in our natural environment, society and economy. Its greatest opportunities lie in tackling its greatest liabilities. Then it will become a trailblazer for all New Zealanders on their journey to deeply sustainable relationships with the natural world – literally our life-support system – and with each other in our social structures."*

2.0 | Strategic Assessment
The need for change | The future of tourism

In the same book, Susanne Becken discusses how we can move towards carbon-proofing New Zealand tourism. She argues that investing in new technology and improving energy efficiency is one way of decarbonising tourism, but it will not be enough; and we will need to rely significantly on behavioural change. One way forward is to reduce travel distance by promoting 'slow' visitation. This may mean we require visitors to stay longer; they simply may not be able to 'tick off' all the 'icons' from north to south in one visit.

Becken concludes her essay by making the point that:

> *"Wherever we start, one thing is clear. Tourism will not be the same after the Covid-19 crisis, and 're-imagining' has to move away from a mass-tourism model to one that is low in resource use, high in value generated, and mutually agreed on by all parties. In New Zealand's case, the opportunity to work with Māori and learn from their more holistic approach to the human–nature relationship needs to be front and centre. Developing low-carbon tourism that has high cultural integrity, contributes to conservation and enhances community wellbeing is the aim, and this likely means 'less is more'."*

New Zealand has the opportunity to back away from the development trap; to place environmental sustainability, local manaakitanga and genuine value ahead of volume, mass-market package tours and short-stay visitation, which were rapidly on the rise before 2020. This is a theme emphasised by Te Ngaehe Wanikau and by Erna Spijkerbosch. Te Ngaehe argues we have a once-in-a lifetime opportunity to build an experience rooted in our collective past, and based on Māori and local community culture and values.

2.0 | Strategic Assessment
Investment objectives

The challenges of the current harbour and the need for change are summarised in the Investment Objectives.

The review of the harbour at South Bay was based on community and stakeholder research carried out by KMDP, engineering assessment and KMDP's knowledge of the harbour, and is encapsulated in the Investment Logic Map on page 16.

The ILM identified three core problems that need to be addressed, and underpin the objectives of this investment, specifically:

- The November 2016 Earthquake caused the sea level to rise, which has altered wave action and silting at the harbour. These changes have resulted in safety concerns for all user groups and operational constraints for commercial operators.
- The size of the harbour and the way it is configured is inflexible and limits future growth for both existing operators and potential new harbour uses.
- The space for on-shore activities is insufficient and poorly configured, which causes congestion issues and has adverse impacts on the surrounding community.

In order to address the problems, three investment objectives have been identified. These are:

- The harbour is safe for all operators and users.
- The harbour allows for growth in existing operations and new uses
- On-shore space is efficiently configured and minimises the impact on the surrounding community and environment.

The investment objectives will be used to assess the suitability of the available options in order to determine which approach offers the greatest effectiveness and best public value.

Strategic challenges

The review of the harbour at South Bay identified three core challenges:

1. Wave action and silting changes due to the November 2016 Earthquake have resulted in safety concerns for all user groups and operational constraints for commercial operators.
2. The size and configuration of the harbour is inflexible and constrains future growth as a result.
3. There is insufficient on-shore space and it's poorly configured, which causes congestion issues and adverse impacts on the community.

Investment objectives

The investment objectives were derived from the challenges:

1. The harbour is safe for all operators and users.
2. The harbour allows for growth in existing operations and new uses.
3. On-shore space is efficiently configured and minimises the impact on the surrounding community and environment.

2.0 | Strategic Assessment
Investment scope, constraints & dependencies | Overview

The objectives are framed by the scope of the investment, as well as additional constraints and dependencies.

In scope

1. The redevelopment of the harbour to ensure it is fit for purpose for the existing users of the facility, including commercial, Coast Guard and recreational users
2. Development of a flexible layout within the harbour that will allow for future sectors and uses (such as marine research, local government agencies (MPI) , berth hire, etc.,) without requiring significant reinvestment
3. On-shore development and changes in the immediate South Bay area in order to improve the operation of the harbour, including roading, parking and other spatial changes
4. Meeting the required regulatory and legislative standards in the construction and operation of the harbour, including the Health & Safety in Employment Act and the Government's climate change obligations under the Paris Agreement.

Out of scope

1. Development or construction beyond the immediate South Bay area, such as any consequential changes to the State Highway intersection or other spatial changes in Kaikōura
2. Investment in any of the future sectors or uses for the harbour, such as marine research or aquaculture facilities.

Constraints

1. The preferred option must be aligned to the objectives of the New Zealand Coastal Policy Statement
2. The preferred option must conform to the wider legislative controls and constraints, such as the Resource Management Act and the revisions to the legislation the Government has indicatedt
3. The redevelopment of the harbour must be aligned with the relevant local, regional and national strategies detailed earlier in the document.

Dependencies

1. There are no immediate dependencies for this investment.

2.0 | Strategic Assessment
Investment scope, constraints & dependencies | Traffic & parking

Demand for parking at South Bay exceeds current capacity during peak periods.

The question of traffic and parking was a persistent concern among stakeholders during the development of this business case, indicating the feature of traffic management as a potential constraint for the investment.

WSP undertook a high-level traffic assessment for the proposed development at South Bay. Drawing on drone photos provided by KMDP, and historical photos from Google Earth, WSP gleaned some insight as to the number of vehicles that use the existing harbour during peak periods. The illustration to the right is adapted from the WSP report, and shows the zones used for the vehicle counts. Without NZ-specific design guides, guidelines from Australia have been drawn on to inform the WSP assessment.

Current demand related to the boat ramp during peak periods is estimated at **54 car and trailer parks**, and **29 car-only parks** (83 total). Parking for other activities is estimated to between 21 - 42 car-only spaces. The proposed public boat ramp could generate demand for as high as 150-180 car and trailer spaces, 30-36 car-only spaces, and 1 (minimum) mobility space. WSP expect however, that demand for the new boat ramp will be similar to the existing demand, and suggest that **the total number of spaces required could be 54 car and trailer parks, and 50-70 car-only parks.**

With regard to commercial operators and potential future demand, there is uncertainty for precisely how many berths will be wet or dry, and how many employees will be on-site. Using the assumption of 50 boats with wet berths, and 30 boats with dry berths, WSP estimates that the parking demand could be 21 - 42 spaces, with demand increasing further if there are harbour employees and ancillary activities on-site.

Key recommendation

A survey of the existing boat ramp usage and parking areas over the weekends during the boating season would be useful to establish "normal weekend usage" and inform the design accommodations for harbour parking.

2.0 | Strategic Assessment
Investment scope, constraints & dependencies | Ecological

A bird's eye view of South Bay's habitats.

Tonkin + Taylor have undertaken a high-level assessment of the ecological opportunities and constraints for the South Bay Wharf expansion[1]. The purpose of the report is to assist with the consent design process, feasibility assessments, and any future ecological assessments that will accompany final design plans at the consenting stage. Some key takeaways are summarised here to introduces the ecological context of the proposed development.

The project area will cover approximately 243,000m^2, and falls within the 'special purpose' zone of the Kaikōura District Council plans, adjacent to commercial and residential zones.

Habitats within and surrounding the project area include dune land vegetation, shingle beaches and limestone reefs, rocky outcrops, and artificial habitats created by wharfs, jetties and boulder breakwaters.

The only known monitoring programmes active within the project footprint are two studies; one following little blue penguins, and a community-driven study on the banded dotterel.

General species location

- Potential avifauna foraging area
- Potential avifauna foraging area and seal haul-out zones
- Potential lizard habitat
- Penguin nest-boxes and predator-free area

1 Tonkin & Taylor Ltd, April 2022, South Bay Wharf Extensions - Ecological Opportunity and Constraints. Prepared for Kaikōura District Council.

2.0 | Strategic Assessment
Investment scope, constraints & dependencies | Ecological

Constraints and opportunities within the project footprint

The illustration below highlights the range of native or endemic species that have 'at-risk' or 'threatened' conservation profiles. Their habitats and conservation status contribute to the key ecological concerns for the project, and additional species and habitats are listed in the report's appendix.

The report provides at least 15 recommendations for mitigating the ecological costs of the project, and for exploring additional opportunities that would foster new habitat growth and ecological resilience in the area.

Key concerns

- Loss of benthic habitat through dredging and constructions works
- Disturbance to marine mammals and avifauna
- Possible degradation of coastal bird habitat and disruption to breeding, nesting, and moulting.
- Disturbance or removal of lizard habitat and associated injury or displacement of lizard species

Opportunities

- Timing the project works with the tides where it may mitigate impacts to coastal vegetation
- Timing project works so that nesting/moulting/breeding seasons of avifauna and seals are not negatively impacted
- Prioritising ecological enhancements of marine and coastal habitats through the strategic placement of artificial structures, complete with rough/indented surfaces that encourage marine growth in a range of niches.

At-risk and threatened species potentially present in and/or around the project footprint


Little Shag


Pied shag


Variable Oystercatcher


Little penguin


Red-billed gull


Banded dotterel


Hutton's Shearwater


Yellow-eyed penguin


Pacific Reef Heron


Bladder kelp


Hector's dolphin

Relict ← – – – – – – – → Recovering ← – – – – – – – → Declining ← – – – – – – – → Increasing ← – – – – – – – → Vulnerable ← – – – – – – – → Endangered

2.0 | Strategic Assessment
Summary | Risk management

There are a range of risks that are being effectively managed.

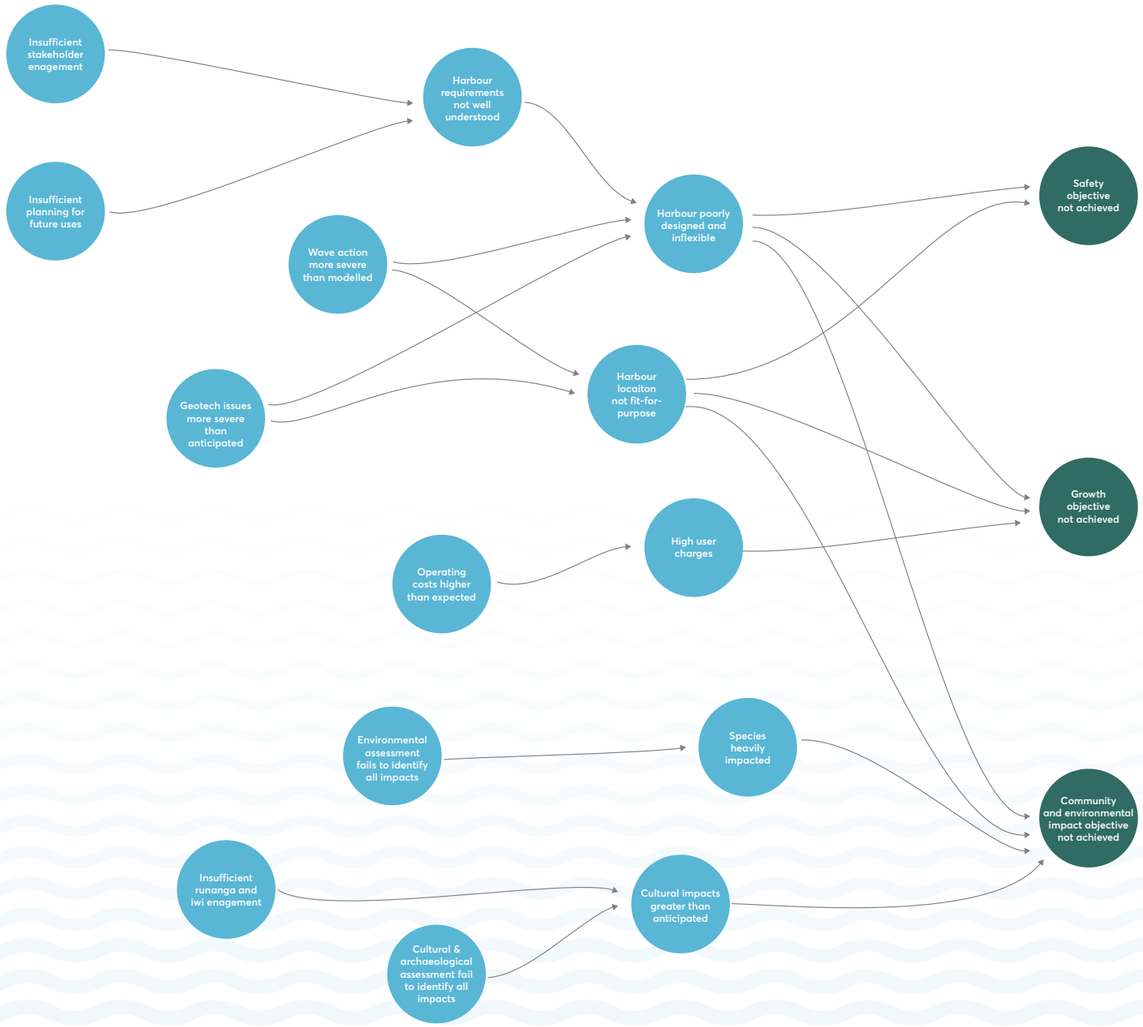
The diagram at right uses a risk bow-tie to identify the most pressing challenges for the investment. It assesses the causal factors that could contribute to the desired outcomes not being achieved.

The items at the left hand side of the diagram are the factors that need to be managed to ensure the investment outcomes are delivered.

As the diagram illustrates, effective stakeholder engagement is key to mitigating many of the risks. Good engagement ensures there is a clear view of the current and future requirements for the harbour, which will ensure the resulting facility will be fit for purpose in the immediate future and in the decades to come.

With this in mind, there has been a steady and consistent focus on community and stakeholder engagement by the KMDP team over the last two years. Details of stakeholders and the interactions with the various groups are provided later in the document.

The delivery risks for the project – threats to the redevelopment being delivered on time, within budget and to the correct scope – are discussed later in the business case as part of management case.



2.0 | Strategic Assessment
Summary | Benefits

The development of the harbour will have far-reaching benefits.

An investment into the development of Kaikōura's harbour will create a range of social, economic, and environmental benefits at local, regional, and national levels.

The local benefits are most easily recognisable; the improved level of safety and efficiency of a new harbour will benefit all users, and the additional space will enable existing operators to expand their operations and support new uses. The improved capacity will also support visiting research vessels, bringing additional economic benefits to the area.

The envisioned landscaping will increase the harbour's value for residents and visitors alike. Altogether the investment aligns easily with local strategies and long-term plans.

At a regional level the effect of a newly developed harbour is less obvious. The opportunities created for investments in new eco-tourism activities and tourism adjacent services (accommodation, hospitality), education, and research and development, will in turn provide innovation and diversify the regional economy, as well as providing high-value employment opportunities.

At the national level, the investment objectives and outcomes that aim to achieve the dual goals of economic development and environmental sustainability align strongly with a suite of strategies and plans across Government. In particular, the development of the on-shore facilities that hinge upon a new harbour is highly attractive to international research institutions and visitors. Forming partnership and hosting such institutions and visiting researchers will in essence create a new export economy for Kaikōura.

Regional benefits

- Enables the development of research institutes and international partnerships and investment.
- Creation of direct and indirect high-value employment opportunities.
- Aligns with Environment Canterbury long term plans and existing community outcomes.
- Strengthens existing regional economies, and provides diversification opportunities.
- A safe harbour for vessels on the eastern coast of the South Island, particularly between Picton and Ōtautahi Christchurch.
- Wealth creation and contribution to regional economy from increased economic activity.
- Relationship with marine science and education enhances regional innovation and entrepreneurial business.

National benefits

- Directly contributes to the priorities of the Ministry for the Environment, particularly 2, 3, 4, 5 and 7.
- Improved safety in harbour and marine activity reduces national costs.
- Supports the goals of the Ministry for Transport and Maritime New Zealand, for safety, accessibility, economic prosperity, and resilience.
- Reflects the priorities for Coasts and Oceans, as outlines within the Conservation and Environment Science Roadmap.
- Aligns with the priorities of Ministry for Primary Industries regarding the support of future opportunities for commercial activity.
- Direct links to Te Waihanga's infrastructure wellbeing benefits.
- Supports the dual goals of economic development and environmental protection.
- Demonstrates the national value of conservation and marine science, as held by DoC and the national Biodiversity Strategy.
- Contributes toward the goals of Ministry for Business, Innovation and Employment, and in particular, the goals of the tourism strategy.

Local benefits

- Revitalises local economy, creating new eco-tourism, research and education opportunities.
- An efficient and safer operating environment for all user groups.
- Aligns with the goals of the Kaikōura District Council's long-term and annual plans.
- Creates economic opportunities for adjacent services such as accommodation and hospitality.
- Increased value of the harbour for residents (improved views and accessibility).
- Aligns with the Kaikōura Marine Strategy - Sustaining Our Seas.
- Increased direct and indirect high-value employment opportunities.
- Secures the longevity of the harbour, and the future for local businesses.

3.0
Economic case

KAIKŌURA MARINE DEVELOPMENT PROGRAMME

3.0 | Economic case
Section overview

3.0 | Economic case
- Overview
- Process used
- Options framework
- Assessment approach

3.1 | Harbour configuration
- Requirements
- Location long-list
- Assessor profiles
- Engineering assessment
- Archaeological assessment
- Short-list assessment
- The preferred option

3.2 | On shore
- The on-shore facilities
- Location & access
- The proposed multi-use campus
- A commercial model
- Example: The University of Canterbury
- Assessing feasibility

3.3 | Benefits
- Wellbeing
- Wellbeing & infrastructure
- Wellbeing across the four domains
- A safer operating environment
- Growing existing operations
- Marine education & behaviour change
- Economic impacts of research & education institutions
- Economic impacts of marine science & education institutions

3.0 | Economic case
The process we have used

Arriving at the preferred option is the heart of the business case – and a structured process.

The focus of any business case is on developing and validating the preferred option, and this process is the primary purpose of the Economic Case. Developing the preferred option is a structured process within the Better Business Case methodology, as the diagram at right shows.

The process starts with defining the requirements of the solution. This is done by building on the information already collected by the KMDP team through community consultation and engagement, and expanding on it in workshop sessions.

Once the requirements are set out, the next step is to identify potential locations for the harbour based on the issues and requirements. These locations are then analysed at a high-level to rule out any that are not feasible due to uncontrollable factors.

The remaining options make up the short-list, which will require more analysis for a preferred option to be developed. The analysis will include a range of factors, from getting the input of specialists such as engineers, through to seeking input from specific user groups and identifying the likely investment requirements. The process will tend to highlight the strengths and weaknesses of short listed options, from which a preferred option can be developed.

The preferred option then carries forward into the rest of the business case, where issues such as the achievability of the project and the financial sustainability of the resulting asset can be fully tested.

This process is set out in steps in the diagram at right.

3.0 | Economic case
Options framework

The options framework will allow us to work through the possibilities for the harbour.

The diagram at right shows how the options development process works in practice. It uses the multi-criteria analysis approach within the Better Business Case methodology, which:

- Identifies each of the solution components
- Assesses the full range of options for each component, ranging from doing the bare minimum through to most aspirational approach
- Combines the components into an integrated option, which can then be assessed for viability.

In the case of the Kaikōura Harbour, the key components of the solution are the location, the size of the facility, the uses to which the harbour will be put, the operators (commercial and non-commercial) who will use the harbour, the extent of the on-shore facilities, and the access and parking requirements.

Work is now needed to explore the options, the process for which is described on the following page.

Components

Location

The location of the facility; South Bay or alternatives

Operators

The commercial and non-commercial harbour uses, including tourism, charters, recreation, commercial fishing, aquaculture research, etc.

Size

The physical size of the harbour and its ancillary facilities such as ramps and quays

On-shore

The size and extent of supporting facilities, including cafes, offices marine servicing, onshore processing etc.

Uses

The functions the harbour performs, such as berthage, ramps, refueling, marina etc.

Access and parking

Onshore roading and parking for all types of users

3.0 | Economic case
Location options assessment approach

While consensus has been reached for the likely location and primary functions of the harbour, additional work is required to ensure it is sized and configured correctly and accommodates anticipated additional functions and activities. This will require input from a range of engineering consultants, as there are a range of constraints and possibilities that will need to be taken into account – for instance, the impact of the wave climate will be a significant determinant of how and where some elements of the harbour can be constructed.

The scope of this engagement is therefore as follows.

Part 1: Conducting a baseline assessment of the harbour in its current configuration.

The purpose of this step is to establish whether there are any challenges with the operation of the harbour in its current form, and therefore the costs and risks of doing nothing. The time horizon for the assessment is the expected 50 year life of the existing facility. The baseline should establish:

- The expected life-span of the harbour, based on wave climate, sea level rise and climate change impacts, potential silting issues and the like.
- The steps that will need to be taken to ensure the harbour remains viable in its current form for the next 50 years, including a high-level estimate of the costs of maintenance and remediation in 2021 dollars.

Part 2: Developing the preferred option

Work to date has identified the area from Atia Point/South Bay Reserve to the mouth of the Kōwhai River as the suitable location for the harbour, which sets the scope for the sites that need to be examined. Within this geographic spread a full range of options can be considered, based on the proposed size and configuration of the facility. The options can include:

- Keeping all harbour facilities at the current location
- Moving some harbour facilities to a new location within the geographic boundary whilst keeping some harbour facilities at the existing location
- Moving all harbour facilities to a new location within the geographic boundary.

3.1
Harbour configuration

3.1 | Harbour configuration
Requirements

There are a defined set of requirements for the harbour.

The harbour requirements were ratified in a workshop with KMPD in early November 2021 based on information gathered by KMDP from the community and users of the harbour, including commercial operators and recreational users.

There are a number of high-level assumptions about how the harbour will function and level of facilities provided. These are noted below.

Recreational users

Recreational users are serviced in two ways; via the launching ramp at South Bay and via the Boating Club ramp at Atia Point. Users are assumed to launch and recover boats from trailers, and will require onshore parking for vehicles and trailers.

The amount of parking will be managed to ensure undue pressure is not placed on the marine environment by recreational fishers, and the total volume of parking may be reduced over time in line with environmental goals. Parking will be charged for, and ad-hoc parking on the streets of South Bay will be heavily restricted. Preferential parking will be provided for Kaikōura residents.

Commercial users option 1: berthage

Commercial users (tourism, fishing and new uses such as research) are assumed to be berthed as the first preference. This is a change from the current approach where vessels are moved in and out of the water. In this option, no on-shore parking is planned for commercial vessels unless the costs of providing berthage are prohibitive. It is therefore assumed haul-out is only required for vessel servicing, with this taking place away from South Bay.

The tourism vessels are assumed to be a maximum of 45m in length and other commercial vessels 30m in length. Some interchange between the various non-tourism commercial vessels is assumed over time, so the total berthage can flex between the various usage types.

Having separated access for tourism and commercial vessels is desirable, with the goal of improving amenity and experience for tourists.

Commercial users option 2: haul ashore

There is an acknowledgement that while berthage is the preferred approach, either the engineering constraints or the costs may prove prohibitive. If this is the case, then haul-out is assumed to be the backup plan. In this option, the 45m tourism vessels remain berthed but the 30m vessels are taken in and out of the water on a daily basis.

In the haul ashore option, specific commercial parking is required in addition to the parking for recreational vessels. The maximum requirements are for 20 x 30m vessels with trailers, tractors for haulage and appropriate manoeuvring spaces. A physically separate boat parking area is desirable, with its own access control gate.

Given the size of the commercial vessels, their trailers and towing vehicles, minimising towing distances is a desirable goal. Placing recreational parking further away than the commercial parking is an acceptable outcome.

Parking restrictions in South Bay

In order to control the parking flow and access to the ramps, it is assumed street-level parking controls will be put in place by KDC, using a parking bylaw. These restrictions will be aimed at preventing recreational or commercial users parking boats and/or trailers on the streets of South Bay, with suitable exemptions for residents.

Harbour requirements

The requirements for the harbour have been broken down into the following categories:

- Transport
- Public spaces, amenities and facilities
- Boating activities
- Harbour movements and boat sizes (harbour size and configuration must accommodate boats and movements).

The requirements under each of the categories are set out in tables on the following pages.

3.1 | Harbour configuration
Requirements

The indicative requirements we are seeking are detailed in the tables below.

Transport

Component	Functional	Non-functional
Tenanted commercial parking (Option 2 for commercial operators)	20 permanent parking bays for commercial boats with their tractors and trailers (and some with hijabs) and two on wait list. Must allow for limited future growth in size of boats and operators	• User pays/market-drive annual fee commercial parking so controlled access • Physically separated from the recreational parking area

Day/hour car and trailer parking for recreational users	• 55 car and trailer parks
	  • 70% to Class TB size
	  • 30% to Class TA size
	• 2 disabled parks
	• 5 motorbike parks
	• 1 EV charging stations
		User pays/market-driven rates so controlled access to car parking area. See spreadsheet model

Day/hour car parking	Existing only - no change to current facilities	User pays/ market-driven rates
Van/bus/coach parking	Existing only - no change to current facilities	User pays
Bike/scooter parking	20 push bike parking area 1 charging station for e-bikes	User pays
Reduce road congestion through South Bay at peak times	Consider optimal transportation for South Bay, considering current constraints and any changes to current operating approach. Assess current roading layout and look for improvements	• Consider pushing Moa Road through to the main South bay Parade as a one-way • Consider road speed reduction
Reduce congestion on top of the slipway	• Create adequate space for 4 cars and trailers to Class TB size to pull off the road for pre/post-launch prep	
Masterplan - improve pavements/pathways	Consider passive recreational users – safer pavements/pathways for pedestrians moving from the car parks to the harbour and those connecting with the Peninsular on foot or bike	
Whale Watch (WW)/ Dolphin Encounter (DE) drop-off zone	WW and DE currently have their own drop off/ pick up area close to their jetty's. Increase space to allow for 4 buses to pull in at any one time. No change to these facilities.	
Bus and shuttle drop-off zone	Safe drop off/pickup zone required for up to 3 vans and shuttle buses at one time servicing cruises, Seal Swim, charter fishing	Sheltered waiting area close to designated drop-off/pick-up zone

Public spaces, amenities and facilities

Component	Functional	Non-functional
Harbour frontage	• Demand for a community space with seating, BBQ with a pathway across the harbour front connecting towards the Peninsular / SH1. • Safer access around the Harbour facilities for those in wheelchairs or using mobility scooters.	
Physical structure/ meet & greet/shelter/education/ information	300m^2 multipurpose community structure which meets several requirements: • Designated meet and greet space for guests waiting for shuttles and to be directed to / from their chosen activities (needs to be covered and able to protect from the prevailing wind) • Information boards - Visitors need to have information easily available to know what the rules are and what the community expectation in around protecting our special place and being good kaitiaki. DOC / Te Korowai / MPI / community notice board / public messaging	• Education – sharing Kaikoura's geological, ecological, social and cultural history. • Enough space to give talks, education sessions, information sharing.
Tenancies	100m^2 of space able to be configured for single or multiple hospitality or retail tenancies	
Bins	Recycling and rubbish	Blue cod frames disposal bins (if required
Public toilets	Suitable public toilets, 5 stalls per gender Potential for user-pays showers, 2 unisex	
Public wifi	Provision of wifi facility	Free wifi at the wharf area
Waste oil disposal	Service to disposal	

3.1 | Harbour configuration
Requirements

The indicative requirements we are seeking are detailed in the tables below.

Boating activities

Component	Functional	Non-functional
Boat wash	Wash off facilities for 2+ boats (environmentally conscious)	System must be user-pays
Fuel	Fuel station	Second bowser for wharf fill up station desirable
Slipway/harbour signage	Information regarding the harbour use and fees, parking, fish catch, marine life	
Slipway	Suitable space, free from congestion at peak times	User pays facility
Recreational jetty	Floating jetty to allow for x recreational boats to tie up at any one time/load and unload passengers/park trailer	
Commercial Wharf/jetty (Option 1 for commercial operators)	Berthage for up to 19 vessels - commercial fishing, charter fishing, other uses Vessels range from 20m-30m Preferably separated access from the tourism wharf	
Tourism Wharf	• Berthage for up to 6 vessels of 45m length • Sufficient working area for boarding/loading activities • Electricity – 230 volt, 10 & 16 amp • Water – Town supply • Fuel – Petrol & Diesel available • Sewage – Pump out available on fuel jetty • Waste Oil Disposal	
Coastguard	Happy to stay in existing location but will consider moving to a new building / berth if required Coastguard need to maintain a clear channel from their slipway, or easy access to/ from a permanent berth to the open sea free at all times.	

Harbour movements and boat sizes

Based on maximum movements in peak summer season with current boat numbers

Category	Boats	Boat size	AM	PM	Total
WW	2 very large boats (remain in the harbour) 2 smaller boats (remain in harbour during the day if weather is ok)	34m & <20m	2 x 1	2 x 1	4
DE	2 large (remain in harbour during the day if weather is ok) 2 small (in and out between trips as lack of a safe tie up space)	Moana Nui 16m Lissodelphis 13m Delphinidae 14m Kotoku 10.5m	2 x 1 2 x 3	2 x 1 2 x 3	12
Seal Swim (Dec - Mar)	2 small (in and out between trips as lack of a safe tie up space)	<12m	2 x 2	2 x 2	8
Cruise (Dec - Mar)	2026 – 5 ships 2031 – 16 ships anticipated 10,000 passengers a year) 2 large tenders move back and forth. Require a place for 1 boat to tie up	>30m	1 x 8	1 x 8	16
Charter fishing	2021 – 6 boats 2025 – 10 boats anticipated Some move in and out of the water and some try and tie up between trips if jetty space	Various >25m	2 x 6	2 x 6	24
Commercial fishing	2021 - 9 boats	Various >30m	2 x 6	2 x 6	16
Recreational boats using Council jetty	See spreadsheet model				

3.1 | Harbour configuration
Location long-list

The long-list of potential locations for the harbour are shown on the map below.

The diagram at right shows the long-list of potential locations for the harbour, based on a high-level evaluation for functional suitability. Many of these locations have been assessed over the years, to varying levels of detail. Working from left to right:

1. Racecourse Reef/Gooch Bay is the beach area immediately in front of SH1 and the Racecourse
2. South Bay (the existing site)
3. South Bay Reserve/Atia Point to the east of the existing site, and currently the location of the boating club ramp
4. Jimmy Armers is the inlet on the eastern side of the peninsular, which has historically been used for some water access
5. North Wharf/Wakatu Quay on the northern end of the peninsular is the site of a launching ramp and is currently being redeveloped.

A range of other locations – such as river mouths at increasing distance from Kaikōura – were initially considered but discarded due to being unable to meet even the most basic functional requirements.

The assessment of the long listed options is on the following page.

3.1 | Harbour configuration
Location long-list

The table below sets out the benefits and constraints of the long-list location options.

Location	Description	Benefits	Constraints	Achievability	Affordability	Overall feasibility
New Wharf (Wakatu Quay)	This site is close to town and still used by a few commercial fisherman to launch from. There is also a ramp owned by the recreational fishing club, although most use South Bay. The Quay used to house fish processing buildings.	• There is an existing natural reef, which could be utilised • The location is close to Kaikōura township	• The depth of water is likely to be too shallow and would require dredging to the harbour to be functional • The rise in coastal land has resulted in large rocks at this site, which would need to be removed • There is a lack of space for parking and other on-shore facilities • This area will likely become congested due to the Wakatu Quay development	Low	Low	
Jimmy Armers	This site is the location of the "Old Wharf", which was the first wharf in Kaikōura and was originally used by whaling boats and the first fishing boats. These days the beach is used for launching boats and is a popular recreational area for people to snorkel and swim.	• The landscape provides a natural protected harbour	• There is a lack of space for parking and other on-shore facilities. It would likely be necessary to acquire the land across the road • The site is at the end of a dead-end road, which already has very high visitor numbers due to a tourist attraction at the end of the road • The site has high cultural importance including whale bones • Significant dredging and rock clearing would be required to make this site a feasible option	Low	Low	
Te Atia Point	This site is near the current harbour and is the location of the recreational fishermen's jetty. The site extends from past the recreational boating club slipway, around towards the start of the peninsular walkway.	• Well-established and protected waterline • Room for parking on nearby reserve land • Potential to use old quarry land for parking or on-shore facilities	• Very culturally sensitive area - burial ground • Potential environmental issue due to rare snail species • The reserve is already a popular tourist site and is the entrance to the peninsular walkway	Medium	Medium	
Racecourse Reef (Gooch Bay)	This site includes the land along SH1 where the freedom camping area currently is. There is potential for discussion to include the racecourse land.	• Close to SH1 • Plenty nearby Council-Owned land, which provides space for parking, on-shore facilities and future expansion • Potential for petrol station across the road • There is land available for commercial opportunities • Less culturally sensitive compared to other sites	• Potentially very rough wave action (needs further investigation) • The beach is a popular banded dotterel nesting area • No current facilities	Medium	Medium	
Current harbour (South Bay)	The site of the current harbour, which is heavily utilised by commercial operators, tourism operators and recreational users.	• Plenty of existing infrastructure that can be utilised • Beginnings of natural reef • A natural rock platform has risen up since the earthquake, lending itself to development and should be less culturally sensitive as it is underwater	• Potentially limited space for parking and other in-land development • Rough wave action • Dredging and rock clearing would be required to create a harbour • Penguins live in the area	High	Medium	

3.1 | Harbour configuration
Location short-list

Three locations have been taken through to the short-list.

Based on the high-level assessment of the benefits and constraints of the long-list of options, the short-list includes the following locations:

- Racecourse Reef (Gooch Bay)
- South Bay (existing site)
- South Bay (including Baxter Reef)
- Te Atia Point.

To better understand the feasibility of each option, additional layers of research have been undertaken, including reports from teams of engineers, archaeologists, and ecologists. The remainder of this Economic Case details each of the assessments, and closes with a review of the benefits of change in terms of the four well-beings.

	Assessment	Pages
A	Status Quo	44 - 45
B	Racecourse Reef / Gooch Bay	46 - 47
C	South Bay	48 - 49
D	Baxter Reef	50 - 51
E	Te Atia Point	52 - 53
	Archaeology assessment	55 - 60
	Short-list assessment	61 - 63
	Preferred option	64 - 65

3.1 | Harbour configuration
Assessor profiles | Engineering

Leading engineering consultancies have assessed the short-listed options.

In order to establish the engineering feasibility and challenges for each site, the KMDP programme team assembled an engineering consultancy panel using a robust procurement approach. This panel includes some of Aotearoa' New Zealand' s leading engineering firms with a wealth of experience in complex projects.

WSP started life as the Public Works Department, in 1870, and is now one of the world's leading engineering professional services consulting firms, bringing together approximately 54,000 talented people globally. WSP are technical experts who design and provide strategic advice on sustainable solutions, and engineering projects that will help societies grow for lifetimes to come. With a vision of 'Creating what matters for future generations' we are dedicated to delivering projects that serve communities across our country.

WSP has over 2,000 people in 36 offices and laboratories in New Zealand. This combines with our world-class technical experts in Transport, Water, Marine, Property & Buildings, Power and Environment. WSP NZ has been involved in many similar projects to the proposed Kaikoura South Bay Harbour redevelopment, which include:

1. Waitohi Picton Ferry Precinct Development for Port Marlborough New Zealand, where WSP provided services in Structural Engineering (seawalls/revetments, wharves, linkspan support piers, berthing and mooring systems, commercial jetties, wavescreen, gangways, ancillary buildings) and also Geotechnical Engineering, Maritime Engineering (dredging, scour assessment and protection), Civil Engineering, Rail Engineering, Electrical Engineering, and Design Management.

   This development will upgrade Picton's port infrastructure to accommodate the new, larger Interislander ferries being introduced under. This includes new wharves, terminal building, linkspans and gangways, railway and vehicle yards, and associated infrastructure to support logistics within the port.

2. Motuoapa Harbour for Department of Internal Affairs, where WSP provided services in Geotechnical Engineering, Planning, Surveying, Structural Engineering, Civil Engineering, Ecology and Landscape Architecture.

This 50-year old boat launching and mooring facility on the eastern shores of Lake Taupō, had significant health and safety defects, and the existing infrastructure was at the end of its useful life. WSP worked with the client in a highly collaborative way to design and build a new harbour. Complexities included numerous stakeholders; significant environmental considerations; a badly silted channel and harbour, making navigation treacherous; the harbour was partly built over neighbouring Māori Freehold Land title without permission; stagnant and unhealthy water; and the electrical reticulation was not up to code.

T+T has a long-standing reputation for delivering outstanding results. Established in 1959, we're New Zealand's leading environmental and engineering consultancy, with offices in New Zealand and Australia.

Our national and international award-winning engineers, scientists, planners and project managers stand shoulder-to-shoulder with the best in the world.

Equally, their personal and professional values are as important to us as their internationally recognised expertise. For you, that means working alongside people with whom you can build solid, enduring relationships founded on trust.

Our team culture is second to none; T+T is 100 percent employee owned and operated. Our focus is 100 percent on you, your needs, your project, your aspirations to create reliable, well-designed, future-proof infrastructure while maintaining a caring eye on the environment.

3.1 | Harbour configuration
Engineering assessment | Option A – Status quo

Option A - Status quo.

At present, the harbour does not sufficiently meet the needs of its users and community. There are also risks to the safety and sustainability of the harbour as climate change and sea level rise loom on the horizon.

A baseline assessment of the harbour listed several illuminating conclusions:

1. The harbour has a lifespan with only 45 years remaining.
2. By the end of those 45 years, sea level rise (SLR) will have nearly returned the site to its pre-2016 earthquake conditions.
3. Climate change will likely increase weather events that generate storm tides and high wave conditions that may exceed the breakwater, and create hazardous conditions in and around the harbour. The result being increased risk, and downtime, for commercial operators and recreational users.
4. The narrow approach channel and limited berths contribute to the capacity limits and operational challenges, creating potential risks for health and safety, and certainly constricting opportunities for economic growth.

In sum, besides creating health and safety concerns in its day-to-day operations, the harbour at present inhibits the development of economic growth and resilience for the local, regional, or national, economies.

3.1 | Harbour configuration

Engineering assessment | Option A – Status quo

Navigation safety and harbour suitability	Coastal processes and hazards	Engineering achievability	Operation and maintenance obligations	Availability of existing land for development and transport links	Future growth potential for existing and new sectors	Environmental and ecological considerations	Cultural and archaeological considerations	Planning considerations
No known environmental condition issues; boat ramp and approach channel generally aligned into dominant and secondary wave directions, and permanent berths are sheltered behind breakwater. Passenger pick-up jetty beside boat ramp possibly lively under vessel berthing and exposed to wave front propogation along approach channel Anecdotal capacity issues at peak usage times for boat ramp with no defined separation of recreational, tourism and commercial/ fishing safety users; limited potential for future growth and other industries.	No mobile beach sediment sources posing a harbour accretion risk, or potential downdrift erosion effects from construction of western harbour expansion Existing harbour basin and breakwater in red tsunami evacuation zone. Existing harbour flat land and South Bay settlement in orange tsunami evacuation zone	Status quo; facilities reinstated after 2016 earthquake to current design standards with limited betterment for larger tourist boats and future or new commercial user requirements Elevated liquefaction risk to existing land (younger stream/coastal gravels and sands with a higher water table). No landslide risk	Status quo; facilities reinstated after 2016 earthquake will perform for intended design life (assumed 50 years TBC) subject to KDC's structure asset management planning (inc. designer's recommended inspection and maintenance regime) Size and quantum of marine and landside facilities remains the same; therefore no increase in the operation and maintenance burden on KDC and commerical users (i.e. no increase in harbour maintenance dredging requirements or breakwater and berth structure repairs)	Layout of roads and carparks in existing harbour are poorly laid out and confusing to people unfamiliar with the area - would need improvement to function more safely and efficiently. Existing carpark capacity is limited and may not meet current demand. This can result in vehicles parking haphazardly around the site and on surrounding streets, creating access and safety issues.	Does not meet community needs Current harbour contains 4 Whale Watch berths (piled mooring), 1 cruise ship tender berth (suspended deck wharf), 2 Dolphin Encounter berths (suspended deck jetty with tidal stairs), 1 dual-lane concrete boat ramp and adjacent jetty Anecdotal capacity issues at peak usage times for boat ramp with no defined separation of recreational, tourism and commercial/ fishing users DOC marine mammal permits limit the daily frequency of nature tourism sailings (whale/dolphin encounters). Opportunities for future revenue growth of nature tourism are therefore dependent upon increasing the size and passenger capacity of the vessel fleet. The four Whale Watch berths have a declared depth of -2 m CD, which can accommodate vessels up to 24 m length. This restricts long-term future opportunities to deploy longer and deeper draught vessels No potential for future growth and new industries such as aquaculture or research due to harbour space constraints; lack of additional berthage,vessel manoeuvring areas and landside development areas	No change	Status quo - existing operations continue within area with high cultural and archaeological values	Status quo - within Marine Facilities Zone in District Plan No noise impacts on residents other than that currently experienced.

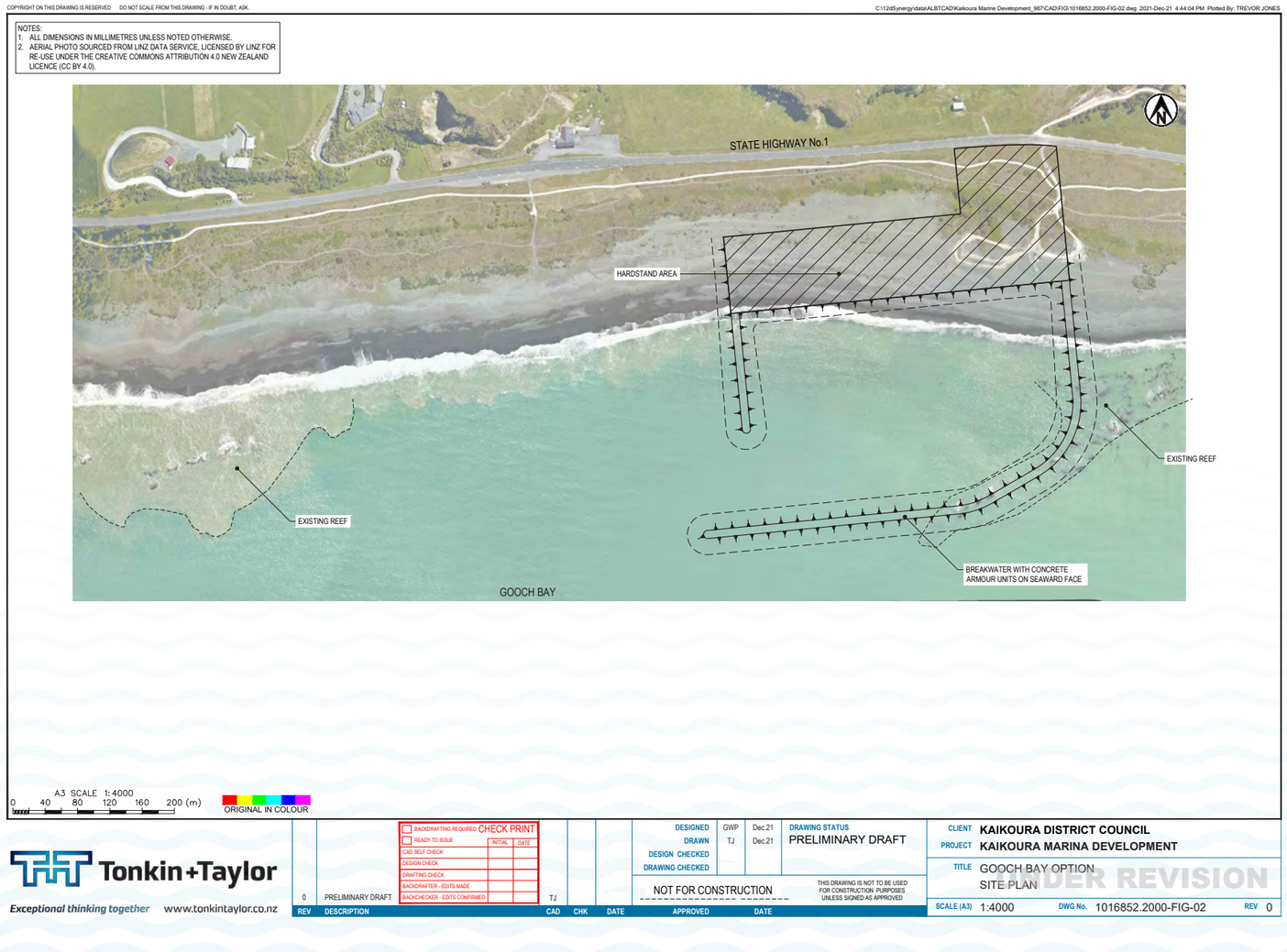
3.1 | Harbour configuration
Engineering assessment | Option B – Racecourse Reef

Option B - Racecourse Reef / Gooch Bay.

A potential harbour configuration at this site is shown at right.

This location has a number of engineering challenges, including:

- Significant wave and secondary direction would mean facilities at these sites are extremely exposed and the usage of facilities at this site would be much more limited. There is no natural off-shore protection and the sites would be exposed to large waves.
- The depth to the seabed is generally between 5m to 10m. The thickness of sand overlying the bed rock would need to be confirmed and determined whether it could be removed to construct any breakwater or whether it would need to be improved to mitigate liquefaction risk during an earthquake.
- Water depths in the area of the southern breakwater are approximately 7m to 8m below Chart Datum. This depth will allow large waves to impact on the breakwater, resulting in the breakwater requiring large concrete armour units and the breakwater itself being a much larger structure than for the other options.
- Land-based facilities are likely to be founded on unknown depths of potentially liquefying sand overlying bedrock. Ground improvement or plied foundations are likely to be required as a result.
- Ariel photos indicate sediment deposition around and in the lee of natural reefs, which indicate that long-shore drift is moving sediment along the coast. Construction of a harbour is likely to cause interruption to sediment transport with deposition on the western side of any harbour and coastal erosion on the eastern side of the harbour.



3.1 | Harbour configuration

Engineering assessment | Option B – Racecourse Reef

Navigation safety and harbour suitability	Coastal processes and hazards	Engineering achievability	Operation and maintenance obligations	Availability of existing land for development and transport links	Future growth potential for existing and new sectors	Environmental and ecological considerations	Cultural and archaeological considerations	Planning considerations
Harbour exposed to dominant S -SE wave direction on the open surf beach coast with no natural offshore protection reef structures. Large waves with shoaling and refraction effects and long-shore currents problematic for safe navigation; beam-on wave fronts from dominant wave direction Probable high wave penetration of harbour; berth downtime and disruption of operations from unsuitable internal wave conditions	Interruption of longshore sediment transport processes by harbour breakwaters; beach accretion on updrift side of breakwater and eventual bypassing leading to infilling of approach channel and harbour basin without continual maintenance dredging. Consequential erosion and shore line recession effects downdrift of harbour development as seen at other NZ open coast harbours (e.g. Timaru) Existing beach zone in red tsunami evacuation zone, dunes and flat land SH1 strip in orange tsunami evacuation zone	Significantly extensive dredging of shallow marine beach and seabed deposits and underlying Mead Hill sandstone, siltstone and limestone bedrock and reef to form a large harbour basin and approach channel on the open surf beach coast. Main breakwater partly founded on existing reef and seabed from -5 to -10 m CD. Lee breakwater perpendicular to shoreline Reclamation of beach zone below MHWS tide line for land development. Balance of dredge arisings likely to exceed reclamation and land levelling requirements given availability of dunes and flat land SH1 strip. Alternative uses or disposal of excess dredge arisings required. Ground improvement of reclamation and existing land for seismic resilience. Elevated liquefaction risk to existing land behind beach zone and dunes (younger stream/coastal gravels and sands with a higher water table). No landslide risk. Ground improvement of liquefiable marine deposits under breakwaters likely required if dredging removal is impracticable Breakwater form either rubble mound (imported rock / concrete armour units) for pontoon berths with no vehicle access, or composite form (concrete blockwork quay walls on harbour-side) for berth vehicle access. Heavy concrete armour units likely required for breakwaters given significant site water depths and wave heights Breakwater and reclamation 100 year design life inc. sea level rise. Berth structure 50 year design life inc. sea level rise	Elevated risk of breakwater storm damage and maintenance repair obligations due to bay exposure and deep water proximity Significantly extensive maintenance dredging obligations from presence of mobile beach sediment and a dominant south to north longshore current Increased post-earthquake sediment inputs to the coastline from the Kahutara and Kowhai river outflows	Greenfield site with availability of dunes and flat land SH1 strip for landside development No existing infrastructure or neighbours Will introduce a new intersection on SH1 - needs consultation with Waka Kotahi. Intersection will likely need to be quite high standard to accommodate the likely traffic volumes. Potentially good transport links; closer proximity to SH1, railway and Kaikōura airstrip (although perhaps not so essential for a harbour?) Overhead powerlines (running parallel with SH1 -south side) will need to be rerouted underground to avoid being hit by boat masts. Limited access road length available between SH1 and Harbour - could result in vehicles queuing back to SH1 (or within the harbour) during busy periods.	The open surf beach location provides a greenfield site for the development of a new breakwater harbour with potential space for accommodating existing and new industries, particularly in terms of land availability and proxitmity to SH1. However, the location has serious drawbacks from its exposure to large waves. Significant berth downtime and disruption of user operations is expected from unsuitable internal wave conditions inside the harbour basin. This is not conducive to successful growth The harbour layout as shown has a basin approx. 165 x 280 m and reclamation hardstand areas of approx. 30,000 m2. Although not explicity identified, the berth facilities are anticipated to be similar in quantum and size to the other presented harbour options	Adjacent to a recreational reserve with clumps of native vegetation providing refuge and habitat for native, protected terrestrial bird species (e.g., bellbirds). Lizard species (native common skink and Marlborough mini gecko) recorded within the vegetation nearby the site. Nearby seal colony present (NZ fur seals)- important haul out, breeding and foraging areas within and nearby the site. Native, protected coastal bird species present, foraging and breeding areas (e.g., nearby Hutton's shearwaters). Paua habitat and other important kelp/fish populations, including Taonga species (kina), present within the nearby reef system. Reef and soft sediment habitat within construction area holds ecological and fisheries value (paua, kelp, fish etc) - sedimentation, habitat disturbance and loss and changes to local wave dynamics will likely require considerable compensation measures. Permanent alternation/ impacts to the habitat type (from rocky intertidal zones/outcrops to artificial structure) and altered wave dynamics as a result of construction would need to be considered and compensated for. Area of high recreational value.	Entire Kaikōura coast is a Statutory Acknowledgement Area, Runanga sensitive area Significant number of archaeological sites in wider area (none recorded within footprint) - high chance excavations will expose artefacts and features. Related to cooking activities close to shoreline Te Taumanu o Te Waka a Maui Taiapure ("coastal patch") - local fishery regulations Important to engage and seek input from Ngai Tahu and Te Runanga o Kaikōura	District Plan - within Scenic/ Recreation Reserve Zone, significant landscape nearby Coastal Plan - within Coastal Hazard Zone 1 Undeveloped site requiring significant change to a natural shoreline system. NZ Coastal Policy Statement requires protection of indigenous biological diversity, natural character, protection from inappropriate use and development A significant change to overall landscape as there is a general absence of existing structures in area Minimal impact on small number of properties from temporary construction noise. Operational noise expected to be small number of vehicles accessing harbour and vessel noise. Likely to be low impact for residents, though potential for annoyance if vessels operate at night (e.g. fishing vessels)

3.1 | Harbour configuration
Engineering assessment | Option C – South Bay

Option C - South Bay (current harbour location).

A potential harbour configuration at this site is shown at right.

This site has significantly less challenges than the other sites:

- The depth to rock is less than 5m
- The extent of dredging is likely to be significantly less than for the other two locations
- The construction works could be staged to allow for full operation of the existing harbour during construction
- The extent of the proposed breakwater could be adjusted to allow for further growth
- The layout of the breakwater also allows for protection of the harbour from most of the significant wave actions, with only a small area being exposed to waves from the westerly direction.

Two configuration options were considered by the engineers at this location - one which is slightly larger in size and allows for the inclusion of a boat wash area and one which doesn't include a boat wash area.

To achieve additional space to allow for a boat wash area, and additional area of reclamation is required at the southern side of the site. The reclamation area is likely to have cultural sensitivities. As such, the option with a boat wash area is not recommended to be carried forward. The recommended layout at this location instead includes a car/trailer wash down pad by the trailer parks.

The hardstand area behind the commercial wharf can also function as a maintenance hardstand for boats in the off-season with appropriate management of the area. At this stage it is assumed that fishing boat trailers will generally be parked off-site and only used when boats are removed for maintenance.

3.1 | Harbour configuration

Engineering assessment | Option C – South Bay

Navigation safety and harbour suitability	Coastal processes and hazards	Engineering achievability	Operation and maintenance obligations	Availability of existing land for development and transport links	Future growth potential for existing and new sectors	Environmental and ecological considerations	Cultural and archaeological considerations	Planning considerations
Expanded harbour exposed to dominant S wave direction and secondary W wave direction similar to existing harbour, but with the natural protection effect of the adjacent Baxter Reef for the S direction. The protective lee breakwater will provide the new approach channel some shelter from the W wave direction Harbour area immediately east of the entrance unsuitable for berthage due to potential wave penetration and its beam-on aspect; in contrast the commerical/ fishing wharf is aligned with an end-on aspect to entrance channel	No mobile beach sediment sources posing a harbour accretion risk. Anecdotal accounts of increased water turbidity since earthquake uplift of reefs; potentially increased erosion by wave action. Fine sediment settlement in harbour basin likely to be transient and easily displaced by vessel propulsion wash No known instances of maintenance dredging since 2016-17 post earthquake capital dredging Existing harbour basin, new breakwaters and harbour expansion in red tsunami evacuation zone. Existing harbour flat land and South Bay settlement in orange tsunami evacuation zone	Moderate dredging of shallow Amuri limestone seabed to form an enlarged outer harbour basin and main breakwater west of existing harbour. Existing approach channel closed-off. Coastguard approach channel to north enlarged for new harbour access with protective lee breakwater perpendicular to shoreline0 Land reclamation of intertidal zone to expand existing northern landside area. Ground improvement of reclamation for seismic resilience if formed from site-won dredge material. Elevated liquefaction risk to existing land (younger stream/coastal gravels and sands with a higher water table). No landslide risk. Outer harbour main breakwater form either rubble mound (imported rock / concrete armour units) for pontoon berths with no vehicle access, or composite form (concrete blockwork quay walls on harbour-side) for berth vehicle access. Lee breakwater form rubble mound (imported rock / concrete armour units) Staged construction and development for future growth while existing harbour remains operational. Breakwater and reclamation 100 year design life inc. sea level rise. Berth structure 50 year design life inc. sea level rise Founding on Amuri Limestone for the structure is expected	Increased operation and maintenance obligations due to increase in size and quantum of marine and landside facilities Limited maintenance dredging obligations from absence of mobile beach sediment sources	Doesn't need new intersection on SH1 - Intersection of South Bay Parade/SH1 already formed to high standard (additional traffic volumes would still need to be tested using traffic modelling) Location provides good options for local walking trips using several different routes (people using the breakwater for recreational fishing could walk from Kaikoura township rather than drive). Land available on western side of South Bay Parade for road widening, pedestrian/ cycle paths if required. But, local residents may not support additional traffic on South Bay Parade.	o support future growth the proposed harbour expansion allows for the following indicative marine and landside facilities, development of which might be staged: • 50 m fuel berth (pontoon) in existing harbour • Pontoon on public boat ramp with rigging area in existing harbour • 60 m cruise tender berth (pontoon) on outside of existing harbour breakwater • 27 x finger berths 15 m long (pontoon) inside new main breakwater • 11 x finger berths 20 m long (pontoon) inside new main breakwater • 2 x finger berths 30 m long (pontoon) inside new main breakwater • 2 x finger berths 35 m long (pontoon) inside new main breakwater • 4 x passenger loading berths (pontoon) off new main reclamation • 70 m commercial/ fishing wharf along new main reclamation near coastguard ramp with associated hardstand yard • New main reclamation near coastguard ramp with up to 2,500 m^2 commercial retail area and 60 parking spaces linked to plaza and bus/ taxi drop-off area • 59 x car / trailer parks on secondary reclamation near coastguard ramp and root of new lee breakwater	Significant change to shoreline but more limited than other options on the reef, less dredging required than other options. Bird nesting sites nearby - bird breeding and moulting seasons will need to be avoided during works. HAIL site (fuel storage), impact unknown - potential to remediate site. Marine protected area. Area is currently impacted by high levels of recreational use and disturbance from previous construction works. Ecological aspects to consider include little blue penguin habitat. Local breeding populations are present/monitored yearly within this area, some purpose built, viewable nests are beneath the Coastguard building and other nests are located nearby. Foraging and potential breeding ground for other native, protected seabird species including, but not limited to New Zealand Pied Shag (recovering), Variable Oyster Catcher (recovering) and Red-billed Gull (At-risk, declining). Reef and soft sediment habitat within construction area holds ecological and fisheries value (paua, kelp, fish, sea slugs etc) - sedimentation, habitat disturbance, species-level/ community shifts, and loss and changes to local wave dynamics will likely require considerable compensation measures. Given the distance of the project works out into the pelagic environment, impacts (such as noise and sedimentation) on any resident dolphin populations (hectors or bottle nose) and fish/filter feeding/algal species will need to be considered at the time of construction.	Entire Kaikoura coast is a Statutory Acknowledgement Area, Runanga sensitive area High archaeological risk area (whaling station within footprint) Te Taumanu o Te Waka a Maui Taiapure ("coastal patch") - local fishery regulations Important to engage and seek input from Ngai Tahu and Te Runanga o Kaikoura	Amenity values impacted (scale of buildings) and noise for adjacent properties District Plan - within Marine Facilities Zone, Scenic/ Recreation Reserve Zone, height control of 5.5m Coastal Plan - within Coastal Hazard Zone Construction relatively close to a reasonable number of residential dwellings. Construction noise (especially piling) may exceed construction noise limits at times. Temporary effect. Operational noise expected to be small number of vehicles accessing harbour and vessel noise. Likely to be low impact for residents, though potential for annoyance if vessels operate at night (e.g. fishing vessels) NZ Coastal Policy Statement - requires protection of indigenous biological diversity, natural character, protection from inappropriate use and development Coastal permits required for dredging and reclamation HAIL site in Listed Land Use Register - area used for fuel tanks. Extent of any contamination unknown. Opportunity for remediation.

3.1 | Harbour configuration

Engineering assessment | Option D – South Bay/Baxter Reef

Option D - Baxter Reef.

A potential harbour configuration for this site is shown at right.

Construction of a breakwater at this site would be feasible. However, there are a few limitations to this site:

- The distance to deep water (>10m) is very short and large waves would therefore be breaking on the southern side of the breakwater. This would require the breakwater to be armoured with interlocking concrete armour units.
- Breakwater crest elevation along the southern arm of the breakwater is likely to need to be high in order to limit wave over-topping of the breakwater to acceptable levels.
- There is a small area in the harbour entrance that would not have mooring capacity due to wave actions from the westerly direction.
- The size of the harbour is limited and would not service all the harbour requirements.

3.1 | Harbour configuration

Engineering assessment | Option D – South Bay/Baxter Reef

Navigation safety and harbour suitability	Coastal processes and hazards	Engineering achievability	Operation and maintenance obligations	Availability of existing land for development and transport links	Future growth potential for existing and new sectors	Environmental and ecological considerations	Cultural and archaeological considerations	Planning considerations
New southern and northern breakwater harbours exposed to dominant S wave direction and secondary W wave direction similar to existing harbour, utilising existing reefs for founding of breakwaters where practicable. Existing harbour and approach channel are retained Baxter Reef will provide some natural protection from the S wave direction, but the effect will be diminished by the southern outer harbour main breakwater being founded upon it, immediately adjacent to the deep water and breaking waves. The large southern outer harbour will effectively provide shielding to the northern harbour The large entrance between the two new harbours means the seaward side of the existing harbour breakwater is unsuitable for further berthage development due to its beam-on aspect to the W wave direction. This does afford a large area of open water for turning and manoeuvring	No mobile beach sediment sources posing a harbour accretion risk, or potential downdrift erosion effects from construction of northern and southern harbour expansion Existing harbour basin, new breakwaters and northern and southern Baxter Reef expansion zones in red tsunami evacuation zone. Existing harbour flat land and South Bay settlement in orange tsunami evacuation zone	Extensive dredging of shallow Amuri limestone Baxter Reef area to form large southern outer harbour basin (tourism) with breakwater. More modest dredging to form small northern harbour basin (fishing/commercial) with breakwater. Existing approach channel retained. Land reclamation of intertidal zone to expand existing southern and northern landside areas. Ground improvement of reclamation for seismic resilience if formed from site-won dredge material. Elevated liquefaction risk to existing land (younger stream/coastal gravels and sands with a higher water table). No landslide risk Breakwater form either rubble mound (imported rock / concrete armour units) for pontoon berths with no vehicle access, or composite form (concrete blockwork quay walls on harbour-side) for berth vehicle access. Large concrete armour units and a higher crest elevation required at the southern breakwater to resist large waves and limit overtopping Breakwater and reclamation 100 year design life inc. sea level rise. Berth structure 50 year design life inc. sea level rise Founding on Amuri Limestone for the structure is expected	Elevated risk of breakwater storm damage and maintenance repair obligations due to bay exposure and deep water proximity (-10 m CD) Increased operation and maintenance obligations due to increase in size and quantum of marine and landside facilities across both harbour basins Limited maintenance dredging obligations from absence of mobile beach sediment sources	Similar to South Bay Existing Site (Option C) although carpark layout in drawing doesn't meet Kaikōura District Plan requirements for access width (though this can easily be amended). Layout of South Bay Existing is slightly preferable to this Option due to the slightly better access and carparking locations/arrangement - but hard to compare as some options don't show harbour layout details so it's difficult to compare. From a high level perspective this option is similar to Option 2a.	To support future growth the proposed southern and northern harbour expansions allow for the following indicative marine and landside facilities, development of which might be staged: • Pontoon on public boat ramp in existing harbour • New main reclamation on south side of existing harbour reserve with 1,500m^2 commercial retail area, 60 parking spaces and bus/taxi drop-off area • 100m boarding berth (pontoon) inside new southern breakwater harbour • 85m fuel berth (pontoon) inside new southern breakwater harbour • 85m cruise tender berth (pontoon) inside new southern breakwater harbour • 2 x finger berths 15 m long (pontoon) inside new southern breakwater harbour • 10 x finger berths 20 m long (pontoon) inside new southern breakwater harbour • 2 x finger berths 30 m long (pontoon) inside new southern breakwater harbour • 2 x finger berths 35 m long (pontoon) inside new southern breakwater harbour • New secondary reclamation near coastguard ramp with 54 x car / trailer parks and washdown area • 50m commercial/fishing wharf with associated hardstand inside new northern breakwater harbour • 26 x finger berths 15m long (pontoon) inside new northern breakwater harbour	Area is currently impacted by high levels of recreational use. Bird nesting sites nearby - bird breeding and moulting seasons will need to be avoided during works. HAIL site (fuel storage), impact unknown - potential to remediate site. Marine protected area. Area is currently impacted by high levels of recreational use and disturbance from previous construction works. Ecological aspects to consider include little blue penguin habitat. Local breeding populations are present/monitored yearly within this area, some purpose built, viewable nests are beneath the Coastguard building and other nests are located nearby. Foraging and potential breeding ground for other native, protected seabird species including, but not limited to New Zealand Pied Shag (recovering), Variable Oyster Catcher (recovering) and Red-billed Gull (At-risk, declining). Reef and soft sediment habitat within construction area holds ecological and fisheries value (paua, kelp, fish, sea slugs etc) - sedimentation, habitat disturbance and loss, shift in the local ecological community and changes to local wave dynamics will likely require considerable compensation measures. Permanent alteration/ impacts to the habitat type (from reef structure to artificial structure) and altered wave dynamics as a result of construction. Seal foraging area. Located nearby seal colony. Monitoring would need to be considered.	Entire Kaikōura coast is a Statutory Acknowledgement Area, Runanga sensitive area High archaeological risk area (whaling station within footprint) Te Taumanu o Te Waka a Maui Taiapure ("coastal patch") - local fishery regulations Important to engage and seek input from Ngai Tahu and Te Runanga o Kaikōura	Amenity values impacted (scale of buildings) and noise for adjacent properties District Plan - within Marine Facilities Zone, Scenic/ Recreation Reserve Zone, height control of 5.5m Coastal Plan - within Coastal Hazard Zone Construction relatively close to a reasonable number of residential dwellings. Construction noise (especially piling) may exceed construction noise limits at times. Temporary effect. Operational noise expected to be small number of vehicles accessing harbour and vessel noise. Likely to be low impact for residents, though potential for annoyance if vessels operate at night (e.g. fishing vessels) NZ Coastal Policy Statement - requires protection of indigenous biological diversity, natural character, protection from inappropriate use and development. Particularly relevant for expansion into reef area, may make consenting difficult Coastal permits required for dredging and reclamation HAIL site in Listed Land Use Register - area used for fuel tanks. Extend of any contamination unknown. Opportunity for remediation.

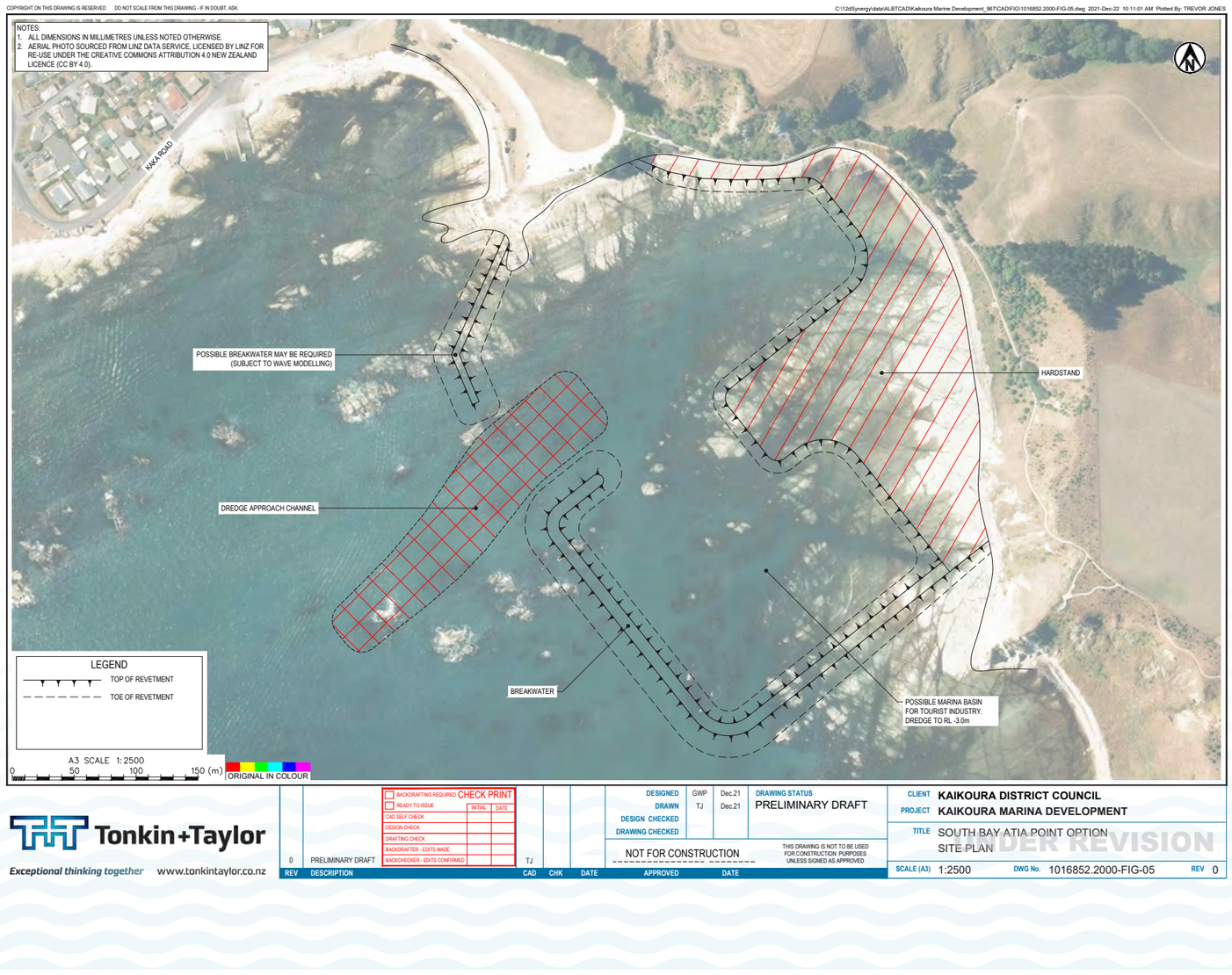
3.1 | Harbour configuration
Engineering assessment | Option E – Te Atia Point

Option E - Te Atia Point.

A potential harbour configuration at this site is shown at right.

The depth of rock in this area is less than 5m and a breakwater could feasibly be constructed. However, this option would have limited functionality as the direction of the wave would enter the harbour and limit any permanent moorings to the southern extent of the facility.

This option also represents a significant change to a relatively natural shoreline and reef system with little in the way of man-made structures in the area.



3.1 | Harbour configuration

Engineering assessment | Option E – Te Atia Point

Navigation safety and harbour suitability	Coastal processes and hazards	Engineering achievability	Operation and maintenance obligations	Availability of existing land for development and transport links	Future growth potential for existing and new sectors	Environmental and ecological considerations	Cultural and archaeological considerations	Planning considerations
Harbour entrance exposed to dominant S -SE wave direction and secondary W wave direction with no natural offshore protection reef structures. Size of available harbour is relatively small and likely only to cater for the tourism market North of harbour unsuitable for permanent berthage due to internal wave conditions; berthage limited to south of harbour	Bay location and deep water proximity increase the harbour exposure risk from southerly swells and storm surges. Development is likely to require more substantial breakwaters to resist the higher wave exposure. No mobile beach sediment sources posing a harbour accretion risk, or potential downdrift erosion effects from harbour construction Existing intertidal reef area and bay in red tsunami evacuation zone, and flat land narrow strip in orange tsunami evacuation zone	Extensive dredging of shallow Waima mudstone reefs and seabed to form approach channel and harbour basins to -3 m CD Shoreline intertidal reef available for land creation by reclamation. Ground improvement of reclamation for seismic resilience if formed from site-won dredge material. No liquefaction risk of existing land (rock and hillside soils). Landslide risk Breakwater form either rubble mound (imported rock / concrete armour units) for pontoon berths with no vehicle access, or composite form (concrete blockwork quay walls on harbour-side) for berth vehicle access Breakwater and reclamation 100 year design life inc. sea level rise. Berth structure 50 year design life inc. sea level rise Founding on Amuri Limestone for the structure is expected	Elevated risk of breakwater storm damage and maintenance repair obligations due to bay exposure Limited maintenance dredging obligations from absence of mobile beach sediment sources	Flat land limited to narrow strip and coastal track between shoreline and foot of hillsides. The narrow flat strip provides limited width for an access road and pedestrian path - access road may interact closely with the Kaikōura Coastal walking track. Introduces higher traffic volumes on what is currently a low volume section of South Bay parade Harbour location results in the loss (or significant disruption) to South Bay Recreation Reserve - likely to be contentious with locals.	The peninsula location will support future nature tourism and aquaculture research growth by providing a new harbour site for the development of marine and landside facilities The drawback of this option is that permanent berthing can only be accommodated in the southern portion of the breakwater harbour due to the site exposure and probable wave penetration conditions. A tourist harbour basin approx.195 x 195 m and dredged to - 3 m CD is indicated with reclamation hardstand areas of approx. 50,000 m2 (noting the lack of existing flat land) Although not explicitly identified, the pontoon berth facilities for tourism and aquaculture research are anticipated to be similar in quantum and size to the indicative berth provision previously shown for the harbour expansion options. It is expected that the commercial fishing and recreational functions would stay at the existing South Bay harbour location	Adjacent to a recreational reserve with clumps of native vegetation providing refuge and habitat for native, protected terrestrial bird species (e.g., bellbirds). Lizard species (native common skink and Marlborough mini gecko) recorded within the vegetation nearby the site. Nearby seal colony present (NZ fur seals)– important haul out, breeding and foraging areas within and nearby the site. Native, protected coastal bird species present, foraging and breeding areas (e.g., nearby Hutton's shearwaters). Paua habitat and other important kelp/fish populations, including Taonga species (kina), present within the nearby reef system. Reef and soft sediment habitat within construction area holds ecological and fisheries value (paua, kelp, fish etc) - sedimentation, habitat disturbance and loss and changes to local wave dynamics will likely require considerable compensation measures. Permanent alternation/ impacts to the habitat type (from rocky intertidal zones/outcrops to artificial structure) and altered wave dynamics as a result of construction would need to be considered and compensated for. Area of high recreational value.	Entire Kaikōura coast is a Statutory Acknowledgement Area, Runanga sensitive area High archaeological risk area (1 site within footprint, others near, Atia Point is a Pa site). Earthworks on land areas are "red risk" and works in water "green risk" Te Taumanu o Te Waka a Maui Taiapure ("coastal patch") - local fishery regulations Important to engage and seek input from Ngai Tahu and Te Runanga o Kaikōura	District Plan - within Scenic/ Recreation Reserve Zone with Ngai Tahu Reserve Zone adjacent. Within an Outstanding landscape area - would result in significant change to overall landscape as there is general absence of existing structures Coastal Plan - within Coastal Hazard Zone 1. Would require consents for reclamation and dredging Undeveloped site requiring significant change to a natural shoreline and reef system. NZ Coastal Policy Statement - requires protection of indigenous biological diversity, natural character, protection from inappropriate use and development. Particularly relevant for works in undisturbed area of the reef, may make consenting very difficult Noise sensitive receivers approximately 200 m from construction works. Minimal impact expected from construction noise. Operational noise also minimal impact.

KAIKŌURA MARINE DEVELOPMENT PROGRAMME

3.1 | Harbour configuration
Engineering assessment | Summary

There are challenges with all locations but some are more viable than others.

As the assessment table shows, there are a variety of challenges at each of the sites – largely focused on the archaeological and environmental factors, which will need to be carefully assessed. The following sections explore these issues in more detail.

However, from an engineering and functionality perspective, an expansion of the existing South Bay facility in some form (options C and D) is the most likely to be achievable and provide the facility needed by the community into the future.

Option	Navigation safety and harbour suitability	Coastal processes and hazards	Engineering achievability	Operation and maintenance obligations	Availability of existing land for development and transport links	Future growth potential for existing and new sectors	Environmental and ecological considerations	Cultural and archaeological considerations	Planning considerations
A. Status quo									
B. Racecourse Reef									
C. South Bay									
D. Baxter Reef									
E. Te Atia Point									

3.1 | Harbour configuration
Archaeological & cultural assessment | Overview

Archaeological assessments are vital to acknowledging and protecting local histories

In recognition of the value of local histories for the community and a responsibility to protect cultural sites of significance, KMDP contracted **Angel's Archaeology** to produce an archaeological assessment of the proposed project area.

The report was authored by Dr Angel Trendafilov, an archaeologist with 25 years experience in both Bulgaria and New Zealand. Dr Trendafilov is certified by Heritage New Zealand Pouhere Taonga for assessing, excavating and producing reports on, European and Māori sites. To date, Dr Trendafilov has undertaken 150 reports for Heritage New Zealand as an author and/or co-author, largely focused on projects in Ōtautahi and Canterbury.

The assessment

The KMDP team commissioned Dr. Angel Trendafilov to conduct a preliminary archaeological assessment of the shortlisted sites. Dr Trendafilov is an acknowledged expert in his field and assessed the sites on the basis of extensive professional knowledge.

However, the assessment does not in any way represent a statement of cultural values from Ngai Tahu and Te Runanga of Kaikōura about their Te Whenua and Nga Tupuna. It is a preliminary assessment of archaeological values and risk intended to inform the process of site selection, on the basis of minimizing potential damage to both known and unknown archaeological sites.

The context and process

South Bay, Kaikōura is location with abundant evidence of pre-1900s occupation and activities with 25 registered archaeological sites (23 Maori and 2 European related) and several other archaeological sites from the same area that are yet to be and registered. The findings of the assessment based on the historical background and the previous archaeological investigations are that any earthworks in South Bay are considered of high and medium risk for uncovering archaeological deposits.

All archaeological sites are protected under the provisions of the Heritage New Zealand Pouhere Taonga Act 2014. Additional heritage and artefact protective clauses can be found in Resource Management Act 1991 and Protected Objects Act 1975. It is mutual responsibility of all parties involved in the project to acknowledge and implement the legal conditions of these pieces of legislation in their project planning and daily work routine. It is an offence to modify or destroy the whole or any part of an archaeological site without the prior authority of Heritage New Zealand Pouhere Taonga. An archaeological site is defined in the Heritage New Zealand Pouhere Taonga Act 2014 as any place in New Zealand (including buildings, structures or shipwrecks) that was associated with pre-1900 human activity, where there is evidence relating to the history of New Zealand that can be investigated using archaeological methods.

The proposed harbour locations have been assessed by Dr Trendafilov on the base of the historical background, previous archaeological investigations and the registered archaeological sites in the vicinity. Three archaeological risk zones were established, and risk maps developed using the traffic light system to show the high, medium and low risk zones for disturbing archaeological deposits. These are shown on the following pages.

Because there is reasonable cause to suspect that an archaeological site or sites will or may be affected by the proposed earthworks, or new sites discovered, a HNZPT Authority must be applied for prior the beginning of the project. The historical background, the risk maps and the overview of the previous archaeological investigations and registered archaeological sites provided in this broad archaeological assessment, together with the scope of works and cultural value statement from Te Rūnanga o Kaikōura will make significant contribution towards obtaining an archaeological authority.

3.1 | Harbour configuration
Archaeological & cultural assessment | Overview

The South Bay coastline is dotted with dozens of archaeological sites

The archaeological assessment found 25 registered archaeological sites for the area of South Bay, and there are many sites and materials still to be published and registered. Discoveries across the bay include two pā sites, middens, ovens, cultural layers and human burials.

In 2022, archaeologists are continuing to work through a backlog of unpublished data from the many sites revealed by the 2016 earthquake. Also missing from this picture are wāhi tapu – areas of significance for tangata whenua.

The following pages present illustrations that show the engineering designs overlaying the archaeological assessment results.

The key below indicates the risk zones, where dark blue typically covers earthworks above the high tide mark where the potential for finding archaeology is high. Green for the gravel/sandy beach where the potential is lower, and light blue for potential works in the water, where the potential is lowest.

Key: Archaeological Risk Zones

- Registered archaeological site
- Archaeological authority, stand over monitoring
- Archaeological authority, regular site visits
- Accidental discovery protocol, on call procedure

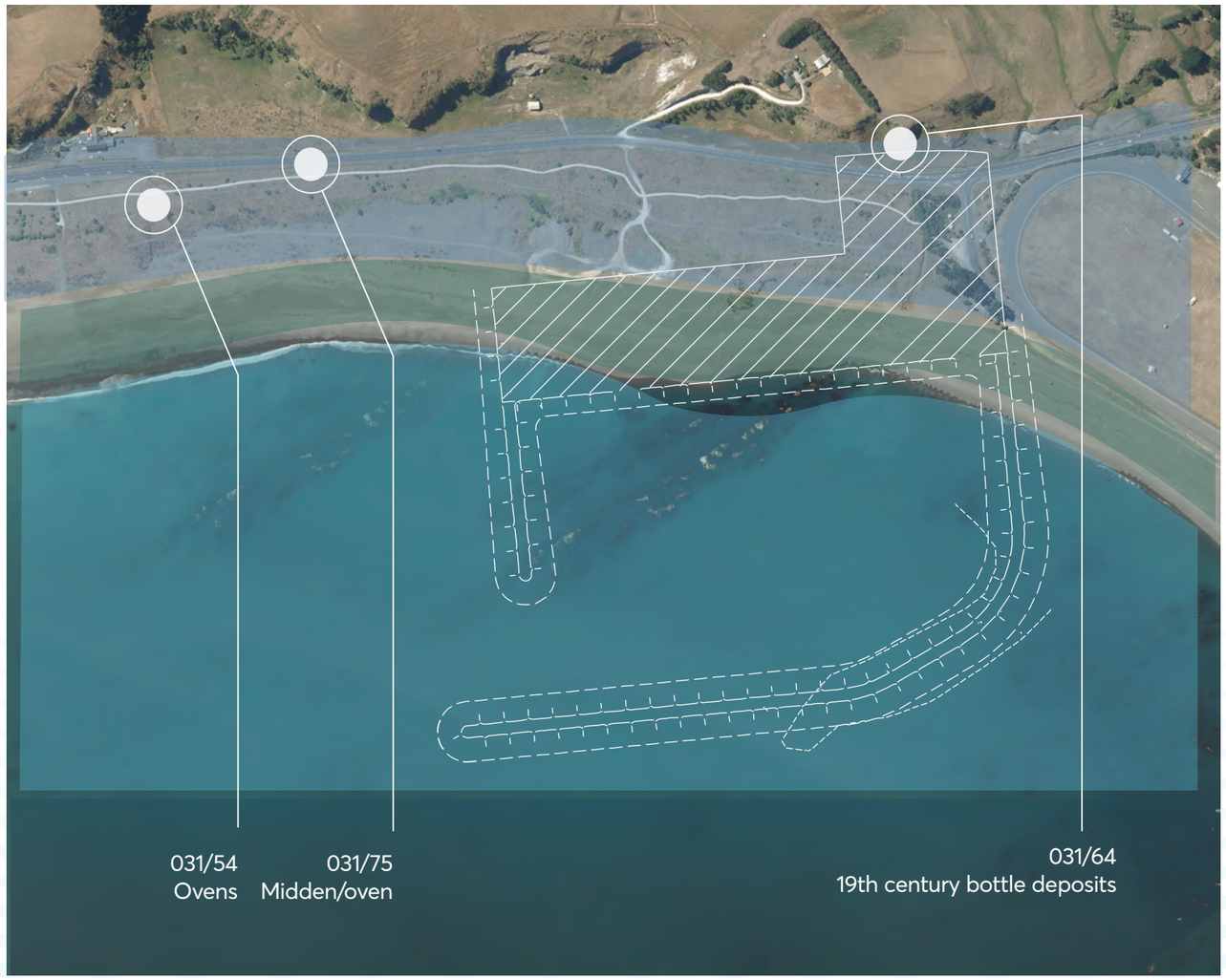
3.1 | Harbour configuration

Archaeological & cultural assessment | Option B - Racecourse Reef

Cooking and midden sites are common along Racecourse Reef / Gooch Bay

Hints of cooking activities are scattered along the length of Racecourse Reef / Gooch Bay, evidenced by middens and ovens.

The likelihood of uncovering artefacts and features in the area is high, and earthworks will require archaeological authority and stand over monitoring.



Key: Archaeological Risk Zones

- Registered archaeological site
- Archaeological authority, stand over monitoring
- Archaeological authority, regular site visits
- Accidental discovery protocol, on call procedure

3.1 | Harbour configuration
Archaeological & cultural assessment | Option C - South Bay

A human burial on the seaward side of the road is one of mutliple sites of significance in the project area

The John Murray whaling station was established in 1844, and one of the few European sites of significance in the area. It is noted that there may be archaeological features from it remain.

Very near the project area is a human burial, and slightly further inland are additional sites that include ovens, middens, and cultural layers with evidence of tool manufacturing.

Any earthworks in the area will require archaeological authority and stand over monitoring.

Key: Archaeological Risk Zones

- Registered archaeological site
- Archaeological authority, stand over monitoring
- Archaeological authority, regular site visits
- Accidental discovery protocol, on call procedure

3.1 | Harbour configuration

Archaeological & cultural assessment | Option D - South Bay / Baxter Reef

The wider view of the area includes the location of sites 031/59 and 031/27, where there are burials, middens, ovens, Moa bone and more.

KAIKŌURA MARINE DEVELOPMENT PROGRAMME

3.1 | Harbour configuration

Archaeological & cultural assessment | Option E - Te Atia Point

Te Atia Point includes 3 registered sites and there are likely many undiscovered

Te Atia Point was once the site of a pā, the full extent of which is unknown. It was noted in the assessment that it likely covered most of Atia Point. As such, any earthworks in the area will need archaeological authority and stand over monitoring.

Key: Archaeological Risk Zones

- Registered archaeological site
- Archaeological authority, stand over monitoring
- Archaeological authority, regular site visits
- Accidental discovery protocol, on call procedure

3.1 | Harbour configuration
Short-list assessment | Meeting objectives

Each of the refined short-list options is assessed against the investment objectives and critical success factors.

Strategic challenges

The review of the harbour at South Bay identified three core challenges:

1. Wave action and silting changes due to the November 2016 Earthquake have resulted in safety concerns for all user groups and operational constraints for commercial operators.
2. The size and configuration of the harbour is inflexible and constrains future growth as a result.
3. There is insufficient on-shore space and it's poorly configured, which causes congestion issues and adverse impacts on the community.

Investment objectives

The investment objectives were derived from the challenges:

1. The harbour is safe for all operators and users.
2. The harbour allows for growth in existing operations and new uses.
3. On-shore space is efficiently configured and minimises the impact on the surrounding community and environment.

Critical Success Factors

The critical success factors were developed based on those contained in the Treasury's business case methodology:

1. **Strategic fit** | Meets the agreed investment objectives | Fits with other strategies, programmes and projects
2. **Value for money** | Optimises value for money
3. **Supplier capacity and capability** | Matches the ability of potential suppliers to deliver the required services
4. **Affordability** | Can be funded from likely available funding | Matches sector funding constraints
5. **Achievability** | Internal and external skills exist and are available for successful delivery

Under the Treasury methodology, the various options for addressing the strategic challenges are assessed against both the investment objectives and the critical success factors (CSFs). Options that are unable to fully deliver the objectives or the CSFs are rejected, and a process of positive dismissal is used to derive the short-list of viable options.

In effect, the investment objectives and CSFs are used as a yardstick to measure the ability of each option to address the challenges identified.

3.1 | Harbour configuration
Short-list assessment | Meeting objectives

Redevelopment of the South Bay facility emerges as the preferred option.

The refined short-list of options were assessed against the investment objectives and the affordability and achievability critical success factors based on the engineer's baseline assessment, which is described in detail on the preceding pages.

The status quo option was discarded as it does not achieve the investment objectives.

Options B, D and E were discarded due to engineering challenges, which would cause the harbour to be unsafe and/or very expensive to construct, space limitations and logistical issues due to wave action.

Option C, South Bay (current harbour location) is the only feasible option based on the engineering assessment. This option will be taken forward to the next stage.

Option	Safe for users	Allows for growth	Efficient on-shore areas	Affordability	Achieveability	Outcome
A. Status quo						discarded
B. Racecourse Reef						discarded
C. South Bay						preferred
D. Baxter Reef						discarded
E. Te Atia Point						discarded

3.1 | Harbour configuration
Short-list assessment | Meeting objectives

Engineering input and guidance will be required to ensure the harbour is configured correctly.

Once consensus has been reached for the location and function of the harbour, additional work will be required to ensure it is sized and configured correctly. This will require input from a range of engineering consultants, as there are a range of constraints and possibilities that will need to be taken into account – for instance, the impact of the wave climate will be a significant determinant of how and where some elements of the harbour can be constructed.

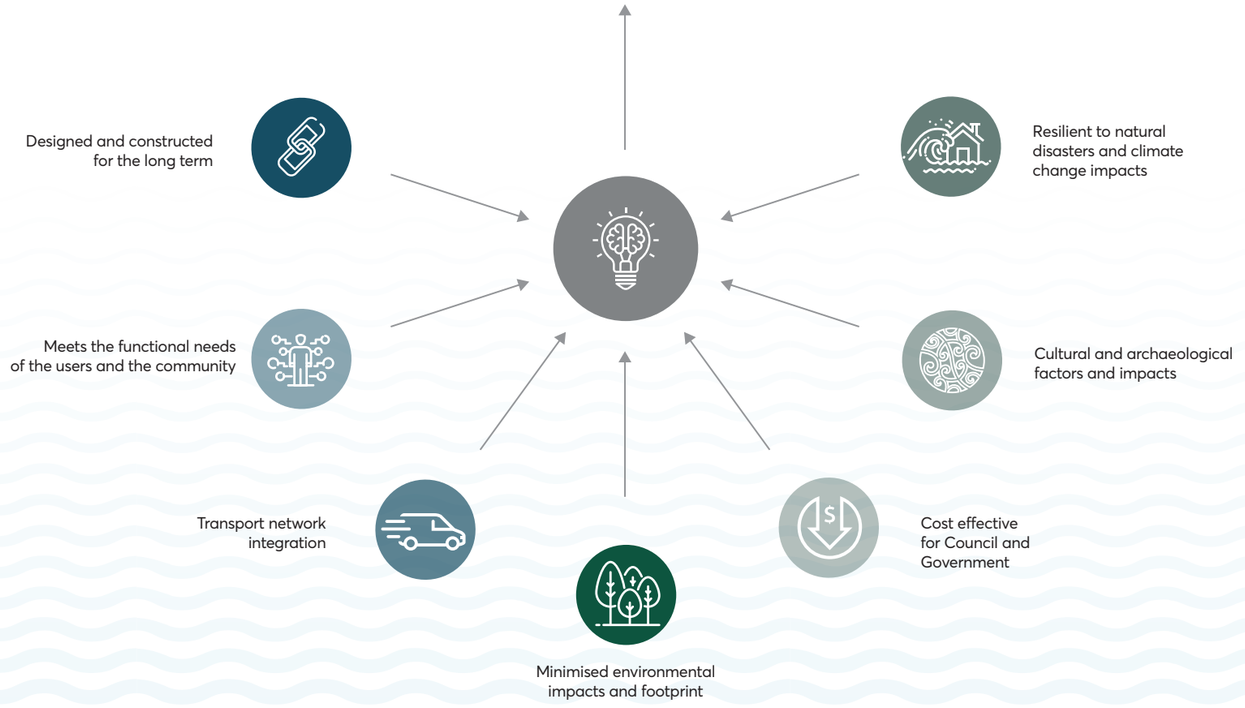
In order to facilitate the process, the KMDP programme team have assembled an engineering consultancy panel using a robust procurement approach. This panel includes some of Aotearoa's leading engineering firms with a wealth of experience in complex projects, so the panel will be used to conduct the assessments and provide input.

A multi-step process will be used to gain the right input and guidance for the finalised harbour design:

- The engineering panel will be briefed in workshop sessions to define the criteria and constraints for the harbour assessment, including setting the parameters for factors such as environmental impact assessments.
- The panel will then provide a return brief before conducting the assessment of the options and possible configurations, looking at how the harbour can best be configured to meet the requirements
- The preferred configuration will then be presented back to the KMDP programme team and key stakeholders in interactive workshop sessions so the approaches and trade-offs can be explored and understood, before the design is finalised for high-level costing and delivery planning.

The purpose of the process is to allow the expertise of a wide range of people and organisations – from stakeholders to specialist engineering and environmental consultants – to be brought together to contribute to the agreed design for the Kaikōura harbour.

The process and parameters for the work are shown in the diagram below.



3.1 | Harbour configuration
The preferred option | South Bay

The current concept plan for the South Bay Marina Expansion

The current concept plan includes the following key features:

- A trailer boat launching ramp positioned to alleviate congestion, and includes launching pontoons and a public landing.
- A 70m long commercial wharf with hardstand and maintenance yard behind. This is primarily intended to service the fishing industry, but the maintenance yard would also be available to other stakeholders and users of the marina.
- A new safe marina berthing area with a minimum berthing depth to -2.0 mCd and jetties that can concurrently accommodate the following vessels and enable future growth:
  - 4x Whale Watch Kaikōura (WWK) vessels up to 25m long (two of the current WWK fleet are 18m long, two are 24m long).
  - 4x Dolphin Encounter (DE) vessels up to 15m long.
  - Several vessels, up to 25 m long, for tourist operations, NZDF/Civil Defence use or larger visiting recreational vessels.
  - 40+ recreational boat berths of a length and number to be determined based on demand (the current concept design allows for significant flexibility with respect to this issue).
  - Cruise ship tenders.
- A 45m wide marina approach channel to raise access safety and enable two-way navigation in and out of the expanded marina facility. This will also significantly reduce Coastguard response times in many weather conditions.
- A new integrated tour operations terminal/hub building to accommodate increased tourist numbers, achieve efficiencies, mitigate environmental impacts and enhance passenger experience and safety.
- Efficient bus passenger transfer and parking facilities, and increased drop-off facilities, at the tour boat terminal building site.
- Allowance for a new secondary commercial building.
- Allowance for a future travel-lift dock to aid sea-to-shore retrieval of boats and transfer to the maintenance yard.

3.1 | Harbour configuration
The preferred option | Ecological impacts & mitigations

The ecological assessment for South Bay identifies a range of opportunities to mitigate the impacts of the development.

A key aspect of this project is it's location and the sensitivity of the ecological environment it sits within. It has been made clear in all stakeholder engagements that ecological concerns must be at the forefront of the detailed design process.

A preliminary ecological assessment undertaken by T+T outlines the most prominent areas of concern and potential avenues for securing the opportunities to mitigate any negative effects on the local fauna and flora. The list below introduces a simplified version of their findings.

Ecological constraints associated with the wharf expansion include:

- The permanent loss of likely high value benthic habitat through dredging and construction works
- Disturbance to marine mammals and/or their habitat.
- Potential degradation of coastal bird values through disturbance and/or removal of habitat (specifically for little blue penguins known to nest within the project footprint).
- Disruption to breeding, nesting and moulting (penguins only) native birds.
- Disturbance or removal of lizard habitat (terrestrial grassland/ shrubland and rockland habitats) and the associated injury or displacement of lizard species.

There are a suite of recommendations for exploring the various constraints and opportunities associated with the expansion of the South Bay harbour, such as:

1. Partnership (or consultation) with iwi to explore mahinga kai and other concerns throughout the detailed design process
2. Field surveys and information gathering to confirm the habitat and species within the site.
3. Minimising removal or disturbance to coastal vegetation, and keeping tracking minimal, and below the high-tide line as much as possible.
4. Timing construction works outside of peak coastal breeding, nesting, and moulting timeframes.
5. Marine habitat mapping in the foreshore, intertidal and tidal habitats.
6. Construction works and structures to include ecological enhancements to provide habitat complexity to encourage marine growth.
7. Th Ecological Impact Assessment programme should be undertaken by suitably qualified ecologists, and include avifauna, seals, and benthic surveying. It should also be prepared to inform the resource consent process and detailed engineering phases, and inform the management required to appropriately mitigate, offset, or compensate for any constrained unable to be avoided.
8. A robust Environmental Management Plan (EMP) should be developed for the project footprint, which covers the management of potential avifauna, lizards, marine mammals, and their associated habitats, to reduce or mitigate impacts associated with the proposed expansion works.
9. Additional investigations into marine sediment quality and water quality, to inform disposal options, and to understand ecological effects.
10. Noise and vibration assessment for marine mammals as required by DOC and Environment Canterbury.

There are a number of actual and potential risks to ecological values within the project footprint and surrounding zone of influence. As such a full Ecological Impact Assessment (EcIA) is required to assess whether adverse effects can be avoided, mitigated, offset or compensated.

3.2
On shore

3.2 | On shore
Development opportunities & the feasibility study

Streamlining the harbour development with on-shore developments reduces risks and maximises benefits.

Harbours are not inherently profitable pieces of infrastructure, nor are they especially glamorous. They do however. enable a diverse range of wider investment activities, and in turn be economically transformative projects for the towns, regions, and countries that they are situated within.

A new harbour in Kaikōura for example, a world-renowned and high-value destination for tourists and marine researchers alike, would not only benefit the day-to-day users and enable tourism operators to develop their water-based businesses – it would also provide the impetus for a range of on-shore developments. Approached strategically, those on-shore developments will not only provide additional financial returns at local, regional, and national levels, but diverse and far-reaching benefits in social and environmental terms as well.

This section illustrates, using a particularly salient example, the interrelatedness of the harbour and an on-shore development opportunity already available in Kaikōura. The example used includes a commercial model to illustrate how those financial returns and broader benefits would accrue, and thus how the investment of national funds towards a harbour in Kaikōura will greatly benefit not only the township, but the rest of the country.

This document altogether provides an overview of the investment opportunity in Kaikōura, and this section serves to highlight the ways in which the harbour and on-shore developments are intertwined. It also introduces additional key stakeholders who are prepared to continue these discussions and contribute toward the next stages of work; the feasibility study and developed design.

Together, these next pieces of work will provide the additional support and confidence required by decision-makers and community leaders to guide the project forward and streamline on-shore developments alongside the harbour – altogether maximising the positive outcomes of these projects for the people and natural resources of Kaikōura.

The following pages detail the current state of one of Kaikōura's most significant economic development opportunities on-shore, and its connections to the proposed harbour development.

Introducing the case study: WWK & the peninsula

During early stages of consultation for this business case, representatives from Whale Watch Kaikōura (WWK) described their long-held vision for future developments on the peninsula.

They described a substantial amount of work that had been done in previous decades towards making that vision a reality; a reality that then had to be put on hold following a series of events (i.e., the Global Financial Crisis, the earthquake, and the pandemic) that impacted WWK's priorities and inclination to prioritise the development plans.

Whilst the WWK plans remain on hold, they represent one of Kaikōura's most significant economic development opportunities and thus provide a particularly strong example of the on-shore developments that could be designed to incorporate a mutually beneficial and symbiotic relationship with the proposed harbour.

The feasibility study includes by design, the opportunity to explore and initiate a process of streamlining the harbour and potential on-shore developments.

3.2 | On shore
Case study | The Kaikōura Peninsula Tourism Zone

On-shore tourism developments are already provided for in the Kaikōura District Plans.

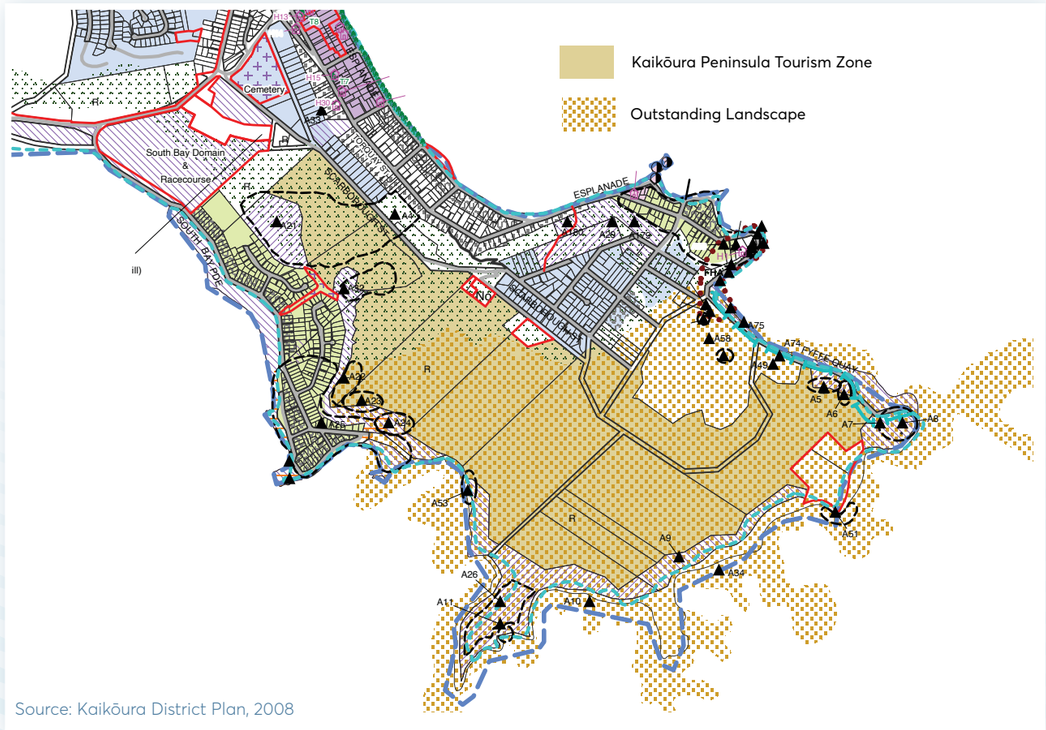
Indicated by the gold colour in the map opposite, is 180ha of "outstanding landscape" atop the peninsula that was recognised in the 2008 Kaikōura District Plan as the **Kaikōura Peninsula Tourism Zone**[1] (the Zone). The District Plan describes the Zone as *"provid[ing] an integrated approach to development and the environment, by enabling controlled development to proceed in locations which have been considered as appropriate, after having regard to the landscape / landform, visual, cultural, and servicing constraints"*.

The District Plan introduced the Zone *"to provide for an integrated tourism complex on Kaikōura Peninsula"* (p.2), and details several recognised issues and their related objectives, policies, and implementation methods, to ensure developments within the Zone are aligned with the values and aspirations of residents and protect the integrity of the unique landscape.

A key objective for enabling the development of an integrated tourism complex on the peninsula is to *"encourage and provide for a diverse range of sustainable recreation, visitor accommodation, research and tourism related activities, whilst ensuring that the quality of the environment is maintained or enhanced."*[2] The rationale provided states that the Zone was developed with the premise that the above will be *"of such a scale that [it] will provide for the future development of Whale Watch Kaikōura Limited or its successor (the developer) and aid the sustainable development of Kaikōura"*.

The support and recognition of the Zone by Council was brought about in large part by the considerable mahi of WWK. In the 14 years since this groundwork for the peninsula development was undertaken however, multiple events have affected the preparedness of WWK to pursue their development plans. Recent discussions indicate that WWK retains a strong interest in reviving the plans, but that additional research is required to provide the assurance needed by key decision makers.

The following pages describe the early concepts included in the peninsula development plans, highlighting the most pertinent connections with the potential new harbour.



Source: Kaikōura District Plan, 2008

1 Kaikōura District Council. 'Kaikōura District Plan: Kaikōura Peninsula Tourism Zone', 2008.
2 Section 23.6 ,'Issue 5 - Diversity of Educational, Research and Visitor Accommodation Opportunities', in Kaikōura District Council. 'Kaikōura District Plan: Kaikōura Peninsula Tourism Zone', 2008.

3.2 | On shore
Case study | The Kaikōura Peninsula Tourism Zone

A community-led vision for the future of tourism in Kaikōura.

In recent discussions, Whale Watch Kaikōura (WWK) described their Peninsula Development Plans that contributed to the formation of the tourism Zone, and generously shared some internal documentation so that we could detail this section accurately on their behalf.
A presentation document, titled 'Kaikōura Peninsula Property/ Development', described the original purpose, drivers and components of the Peninsula Development, and includes several illustrations and renders of ideas and plans, such as the image below (a visitor centre concept).

Important to note at the outset is that the WWK plans were not created in isolation, but in fact were the result of extensive consultation with, and wide support from, the local community. WWK holds the needs and aspirations of its community at its core, alongside steadfast views on the importance of protecting and enhancing the natural resources that surround Kaikōura for future generations. Those core values are reflected in the forward-looking drivers behind the original development plans, such as:

- Providing quality tourism products that are not weather and wildlife dependent
- Enhancing the overall visitor experience
- Providing facilities that can attract and accommodate existing and forecast demand, whilst increasing the length (and spending) of visits
- Enable developments relating to marine research and education
- Creating employment and increased economic returns for the company and community.

WWK's business is in tourism; a seasonal (and very weather-dependent business. A fundamental purpose of the on-shore development plans is to provide tourism products that are non-weather or wildlife dependent and offer attractive land-based activities for visitors year round, in addition to the main tourism peak of November to April.

The plans include concepts for a range of accommodation options and related facilities (hotel, lodges, conference area, restaurants etc.), with a large visitor centre as the main attraction, a.k.a., "The Marae of the Sea".

The visitor centre is envisaged to be of such scale that it could host exhibits, information displays, restaurant, cafe, research and education facilities, offices (for WWK, and potential tenancies for other local tourism operators or others), retail, and a conference area for visiting groups, lectures, and evening shows.

WWK also recognise the valuable role their tourism offerings play in educating visitors about whales and the marine environment. The intention of hosting marine research and educational facilities at the visitor centre is in part to support new research that will inform and increase the value of WWK tourism products, but to also provide other educational opportunities for visitors, locals, and even an international (online) audience.

The case for the harbour

Herein lies the key connections with the South Bay harbour development; Kaikōura is in a very strong position to offer:

1. **High-value marine research opportunities that are sought after by local and international universities and research institutes**
2. **Incorporate research outputs into innovative and high-value eco-tourism and educational products.**

Offering the above would be transformative for Kaikōura's economy, and in turn enable the township to also contribute national returns, as well as towards social and environmental goals. The next pages point to existing relationships and capabilities available to help secure these outcomes, and the role of the harbour in answering the question of capacity.

KAIKŌURA MARINE DEVELOPMENT PROGRAMME

3.2 | On shore
Case study | Aligning tourism & marine research

Kaikōura is a sought-after destination for marine research, with established ties to local institutes.

The University of Canterbury has maintained field research facilities for marine biological sciences in Kaikōura for many decades. The Edward Percival Field Station on the Esplanade included laboratory and research areas, and accommodation for visiting students and researchers. The facility was irreparably damaged in the 2016 earthquakes has been closed since. UC will be demolishing the damaged buildings, and is exploring options for reviving marine science and training activities in Kaikōura.

The primary requirements of a field station facility include:

- Continued access to a seawater inlet
- Suitably sized and configured research labs, including working and storage areas
- Suitably sized office and administrative spaces
- The provision of short-term accommodation for research teams.

UC has noted that some of the facilities – such as the accommodation area – have not been heavily utilised in the past, due to the project-based nature of much of the research activity. As a result, there is a high level of interest in some shared facilities for accommodation, administration and potential co-working, which would offer the University a higher degree of flexibility at lower cost. This makes the University a good prospective user of a shared facility on the peninsula.

The UC has expressed interest in continuing discussions as the South Bay harbour and tourism zone plans continue to develop. A shared facility like the visitor centre could offer significant operational and financial flexibility in the medium to long term, compared with dedicated facilities that must be solely funded by the University. There is an immediate requirement to address the research needs, so some interim decisions are likely to be made in coming months about short-term approaches

3.2 | On shore
Case study | Aligning tourism & marine research

The proposed South Bay harbour can accommodate local and international research vessels.

To date, the possibilities for marine research activities in Kaikōura – particularly those sponsored by international institutes – has been limited by the small scale of the harbour and the inability to host Research Vessels (RV).

RV can range from 15m to 80m in length. Local examples include:

- The University of Otago's largest vessel is the RV *Polaris II*, 21m.
- The University of Auckland's largest is the 15m RV *Hawere*.
- The National Institute of Water and Atmospheric Research (NIWA), RV *Tangaroa* (70m), RV *Kaharoa* (28m) and the RV *Ikatere* (13.9m).

For examples of international RV sizes, the Monterey Bay Aquarium Research Institute has the 36m RV *Western Flyer*, while the Woods Hole Oceanographic Institute has the 83m RV *Atlantis*, 72m RV *Neil Armstrong*.

The main attraction: the Kaikōura Canyon

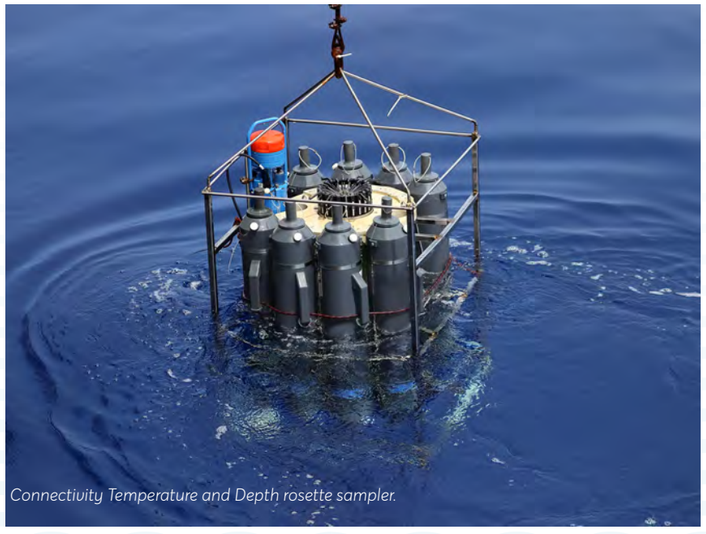
RV in the 70-80m range are designed for deep-water ocean science, exploration and marine engineering. A major attraction of Kaikōura for local and international researchers is the hotspot of biodiversity identified in the depths of the nearby Kaikōura Canyon. For example, the RV *Tangaroa* was used to research the canyon in a 2006 voyage, and researchers found the canyon *"[to be] one of the most productive benthic (ocean floor) deep-sea habitats yet described"*, and their research contributed to NIWA's 'Impact of resource use on vulnerable deep-sea communities' project.[1]

Location & accessibility

Alongside the abundant biodiversity and research opportunities, Kaikōura also appeals to visiting researchers due to the ***accessibility*** of those opportunities. The canyon is no distance at all from (what could become) a safe harbour with a range of facilities for accommodation, on-shore research activity and other services. There is also the possibility of creating an additional traffic connection between South Bay harbour and the peninsula tourism Zone, further easing access for locals, tourists, and researchers alike.

1 NIWA | Taihoro Nukurangi. 'Kaikoura Canyon Survey', 4 April 2011.

Source: Otago University


Connectivity Temperature and Depth rosette sampler.

Source: RV *Kaharoa*, NIWA

3.2 | On shore
Case study | Aligning tourism & marine research

Co-locating tourism and marine research creates a central hub of economic activity.

Redevelopment of the harbour allows for the expansion of existing operations in South Bay – such as tourism and fishing – and it also provides opportunities for new functions, such as marine education and improved marine research.

While expansion in some areas (such as marine engineering) is catered for in the design of the new harbour, it is apparent that new on-shore facilities are needed to provide the engine for economic development in Kaikōura, facilities such as:

- **Visitor facilities** to allow greater numbers of people to interact with Kaikōura and experience its unique environment, regardless of the weather forecast.
- **Educational facilities** to enable students and other private groups to visit and learn about its geology and ecology, in one-day or multi-day visits with suitable accommodation offerings.
- **Research facilities** to enable local and international institutions to base themselves in Kaikōura and conduct short-term and long-term research initiatives, using the harbour facilities as needed, supplemented by on-shore labs and research facilities, office space, and short-term and long-term accommodation.

These three aspects – tourism, education and research – are synergistic. Tourists benefit from education about the Kaikōura region, educational learning benefits from the depth of knowledge generated by research teams, and researchers benefit from the public outreach and the opportunity to cost-effectively use shared facilities

The diagram below summarises the facilities and infrastructure required to support each component of interaction, research, and education. Many of these are included in the WWK concepts, ready to be further refined. The proposed harbour for South Bay will also provide a great opportunity for other tourism operators to grow their businesses and develop additional on-shore offerings and facilities as well.

INTERACTION

...visitors experience and interact with the Kaikōura environment and are informed about the unique attributes of the land and marine ecology.

EDUCATION

...visitors can learn about the local ecology at a deeper level of engagement; students and researchers can offer high-quality research outputs to inform engagements and other innovations.

ACTION

Interaction and education empowers people, encourages behaviour change, and altogether enables us to make better informed and higher quality decisions as a society.

	INTERACTION	EDUCATION	ACTION
Required facilities	• Visitor information about Kaikōura • Activity information and booking for multiple operators • Information displays • Interactive exhibits	• Dedicated teaching areas • Interactive learning facilities • Remote learning facilities • Field trip capabilities • Accommodation	• Research laboratories and supporting facilities • Dedicated and shared working spaces • Dedicated and shared office and admin spaces • Medium and long term storage areas • Short and medium term accommodation
Supporting infrastructure	• Short term car parking • Coach and bus facilities • Easy access to the harbour	• Car and coach parking • Easy access to the harbour	• Medium and long term vehicle parking • Easy access to the harbour • Dedicated research infrastructure • Dedicated vessel berths • Wharfside working areas

3.2 | On shore
Case study | A commercial model

The development will have a commercial focus and operating model.

While there is a strong rationale for public sector investment in the harbour – given the fundamental nature of national transport infrastructure for the country's wellbeing – a more commercial approach to the on-shore developments is envisaged. At a high level, the proposed model is as follows:

- Land for development is contributed by its owners on a commercial basis, either as freehold or leasehold, subject to negotiation of equity stakes and other commercial matters between the various parties.
- Development of co-located facilities is undertaken using a phased approach, focusing initially on the tourism operators and research institutions who are in a position to make early decisions. Additional facilities are added as demand dictates, subject to a master plan for the development area.
- There is an owner or owners of the co-located facilities, which may be iwi interests, the private sector, or include research institutions. These organisations own and maintain the assets, and act as landlord for other users of the facilities.
- Tourism operators, educational facilities, research institutions and other private sector or iwi interests take leases on appropriate facilities within the campus on a standard commercial basis, ranging from short-term per-use fees through to long-term leases. The terms and conditions are negotiated between the owners and the users on a case-by-case basis.

Funding for development of the campus can be provided in a number of different ways, using standard commercial and non-commercial development models, utilising both equity and debt. It is assumed, however, that the primary function of the campus is to generate an economic return for its owner or owners, by ensuring users have high-quality facilities for which they are prepared to pay normal commercial rates.

The case for the harbour

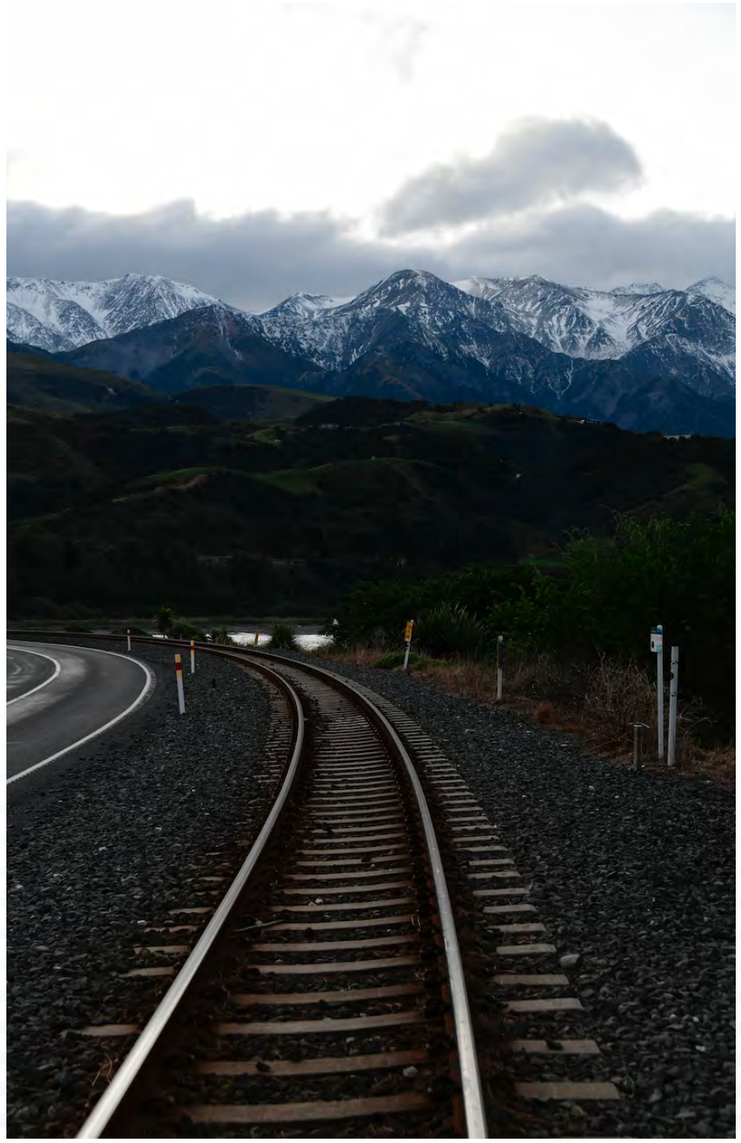
By necessity, this business case and the proposed feasibility study are linked: the investment in the harbour is contingent on there being a demonstrated use for the improved facility, which the proposed Whale Watch peninsular development forms the core.

However, it is only worth progressing with a feasibility study for the peninsular development if there is some assurance the harbour will be constructed. The two investments are therefore co-evolutionary.

With this in mind, a staged approach to investment decision making is proposed, which is discussed in detail in the final section of this document. At a high level, this operates as follows:

1. This business case seeks approval in principle for the investment in the harbour, contingent on the development of a feasibility study for the peninsular that demonstrates it is financially viable and will produce positive economic outcomes.
2. Once the feasibility study for the peninsular facility is completed, detailed design work is conducted on the harbour and the campus, resulting in an agreed investment package for the public and private sectors. A decision is then jointly made to proceed with the investments, allowing construction tenders to be called.

3.2 | On shore
Summary | Assessing feasibility



A feasibility study is required to establish the viability of that path and lay the foundations for a successful journey.

As noted on previous pages, the development of tourism and marine research in Kaikōura is intricately linked with the capacity of the harbour: both investments are required in order to realise the maximum financial, human, social and environmental benefits to Kaikōura and the nation.

This business case is primarily aimed at assessing the rationale for investing in the harbour; it is not a business case for tourism zone on the peninsula. In order for iwi, WWK and/or other private sector groups to be willing to invest in on-shore developments and help realise the wellbeing benefits, a feasibility study will be required. The purpose of the feasibility study document is to:

- **Propose a concept design** for the on-shore development, taking into account the likely requirements of the various user groups, resulting in a master plan for the peninsular area
- **Propose a staged approach** to how the on-shore projects could be developed, aligned with the harbour development
- I**dentify the likely users** of the facilities, and engage with them to obtain the indications of interest necessary to give confidence in the investment
- **Undertake the financial modelling** to demonstrate the financial viability of the campus investment to prospective iwi and private sector interests
- **Obtain in-principle commitments** from the landowners, funders, developers and prospective users so that the Government has confidence in approving development of the harbour.

It is expected development of the feasibility study will take around 12 months.

3.3
Benefits

3.3 | Benefits of the harbour
Wellbeing

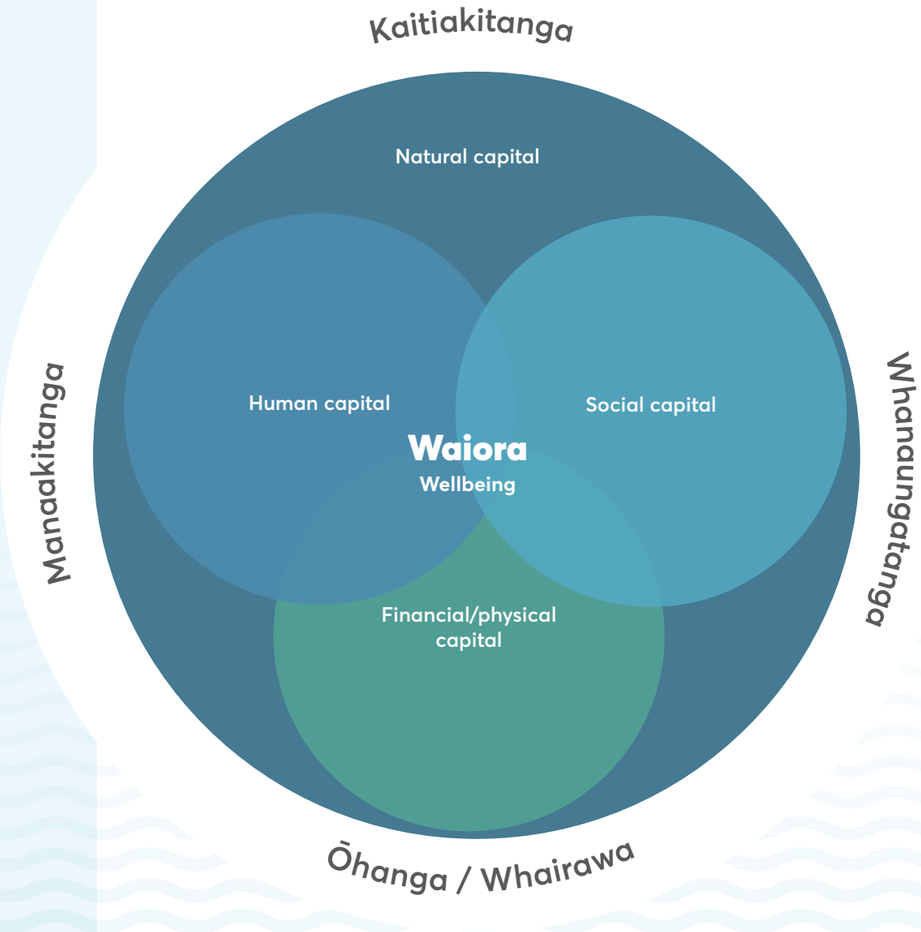
National wellbeing is the tool used to assess the value of investments.

In December 2018, Prime Minister Jacinda Ardern issued this call to New Zealand's people and their leaders as she announced that the upcoming 2019 budget would attempt to align the country's budget with a planning and policy approach built explicitly around indicators of critical components of social, economic, and environmental wellbeing and sustainability. Since then, every successive Budget has built on the foundations announced by the Prime Minister, and the wellbeing approach is becoming embedded in every level of Government decision making.

New Zealand's Living Standards Framework (LSF) – a key element of this approach – was over a decade in the making and is one visible marker of an ongoing but important shift from the country's previous approach to economic management and governance that has been largely focused on measures of economic growth and enhancing government efficiency.

The diagram at right shows how the wellbeing domains interact and support each other to deliver improved outcomes at a personal, societal and environmental level, built on the foundations of kaitiakitanga, manaakitanga, whanaungatanga, ōhanga and whairawa.

> **We will be using the Living Standards Framework developed by the Treasury to create New Zealand's Wellbeing Budgets. We will look beyond the normal GDP measures to measures that show how what we do improves the health and wellbeing of our people, our environment, and our communities. Improving intergenerational wellbeing will drive our priorities and how we measure our success.**



3.3 | Benefits of the harbour
Wellbeing & infrastructure

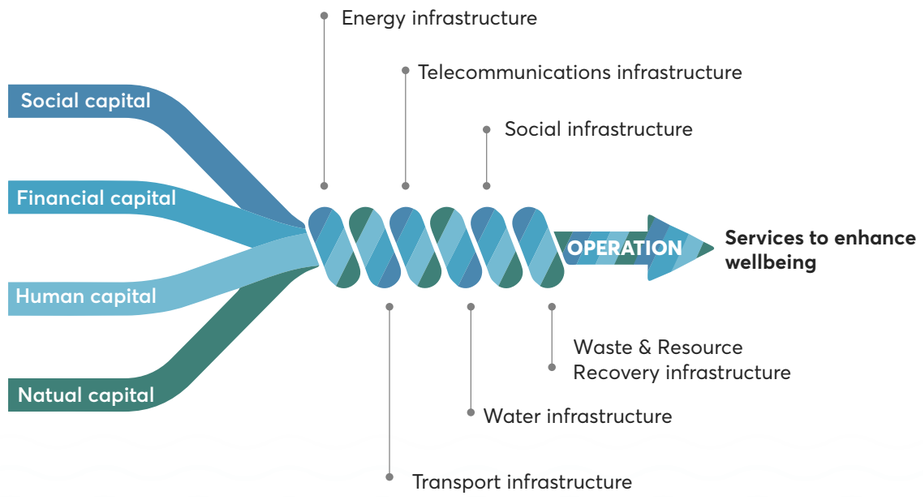
There is a strong linkage between physical infrastructure and the wellbeing of our nation.

The Infrastructure Commission Te Waihanga was formed to provide Aotearoa New Zealand with a long-term strategy for our infrastructure, and as part of its work it has identified the strong linkages between infrastructure and wellbeing.

Te Waihanga's definition of infrastructure places wellbeing outcomes at the core, while recognising commonalities, including the use of capital such as financial and environmental resources; the interconnectedness of physical structures; and the delivery of shared services, as well as the wellbeing benefits we get from those shared services.

Te Waihanga defines infrastructure as a system of inter-connected physical structures that employ capital to provide shared services to enhance wellbeing.

By defining infrastructure in this way, Te Waihanga has developed a common framework to think about the integrated management of infrastructure. This considers the relationship between the enabling environment for the country's infrastructure, the sustainable use of the capitals employed in its development, the investment management process and the wellbeing benefits created by infrastructure services.



Infrastructure is a system of inter-connected physical structures that employ capital to provide shared services to enhance wellbeing.

The four capitals (natural, human, social, and physical/financial capital) are central and scarce ingredients to the process of delivering infrastructure.

Natural capital provides services to infrastructure in the form of land and raw materials like cement, aggregate, water and steel.

Human capital provides people who have the skills, education and experience necessary to build and operate infrastructure.

Social capital refers to the ties that help make the most of human capital across networks of people, such as the role organisations play in planning, developing and maintaining infrastructure.

Finally, **financial capital** provides the finance and funding necessary to bring all the other elements together.

3.3 | Benefits of the harbour
Wellbeing across the four domains

The benefits of the harbour are unevenly shared between the wellbeing domains.

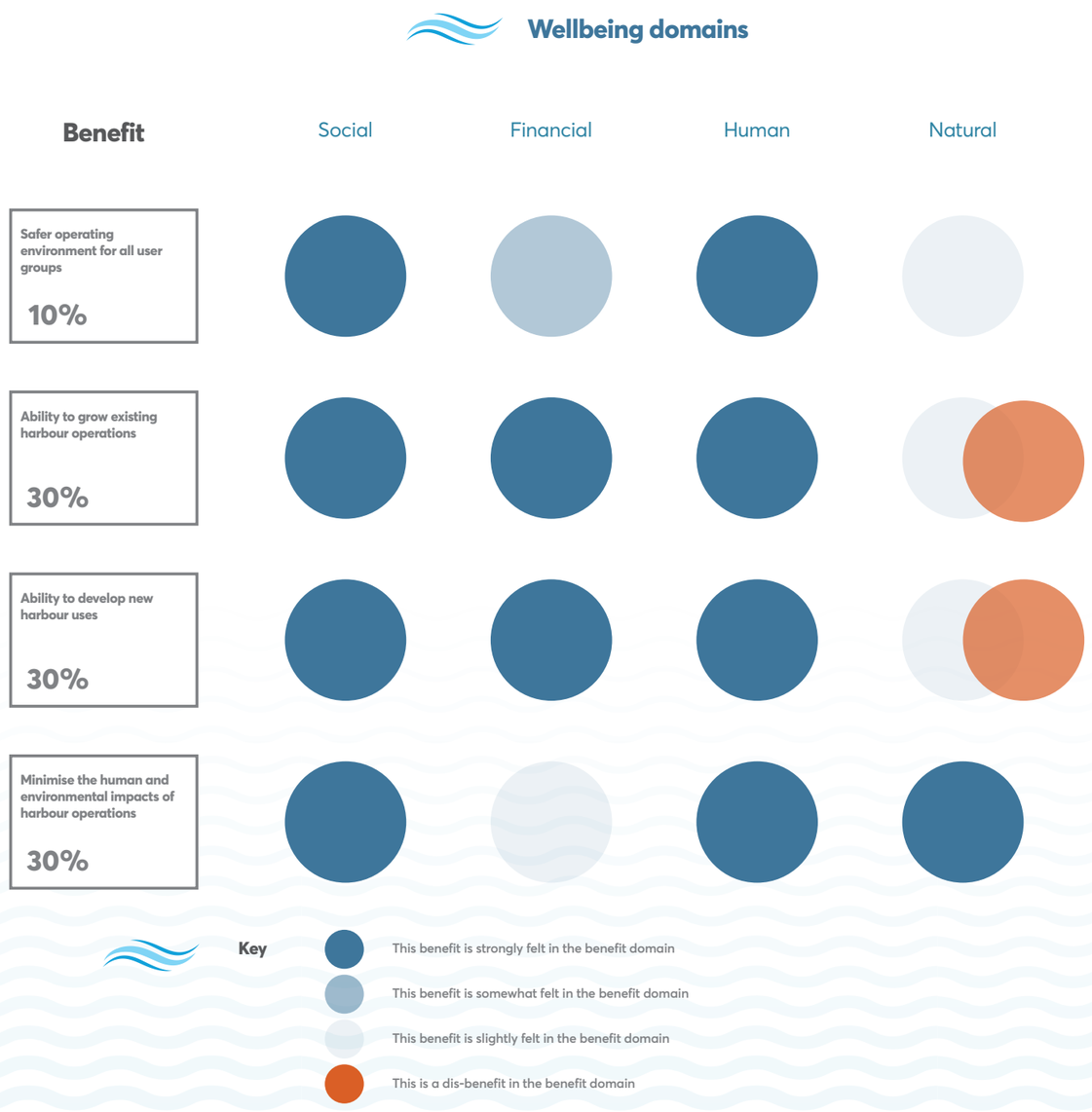
The assessment of the harbour began with identification of the problems being experienced and the benefits that would come from addressing these challenges; this is described in the Strategic Assessment. The benefits – and their relative weightings – are shown in the diagram to the right.

Each of these benefits has different impacts in each of the wellbeing domains. For instance, the ability to grow existing harbour operations and develop new uses has significant social, financial and human benefit – but against this must be set the slight benefits in natural capital and the very significant dis-benefits from the project.

In most cases, the benefits and dis-benefits are made up of both directly-attributable effects and indirect or induced effects. These effects are quantified using financial and non-financial measures, and can be tracked using various key performance indicators, within Kaikōura and the nation as a whole.

At this stage of the investment, a full economic model for the impacts of the harbour has not been developed. This is primarily because the extent of new activity – primarily education and research – still needs to be quantified, as it holds the key to a significant expansion in Kaikōura. And until the extent of the educational and research opportunities are agreed with interested institutions, quantification of benefits would be highly speculative.

However, the likely wellbeing impacts can be mapped for each benefit, and this is done on the following pages.



3.3 | Benefits of the harbour
A safer operating environment

A better functioning harbour results in safety improvements.

As noted earlier in the document, Kaikōura can be a challenging environment for marine operations. The coastline is rugged and the wave climate can be severe at times, and the work of the Coastguard has been essential in helping reduce the level of danger to marine users over the decades.

The existing harbour has a number of safety challenges, which the new facility will largely address. Doing so will have material benefits to users on the ocean and on the land, and there is robust data and valuations for the cost of death and injury in these environments.

Drownings

In Aotearoa New Zealand drownings are high by the standards of other developed nations, at around 1.7 people per 100,000 population, and Māori are over-represented in drowning statistics. Some 23 of these drownings occurred in harbours in the period 2016-2020.

There is robust national and international research into the societal cost of drownings, based on both willingness to pay and a human capital approach. This results in a value of a statistical life (VSL) methodology. The latest valuations from 2018 show each drowning costs society $4.7 million.

Road fatalities

Access to the harbour is tightly constrained due to geography and the layout of local roads. While major crashes between vehicles resulting in death or injury are rare, the close manoeuvring area and poor parking facilities make it a dangerous environment for pedestrians, particularly during peak holiday periods.

While road deaths have been rising in recent years, pedestrian deaths have increased rapidly. On average, every week in New Zealand, nearly 20 pedestrians (around 1,000 annually) are injured seriously enough to require hospitalisation, and at least one (65 annually) dies

There are a number of contributing factors to the rising pedestrian death toll, including the relative "aggressiveness" of large passenger vehicles – such as SUVs and utes – when they hit pedestrians, resulting in higher fatality rates even in lower-speed crashes. These vehicles predominate for recreational boat towing, and are the major vehicle type in South Bay during busy periods.

Road crashes represent a significant cost to the country. According to the Ministry of Transport, the average social cost is estimated at $4.916 million per fatal crash, $923,000 per reported serious crash, and $104,000 per reported minor crash.

Benefits and dis-benefits

Improving the harbour will have the benefit of making it a safer operating environment for both marine and onshore users, with greater active and passive safety. The death and injury rate is therefore expected to fall, in line with newer and safer facilities elsewhere in the country.

However, construction of the harbour will also induce demand. It is expected that the number of people using the harbour will increase, for both the marine and onshore environments – so while the relative number of deaths and injuries is likely to fall, the absolute number may not change or may even rise, depending on the changes in usage.

As noted on previous pages, the economic impacts of the harbour have not been modelled at this point in the investment cycle, so the changes to VSL from drownings and road fatalities have not been quantified.

$4,700,000

The societal cost of a single drowning

23

People drowned in harbours 2016-20

$4,916,000

The societal cost of a pedestrian fatality

$923,000

The societal cost of a pedestrian injury

3.3 | Benefits of the harbour
Marine education & behaviour change

In Aotearoa New Zealand, where our marine environment is over 20 times larger than the terrestrial landmass and our Economic Exclusion Zone is the fourth largest, there is a lot to inspire and empower people to understand and protect. With eight out of ten New Zealanders participating in marine based activities in our summer months, it is clear that we already profoundly connect to aquatic environments.

However, being inspired about our marine environment is insufficient in itself – instead, there is a requirement that the oceans and their vibrant life is valued and nurtured and cared for, in a way that Māori have always understood as kaitiakitanga.

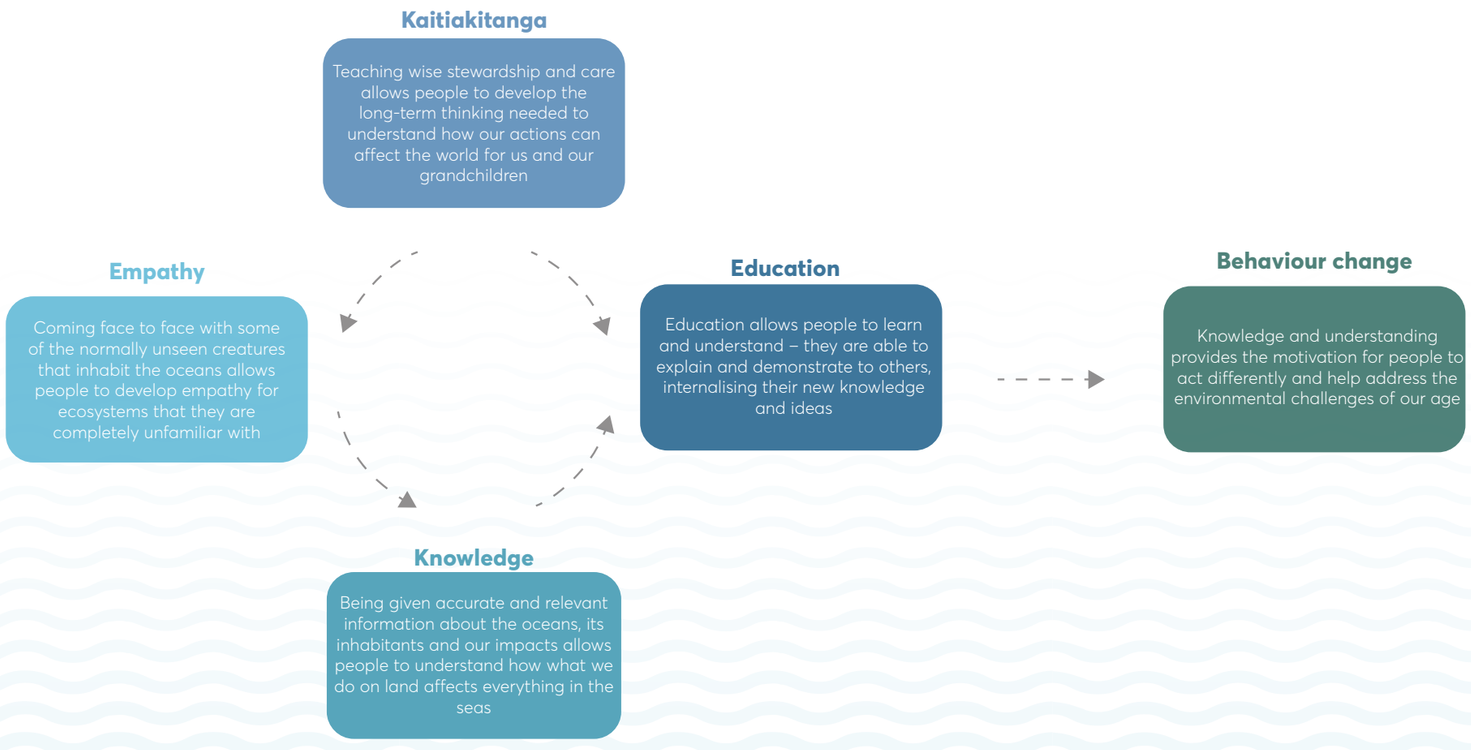
Kaitiakitanga has its roots in tikanga Māori and is a broad notion of guardianship, care, and wise management. It is a system that ensures peace within the environment, providing a process of active stewardship, as well as preventing intrusions that cause permanent imbalances and guards against environmental damage. Kaitiakitanga happens in place: it is an ethic that can be applied anywhere but can only physically occur at a site.

Some of the principles of kaitiakitanga are embedded in key legislation in Aotearoa New Zealand, such as the Resource Management Act 1991, which requires that all those exercising power have a mandatory obligation to recognise and make provision for Māori cultural values in all aspects of resource management.

The 2010 New Zealand Coastal Policy Statement also calls for coastal managers to take into account tāngata whenua concerns regarding the coastal environment. Th is includes providing tāngata whenua opportunities to exercise kaitiakitanga "over waters, forests, lands, and fisheries in the coastal environment".

While Māori have exercised kaitiakitanga for millennia, it is a concept that is equally applicable to everyone in Aotearoa New Zealand if the degradation of our oceans is to be reversed. A sense of stewardship and wise management will allow people to see that actions taken on land have consequences at sea, and that the resources of the ocean are not limitless.

Teaching about the oceans and their ecosystems is not enough – education must include the idea that the responsibilities of caring for our environment for the long term is an obligation on all of us. This is one of the key concepts of kaitiakitanga.



3.3 | Benefits of the harbour

Marine education & behaviour change

The actions we take on land are affecting life in the ocean. And there is a slowly-dawning realisation that our actions are having a dramatic effect on the oceans.

An example is growing community concern about plastic pollution, where awareness of the Great Pacific Garbage Patch and local activities such as beach clean-ups are attracting national media attention.

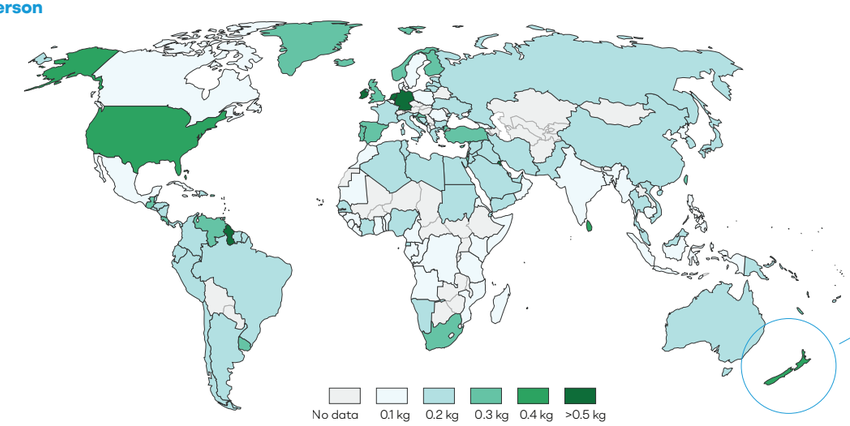
It is tempting to think that New Zealand is not a major contributor to these issues, but on a per-capita basis we are amongst the worst-offending nations for generating plastic waste.

The problem of poorly-managed plastic waste entering the oceans is also exacerbated by the majority of our population living close to the sea, where ineffective landfill management and stormwater issues can result in plastics ending up at sea. Walking through Wellington on a windy day is a graphic demonstration of how easy it is for plastics originating in Aotearoa New Zealand to find their way into the oceans.

These items are having a detrimental effect on marine life, seabirds, turtles, fish, whales and dolphins and marine ecosystems too, with flow-on impacts on human health and wellbeing.

Daily plastic waste per person

The chart shows the per-capita daily pastic waste pollution per person across the globe. The highest-polluting countries have a rate of waste production that is more than 10 times the rate of low-pollution countries.



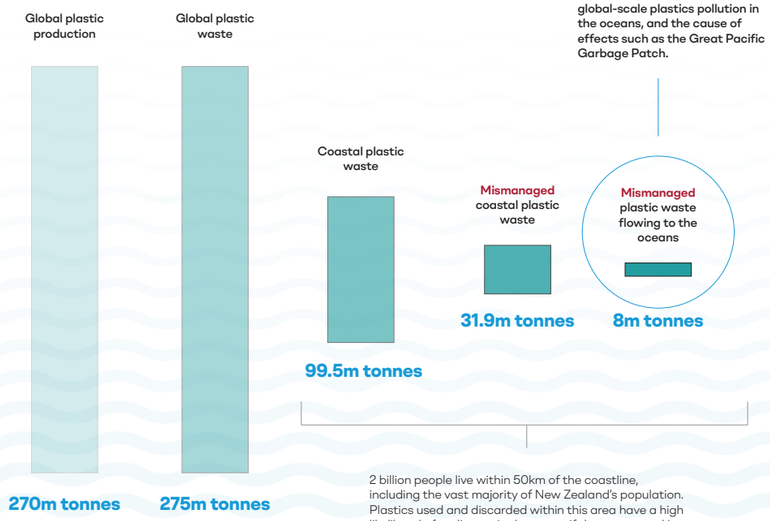
New Zealand produces 0.33kg of plastic waste per person per day.

This puts us in the top quartile internationally, and on a per-capita basis is three times the rate of our nearest neighbour, Australia.

Global pastic waste

The chart shows that the world produces about 275m tonnes of plastic waste each year. This can exceed the annual production in a given ear because it can include production from prevous years.

On a per-capita basis, New Zealand is a disproportionately high contributor to this problem.



2 billion people live within 50km of the coastline, including the vast majority of New Zealand's population. Plastics used and discarded within this area have a high likelihood of ending up in the ocean if they are stored in inadequate landfills or enter the stormwater system.

Impact on ecosystems

Plastics pollution has well-documented impacts on wild and human health, through three pathways:

Entanglement

The entrapping, encircling or constricting of marine animals by plastic debris. Entanglement cases have been reported for at least 344 species to date, including all marine turtle species, more than two-thirds of seal species, one-third of whale species, and one-quarter of seabirds.

Ingestion

Ingestion of plastic can occur unintentionally, intentionally, or indirectly through the ingestion of prey species containing plastic and it has now been documented for at least 233 marine species, including all marine turtle species, more than one-third of seal species, 59% of whale species, and 59% of seabirds. There are growing concerns about the effects of micropastics ingestion on human health.

Interaction

interaction includes contact with plastic debris (with exception of entanglement) including collisions, obstructions, abrasions or use as substrate. Fishing gear, for example, has been shown to cause abrasion and damage to coral reef ecosystems upon collision.

3.3 | Benefits of the harbour
Economic impacts of research & education institutions

The development of South Bay will enable the reinvigoration of marine research and education in Kaikōura. In turn, these will provide local and national economic benefits.

The proposed development of the South Bay harbour will enable the berthing of larger vessels. An additional benefit of this increased capacity is the potential for marine research vessels to use the harbour – positioning South Bay as a unique opportunity for national and international marine research institutions to undertake research and run educational programmes in the area.

Our marine environment is estimated to contribute at least $7 billion to our economy[1]. Research and education is not included in these marine economy estimates. The economic impacts of research and education are explored however, with regards to their value for innovation and economic growth.

A 2018 report by Deloitte highlights the link between universities and innovation, as well as a view of the economic impacts of university expenditure on research on local economies[2]. In New Zealand, universities generate economic growth and impact workforce productivity and as a result, the national GDP is 3-6% higher. Regions that have universities also have a higher GDP by 4.1%.

Universities contribute to a region's innovative capacity through commercial products (intellectual property and spin-off activities) and human capital though knowledge transfer between research, businesses, government and industry (such as conferences, researcher mobility, workforce education and entrepreneurial activity)[2]

The effects of universities and research institutions for regions generally indicate that the intellectual property and patents produced provide a positive stimulation for local and regional economies[2].

1 What the Marine Environment Means to New Zealanders', Ministry for the Environment, 1 October 2019, https://environment.govt.nz/publications/our-marine-environment-2019/what-the-marine-environment-means-to-new-zealanders/.
2 Deloitte Access Economics, 'Economic Impact of Universities' Contribution to Innovation' (Wellington, September 2018).

Crown Research Institutes are the largest providers of research to Aotearoa New Zealand's public and private sectors. There are significant economic impacts, indicated by the total operating revenue of $805.76m, the 40 databases and collections, 54 sites, 3,756 staff, and approximately 6,000 projects[3].

"For every dollar invested in university research in New Zealand, there is a long-term return to the economy of over $5."[2]

3 NIWA, 'Value of Crown Research Institutes in Aotearoa New Zealand's Science System Today', NIWA, 7 September 2021, https://niwa.co.nz/files/Value_of_CRIs_in_the_NZ_science_system.pdf.

3.3 Benefits of the harbour

Economic impacts of marine science and education institutions

The development of South Bay will reinvigorate research and education related activities in Kaikōura. In turn, these will provide local and international economic benefits.

While the impacts of the marine economy, universities and research institutes are recognised, few studies combine these findings to illustrate the economic impacts of marine research institutes and education specifically.

One exception however, is a 2007 report that explores precisely that, in the Monterey Bay Crescent[1]. The authors drew on the following indicators for measuring the combined economic contributions of 22 institutions belonging to the Monterey Bay Crescent Ocean Research Consortium:

- Annual budgets
- Employment figures
- Annual earned wages
- Numbers of students
- Sources of funding
- Distribution of research spending

The results included combined annual budgets of over $209 million, over 1,700 employees with wages totalling nearly $78 million, and 861 students being served across the four higher education institutions.

Additional key points included

- The average wage within marine science and education was well above the average wages of other sectors (and more than double than those of leisure and hospitality)
- Within the budgets, spending can be tracked according to research category. In this case, 76% of the research spending went to Biodiversity and Coastal Processes projects.

The authors demonstrated that marine research and education institutions contribute significantly to the economy in Monterey Bay through jobs, wages, and annual budgets.

1 Dr Judith T Kildow and Nathaniel Miller, 'The Economic Contribution of Marine Science and Education Institutions in the Monterey Bay Crescent' (2007). Publications. 17. https://cbe.miis.edu/noep_publications/17

4.0
Financial Case

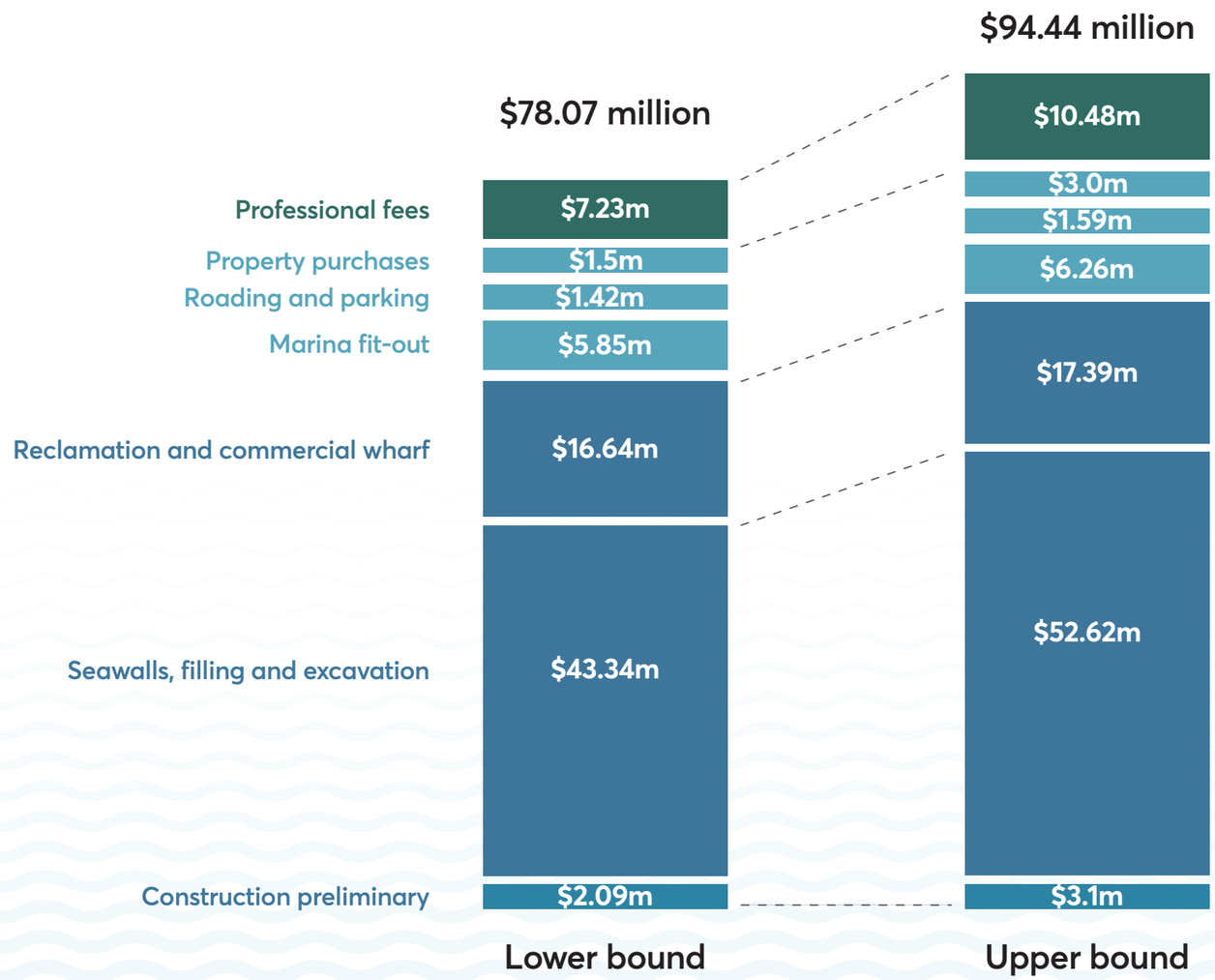
4.0 | Financial Case
Capital investment requirements

Initial assessments have produced an investment range of $78-$94 million.

As part of the concept design process, WSP and Tonkin + Taylor were asked to provide ranged estimates for construction of the harbour using a Rough Order of Cost (ROC) methodology. A summary of their analysis is shown at right. The breakdown for both the low and high range estimates is contained in the appendix.

There are a number of underlying assumptions for the cost estimates, as follows:

- Construction is costed in 2022 dollars, and construction cost inflators will need to be added to these figures to account for likely increases during the design phase before construction tenders are called.
- Construction costs are based on ROC guidelines for harbours of similar construction methods, such as at Ōpōtiki in the Eastern Bay of Plenty. These comparators are the most up-to-date available, given the Ōpōtiki harbour is currently under construction.
- Construction estimates are also informed by the major civil engineering works undertaken after the Kaikōura earthquake in 2016, thus are likely to be robust.
- Industry-standard contingencies have been allowed for in the construction estimates, and these will be further refined during the detailed design process. As part of that process, quantity surveyors will provide P90 and P95 construction estimates for greater assurance of project delivery costs.



4.0 | Financial Case
Projected cashflow

The table below shows the projected capital costs over the design phase and construction phase of the project. Construction contingency is included.

All costs are in FY2022 dollars and the total sum is the mid-point estimate from the lower and upper bound figures on the preceding page.

2022$, 000	FY22/23	FY23/24	FY24/25	FY25/26	FY26/27	FY27/28	FY28/29	Totals
Assessment								
Evaluation and consideration	$540							$540
Feasibility								
Feasibility study		$1,200						$1,200
Design								
Developed design		$6,300						$6,300
Detailed design			$8,200					$8,200
Consenting			$1,300					
Procurement								
Main contractor procurement			$125	$125				$250
Construction								
Preparatory works				$4,100	$1,600			$5,700
Breakwaters, dredging, reclamation					$12,300	$15,200	$12,000	$39,500
Wharf construction						$7,500	$9,600	$17,100
Marina and onshore works							$6,100	$6,100
Totals by FY	$540	$7,500	$9,625	$4,225	$13,900	$22,700	$27,700	$86,190

4.0 | Financial Case
Capital funding sources

A range of options have been investigated but the viable choices are limited.

While the benefits of the harbour and the resulting onshore investments are significant, it is clear that the capital funding the development of the required infrastructure is beyond the financial capabilities of the region acting on its own. Central Government support will be key to constructing the harbour and unlocking the resulting economic potential of the region.

A range of alternative funding approaches have been assessed, as shown in the diagram at right. The table looks at a range of options and evaluates them against three criteria:

- **Achievability** – the likelihood a suitable funding arrangement can be designed and successfully implemented
- **Equitable share** – the likelihood that the capital costs of the harbour will be shared on a reasonably proportionate basis with the groups that will experience its benefits
- **Affordability** – the likelihood the costs of repaying the capital will be affordable over the long term for the groups bearing the repayment burden.

As can be seen, the primary challenge is in affordability. This is because there is a limited ratepayer base and a limited user base for the harbour, and a project of this size will impose very significant burdens – to the point of unaffordability – on either or both groups.

For example, if Kaikōura ratepayers were expected to repay 50% of a loan on the harbour, the interest costs alone would amount to a 15% rates rise across the entire District. This is before any contribution to the operation or maintenance of the facility.

In this context, some form of Crown assistance is likely to be a prerequisite for the project moving ahead.

option	what it is	Achievability	Equitable share	Affordability	
KDC loan with ratepayer contribution	The capital cost of building the harbour is funded entirely by Kaikōura District Council via loan and repaid via rates, fees and charges.	Moderate match to criteria	Moderate match to criteria	Poor match to criteria	Unlikely to be viable
KDC loan repaid by users	The capital cost of building the harbour is funded entirely by Kaikōura District Council via loan and repaid solely from user fees and charges, with no ratepayer contribution.	Moderate match to criteria	Some match to criteria	Poor match to criteria	Unlikely to be viable
Public private partnership	The costs and risks are borne by the private sector and a commercial model is used to generate a commercial return on investment, based on user fees and charges with potential ratepayer contribution.	Poor match to criteria	Moderate match to criteria	Poor match to criteria	Unlikely to be viable
Crown loan	The capital costs are provided by the Crown as a loan, recovered via rates, fees and charges.	Moderate match to criteria	Good match to criteria	Moderate match to criteria	Feasible
Crown grant	The capital cost are provided as a grant by the Crown, with rates, fees and charges used solely to fund the operating costs of the harbour.	Moderate match to criteria	Moderate match to criteria	Good match to criteria	Feasible

Key

- Good match to criteria
- Moderate match to criteria
- Some match to criteria
- Poor match to criteria

While the analysis table is a useful starting point, it is overly simplistic. In practice, infrastructure such as harbours requires a range of funding sources for different aspects of their costs.

For instance, a suitable model might include Crown grant funding of the seawalls, Crown loan funding in conjunction with KDC loan funding for the wharf area, and loan funding of marina infrastructure fully funded by user fees and charges. A mixed model is the most likely viable approach.

The options for this kind of approach will be explored in the Feasibility Study. However, as the table demonstrates, some Crown contribution is likely to be required.

4.0 | Financial Case
Harbour operating costs

User charges will need to rise to fund ongoing operations.

While fees are levied against users of the current harbour, these are insufficient to fund the full operating costs of the facility. As a result, Kaikōura ratepayers subsidise the harbour by around $50,000 per annum. The subsidy reflects the wider community benefit that comes from the facility, particularly in wider employment and increased visitor nights.

Operating funding includes harbour operations and some maintenance activity but excludes depreciation or any cost of capital. Kaikōura District Council is amongst the smallest local bodies in the country and has a small ratepayer base, with a very limited ability to pay. In 2022, an $80,000 increase in operating costs results in a 1% rates rise.

For this reason, the level of subsidy available from the wider ratepayers for a redeveloped harbour will be limited. There will certainly be additional benefits to the community but the ability to contribute further operational funding is tightly constrained by available incomes in the District.

Assuming the proposed campus is developed as part of the proposal, the Council's ratepayer base is likely to increase. However, there are also likely to be limits on the level of expansion, particularly in the early years of harbour operation.

For these reasons, some increases in fees and charges for harbour users will likely result from the redevelopment; however, these will be offset to some extent by increased usage and thus a wider group of individuals and businesses contributing to the operating costs. There are also some timing issues that need to be taken into account, as summarised in the diagram at right.

Factors driving higher user charges

The harbour is larger and will need more management
Maintenance costs will rise over time
The available subsidy from ratepayers is limited

Factors driving lower user charges

Increased number of users of all types
New user types, such as research vessels
More businesses, such as marine engineering
New revenue sources, such as recreational parking
Low maintenance costs while the harbour is new

As noted on the preceding page in the discussion about capital funding sources, a mixed model is likely to be required to ensure the operating costs of the harbour are well matched to the benefits experienced.

At this stage of the process, it is difficult to model the likely operating costs as the design and functionality of the harbour is not yet settled. During the Feasibility Study and the Developed Design stages, more work will be done to identify both the costs and the revenue sources for the long-term operation of the facility. The revenue sources are likely to be a mix of user fees and charges for different groups – ranging from tourism operators to research institutions to recreational boaties – with the potential for some ratepayer contribution for specific aspects of the facility.

Achieving the right mix is crucial, as the costs cannot fall disproportionately on a single group without the facility becoming uncompetitive. These issues will be explored in the Feasibility Study.

5.0
Commercial Case

KAIKŌURA MARINE DEVELOPMENT PROGRAMME

5.0 | Commercial Case Framework

An overview of the procurement approach.

A robust, documented procurement strategy, based on facts and analysis, is an important part of planning the successful delivery of a capital project. It is considered best-practice for councils to follow the Government Procurement Rules. The Rules help to support good market engagement, which leads to better outcomes for agencies, suppliers and New Zealanders. As this is a construction project, it is also recommended that the Council applies the practices set out in the construction procurement guidelines.

The procurement strategy defines the procurement process for the project. It will be developed during the planning phase of the implementation project, and may be prepared internally by the Council or externally, such as by the project manager or architect.

One of the key objectives of a procurement strategy is to assess a range of delivery options and identify a recommended delivery model. Assessing a range of options maximises value and optimises project outcomes.

The procurement plan follows on from the procurement strategy document, providing the methodology, approach, process, and project management structure for sourcing and managing suppliers.

The process of developing a procurement strategy can be divided into four steps:

1. Assess the state of the construction sector
2. Analyse project information and develop requirements
3. Determine the preferred delivery model
4. Plan the engagement with the market.

The process is set out in more detail at right.

1 Industry context

Gather information about the state of the construction sector and the challenges being faced at a national level in order to identify the risks and opportunities for the project.

2 Project requirements

Analyse relevant project information to establish a good understanding of the project characteristics in the following areas:

- Project requirements
- Project constraints
- Project risks
- Client capability
- Market position

3 Delivery model

Determine appropriate evaluation criteria based on project information

Evaluate each potential delivery model
Identify and **test** preferred options to determine the final option.

4 Market engagement

Determine the most appropriate tender process and type

Identify the most appropriate pricing mechanism

Determine the most appropriate contract type.

> **The construction industry is at a critical point of supply and demand, with supply constrained by the ongoing impacts of COVID, and a demand boom with residential and commercial consenting at record levels.**
>
> **In order to mitigate the risks of supply chain delays and construction cost increases, a nuanced and robust procurement approach will be required.**

5.0 | Commercial Case
Construction pipeline assessment

The construction pipeline report shows continued strong demand.

The National Construction Pipeline Report 2021 reports that New Zealand's total construction value decreased by 5.7% in 2020 to $42.6b, showing the impacts from the COVID-19 pandemic. This year's forecast is for construction activity to grow steadily to about $48.3b in 2024, driven largely by the continued strength of the residential sector. Residential buildings contributed 58% of total construction value in 2020.

Non-residential building value nationally peaked in 2019 at $10.2b. However, strong project intentions in the sector remain. The report forecasts activity to reach the 2019 levels towards the end of the research period, with a forecast of $10.2b in 2025 and $10.3b in 2026.

Commercial buildings are the most prominent non-residential building work expected to start in the year to December 2021, contributing 47% of the total number of projects and 47% of total value. This is a higher proportion by number than in the 2020 report when many planned visitor accommodation and office building projects were being delayed. These are now being progressed. Education has many projects (24% of the total number of projects) but only accounts for 13% of the total value.

The private sector is the largest initiator of non-residential building, contributing 66% of the value of researched intentions over 2021 to 2026, while central and local government make up 21% and 13% respectively. Compared to last year, central government has decreased its overall share slightly, whilst local government has maintained and the private sector has increased marginally. New non-residential building intentions for all sectors are forecast to peak through 2022.

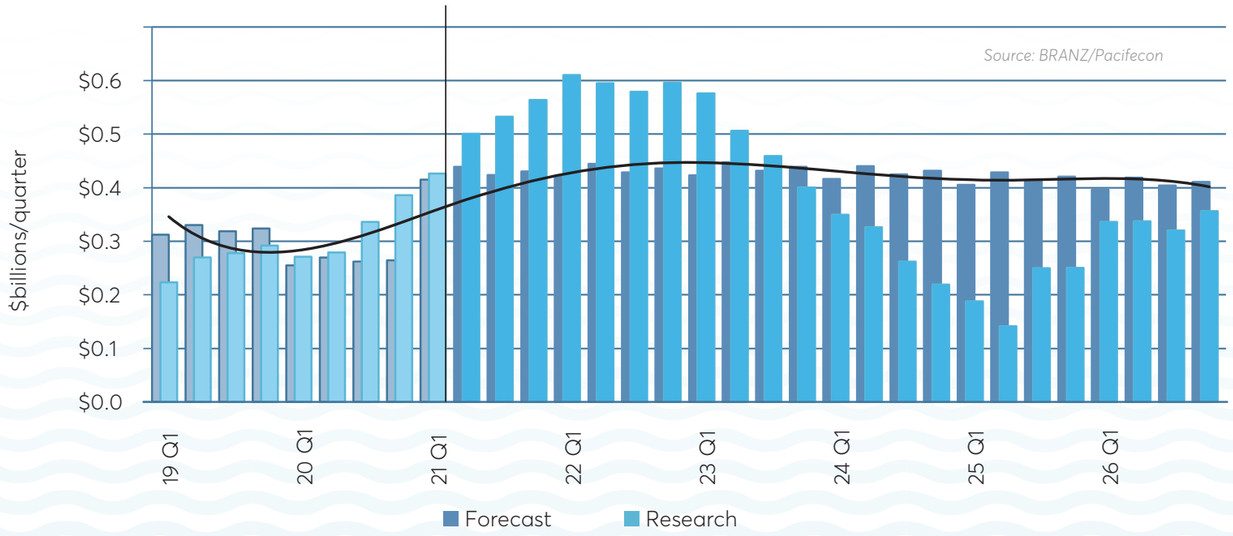
Central and local government-initiated projects continue to benefit from having good long-term visibility of funding, which means intentions tend to remain strong throughout the forecast period.

For the purposes of the construction pipeline report, Hawke's Bay is included in the Rest of New Zealand aggregation. Rest of New Zealand contains 10 regions – Gisborne, Hawke's Bay, Manawatu-Whanganui, Marlborough, Nelson, Northland, Southland, Taranaki, Tasman and West Coast. These regions individually all have a lower value of total construction activity and populations than the other regions considered in the report.

For Rest of New Zealand, total construction value reduced by 4% to $6.4b in 2020, following 10% growth in 2019. Slight growth in residential building of 0.3% was mitigated by an 18% decrease in non-residential building and 2% in infrastructure.

Total construction value for Rest of New Zealand is forecast to increase by 15% to $7.3b in 2021 and then remain close to that level until 2024, decreasing to $6.8b in 2026.

The graph below shows the forecast and researched predictions for the growth in non-residential construction in the ten aggregated regions. With construction volumes predicted to continue at robust levels over the next five years, it is likely the Station Street project will be of interest to construction companies, based on their likely pipelines and the size of the building.



5.0 | Commercial Case
Construction sector challenges

Costs are escalating due to supply chain and logistical issues.

In late 2021 EBOSS undertook a supply chain report for the construction sector, in conjunction with BRANZ. The intention of the report is quantify the anecdotal supply chain issues being experienced by construction companies, which are in turn impacting projects across the country.

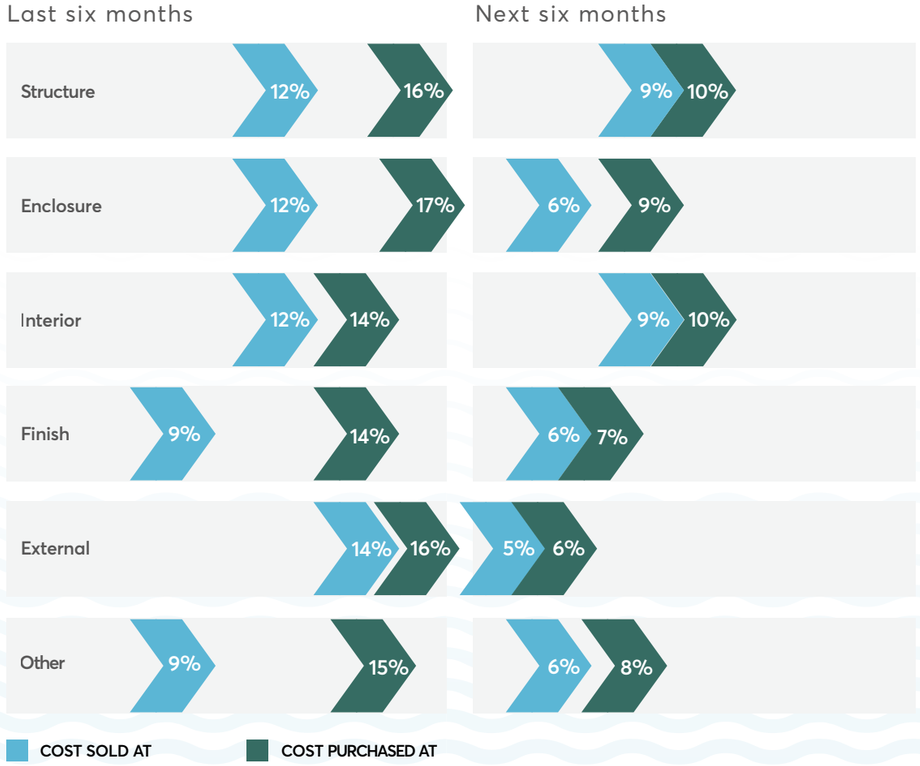
As the report notes, 90% of all construction products sold in NZ are either imported or contain imported components not easily replaced by domestic supply. In this context, logistics and supply chain issues are major determinants of both materials availability and construction costs, particularly given that international shipping costs have risen up to 100% for some categories of product in the last 12 months.

The diagram at right shows the extent of the challenges in key construction product categories, ranging from structural components to interior and finishing items. There are a number of impacts identified in the EBOSS report:

- Structural products are suffering from the greatest supply and logistical challenges, increasing costs and lead times for practically all significant projects
- Lead times have lengthened significantly since 2019 and are expected to continue to do so, with flow-on effects for project delivery.

In this environment, early decision making on whether or not to proceed with a project and early planning for major construction components is key to working around the ongoing logistical and supply challenges in the industry.

Average price increases by category



Structure: Aluminium, Composite Panels for Floors and Walls, Concrete, Fasteners and Connectors, Masonry, Plastics, Site Safety and Roof Access Equipment, Stainless Steel, Steel, Structural Systems, Structural Timber

Enclosure: Awnings and Canopies, Enclosure Adhesives, Sealants and Fasteners, Enclosure Balustrades and Stairs, Exterior Decorative Items, Flashings and Expansion Joints, Glazing, Insulation, Roofifing and Decking, Tanking and Pre-Cladding, Wall Cladding, Windows, and Doors

Interior: Ceiling Systems, Floors, Furniture, Hardware, Joinery Fixtures and Appliances, Partitions and Interior Doors, Signs and Features, Wall, and Ceiling Linings

Finish: Applied Coatings, Carpeting, Flooring Ancillaries, Flooring Underlays, Overlay Flooring and Wall Panels, Painting, Decoration and Coating, Resilient Surfacing, Tiling

External: Engineering Works, External Heating, Landscaping, Roads and Paving, Stretched Fabric Systems

Other: Services, Central Vacuum Systems, Communications and Controls, Fire Safety, Heating and Cooling, Lighting and Electrical, Plumbing and Drainage, Sanitaryware, Tapware, Transport, Ventilation and Air Conditioning

5.0 | Commercial Case
Procurement requirements

There are a range of services and capabilities to be procured.

The table at right sets out the consulting and construction services required to deliver the project. These range from project management and design capabilities through to specialist engineering and construction capabilities.

Each service has a range of requirements and capabilities, as shown in the table. The individual services will sometimes be delivered by a single organisation – in which case one procurement method will be used – whilst others will need to be contracted individually. It will therefore be necessary to tailor the procurement approach to the specific services, depending on the delivery approach. A number of delivery models are likely to be required for the project as a result.

The required services to design and then construct the facility will be procured separately, as follows:

- The **professional services** for developed and detailed design will be procured following approval of the business case. These services will ensure the design is completed so construction tenders can be called and final construction decisions made.
- **Construction procurement** will occur during the design phase. The timing of this procurement step will depend on the contracting method, and the options are discussed on the following page.

Both procurement steps are managed within a structured procurement plan, and the structure and intention of this document is described later in the document.

Service	Required scope
Project Manager	Responsible for delivery of the project scope, cost, time and quality, including procurement of the team to achieve the outcomes. Reports to the Project Sponsor. Involved from initiation through to handover to operations. Can be an internal resource or externally procured. Can sometimes include design management to support the design coordination role
Project Engineer	Responsible for the administration and management of the construction contract
Quantity Surveyor	Responsible for developing and agreeing the capital cost estimation methodology. Also updating the project control budget and providing assessments for variations and progress claim certificates. Scope to include whole-of-life costs for plant selection
Architect	Typically lead consultant, and responsible for the provision of detailed design drawings and technical specifications and monitoring the construction in accordance with New Zealand Institute of Architects observation levels 1-5 to achieve the intent of the design. Responsible for building consent process, lodgement, responses and obtaining approvals
Structural Engineer	Provides detailed design drawings, technical report and technical specifications Provides construction monitoring during the construction phase, assists with design-related issues in accordance with IPENZ construction monitoring levels 1-5, and as per scope of services Provides certification of design in accordance with relevant standards and to achieve the Code Compliance Certificate (CCC)
Fire Engineer	Provides detailed design drawings, technical report and technical specifications Provides construction monitoring during the construction phase, assists with design-related issues in accordance with IPENZ construction monitoring levels 1-5, and as per scope of services Provides certification of design in accordance with relevant standards and to achieve CCC
Mechanical/HVAC/hydraulic/ electrical engineer	Provides detailed design drawings, technical report and technical specifications Provides construction monitoring during the construction phase, assists with design-related issues in accordance with IPENZ construction monitoring levels 1-5, and as per scope of services Provides certification of design in accordance with relevant standards and to achieve CCC.
Civil Engineer	Provides detailed design drawings, technical report and technical specifications Provides construction monitoring during the construction phase, assists with design-related issues in accordance with IPENZ construction monitoring levels 1-5, and as per scope of services Provides certification of design in accordance with relevant standards and to achieve CCC
Geotechnical Engineer	Provides detailed design drawings, technical report and technical specifications Provides construction monitoring during the construction phase, and is responsible for dealing with the site ground conditions, foundations and groundwork required Provides certification of design in accordance with relevant standards
Planning Officer	Provides consenting strategy, schedule of consents required, specific planning advice, assessments of environmental effects and scoping of technical assessments, and includes lodgement and processing support for the resource consents
Legal Advisor	Provides legal advice as required for planning, consenting and compliance purposes
Construction Contractor	Constructs the facility to the supplied designs, managing all subcontractors as required

KAIKŌURA MARINE DEVELOPMENT PROGRAMME

5.0 | Commercial Case
Design stage procurement options

There are a range of options for how the design services can be procured.

Given the specialist nature of the services required, there are a limited number of potential engagement models for designing the harbour:

- Design and build
- Package based
- Alliance
- Early contractor involvement
- Panel of suppliers
- Public private partnership.

A summary of each model and a description of when each model is appropriate is included in the table at right.

As noted on the previous page, different approaches may be needed for specific services or to achieve specific outcomes within the project. A tailored approach to how companies are contracted is likely to be required as a result.

Approach	Summary	When it is appropriate
Traditional	Requires that the design is fully developed before the construction contract is awarded. The client engages consultants to prepare a design against a brief and budget, and to prepare the tender documents. Contractors are then invited to submit bids to do the construction work, based on the tender documents.	Regarded as the best delivery model to use for routine, uncomplicated works of small to medium size and duration
Design and build	The main contractor takes on the responsibility for both the design and construction. The client develops the functional and technical performance requirements for a facility and this information is used in the tender process to invite contractors to submit proposals for design and construction. With the exception of relatively simple, straightforward projects, design and build projects typically require a comprehensive set of requirements documents to ensure that the completed facility meets the client's expectations.	This model is best used when: • Functionality is more important than achieving the highest possible design quality • There is a need for a high degree of cost certainty at the time of contract award • The result sought by the client is clear in terms of stakeholder requirements, and the required functional and technical performance standards can be clearly defined at the time of tender • The client does not want to take on design risk and/or the client requires a single point of responsibility for design and construction • There is a need to improve integration of the design and construction process, to improve constructibility outcomes.
Package based	Allows an earlier on-site start and enables the tender process and construction to overlap with the design. They've developed to provide faster project delivery times while still allowing the client to retain control over the design, and therefore quality. Management methods break down a project into small packages that can be tendered as and when the design for each package is complete.	This model is best used when: • The client wants to retain overall control of the project, including design aspects, to ensure flexibility to amend the design • The project is of a specialised nature • The risk of potential cost overruns is acceptable, where completion is critical to the client's operational needs • There are complexities that warrant expert advice from an experienced construction manager or management contractor who can provide constructibility advice on the design, and can coordinate and administer delivery of the construction works • The works can be readily broken down into separate packages • A fast-track approach to design and construction is required to achieve the earliest possible completion.
Alliance	A relationship-style arrangement, that brings together the client and one or more parties to work together to deliver the project, sharing project risks and rewards.	Collaborative procurement methods are usually used for highly-complex or large infrastructure projects that would be difficult to effectively scope, price and deliver under a more traditional delivery model.
Early contractor involvement (ECI)	ECI is an approach to contracting that can complement either a traditional or novated design and build delivery model. ECI can be used to gain early advice and involvement from a contractor into the buildability and optimisation of designs. ECI usually takes the form of a two stage approach to tendering.	This model is suited to large, complex or high-risk projects because it affords an integrated team time to gain an early understanding of requirements, enabling robust risk management, innovation and public value.
Panel of suppliers	A panel of suppliers is a list of suppliers who have been pre-approved by an agency and who have agreed to the terms and conditions for supply. In establishing a panel of suppliers, the agency will verify which suppliers are capable of delivering the works and will agree in advance with each supplier the terms and conditions of supply of the goods, services or works, including the pricing or the pricing mechanism that will apply. Once the panel has been established, the client can select an appropriate supplier from the panel each time a project needs to be delivered through a secondary procurement process.	This model is best used where clients: • Are delivering a significant programme of work requiring construction or maintenance services, requiring multiple procurements of a similar nature • Have a good degree of certainty on the pipeline in terms of planned volumes of work and their timing • Want to develop long-term strategic relationships with suppliers to encourage industry investment in skills and training • Want to adopt a continuous improvement approach to realise the wider programme benefits a panel can bring.
Public private partnership (PPP)	PPP is a term that can refer to many different kinds of relationships between the government and the private sector. Generally, the term is used to refer to long-term contracts for the delivery of a service, where the provision of the service requires the construction of a facility or asset, or the enhancement of an existing facility. The private sector partner finances and builds the facility, operates it to provide the service and usually transfers control of it to the public sector at the end of the contract. A key objective of the PPP approach is the drive to optimise whole-of-life outcomes by encouraging innovation from the private sector.	PPPs are suited to a range of different projects. However, PPPs are better suited to high value projects in order to attract private finance.

5.0 | Commercial Case
Construction stage procurement options

Construction procurement has a limited number of options due to project type.

At a high level, there are eight potential delivery models that can be used to deliver the harbour:

- Traditional
- Design and build
- Package based
- Direct managed
- Alliance
- Early contractor involvement
- Panel of suppliers
- Public private partnership.

A summary of each model and a description of when each model is appropriate is included in the table at right.

As noted on the previous page, different approaches may be needed for specific services or to achieve specific outcomes within the project. A tailored approach to how companies are contracted is likely to be required as a result.

Approach	Summary	When it is appropriate
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Package based	Allows an earlier on-site start and enables the tender process and construction to overlap with the design. They've developed to provide faster project delivery times while still allowing the client to retain control over the design, and therefore quality. Management methods break down a project into small packages that can be tendered as and when the design for each package is complete.	This model is best used when: • The client wants to retain overall control of the project, including design aspects, to ensure flexibility to amend the design • The project is of a specialised nature • The risk of potential cost overruns is acceptable, where completion is critical to the client's operational needs • There are complexities that warrant expert advice from an experienced construction manager or management contractor who can provide constructibility advice on the design, and can coordinate and administer delivery of the construction works • The works can be readily broken down into separate packages • A fast-track approach to design and construction is required to achieve the earliest possible completion.
Direct managed	The client directly manages all aspects of the delivery of the project works.	This model is best used when: • The client operates in an asset-intensive environment and can invest in developing the in-house skills required • There's a need for the client to control all aspects of the project • There's a desire for the client to remain informed and develop the skills of in-house personnel • The project is for minor works contracts and/or emergency works • There are uncertain or complex interfaces, and flexibility on scheduling and delivery is required.
Alliance	A relationship-style arrangement, that brings together the client and one or more parties to work together to deliver the project, sharing project risks and rewards.	Collaborative procurement methods are usually used for highly-complex or large infrastructure projects that would be difficult to effectively scope, price and deliver under a more traditional delivery model.
Early contractor invovlement (ECI)	ECI is an approach to contracting that can complement either a traditional or novated design and build delivery model. ECI can be used to gain early advice and involvement from a contractor into the buildability and optimisation of designs. ECI usually takes the form of a two stage approach to tendering.	This model is suited to large, complex or high-risk projects because it affords an integrated team time to gain an early understanding of requirements, enabling robust risk management, innovation and public value.
Panel of suppliers	A panel of suppliers is a list of suppliers who have been pre-approved by an agency and who have agreed to the terms and conditions for supply. In establishing a panel of suppliers, the agency will verify which suppliers are capable of delivering the works and will agree in advance with each supplier the terms and conditions of supply of the goods, services or works, including the pricing or the pricing mechanism that will apply. Once the panel has been established, the client can select an appropriate supplier from the panel each time a project needs to be delivered through a secondary procurement process.	This model is best used where clients: • Are delivering a significant programme of work requiring construction or maintenance services, requiring multiple procurements of a similar nature • Have a good degree of certainty on the pipeline in terms of planned volumes of work and their timing • Want to develop long-term strategic relationships with suppliers to encourage industry investment in skills and training • Want to adopt a continuous improvement approach to realise the wider programme benefits a panel can bring.
Public private partnership (PPP)	PPP is a term that can refer to many different kinds of relationships between the government and the private sector. Generally, the term is used to refer to long-term contracts for the delivery of a service, where the provision of the service requires the construction of a facility or asset, or the enhancement of an existing facility. The private sector partner finances and builds the facility, operates it to provide the service and usually transfers control of it to the public sector at the end of the contract. A key objective of the PPP approach is the drive to optimise whole-of-life outcomes by encouraging innovation from the private sector.	PPPs are suited to a range of different projects. However, PPPs are better suited to high value projects in order to attract private finance.

5.0 | Commercial Case
The procurement plan

A detailed procurement plan will be developed in the next phase.

Design and construction of a significant building such as the South Bay Harbour is a complex process, with a wide range of specialist services and construction capabilities required. All of these must be procured from the market, and as the previous pages have shown, there are a number of different approaches to how this can be done.

The purpose of the Procurement Plan is therefore to provide a roadmap to how the activity will be undertaken. It sets out:

- The scope of the project and the resulting procurement activity
- The procurement and project management principles and methodologies that will be used to ensure a high-quality outcome and the greatest value for money for the project
- The purpose and scope of the major procurement activities, in this case the design and construction procurement steps
- The options for how the required services can be procured for each step, including a recommended approach
- The governance and procurement management structures for the process, including the indicative decisions that will be needed at each procurement step
- An indicative timeline.

The Procurement Plan is a stand-alone document presented to the project governance group for approval. However, the procurement approach in the Plan sits in the context of Council's wider procurement strategy and policies, which in turn are shaped by Government sourcing and procurement policies and rules.

Achieving broader outcomes

Council supports the Government's goal of achieving broader outcomes from investment decisions. For this project we will be assessing the experience, buy-in, and initiatives offered by the Main Contractor and their nominated personnel to deliver the Government's stated broader outcomes objectives. We will be both looking back at what the Main Contractor has previously achieved and what outcomes can be supported through this specific engagement.

Examples of these could be, but are not limited to:

- Increase New Zealand businesses' access to government procurement: increasing the number of New Zealand businesses contracting directly to government, and within the supply chain. This includes Māori businesses and Pasifika businesses
- Increase the size and skill level of the domestic construction sector workforce: the government is leveraging procurement through construction to encourage businesses to increase the size and skills of their workforces
- Improve conditions for workers and future-proof the ability of New Zealand businesses to trade: this priority protects workers from unfair and unsafe behaviour, and incentivises well-performing firms while ensuring they are not undercut by firms who have reduced costs through poor labour practices
- Support the transition to a net zero emissions economy and assist the Government to meet its goal of significant reduction in waste by 2020 and beyond.

6.0
Management Case

6.0 | Management Case
Project management methodology

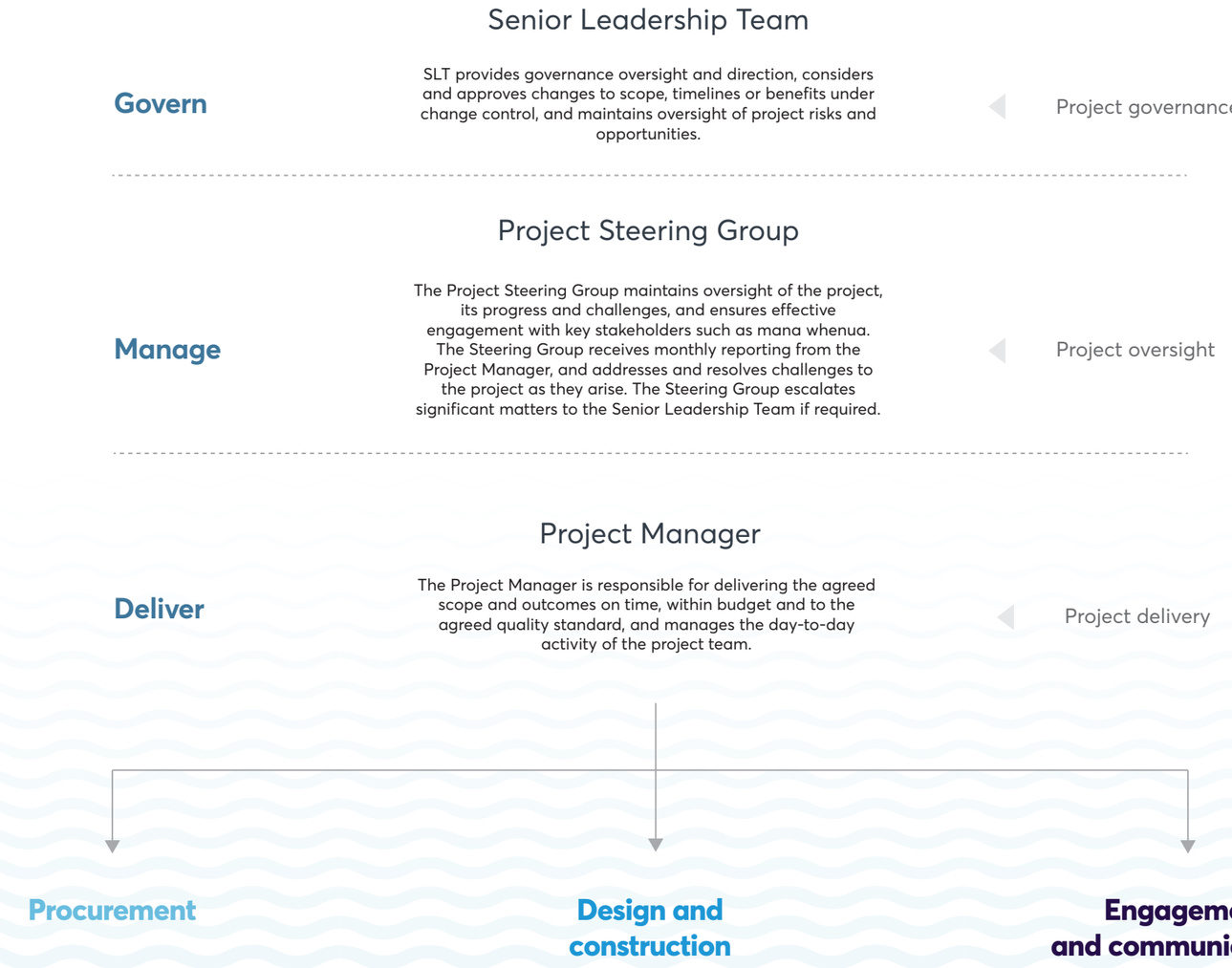
Effective project governance is key to a successful implementation.

Council will use industry-standard PRINCE2 and PMI project management methodologies to ensure the project is delivered on time and within budget, and that the deliverables meet the required quality standards..

Within the standard methodologies, there are clearly-defined roles and areas of authority. These are shown in diagram form at right, with the key responsibilities noted for the different tiers within the structure.

Three workstreams are planned for the project in its initial stages:

1. The **Procurement workstream** manages the flow of activity to procure the professional services for the Design stage, followed by the construction services for the Build stage. The workstream is responsible for the design and implementation of the Procurement Plan described in the Commercial Case.
2. The **Design and construction workstream** provides the Council project interface for the external designers and the construction contractor. The service providers are responsible for delivery of the main projects, with the Council workstream maintaining communication, information flow and management integration between the external parties and the Council project.
3. The **Engagement and communications workstream** provides the interface between the project and key stakeholders, including mana whenua. The workstream draws on existing Council networks and resources where necessary to ensure there is a timely and effective two-way flow of information and perspectives, in order to align the project with the needs and aspirations of mana whenua, other stakeholders and the wider community.



6.0 | Management Case
Project staging

The diagram at right shows the staging of the project. Five stages are envisaged, starting with assessment of the business case and concept design (this document), further feasibility and design work, a procurement phase to confirm the final costs for the project, and a construction phase of approximately three years duration.

Three decision gateways are expected over the life of the project, once the business case has been submitted. These are:

- Government will make a decision whether or not to fund the feasibility and design stage once the business case has been assessed. This is not a final decision on whether to proceed with the project – it simply allows for more detailed work and the commencement of the consenting process.
- Once the Feasibility Study and the Developed Design have been submitted, Council and Government will have the information needed to determine the precise benefits of the project, the commercial arrangements for development of the onshore facilities and the agreed design for the harbour. A joint decision is made at this gateway on whether to proceed with Detailed Design, consenting and the procurement process.
- The final joint decision on whether to proceed with harbour construction comes at the conclusion of the procurement phase, when tenders are received and final prices for all elements of the harbour are known. This marks the commencement of the construction phase, which is expected to take around three years.

Assessment

The business case is submitted by Council and considered by Government, with the intention to agree to assess the harbour further. Approval for funding of the feasibility and design stages is sought.

Feasibility

The Feasibility Study is developed, which identifies the contributing parties to the onshore facilities, quantifies the economic benefits to the country, and reaches heads of agreement to proceed with the commercial and research investments.

Design

There are two parts to the Design stage:
- **Developed design** arrives at the final configuration and layout of the harbour, identifies the construction methods and obtains initial consents for the project.
- **Detailed design** completes the engineering and design documents to the final standards needed for full consenting and procurement, and applies for all necessary consents with the expectation of public consultation.

Decision gateway

Council and the Government make a decision on detailed design funding after receiving and considering the Feasibility Study and Developed Design

Procurement

The Procurement stage calls for tenders for the various components of the construction project, including the seawalls, wharf, marina components and other elements. A final decision whether to proceed is made once tender prices are received.

Decision gateway

Council and the Government make a decision on commencing construction after receiving final construction tender prices

Construction

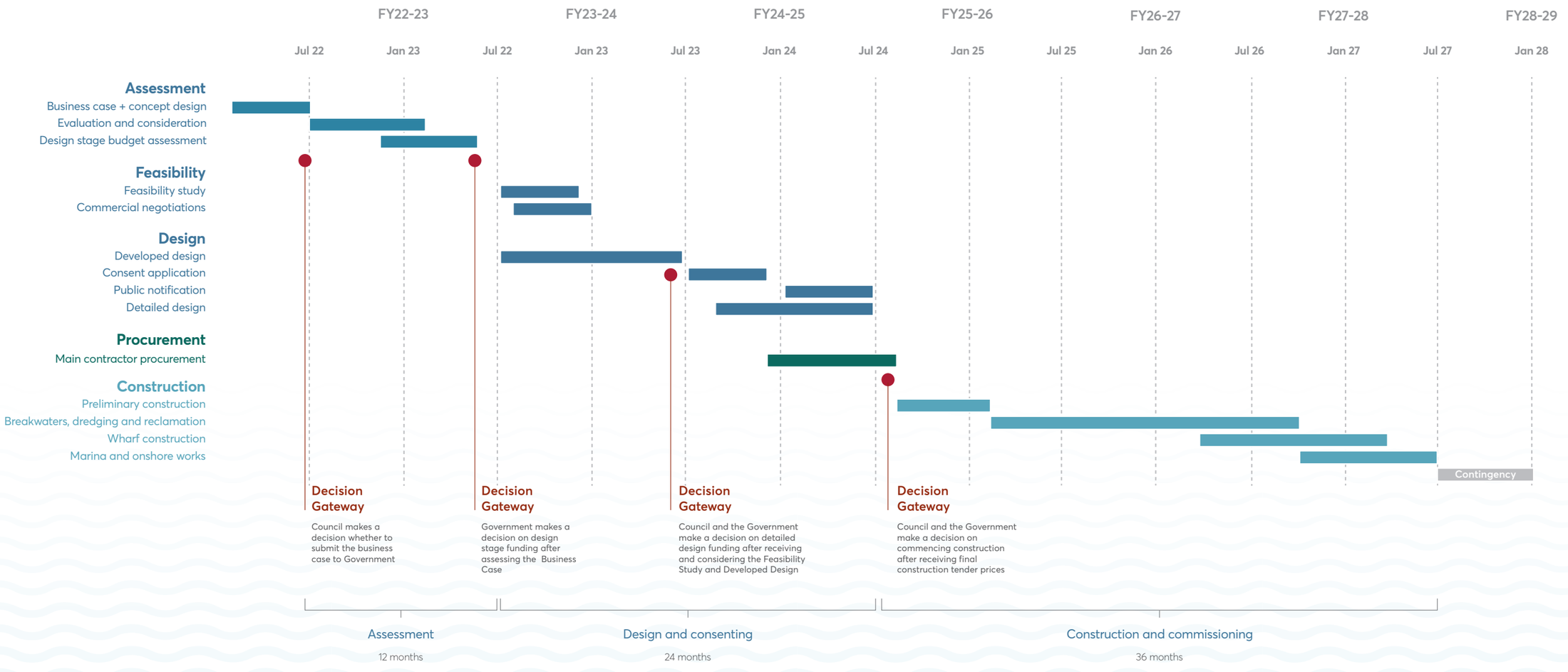
The Construction phase commences with the establishment of the onshore working areas, and proceeds over an approximately three year period before the handover of the completed harbour. Existing harbour operations are maintained during the construction phase.

Decision gateway

Government makes a decision on design stage funding after assessing the Business Case

KAIKŌURA MARINE DEVELOPMENT PROGRAMME

6.0 | Management Case
Proposed timeline



6.0 | Management Case
Risk management

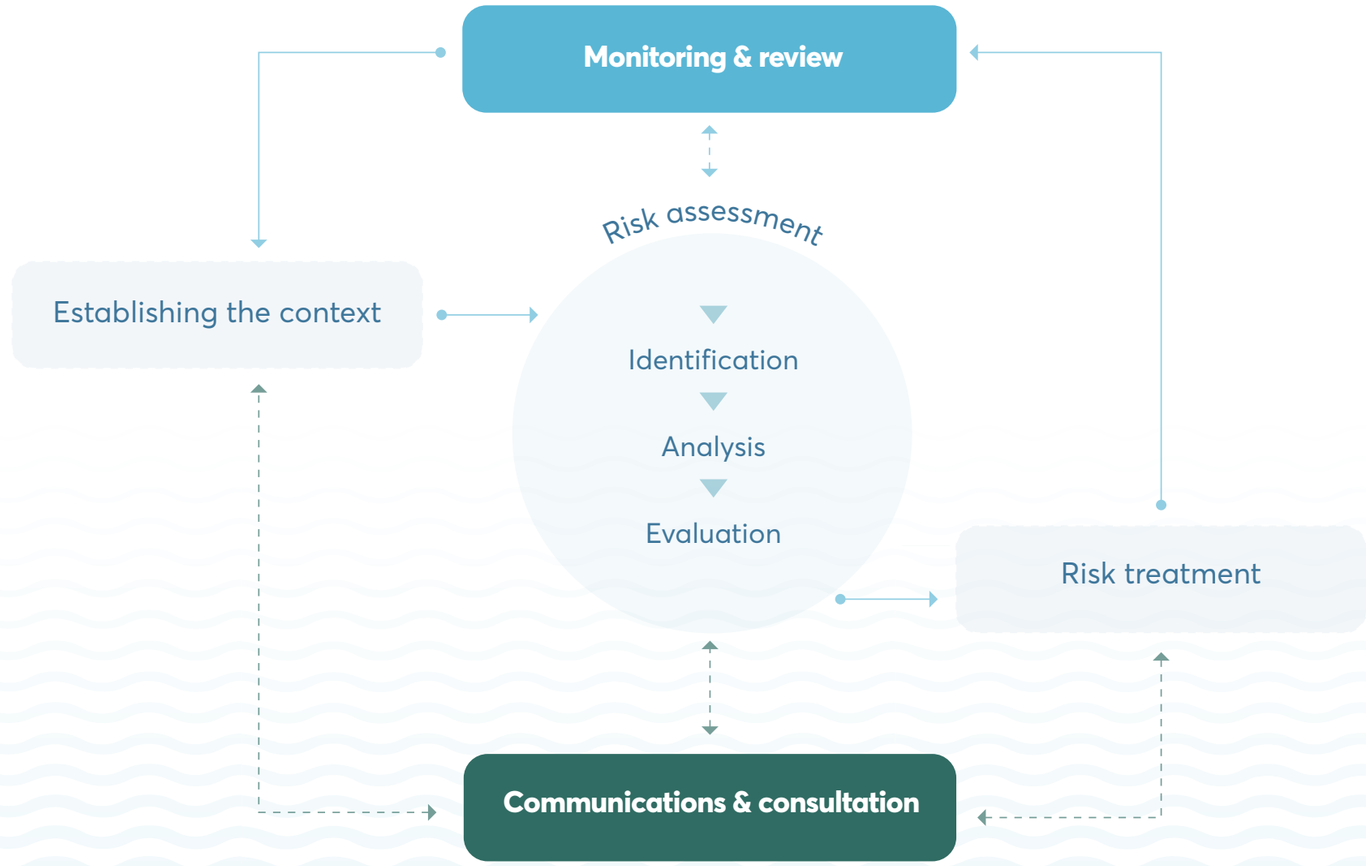
Construction procurement has a limited number of options due to project type.

As can be seen from this business case, there are a number of investment, design and construction risks that will need to be managed as part of the delivery projects. An industry-standard risk methodology – shown in the diagram at right – will be used for this purpose.

In practice, risks will be categorised:

- **Delivery risks** are those which are material to the implementation project. They typically include factors such as time, cost and quality challenges for the project, arising from project and external factors. The tracking and management of these risks is the responsibility of the Project Manager, and they are reported and escalated to the Steering Group.
- **Outcome or investment risks** are those which are material to Council and the Government achieving the immediate and longer-term goals of the redevelopment. These include factors such as strategic alignment, economic and social benefits realisation and operational effectiveness. Some of the risks are addressed during the implementation project – by ensuring good design, for instance – whilst others will continue past the conclusion of the redevelopment and will form part of the ongoing risk management processes.

As part of the detailed design process, the key delivery and outcome risks will be identified to ensure decision makers have a clear view of the risks of the investment as well as its likely benefits. Once construction approval has been obtained, risk management will become part of the standard project delivery process, in accordance with best practice methodologies.



7.0 Recommendations and next steps

7.0 | Recommendations for Council

The investment will facilitate the economic development of the Kaikōura region.

As this business case notes, considerable work has been done by the Kaikōura Marine Development Programme to understand the needs of the community, specify a new facility that can be adaptable for the future, and to assess how it will fit into the fabric of the region. This business case brings together that thinking, and sets the stage for the next step in the process – establishing the feasibility of the onshore facilities and commencing the detailed design of the harbour.

The work on the harbour has occurred during a period of great turbulence – due to the COVID-19 pandemic and resulting personal, organisational and supply chain disruptions across the country and across the world. As a result of these disruptions, construction costs have risen, and are likely to continue to do so for quite some time to come.

In this environment, early decision-making on the design and construction of the harbour will result in lower overall costs in the future.

The next step is to validate the economic, environmental, social and cultural impacts of the project – and this can only be done once the feasibility of the onshore facilities have been established. Further work is required in partnership with commercial operators and Mana Whenua to complete this assessment, in parallel with the detailed design work.

The decision required at this step of the process is straightforward: does Council agree to submit the business case to Government and seek agreement in principle to develop the harbour, subject to the feasibility study and design work.

The specific recommendations for Council are listed at right.

It is recommended that Council:

1. **Receive** the Business Case for the South Bay harbour
2. **Note** the proposed facility will make a significant contribution to the economic, social and cultural development of Kaikōura
3. **Note** the total budget for the proposed facility is estimated within the range of $78.07m and $94.44m
4. **Note** the required funding for the Feasibility Study and Developed Design for the harbour is in the range of $4.5m to $7.5m
5. **Approve** the submittal of the business case to central Government to seek an agreement in principle to develop the harbour, subject to the outcome of the Feasibility Study
6. **Approve** the request to the Government to fund the Feasibility Study and Developed Design as part of Budget 23 for commencement on 1 July 2023
7. **Approve** ongoing engagement with Mana Whenua on the design, management and governance of the facility, in accordance with Council's commitments under Te Tiriti o Waitangi.

7.0 | Recommendations for the Government

The investment makes sense for Kaikōura and the nation.

Harbours are essential transport infrastructure that can unlock the economic and social potential of an entire region – and Kaikōura is an example of where a suitable harbour facility can be transformational.

Harbours are not ends in themselves however, and for the South Bay harbour to deliver the outcomes expected by the community and the Government, additional onshore investment will be required – with the private sector and Mana Whenua leading the way. Constructing the harbour is well beyond the financial capabilities of Kaikōura acting on its own, so Crown support will be critical if the opportunities presented by the harbour are to be realised. But once the facility exists, it can be a catalyst for wider economic, social and cultural development that will have national benefits.

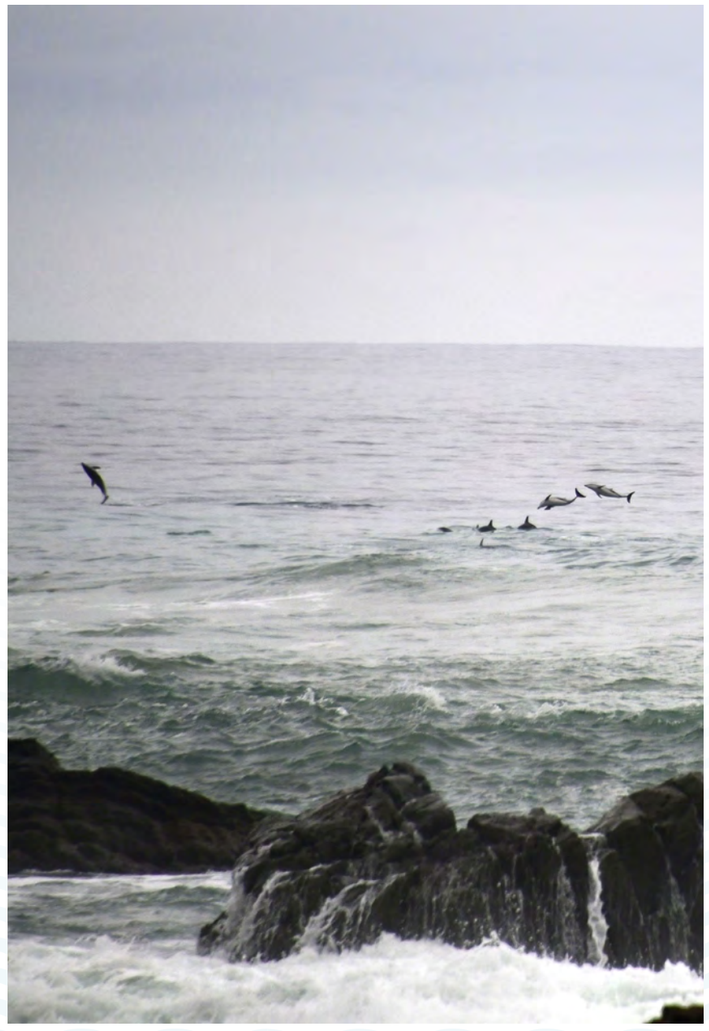
In order for the full viability of the harbour to be established and the full benefits quantified, a Feasibility Study is required, along with more detailed design work to help firm up the costings for the infrastructure. It is not worth proceeding with this work unless there is an agreement in principle that the harbour is a worthwhile national investment the Government is willing to support. Without an initial agreement, there will be insufficient certainty for the private sector to commit to assessing and developing the onshore facilities.

It is therefore recommended the Government agree in principle to develop the harbour, conditional on further analysis. The specific recommendations for the Government are listed at right.

It is recommended that the Government:

1. **Receive** the Business Case for the South Bay harbour
2. **Note** the proposed facility will make a significant contribution to the economic, social and cultural development of Kaikōura
3. **Note** the total budget for the proposed facility is estimated within the range of $78.07m and $94.44m
4. **Approve in principle** the redevelopment of the South Bay harbour, subject to the outcomes of the Feasibility Study and the developed design
5. **Approve** the funding of the Feasibility Study and the Developed Design for the harbour, in the range of $4.5m to $7.5m, as part of Budget 23
6. **Approve** ongoing engagement with Mana Whenua on the design, management and governance of the facility, in accordance with the Government's commitments under Te Tiriti o Waitangi.

This is not the final decision on the South Bay harbour, as the following page notes; there are additional gateways where Council can assess the design and costings, and make choices about how and when and if to proceed.



7.0 | Next steps and decision points

Approval in principle allows the feasibility study and detailed design to proceed.

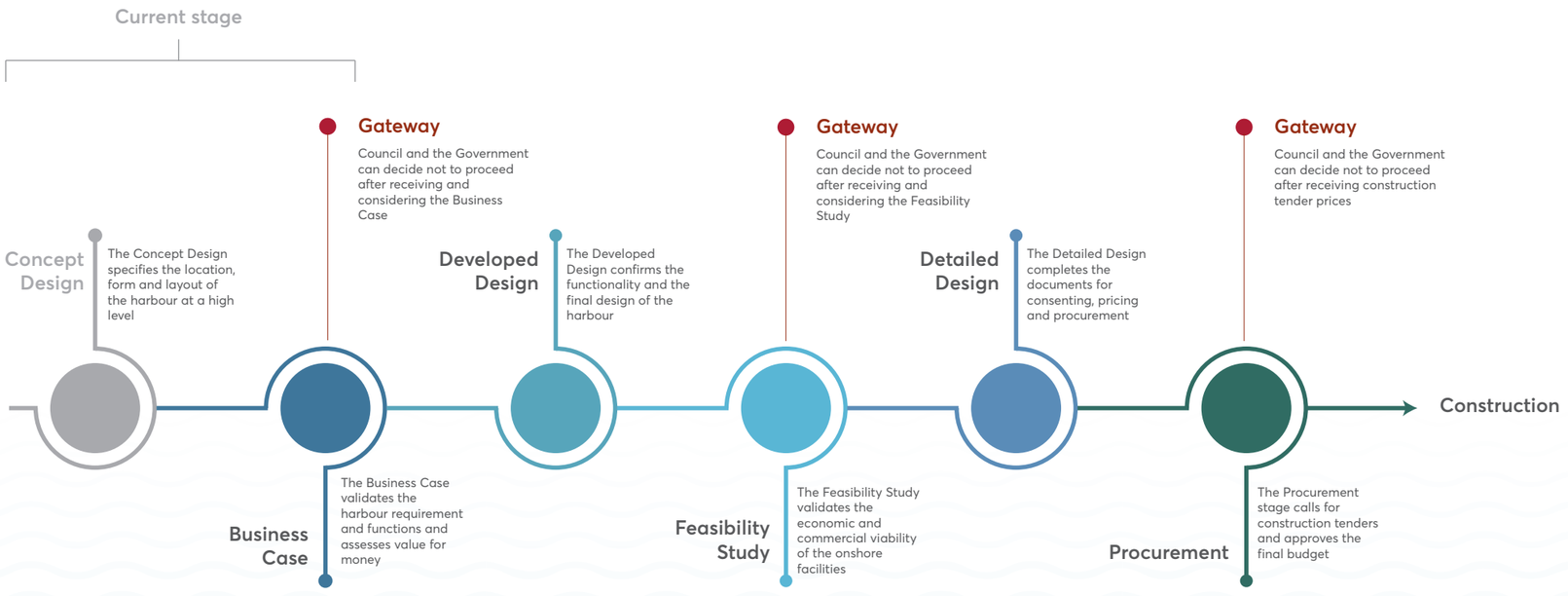
The diagram at right sets out the upcoming decision points for the project. These are:

- Once the business case (this document) has been approved by Council, it is submitted for central Government consideration, seeking approval in principle to develop the harbour.
- A feasibility study for the onshore facilities and the developed design for the harbour are then completed, in order to establish the economic and commercial viability of the project. Council and Government then consider the results of the assessment.
- Once the developed design has been agreed and the benefits and commercial viability of the harbour established, detailed design is undertaken. This process completes the work for consenting and tendering purposes, and tenders are called, with a decision to proceed once final costs are known at the conclusion of procurement.

Each of the decision points is shown as a gateway in the diagram. At these gateway points, Council and the Government can make one of three possible decisions:

- To continue with the project as planned
- To revise the project based on the information received and request additional work, at either the design or procurement steps
- To not proceed with the project.

Advice and appropriate information will be provided to Council and the Government by officials at each of these gateways to enable informed decision making.



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