Coromandel Marine Farmers Association

Ariki Tahi / Sugarloaf Wharf Development: Business Case

Final Version May, 2019

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"Shane Jones and myself are very keen to see applications from innovative aquaculture players who have done the testing, know their markets and just need start-up capital to get across the line".

- **Hon. Stuart Nash, Aquaculture New Zealand Annual Conference, 27/09/2018.**

"The wharf development at Sugarloaf will deliver a critical piece of regional infrastructure that not only supports and encourages future growth of marine farming in the district but also provides for further development of other important sectors including tourism and recreational activity in the region".

- **Gary Hooper, Chief Executive, Aquaculture New Zealand**

"The Hauraki Maori Trust Board supports the development of this planned expansion and confirm their ongoing support for the aquaculture sector in the Thames-Coromandel District. We wish to reinforce that without the expansion of Sugarloaf, future aquaculture development in the Thames-Coromandel District will be negatively affected. This will, in turn, impact the ability of Hauraki Iwi to realise our aspirations for commercial aquaculture development, and the associated cultural and social benefits that would accrue to our Iwi and the broader district".

- **David Taipari, Chairman, Hauraki Maori Trust Board**

"Thames-Coromandel District Council has been involved in the Steering Group for the business case for the Sugarloaf upgrade and the proposal has our full support. This investment by the Provincial Growth Fund will unlock in excess of $2 billion of economic activity in coming decades, provide hundreds of new, productive jobs, and is an essential part of the social, economic, environmental and cultural makeup of the Thames-Coromandel District".

-Rob Williams, Chief Executive, Thames-Coromandel District Council

"I believe this proposal would have significant benefits for the Thames Coromandel area, would add considerable value to the aquaculture industry in the Waikato region and for New Zealand, through additional investment and employment opportunities in an area where such opportunities are currently very limited".

- **Dallas Fisher, Chairman, Te Waka**

"I can see this project having a substantial collective benefit for communities in both our Districts".

- **John Tregidga, Mayor, Hauraki District**

CURRENT STATE

90%
of North Island Mussels go over Sugarloaf Wharf

Facility at capacity
No longer fit for purpose
~[redacted]t

Industry Growth Constrained

[redacted] FTE jobs in the District

1/3 of national Greenshell Mussel production

Health & Safety Risk rating: **"extreme"**

Publicly Owned
[redacted]

THAMES COROMANDEL DISTRICT COUNCIL

Developed vs Undeveloped Space
[redacted]

Māori hold [redacted]% of current waterspace

Pare Hauraki Kaimoana

2
Commercial Berths:
Too few for current production

Climate Change Impacts:
→ Sea Level Rise, Flooding prevents use of facility

Recreational user conflict:
→ Poor separation of commercial and public areas increases health & safety risk.

FUTURE STATE

→ Long-term industry growth enabled

~[redacted]t

Total Value Added of
$1b
Over 35 years

Return on Government Investment
[redacted]

Unlock private investment of
$[redacted]

[redacted] **jobs**
supported once fully operational

$[redacted] grant
to Industry to make facility fit for purpose
→ industry growth supported over next 30-50 years

Labour
NEW ZEALAND FIRST
Strategic priority for coalition government

Public Ownership Preferred
→ Owned by TCDC.

Enables Future Māori Asset Development

Reduced Health & Safety Risk

7
Commercial Berths

Climate Change Resilience:
50 year design principles

Safety benefit to separation of recreational & commercial areas.

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Executive Summary

This Business Case seeks $[redacted] of grant funding, estimated at $[redacted] subject to inflation, from the Provincial Growth Fund (PGF) to undertake an upgrade of Sugarloaf Wharf. There are four investment objectives for this Business Case, all of which are met by the preferred solution.

1. *An upgrade that reduces health and safety risk.*
2. *A development that meets the current and future needs of the sector.*
3. *A development that satisfies the needs of existing recreational users.*
4. *A development that will withstand the effects of climate change.*

The Sugarloaf Wharf is a publicly owned infrastructure asset located on the south side of Coromandel Harbour. It is the sole port commercially and practicably available to >90% of the mussel industry in the North Island; ~90% of North Island mussels pass over Sugarloaf Wharf. Small tidal and private facilities do also exist such as at Kaiaua (south western Firth of Thames) but these have no significant capacity now, nor expansion potential. There are no feasible alternatives to Sugarloaf Wharf in the Waikato Region (or surrounding Regions) that can support the significant volumes of mussels projected to come over the following decades.

The strategic context for this investment is the significant forecast growth in the aquaculture sector within the Region and nationally, the very strong iwi aspirations for future investment (>[redacted]% of water space is iwi-held), and the lack of fit for purpose shore-based infrastructure. This, combined with the recent creation of new marine farming space in the Coromandel has introduced an urgent need to develop critical port infrastructure at the Sugarloaf Wharf – the only all-tide access location in the Firth of Thames within a reasonable distance from the marine farms. Sugarloaf Wharf cannot continue to operate in its current state. The facility has reached a point where imminent growth of aquaculture, extreme health and safety risks, operational inefficiencies, and lack of resilience to climate change threaten the ability for the port to remain functional. The industry urgently needs safe, user-friendly infrastructure to bring produce ashore and realise the economic potential of this very significant industry for the Coromandel, the Waikato region and New Zealand.

The wharf upgrade will also provide critical infrastructure that will enable the farming of potential new species. Waikato Regional Council has recently granted Pare Hauraki iwi the authority to apply for resource consents for fin fish farming; that is expected to generate additional revenue and jobs, further realise Iwi aspirations and diversify the aquaculture industry in the Region. The Thames-Coromandel District Council does not have funding for a Sugarloaf upgrade, and the aquaculture industry cannot invest appropriately in their operations if they are forced to upgrade public assets such as wharves. Government grant funding is required if the massive potential growth in this sector is to be realised; regional aquaculture growth is listed as one of seven priorities for Regional Economic Development in the NZ First / Labour Coalition Agreement and the project is entirely aligned with the goals of the Provincial Growth Fund.

The Business Case process considered options presented in recent earlier reports[1,2] and consulted with other similar operations around the country. Our approach was comprehensive, looking beyond financial estimates in order to quantify the wider economic, social, cultural and environmental impacts within the District, Region and nationally. The design presented in this Business Case represents the best value for money of options considered and offers the most appropriate solution to the industry's objectives described above as it increases production (from ~[redacted] to ~[redacted] tonnes / year) over the next 50 years. The design below shows the increase in commercial berths to seven, as well as complete separation of the recreational and commercial areas. The relevant statutory planning documents provide a positive pathway for the consenting of the wharf expansion. In this regard, there is clear policy recognition of the need to provide for the social and economic wellbeing of people and communities via the undertaking of activities in the coastal environment, whilst recognising that some activities have a functional need to be located in the coastal environment. It is important to consider the sensitivity of the coastal environment and its importance to a range of groups (recreationalists,

[1] *Preferred Location Options Report: Selection of Optimum Wharfing Site for Aquaculture Industry*, prepared by Ben Dunbar-Smith for the Hauraki-Coromandel Development Group, 2011.
[2] *Sugarloaf Options Assessment Report,* prepared by AECOM NZ Ltd for the Coromandel Marine Farmers' Association Incorporated, 2017

iwi, the general community), and a clear need to ensure that the design and construction of the wharf expansion is responsive to the key environmental and cultural values in this location.

The economic impact of this investment will unlock some $1bn of Value Added over 35 years. This new level of activity would support some Commercial I jobs once fully operational, Commerc of those will be located in Waikato and Bay of Plenty. To put this in context, the additional economic activity is around 0.6% of current GDP.

The analysis suggests that the project will return a CBR of Commercial Information with net benefits of $Commercial Inf (including deadweight losses). This return is based on the initial government assistance (PGF funding) of $Commercia and means a return on government funding of Commercia. In other words, for every $ received from the PGF, the economy would see a benefit of $Commercial

Continuing ownership and operation by TCDC, with some arrangements put in place to allow marine farmers a role in governance, would be optimal. Failing that, an asset-owning trust would provide a stable, intergenerational owner of the asset. The Coromandel community and marine farmers could be identified as beneficial owners of the Wharf, with trustees appointed by TCDC and marine farmers reflecting that shared community/industry perspective. Commercial Information

The continuation of TCDC ownership and operation would assist marine farmers in achieving a sustainable solution at the lowest operating cost possible; the operating model was prepared on a 'cost recovery' basis. Minimising the additional operating costs passed onto marine farmers is a critical strategic objective as it allows them to apply their limited capital to developing further water-space and the associated plant and equipment including the downstream transport and processing assets required. Ultimately it is this investment into productive assets, not on-land infrastructure, which will create jobs and significant economic benefit for the Thames-Coromandel District. The funding of the wharf will enable the industry to continue to grow over the next 30 years which will have direct benefits to iwi in the region and the New Zealand Aquaculture industry as increased scale leads to a greater return on investment into productivity and innovation. Operating costs will likely increase to address health and safety concerns and as a result of the increased size of the operation. Depending on the future ownership structure, operating costs are expected to result in between a two-fold to four-fold increase on current costs.

Commercial Information . This assessment has been made based on comparison with Marlborough marine farmers and relies heavily on growth in the aquaculture industry. Marlborough is the only other region with significant volumes of mussels, and has been used as a benchmark of affordability. The key difference between Sugarloaf and Port Marlborough also has a wide range of commercial users (and therefore revenue streams) when compared to Sugarloaf, which is solely based on aquaculture. Options for alternative revenue at Sugarloaf are further constrained by the private land ownership surrounding the wharf by comparison with Port Marlborough, which owns the surrounding land. Contributions from other parts of the value chain (e.g. processing, transport) have been explored with a number of significant challenges limiting achievability.

1 Background & Context

1.1 Purpose of this Document

The purpose of this document is to present the case for the Provincial Growth Fund to invest $[redacted] in grant funding, [$[redacted] including inflation], to allow the expansion of the publicly owned wharf facility at Sugarloaf in the Coromandel. This investment in public infrastructure will unlock significant future investment from the aquaculture sector, resulting in widespread benefit throughout the Thames-Coromandel District, Waikato Region and beyond.

This document has been overseen by a Steering Group comprising:

Industry	
	Chair of Coromandel Marine Farmers Association Incorporated
	Gulf Mussels Ltd
	North Island Mussels Ltd
	Chair, Pare Hauraki Kaimoana
Iwi	
	Chair of Pare Hauraki Kaimoana & Trustee on Hauraki Maori Trust Board
Ministry for Primary Industries	
	Director of Aquaculture (PDU nominee on Steering Group)
Thames-Coromandel District Council	
	CEO, Thames-Coromandel District Council

1.2 Coalition Government Priority

The *2017 Coalition Agreement* between New Zealand First and Labour identifies *"the potential for aquaculture in promoting regional economic growth"* in a list of seven priorities for Regional Economic Development. The Hon. Shane Jones, Minister of Regional Economic Development (New Zealand First), and the Hon. Stuart Nash, Minister of Fisheries (Labour), have both expressed their support for the development of aquaculture in the Coromandel and nationally.

1.3 New Zealand Aquaculture

The New Zealand aquaculture industry began in the 1960's when the first mussel farms were established in the Marlborough Sounds. Following the crash of the wild mussel fisheries in Tasman Bay and the Hauraki Gulf, innovators came up with an effective way to culture mussels on longlines, a technique initially developed by the Japanese. Greenshell™ mussels are the backbone of the sector both in terms of volume and production value; and are well-regarded by the sector and the wider public as a low-impact, highly sustainable food supply. Greenshell™ mussels along with Atlantic Salmon and Pacific Oysters are the three main aquaculture species

cultured in New Zealand, with mussels and oysters accounting for approximately two-thirds of New Zealand aquaculture production volume.

Collectively, the aquaculture sector currently generates export earnings of $427 million and total revenues in excess of $612 million. The sector has growth ambitions to become a major primary industry that all New Zealanders can be proud of, not just for great products, but as importantly for its light environmental touch and its overwhelmingly positive social, cultural and economic contribution to regional New Zealand.

Mussel production is a long-established industry in the area with a proven track record of very low environmental impact. International conservation organisation *Blue Ocean Institute* ranks New Zealand Greenshell Mussels as one of the top two 'eco-friendly seafoods' in the world. Provision of public infrastructure to support sectoral growth is vital, and must happen alongside other investment from industry.

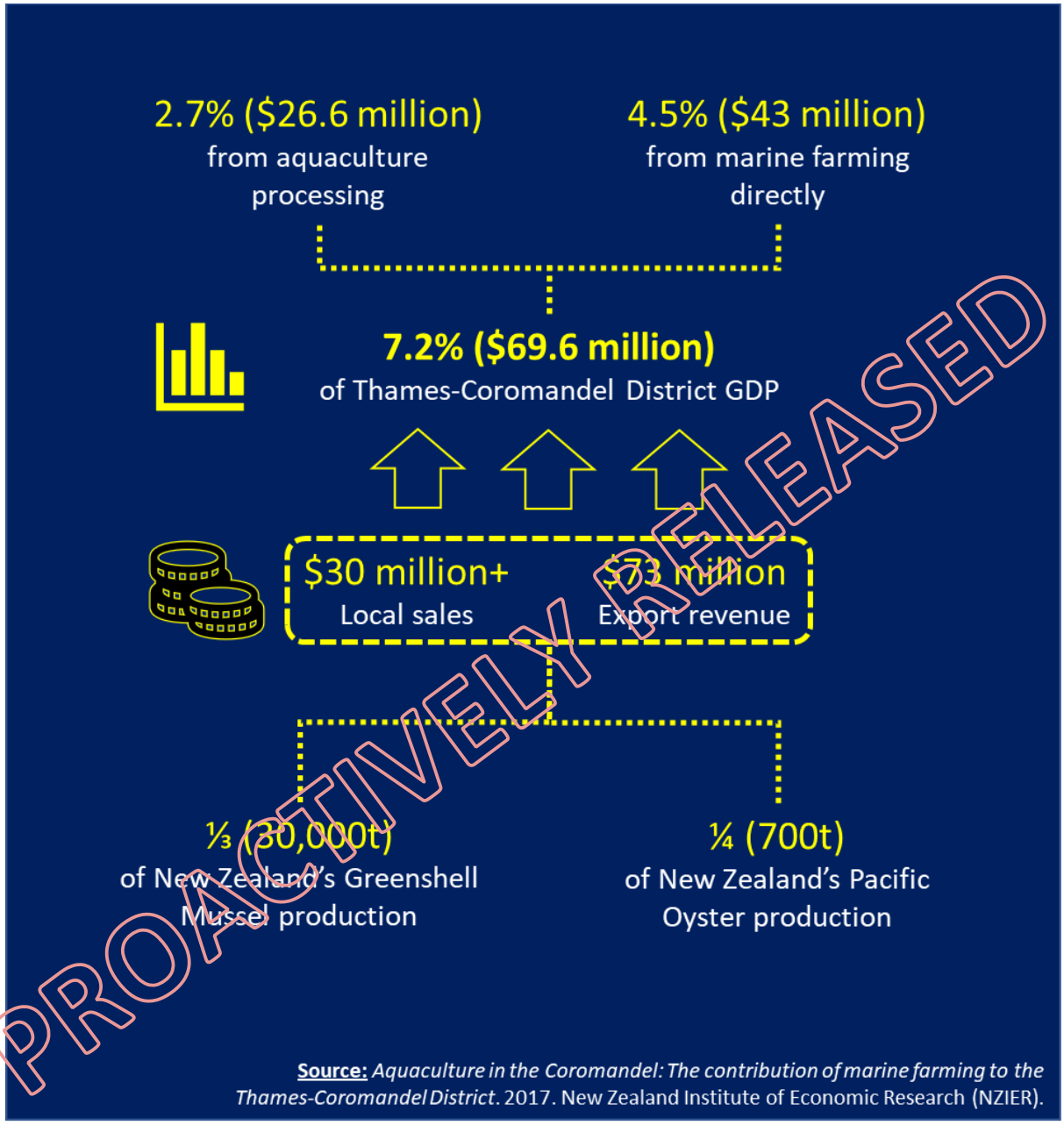
1.4 Coromandel Marine Farming Sector

1.4.1 Economic Importance to the Thames-Coromandel District

The Coromandel mussel farming industry can be traced back 41 years to 1978, when a surface long-line was trialled in Coromandel Harbour. Over the following decades the Coromandel industry has developed from a small pioneering community into the second largest mussel-producing area in the country behind Marlborough / Tasman, delivering approximately 30% of New Zealand's Greenshell™ Mussel production by weight (as of 2015). In the decades since its inception, the Coromandel industry has evolved from a group of innovative pioneers, into experienced producers of premium seafood, all whilst upholding environmentally sustainable practices. As the North Island capital of the aquaculture industry – with 90% of mussels grown in North Island waters passing through the District – the Coromandel marine farming industry is a significant contributor to both the regional and national economies.

A 2017 NZIER report[3] provided insights to the current value of this sector to local and national economies:

[3] *Aquaculture in the Coromandel: The contribution of marine farming to the Thames-Coromandel District*. 2017. New Zealand Institute of Economic Research (NZIER).



Aquaculture, along with other primary industries, and the tourism sector are the foundation of the Thames-Coromandel District economy, providing major contributions to GDP, and generating significant employment opportunities in areas where there are few alternatives. Currently, aquaculture provides 350 direct jobs, and another 37 part-time direct jobs within the Thames-Coromandel District, contributing approximately 4% of the District's total employment[3]. These jobs are available year-round rather than seasonally and are generally better paid than other full-time local employment opportunities in the primary sector. Further direct and indirect economic activity is provided by industries that support aquaculture (e.g. construction, transport, retailing, education and hospitality), within Thames-Coromandel and in other districts.

Direct Jobs	*Number*	*Indirect Jobs*
Mussel Farming	117	Recreational Charter Fishing
Oyster Farming	26	Marine Engineering
Mussel Processing	201	Manufacturing
Oyster Processing	43	Boat Building
		Marine Servicing
		Culinary/Hospitality Sector
Total	***387***	

Table 1. Aquaculture sector job creation in Thames-Coromandel District[4].

1.4.2 Social Importance to the Thames-Coromandel District

"Aquaculture is a key part of the social and economic fabric in the communities of Coromandel Township, Manaia and Whitianga where the majority of sector employees live and work. Iwi-owned aquaculture assists community wellbeing with contributions from marine farming co-funding education and health services" - *NZIER report 2017.*

Coromandel marine farming has become an important part of the social fabric of local communities and are generally well-supported by residents and ratepayers both as employers and as environmentally-responsible businesses. Indeed, the marine farming community is equally committed to ensuring that the coastal marine environment is kept as pristine as possible, recognising that the success of their operations is inherently tied to the stability and health of the ecosystem. The strong position on eco-friendly production has become an identifying trait of the Coromandel marine farming sector, which has leveraged this reputation in order to strengthen their performance in domestic and international markets.

The 2017 NZIER report reflected the understanding held by many that in order to realise the benefits of continued aquaculture activity in the District, critical shore-based infrastructure needs to be upgraded to handle the increased volumes of produce and inputs used.

1.5 Sugarloaf Wharf

The Sugarloaf Wharf (south side of Coromandel Harbour) is a public asset owned by Thames-Coromandel District Council (TCDC), and has been in operation (in its current form) since 1994. The current wharf was funded by both Commercial Information (Comm%) and TCDC (Comm%). Resource consent was granted to TCDC in 1993 to use Sugarloaf as a landing facility to service the aquaculture industry; currently it handles Commercial Info t of mussels per annum and exceeds its maximum capacity. Coromandel marine farmers are the primary users of the wharf facilities, however, recreational boat launching/retrieval is also allowed by the resource consent, as is parking (recreational and commercial) on the wharf platform.

Sugarloaf Wharf is critical regional infrastructure that provides multiple benefits that distinguish it from other ports in the region. The combination of general all-weather, all-tide use with proximity to the Wilsons Bay marine farming zone, proximity to associated operational support bases (e.g. Kopu Marine Service Precinct) and finally, scope to provide for other use and users elevates this development above other potential options.

[4] *Aquaculture in the Coromandel: The contribution of marine farming to the Thames-Coromandel District*. 2017. New Zealand Institute of Economic Research (NZIER).

A 2011 location options assessment[5] considered optimal wharfing sites for the Coromandel aquaculture industry, and confirmed that the Sugarloaf Wharf is the ideal location and most cost-effective solution to port infrastructure expansion in the Coromandel. There are no surrounding or feasible alternative options to Sugarloaf Wharf in the Region that can support the significant volumes of mussels projected in coming decades.

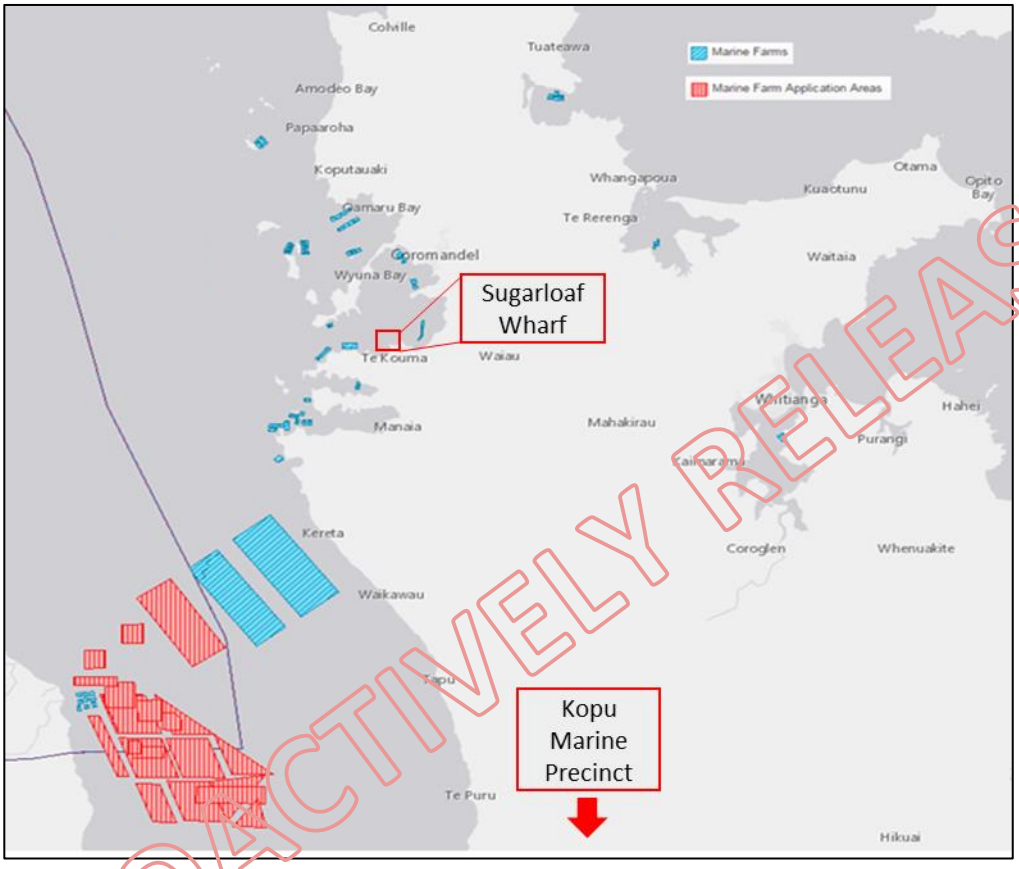


Figure 1: Sugarloaf Wharf location and existing / planned aquaculture development. Source: Sea Change Tai Timu Tai Pari, Marine Spatial Plan, 2016.

[5] *Preferred Location Options Report: Selection of Optimum Wharfing Site for Aquaculture Industry*. 2011. Prepared by: Ben-Dunbar-Smith, Hauraki-Coromandel Development Group.

Figure 2: Aerial view of Sugarloaf Wharf.

1.5.1 History of Planned Expansion

Infrastructure expansion at Sugarloaf Wharf has been the subject of consideration by the marine farming industry / CMFA and the TCDC for at least 15 years. The need to improve user safety, mitigate the likelihood of delays and provide the capacity to handle increasing production volume are not new concepts. The CMFA and local government have produced a series of studies that have explored the potential for aquaculture in the Firth of Thames and wider Hauraki Gulf, optimal wharfing locations, and what a wharf expansion project could look like.

Date	***Description***
2003	Establishment of the Sugarloaf Port Company Ltd (a non-trading entity). Shareholding of this entity is not reflective of current industry participants and it would not be an appropriate vehicle for ownership or operation of an upgraded Sugarloaf.
2009	*Waikato Aquaculture Potential*, prepared by StellarCom Consultants for the Waikato Regional Governance Group of New Zealand Trade and Enterprise.
2010	*Wharfing Infrastructure Analysis Report*, prepared for the Hauraki-Coromandel Development Group
2012	Industry proposed a new facility at Puhi Rare / Windy Point, however there were difficulties of practicality, cost and significant environmental values that ultimately led to the concept being abandoned. *Preferred Location Options Report: Selection of Optimum Wharfing Site for Aquaculture Industry*, prepared by Ben Dunbar-Smith for the Hauraki-Coromandel Development Group.

2014	Industry developed initial plans for an upgraded piled pier structure at Sugarloaf Wharf. This design evolved over the next few years, with several different versions of the piled extension and piers drafted.
2016	A TCDC Zoning process including a subsequent Environment Court Appeal, which ultimately saw Sugarloaf (previously unzoned) given a *Marine Service* zoning.
2018	*Sugarloaf Options Assessment Report,* prepared by Commercial Information Ltd for the Coromandel Marine Farmers' Association Incorporated. *Investigative Review: Risk Associated with Commercial & Public Activities at the Sugarloaf Wharf facility*, report prepared by Commercial Information.

Table 2. Chronological history of work related to the planned expansion.

1.6 Existing Arrangements

1.6.1 Layout

The Sugarloaf facility consists of 1 recreational boat ramp, 1 shared recreational/commercial boat ramp, and 2 commercial wharf berths (one berth is restricted at low tide), vehicle access parking and loading areas, office, toilet, and storage facilities. The facility is shared with recreational trailer vessels, which constrains the opportunities for increasing the current berths operational efficiency.

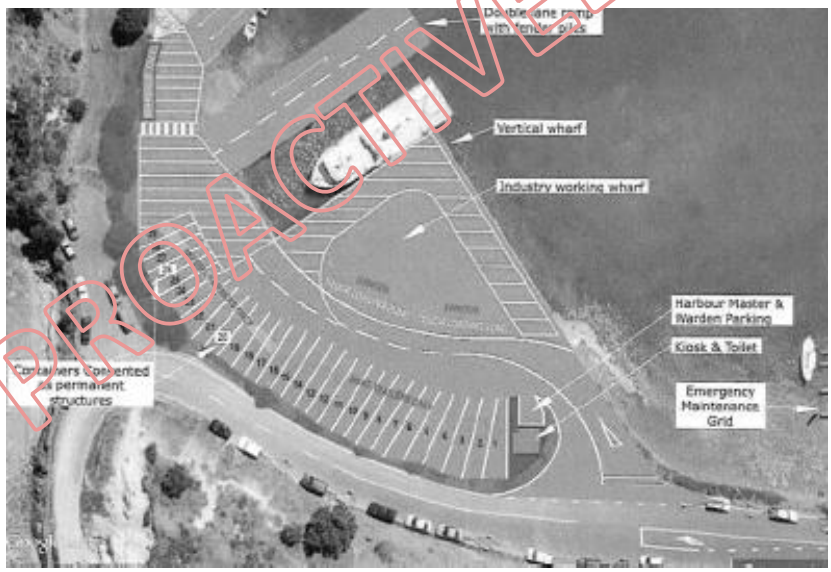


Figure 3. Sugarloaf Wharf Layout. Source: 2018 Sugarloaf Options Assessment Report, prepared by Commercial Informat Ltd for the CMFA.

1.6.2 Health & Safety

The layout of the wharf introduces significant challenges regarding the separation of recreational and commercial users. Poor zoning enforcement between the commercial hardstand area and the public boat ramp have created health and safety risks, particularly when heavy machinery is in use.

Picture 1. Recreational boat ramps in the foreground. Red dotted line indicates access route public users must take on hardstand, skirting around commercial operating zone. Source: Fraser Stobie, onsite December 2018.

Commercial Information was engaged by the CMFA in January 2018 to review health and safety risks associated with public and commercial activities at Sugarloaf Wharf. Commercial Inform determined a risk score of 22 (categorised as "*extreme*" – consequence: disastrous, likelihood: possible) under the current operations. In its current configuration, Sugarloaf Wharf relies heavily on administrative controls to manage risks. These are not deemed sustainable as a long-term solution.

1.6.3 Infrastructure Resilience

Currently the existing facility has a top of berth level of approximately 3.7mCD. Low points on the facility have been flooded due to high water levels. The existing wharf would require repair to the existing capping and anchors within the next 5 years regardless of whether or not expansion happens.

Picture 2. Sugarloaf Wharf underwater. Source: https://www.tcdc.govt.nz/Your-Council/News-and-Media/News-and-Public-Notices/News-Archived-Articles/January-20171/Post-storm-clean-up-continues-for-the-Coromandel/

1.7 The Applicant

Although the TCDC is the current owner and operator of the Sugarloaf facility, it is not the applicant for this business case. It has participated in the Project Steering Group and been involved throughout the project; and remains fully supportive of the recommendations made in this Business Case.

1.7.1 Organisational Overview

The Coromandel Marine Farmers' Association (CMFA) represents the mussel and oyster farmers of the Hauraki Gulf, who are largely concentrated around Coromandel Peninsula and at Waiheke Island. With membership from every mussel farm, and many of the oyster farms (approximately [redacted] members) within the Hauraki Gulf/Tikapa Moana, a mix of smaller holdings and larger operators (including: Pare Hauraki Kaimoana, Sanford, Sealord, North Island Mussels Ltd, and Paddy Bull Ltd) is represented, serving both domestic and international markets. The CMFA overall serves to promote, foster, advance, encourage, aid and develop the rights and interests of its members (including Iwi) and the Coromandel marine farming industry. The CMFA is responsible for paying the industry rental for use of the land-based port infrastructure at Sugarloaf where product is unloaded, which is currently owned by Thames-Coromandel District Council.

Legal Name:	Coromandel Marine Farmers Association Incorporated
Incorporation Date:	27 March, 1997
Identifying No.:	HN/848945
Entity Type:	Incorporated Society
Organisational Address:	c/- Business One Limited, PO Box 22, Thames 3540
The company's website:	https://coromfa.co.nz/

2 The Strategic Case – Making the Case for Change

2.1 Business Case Assumptions

The following assumptions are applicable to this Business Case;

- Commercial Information
- Separating recreational from commercial users is necessary.
- No other existing, alternate facilities exist for recreational users, so they need to remain at Sugarloaf but be separated from commercial users.
- Sugarloaf Wharf is the best location to meet the objectives of the aquaculture sector.
- The aquaculture sector will grow if infrastructure constraints are removed.
- The construction period must allow business as usual (loading / unloading) for the sector.
- Climate change considerations should be included in the design.
- Consideration of public roading upgrades are excluded (this is being addressed in the *'Connected Journeys'* project led by TCDC).

2.2 Investment Objectives

The four investment objectives for this proposal are:

1. *An upgrade that reduces health and safety risk.*
2. *A development that meets the current and future needs of the sector.*
3. *A development that satisfies the needs of existing recreational users.*
4. *A development that will withstand the effects of climate change.*

2.3 The Need for Investment

2.3.1 Future Growth and Capacity Constraints

Outdated and inefficient infrastructure is impacting the growth aspirations, productivity, and health and safety risk, of the aquaculture industry in the Thames-Coromandel District. Sugarloaf wharf is at capacity, which is now seriously inhibiting the investment in, and will in the near future, halt the growth of the sector.

Even at current marine farming production levels there are times when the insufficient wharfage results in operational inefficiency as mussel barges and work boats queue for docking. Additionally, a lack of space on the hardstand to accommodate trucks (for transporting product) has resulted in the displacement of large vehicles onto the adjacent public roading. The congestion on and adjacent to the port not only reduces the efficiency of operations, to the marine farmers, but also compounds the significant health and safety concerns at Sugarloaf Wharf. As the currently undeveloped marine spaces become productive, the additional volume of product coming into Sugarloaf Wharf over the next few decades will exacerbate the inefficiency issues at the wharf, threatening the overall viability of the facility for aquaculture activities.

2.3.2 Health & Safety Risk

Health and safety management is challenging, as commercial loading zones are often traversed by public users. Poor separation of the recreational and commercial zones means that hazards such as heavy machinery (e.g.

forklifts, semi-trucks, cranes) can pose a risk to recreational users who come into close proximity. Although the CMFA and Industry have specific health and safety guidelines for employees, it is difficult to ensure that all recreational users of the Port abide by these regulations. The physical layout of the Port is also not conducive to easy management of safety precautions, overlapping recreational and commercial zones fail to effectively isolate the commercial sections from the recreational boat ramp and accessway. This is depicted in Figure 4 below.

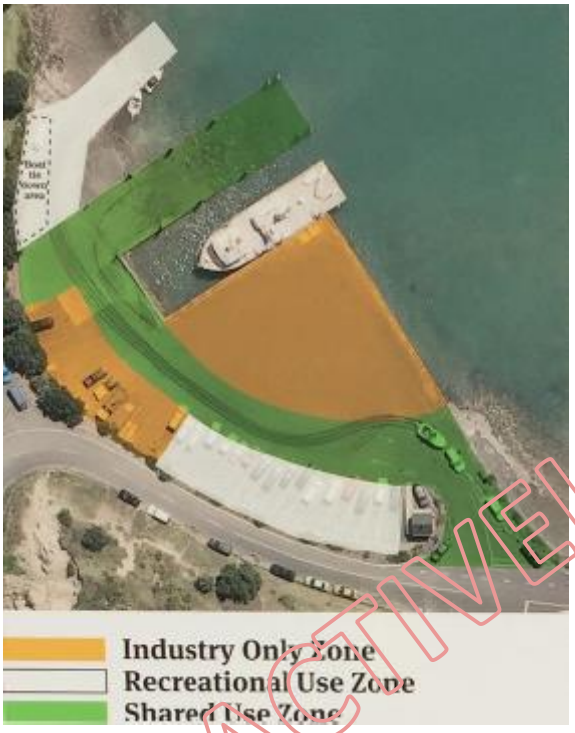


Figure 4. Sugarloaf Wharf Traffic and Parking Plan. Source: Investigative Review: Risk Associated with Commercial & Public Activities at the Sugarloaf Wharf facility (2018), prepared by Commercial Information .

> ***"It is impossible to create sufficient safe working areas free from public without increasing the size of the wharf and changing the overall design. Similarly, the current availability of berths for barges is leading to and encouraging, decisions and behaviours that are not safe, such as mooring alongside other vessels and undertaking lifting over them. The need to be productive and efficient is influencing decisions that affect safety".***
>
> - *Investigative Review: Risk Associated with Commercial & Public Activities at the Sugarloaf Wharf facility*, report prepared by Commercial Information .

The *Health and Safety at Work Act 2015* and related regulations require that all workers and others in or on a workplace are given the highest level of protection from health and safety risks. TCDC, as the wharf owner and operator, must, so far as is reasonably practicable, ensure the health and safety of workers (marine farmers), any other workers it influences or directs (truck operators), and other people (general public) who could be put at risk by the work carried out. Workers and other operators also have duties in this regard.

Failure to maintain acceptable health and safety standards means that the facility (and associated operations) could be at risk of being shut down, or injury / fatality may occur. In the case of an accident, the owner of the facility is likely to face significant scrutiny through litigation processes. These risks need to be mitigated as a matter of urgency.

2.3.3 Needs of the Public

Discussions with TCDC during the *Sugarloaf Options Assessment Report* prepared by Commercial Inform in early 2018 highlighted a Council preference for recreational facilities to be completely removed from Sugarloaf Wharf and relocated to Furey's Creek (Coromandel Town). However, strong support from the public for a recreational launching facility to remain at Sugarloaf Wharf has ensured that the port will remain dual-purpose, catering to both the public and industry. TCDC have been clear that if an upgrade to Sugarloaf Wharf goes ahead, that it does not want the new recreational boat ramp design to exceed the size of the existing boat ramp footprint – but local users will have guaranteed access to recreational facilities.

2.3.4 Climate Change Resilience

Recent climatic events have adversely impacted on efficient industry operation at/from the Sugarloaf. This has occurred through overtopping and submergence of the landing facility itself, and restrictions on the ability of heavy vehicles to access Te Kouma Road and the Sugarloaf via the coast road (SH25). Extreme weather events are predicted to become more frequent in the future, and this along with future sea level rise will be incorporated into the design and construction of the upgraded facility.

2.4 Strategic Alignment

The Sugarloaf project meets most objectives of the Provincial Growth Fund, as well as aligning with national, regional and district priorities as summarised below (see Appendix A for a detailed summary of all strategic alignments).

PGF Outcome	*How the project will impact this outcome*
Increase economic output	Estimated total net economic contribution from aquaculture of ~$87.8 million over 35 years, comprising:

Item	Con%
Benefits	
Processing	Commercial
Farming	Commercial
Labour	Commerc
Total	Commercial Info
Costs	
Capital expenditure (including deadweight losses)	Commerc
Cost to develop the marine farms	Commerc
Wharf costs (operating costs)	Comme
Other investments (vessels, factory, transport)	Commerc
Farming (cost to deliver goods)	Commercial
Processing (cost to deliver goods)	Commercial
Total	Commercial Info
Ratios	
Net position (benefits *less* costs)	Commerc
Net annual position (Net/35years)	Comme
Return on government investment*** ($1: $...)	Commerc
Cost-benefit ratio	Commerc

($'m; NPV @Con% over 35years)

Enhance utilisation of and/or returns for Māori assets	Iwi are already an active and significant investor and owner of aquaculture assets in the area: • Pare Hauraki Asset Holdings Ltd; the Treaty of Waitangi commercial fisheries and aquaculture asset holding company for Pare Hauraki holds Comm% of the consented water space, including Comm hectares of recently purchased water space. • Commercial Information • Commercial Information • Commercial Information Hauraki Iwi investments in the aquaculture industry encompass a wide portfolio of areas, from farming, contracting, processing through to retailing. Pare Hauraki Iwi's economic strategy includes a major strategic focus on maximising the performance of aquaculture assets, and is therefore highly supportive and integral to Sugarloaf development. Iwi negotiated for the creation of a new Colville marine farming zone as part of its aquaculture settlement. All these initiatives reflect Pare Hauraki's strategic commitment to growing aquaculture in their rohe. Pare Hauraki Kaimoana also have investments in mussel farming in Opotiki and provide support to new spat initiatives in Aotea Harbour, Kawhia and Te Hiku. In addition, Waikato Regional Council has recently granted Pare Hauraki Kaimoana the authority to apply for resource consents to occupy Commetc hectares Commetc ha commercial, Comm ha for Iwi) of finfish farming space in the Firth of Thames following a tender process. This new space for finfish farming is expected to *"generate additional revenue of more than $50 million and dozens of full time jobs through expansion and diversification of the regional aquaculture industry"* (WRC Press Release 25/09/2018).
Increase productivity and growth	The mussel sector has significantly increased its consented area in the immediate past and will continue to do so. In addition, growth will occur in the future through fin fish farming. With the local sector already generating $73 million in exports and >$30 million in domestic retail sales, we are anticipating the planned growth to more than double revenue to approximately $200 million in the coming decades. Productivity is expected to increase at ~Comme% every five years.
Increase local employment and wages (in general and for Māori)	Aquaculture growth will provide a significant boost to the region in terms of jobs; estimated direct net job growth within Thames-Coromandel District is likely to increase to Commercial Informatio new FTEs.
National Alignment	

2017 Coalition Agreement: Labour Party & New Zealand First, *Coalition Priorities*.	The **New Zealand First – Labour 2017 Coalition** Agreement provides the following with regard to central government priorities to progress regional development: **Regional Economic Development and Primary Industries** • *Recognise the potential for aquaculture in promoting regional economic growth."*
Aquaculture New Zealand	*"A critical pinch point for growth is current wharfage infrastructure. Virtually all marine farming activity in the region is serviced by the limited facilities at Sugarloaf. This is a shared commercial and recreational facility. Even at current marine farming production levels there are times when the insufficient wharfage results in operational inefficiency as mussel barges and work boats queue for docking. Health and safety management is also challenged as the commercial loading zones are often traversed by public users …."* (Aquaculture New Zealand, Letter of Support).
Regional Alignment	
Waikato Regional Economic Development Agency / *Te Waka*	The Te Waka Regional Economic Development Programme 2018-2022 repeatedly identifies aquaculture sector projects as top priorities: *"Section F.1. Develop the Waikato aquaculture (marine farming) industry to reach its full potential for the Waikato and New Zealand including as priority projects:* • *Development of the Sugarloaf Wharf at Coromandel …* • *Develop finfish opportunities in the Hauraki Gulf* • *Build local employment opportunities through greater processing and value-add in the Waikato".*
Waikato Regional Council - Draft Regional Aquaculture strategy	~Comm% of the currently consented aquaculture areas in the Hauraki Gulf are within the WRC boundaries. WRC requires through its consents that all mussel farm landings occur only at approved landing sites, among which Sugarloaf is the only functional option.
Local Alignment	
Thames Coromandel District Council, 2018-2028 Long Term Plan	TCDC has identified infrastructure resilience as a key issue for the District and is focused on ensuring the long-term sustainability of these assets. *"Critical coastal assets include … Sugarloaf wharf and jetty, …" (Thames-Coromandel District Council Long Term Plan 2018-2028).*

Table 3. Strategic alignment at local, regional and national levels.

2.5 The Case for Change

2.5.1 The Opportunity for Growth

The large economic growth opportunities for the Coromandel and surrounding districts and regions that will arise as a result of this development mean that this project is not a private investment for private benefit, but rather an opportunity to develop a public asset with strong cross-industry links that will ultimately produce significant public good.

Private investment to date has been made with confidence that the planned expansion of the Wilson Bay Farming Zones will proceed, and in light of the strong market forecasts for mussel products internationally. Although investment was carried out with the knowledge that critical pinch points like the Sugarloaf Wharf would require an upgrade, it is not appropriate that the aquaculture sector invest in publicly owned shore-based infrastructure. The ongoing development of the existing Commercial Info ha, together with the further Commercial Info ha of additional consented space to be developed over the next 25 years, and an additional Commercial Info ha of new mussel space projected expected to be consented in the coming years has created an urgency to the longstanding need for Sugarloaf development. The CMFA will track and monitor line development as growth in the sector ramps up following the upgrade of Sugarloaf Wharf.

Resource consents granted for new marine space contain clauses that compel the consent holder to give effect to the consent, or risk their consent lapsing. The consent conditions therefore de-risk the PGF investment in Sugarloaf by providing a legal framework that explicitly encourages the rapid development of water space. As an example, Clause 12 of the Resource Consent issued by Waikato Regional Council (2017) to Pare Hauraki states:

The consent holder shall give effect to this consent by:

a) *Commencing development within one year from the date on which this resource consent was granted or as otherwise agreed in writing by Waikato Regional Council; and*
b) *Completing development of Stage 1 within three years from the date on which this resource consent was granted or as otherwise agreed in writing by Waikato Regional Council, subject to condition 13; and*
c) *Completing development of the marine farm authorised by this resource consent five years from the date on which this resource consent was granted or as otherwise agreed in writing by Waikato Regional Council, and subject to condition 13.*

Future private investment of approximately $Commercial Information from the aquaculture sector will be required in coming decades in order for mussel production to reach ~Commercial Info tonnes / annum (at year 35). A rough breakdown of these expected costs is illustrated below:

Direct Investment Summary

Lines	Commercial Information
Vessels	Commercial Information
Factories	Commercial Information
Transport	Commercial Information
Spat	Commercial Information
Total Industry Investment	$ Commercial Information

Source: Discussion from Steering Group

NB: Not adjusted for inflation.

Figure 5. Breakdown of Industry investment required over the next 35 years.

Figure 6. Cumulative Industry investment required over the next 35 years to realise the growth potential of the available farming space.

2.6 Iwi Alignment

CMFA contracted Harry Mikaere of Ngāti Pūkenga, and trustee of the Hauraki Māori Trust Board, to prepare a Cultural Impact Assessment documenting Māori cultural values, interests and associations with the proposed development at Sugarloaf Wharf, and the potential impacts of the proposed activity on these (see Appendix K).

2.6.1 Context

Pare Hauraki Iwi, via Hauraki Maori Trust Board (HMTB), has mana whenua status for the relevant area. The 12 Iwi of Hauraki are:

Ngāti Maru	Te Patukirikiri

Ngāti Porou ki Harataunga ki Mataora	Ngāti Whanaunga
Ngāti Tara Tokanui	Ngāi Tai
Ngāti Hako	Ngāti Tamaterā
Ngāti Hei	Ngāti Paoa
Ngāti Pūkenga ki Waiau	Ngāti Rāhiri Tumutumu

Commercial Information

Sugarloaf Wharf, the subject area, was formerly the site of Ariki Tahi paa, which was once the stronghold of Ngāti Whanaunga. The other 11 Iwi have deferred to Ngāti Whanaunga as having the rights and interest in regard to the Sugarloaf Wharf development and the Cultural Impact Assessment (CIA). Both Ngāti Maru and Ngāti Tamaterā have also given tacit consent for this project. The Sugar Loaf Wharf Expansion project is set within the landscape of Tiikapa Moana (Hauraki Gulf), which is of high cultural and spiritual significance to Ngāti Whanaunga. This important cultural landscape is part of the network of rivers, streams and estuaries that flows and connects to Tiikapa Moana (Hauraki Gulf), Hauraki and Te Waitemataa.

Commercial Information

2.6.3 Iwi as Investor

Pare Hauraki Iwi are already an active and significant investor and owner of aquaculture assets in the area since the industry's inception. Iwi are invested in the Coromandel aquaculture sector in several ways:

- Pare Hauraki Asset Holdings Ltd also trading as Pare Hauraki Kaimoana (PHK); the Treaty of Waitangi commercial fisheries and aquaculture asset holding company for Pare Hauraki. Owning Comm% of the consented water space, including Comm hectares of recently purchased water space.
- Commercial Information

- Commercial Information
- Commercial Information

Hauraki Iwi investments in the aquaculture industry encompass a wide portfolio of areas, from farming, contracting, processing through to retailing. Pare Hauraki Iwi's economic strategy includes a major strategic focus on maximising the performance of aquaculture assets and is therefore highly supportive and integral to Sugarloaf development. Iwi negotiated for the creation of a new Colville marine farming zone as part of its aquaculture settlement. All these initiatives reflect Pare Hauraki's strategic commitment to growing aquaculture in their rohe. Pare Hauraki Kaimoana also have investments in mussel farming in Opotiki and provide support to new spat initiatives in Aotea Harbour, Kawhia and Te Hiku.

In addition, Waikato Regional Council has recently granted Pare Hauraki Kaimoana the authority to apply for resource consents to occupy Commerc hectares Commerc ha commercial, Comm ha for Iwi) of finfish farming space in the Firth of Thames following a tender process. This new space for finfish farming is expected to *"generate additional revenue of more than $50 million and dozens of full-time jobs through expansion and diversification of the regional aquaculture industry"* (WRC Press Release 25/09/2018).

Iwi will be direct financial beneficiaries of the planned future growth; 20% of any new consented space is allocated to Iwi under the *Maori Commercial Aquaculture Claims Settlement Act 2004*. However, this growth opportunity is contingent on having appropriate shore-based infrastructure that will facilitate the landing of product and transport to markets. The proposed development provides a unique opportunity to increase the return on Māori-owned water space, assisting the training, upskilling and job opportunities for Māori and provide further investment opportunities to achieve intergenerational aspiration.

3 Infrastructure Upgrade

3.1 Status Quo

Sugarloaf Wharf cannot continue to operate in its current state. The facility has reached a point where imminent growth of aquaculture, extreme health and safety risks, operational inefficiencies, and lack of resilience to climate change threaten the ability for the port to remain functional. The industry urgently needs safe, user-friendly infrastructure to bring produce ashore and realise the economic potential of this very significant industry for the Coromandel, the Waikato region and New Zealand. With significant mussel related marine farming growth anticipated along with the recently announced Pare Hauraki Kaimoana finfish farming development, the current wharf use issues will only become more acute. The potential for the wharf to be shut down due to health and safety risks would have a massive impact upon the ability of marine farmers to bring their product to market, and will subsequently affect the local and national economies.

TCDC does not have funding for a Sugarloaf upgrade, and the future opportunity provided by aquaculture growth in the District is enormous. Conversely, the opportunity cost of not doing this work, in terms of lost jobs and wellbeing is also significant.

3.2 Process to date

Previous studies considered as part of the detailed design process include:

- *Preferred Location Options Report: Selection of Optimum Wharfing Site for Aquaculture Industry*, (Hauraki-Coromandel Development Group, 2011).
- *Sugarloaf Wharf Options Assessment Report* (Commercial Inform, 2017).
- *Sugarloaf Wharf Design Basis Statement* (Commercial Informa 2018 – prepared as part of this Business Case).

The 2017 *Options Assessment Report* considered seven expansion options for the Sugarloaf Wharf facility. The CMFA board has endorsed expansion presented as 'Option 7' (the project), which has a new recreational facility towards the East of the existing wharf. The Option 7 layout although preferred, required some refinement during preliminary design for this Business Case. Various alternatives were considered, including expansion options that utilise cranes to reduce deck expansion requirements. However, based on the CMFA's operational requirements, including the existing vessel fleet's deck configuration, it was acknowledged that this was not a feasible option at Sugarloaf.

In November 2018, at the start of the preliminary design stage for this Business Case, the design team visited the wharf site and held an industry workshop in Thames. The CFMA board subsequently approved the 'long term - two wide pier' option for progression in the preliminary design.

3.3 Technical Design

3.3.1 Functional Requirements

CMFA's functional requirements are:

General

Layout, berthing requirements, depths and elevations

CMFA's functional requirements are:

- Berth structures will be accessible under all weather conditions and will accommodate 7 No. barges
- The design should cater for phasing of the construction of the 7 berth facility
- Maintained berth and basin depth suitable for all tide access.
- A quay elevation 400mm higher than the current wharf to account for sea level rise
- Suspended deck berths are to be provided.

- A minimum width of 25.5m will be provided along the suspended deck to enable berthing at the end of the piers and to provide sufficient room for offloading operations.

Design Vessels

All tide access should be provided for vessels, with a draft of 2m. Similarly, the length of the design vessel is indicated at 30m; vessel lengths vary with the average vessel length of 22m. The quay should be designed to cater for variances in beam, length and draught.

Basin Dredged Depth

The dredge depth at the Sugarloaf berth should accommodate all tide access for the design vessel.

Recreational facility

The spatial requirements for the recreational facility are to match the existing facility:

- Parking for 15 boat trailers
- 1 kiosk and toilet structure 6m x 6m

Commercial facility

The requirements for the commercial facility are as follows:

- Berthing for 7 vessels
- Parking and storage space of ~Commercial Info2
- Power (Photovoltaic) for lighting and automated gate
- Facility to be fenced
- Ability to discharge and treat vessel waste on land

Continuation of wharf activities

Industry must be able to utilise the wharf during construction, ensuring that productivity is maintained while the port is upgraded

3.3.2 Scope of Physical Works

The scope of the physical works is summarised as follows:

- Dredging of the approach channel to the existing Sugarloaf Wharf to provide adequate navigable depth for all tide access;
- Provision of a 7 berth facility to allow for future industry growth to Commercial Info tonnes / year;
- Provision of additional back-of-berth space to cater for the future growth;
- Provision of a new recreational facility that is separated from the commercial operations and provides 15 parking bays.

3.3.3 Wharf Design

The preferred layout endorsed by CMFA provides two wide (Commerci m) piers for loading and offloading operations and is discussed in further detail in the full Sugarloaf Wharf Preliminary Design report (Appendix G, and shown in figures below).

The estimated probable cost of this Commercial Wharf option is $Commercial Information (including a Comm% contingency).

The estimated probable cost of this Recreational Wharf option is $Commercial Informati (including a Comm% contingency).

The total estimated probable cost of this development is $Commercial Information before inflation

The wharf geometry has been determined to provide berthing facilities for 7 No. barges. A Commerci metre minimum width has been provided along the full length of the finger piers. Fender piles are provided along the berthing length of the finger pier to support the design vessels at Comme m spacing. The layout option endorsed by CMFA provides sufficient space for 9 truck parking/loading bays and 7 berths. The berthing requirements have been optimised for this growth projection based on the delay analysis and spatial requirements noted in this document. Construction will require work to be undertaken in stages to minimise the impact to operations. The recreational area will provide opportunity for placement of dredged material and can be utilised as a construction platform during construction. Should the recreational facility not progress construction staging will lengthen the construction duration due to the requirement to keep the existing facilities in operation.

The layout assumes that the wharf will be extended over the existing ramp to provide adequate space for future development and assumes the recreational boat ramp will be utilised by industry in its current form. The provision of finger piers at right angles to the existing hardstand, which can be implemented immediately or as growth demands, will enable future berth capacity to increase with the minimum land take (seabed loss).

B train trucks will be able to access the centre of the piers (Commerc m) for loading and offloading of the vessels at the ends of the piers, freeing up additional space for offloading the vessels perpendicular to the hardstand. This provides a further Commercial 2 of storage and parking space when compared to a previously considered narrow pier layout.

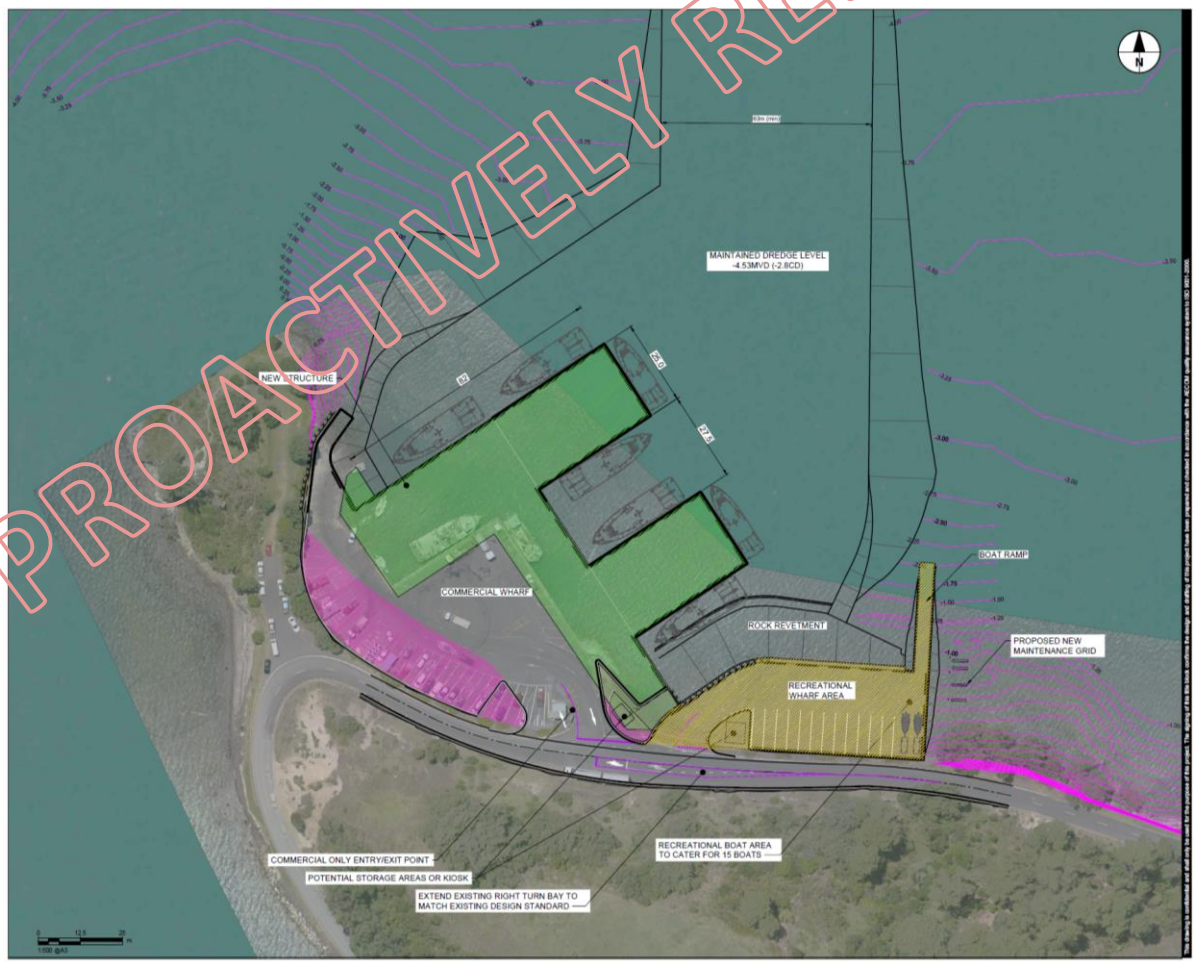


Figure 7. Future wharf layout. Prepared by Commercial Information .

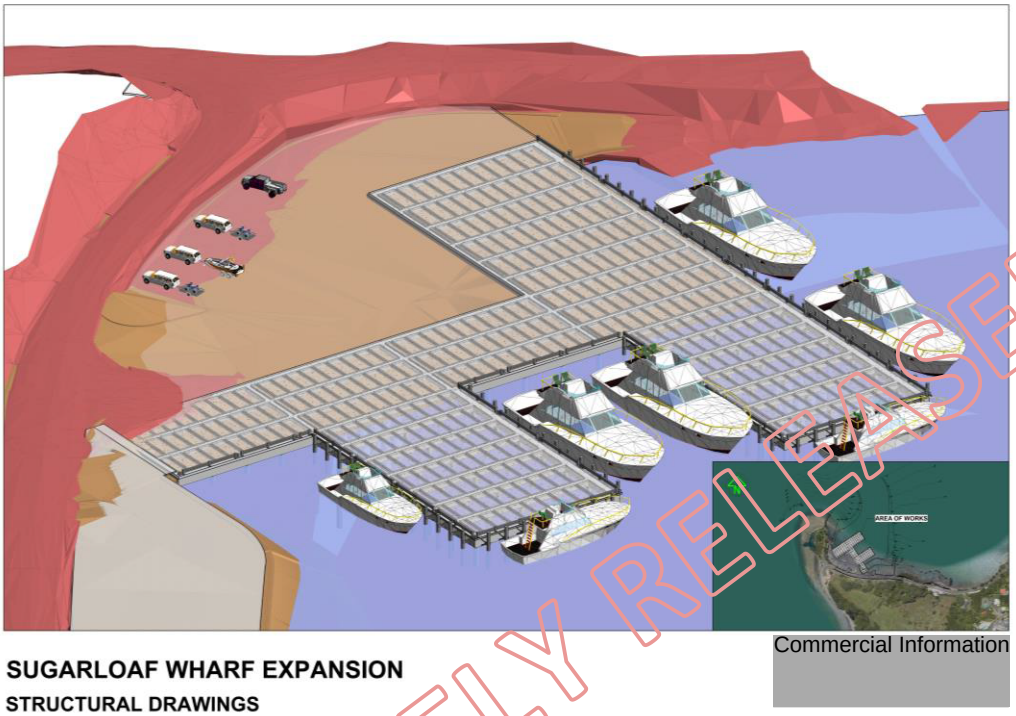


Figure 8. 3D structural drawing & layout plan of proposed Sugarloaf Wharf Development. Prepared by Commercial Information.

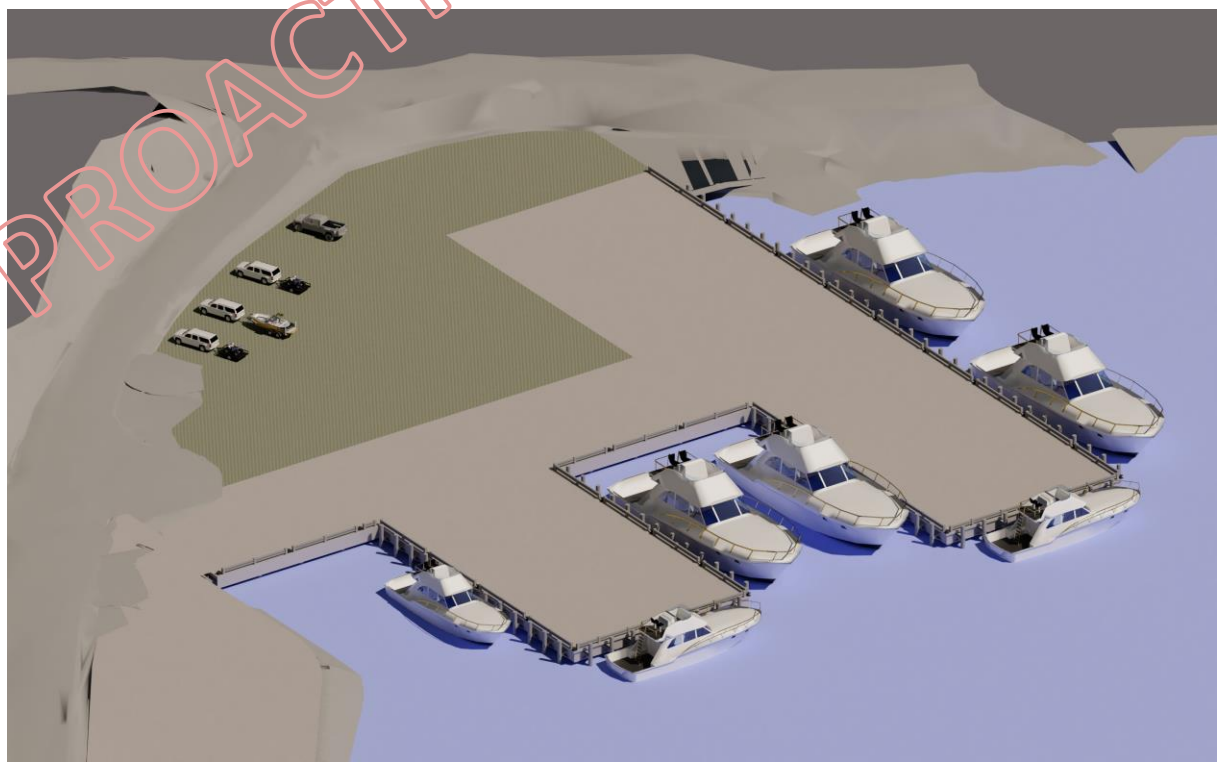


Figure 9. 3D layout plan of proposed Sugarloaf Wharf Development. Prepared by Commercial Information.

Figure 10. Staging plan for Sugarloaf Wharf expansion. Source: Preliminary Design Plan (2019), Prepared by Commercial Information.

Contingency

The contingency figure of $Commercial Inf is the budget for unknowns and project risks identified during the Preliminary Design; this is explored in greater detail in Appendix P. Contingency was assessed via a Quantitative Risk Assessment process; the percentage of contingency vs estimated construction cost is within the order of magnitude expected for the level of design undertaken. The base date for the estimate is Commercial Information. The inflation figure provides for pre and post construction escalation. This was calculated by Commerci based on the programmed construction commencement date of Commercial Information (driven by expected timing for the resource consenting process), with anticipated construction related escalation based on an assessment of the current construction market.

Competitive Procurement

Commercial Information

Commercial Information

Te Kouma Rd Access Modifications

The access from to the wharf from Te Kouma Road will be designed to match the existing standards currently used. Additional shoulder and lane widths will not be provided as the route is low speed and traffic volumes are very low; to widen would require significant cutting and retaining at the existing bluff. Existing sight distance to the start of the right turn bay slot is 105m and the design will aim to replicate this sight distance with the updated layout if possible within current site constraints. Additional signage will be proposed to warn of a concealed entrance. Another option if it is required would be to mount a mirror on the outside of the preceding curve as has been done on other sections of the road nearby.

Maintenance

Routine inspection and maintenance is required to achieve the 50 year functional design life of the facility before change of use. However, for some elements it is not practical to carry out significant maintenance and these shall be designed with sufficient durability to last for the functional design life of the structure after which major repair would be acceptable for a significant change of use of the structures. Elements with a practical life to first maintenance less than the design life will be designed to be readily replaceable.

3.3.4 Resource Consent Considerations

Commercial Information provided a scoping assessment of the key Resource Management Act issues relevant to resource consents from the Waikato Regional Council and the Thames-Coromandel District Council. The full resource consent report is attached in Appendix [I].

Summary

The project will require the following resource consents from the Waikato Regional Council and / or the Thames-Coromandel District Council:

- A land use consent for the establishment of marine equipment storage, maintenance and harvesting operations at the wharf (and potentially for compliance issues related to noise, vehicle access, carparking and vehicle manoeuvring);
- A coastal consent for the extension of the wharf structure;
- A coastal consent for the disturbance of the seabed (including any ancillary discharges) associated with the extension of the wharf structure;
- A coastal consent for dredging (including maintenance dredging);
- A coastal consent for reclamation of the seabed to form the boat launching area and parking for cars / trailers;
- A consent for the discharge of stormwater and contaminants; and
- A coastal consent for the damming or diversion of coastal water.

Several technical assessments will be required to support the resource consent applications for the project, including:

- Visual, natural character and landscape;
- Cultural matters (to be undertaken by the relevant Iwi);
- Assessment of alternatives;
- Recreation;
- Traffic;
- Noise;

- Coastal processes and natural hazards;
- Ecology and coastal water quality; and
- Engineering and construction management.

Diesel Bunkering

The supporting documentation for the CMFA's application to establish the tanker refuelling operation includes an assessment of options for the provision of fuelling at the Sugarloaf which comes out in favour of the mobile tankers over an in- ground or above ground storage tank[6]. Issues against an underground tank included:

- Increased risks of spill, leaks and contamination
- Significant capital and maintenance costs
- Construction effects
- Complicated land ownership issues

The timing of an application requires consideration. If the Sugarloaf Wharf facility is to be extended with changes to the access arrangements, a new land use consent will be required for the operations at the wharf. If diesel bunkering was chosen as the preferred way forward, it would be appropriate to locate the diesel bunker with the other activities (existing ones as currently consented and any additional aspects) that a new consent would accommodate.

Consenting Pathway Forward

The relevant statutory planning documents do provide a positive pathway for the consenting of the wharf expansion. In this regard, there is clear policy recognition of the need to provide the social and economic wellbeing of people and communities via the undertaking of activities in the coastal environment. There is also recognition of the fact that some activities have a functional need to be located in the coastal environment – which is obviously the case for this project.

However, there is also a need to consider the sensitivity of the coastal environment and its importance to a range of groups (recreationalists, iwi, the general community). There is also a need to ensure that the design and construction of the wharf expansion is responsive to the key environmental and cultural values in this location – including natural character values, cultural and historic heritage, amenity values and recreational values. How potential effects on these key environmental values are managed will be critical to securing the necessary resource consents. A compelling analysis of options that have been considered will also be a key aspect in securing resource consents for the project – particularly for the reclamation. It will need to be demonstrated that the design proposed is clearly required and that alternatives with less impacts on the environment are not viable or feasible. Some preliminary engagement with iwi and key stakeholders will assist in ascertaining the extent of opposition to the project, and what the key focus of the technical assessments should be on.

In order to re-risk this investment from a consenting perspective, we have taken into account the known risks to the consenting process, and have adjusted the technical design accordingly. This has included adjustments to the lighting plan (reduced photic period, light intensity), the local roading access (e.g. modifications to the port access points, additional signage), iwi interests (e.g. cultural impact assessment), and avoidance of large industrial equipment (i.e. cranes) that introduce extra noise and visual disturbance. In addition, we have also planned for the use of dredged material as infill on the construction site.

The renewal of the Waikato Regional Coastal Plan will provide the necessary framework for seeking new consents for the upgraded facility, however the investment is also de-risked by the fact that it is an existing use with resource consent. We have also sought legal advice regarding the potential impact of the Marine and

[6] See Appendix N.

Coastal Area Act (MACAA) on coastal asset ownership, and have been advised that this should not be considered a risk from a consenting perspective.

3.3.5 Health & Safety

Commercial Information has reviewed the engineering design (see Appendix J). It found that this design has addressed many of the original health and safety concerns identified in the 2018 report for the CMFA[7]. Many of the previously identified hazards and risks can now be more effectively controlled. The most significant improvement is the creation of separate working and recreational areas. The creation of a separate workspace, along with the two-pier design, has significantly increased the surface area for work to be conducted. This in itself is a vast improvement if the workspace is used appropriately. A potential issue that may occur with the new design is that industry fills this space and the risks associated with congestion recur but now on a larger scale. Potentially, there will be more vessels berthed at any one time, more cranes / lifting occurring at the same time, more commercial vehicles and large B trains and consequently more mobile plant operating at the same time. The following aspects of the design provide improvements to the structure and provide the opportunity for safer operations:

1. Having an additional and separate recreational user space, away from the working environment is an ideal solution and addresses many of the existing hazards and risks that are present and require managing, particularly whilst members of the public are regularly interfacing with the work environment.
2. Having 7 berths will help reduce the issue of vessels parking out at sea while waiting for a berth, which can increase frustration and potentially cause decisions to be made that are less than safe in order to make up the time. The extra berth space will reduce the need for operators of vessels lifting 1t bags of mussels over another vessel berthed alongside. Again, it should also remove the need for vessels to be purposely 'grounded' at the boat ramp to offload equipment from the front of the boat.
3. The work area being equipped security perimeter fencing will provide a secure environment restricted of 'unknown' or 'uncontrolled' hazards that are presently being introduced by others from outside the industry.
4. Power, and specifically lighting, has been introduced into the draft design plan which should address the issue of early starts and late finishes (particularly in Winter) where vessel staff can be required to load / unload vessels in the dark.
5. The new planned two pier design has increased the working area significantly, which will help create a fit for purpose work space.
6. The expansion of the wharf has addressed the lack of a fit for purpose work area for B-Trains to operate safely, i.e. drive in, turn around and leave.
7. Increased area for trucks also addresses the issue of trucks being parked on the roadside waiting to enter the work area, which causes traffic issues and increases risk to public and other road users.
8. Similarly, there is now sufficient room to store items, use light commercial vehicles for loading and offloading equipment.
9. The draft plan allows for more room for forklift operations in and around B Train trucks.
10. The design will introduce ladders and grab chains for crew egressing vessels.
11. The wharf edge will have purpose-built barriers installed, as the current wharf does, but these will also be installed in the centre of the finger piers creating three distinct working areas within the pier. This will help keep mobile plant separated from adjoining operations, reducing the overall risk of collisions.

[7] *Investigative Review: Risk Associated with Commercial & Public Activities at the Sugarloaf Wharf facility*, report prepared by Commercial Information.

4 Ownership & Governance

Commercial Information was engaged to consider the options for:

- Legal structure (or structures) for owning and operating upgraded Sugarloaf Wharf facilities (including the beneficial ownership/shareholding of any new entity(s) proposed); and
- Governance rules (i.e. constitutional arrangements) for such new entity(s); (see Appendix L for full report).

What is 'optimum', in this context, was viewed primarily from the point of view of current and future marine farmer uses of the Wharf, though the priorities of other stakeholders also had some influence. The following key characteristics of ownership and governance arrangements were developed and tested through workshopping with marine farmers:

- Sustainability – ability to secure high-quality governance and management while minimising overhead costs.
- Durability - ability to provide long-term (intergenerational) ownership and management of the wharf/port as an industry/community asset.
- Security – ability to secure and maintain the confidence of a funder/lender.
- Responsiveness – ability to ensure that the best interests of the marine farming industry remains a priority.
- Safety – ability to appropriately manage risks and limit liabilities.

The following considerations emerged as significant influencers of ownership and governance options:

- Operational risks – the costs and risks of establishing and running a stand-alone operating entity for Sugarloaf Wharf in a manner that complies with best practice under the Health and Safety at Work Act 2015, and related requirements, were seen as prohibitive, with an existing institutional operator (i.e. the Thames Coromandel District Council (TCDC)) preferred.
- Commercial Information
- Ownership options are largely constrained by funding options – in particular, an equity funder(s) of the redevelopment would require the wharf to generate a sufficient profit to provide an acceptable return on capable. Having the Wharf operate on such a basis would not be affordable for marine farmers. As a result, a standard commercial structure, such as company incorporated under the Companies Act 1993, may not be the best vehicle for intergenerational ownership of a shared community/industry asset.
- Governance is key – while marine farmers initially felt that it was essential that they own the redeveloped Sugarloaf Wharf, it became clear through workshops that the underlying issue was a desire to maintain a level of control or influence that would ensure future access to the facilities. As a result, this issue becomes more important in design of governance arrangements than in choice of an ownership structure *per se*.

Given those considerations, four possible ownership structures were assessed against the key characteristics noted above:

	Council (or CCO)	Asset-owning Trust	Mixed Ownership Venture
Sustainability	1	2	2
Durability	1	1-2	3
Security	1	1-2	1-2
Responsiveness	2	1	1-2
Safety	1	2-3	2-3
Total	**6**	**7-10**	**9-12**

Where:

1 = optimum
2 = acceptable
3 = unsatisfactory

NB: an SPV with Crown involvement was also considered but deemed likely to be unachievable.

On balance, therefore, it was concluded that continuing ownership and operation by TCDC, with some arrangements put in place to allow marine farmers a role in governance, would be optimal. This would require the wharf to be [redacted]% grant funded as Commercial Information [redacted]

Commercial Information [redacted]

5 The Commercial Case

5.1 Commercial Operating Model

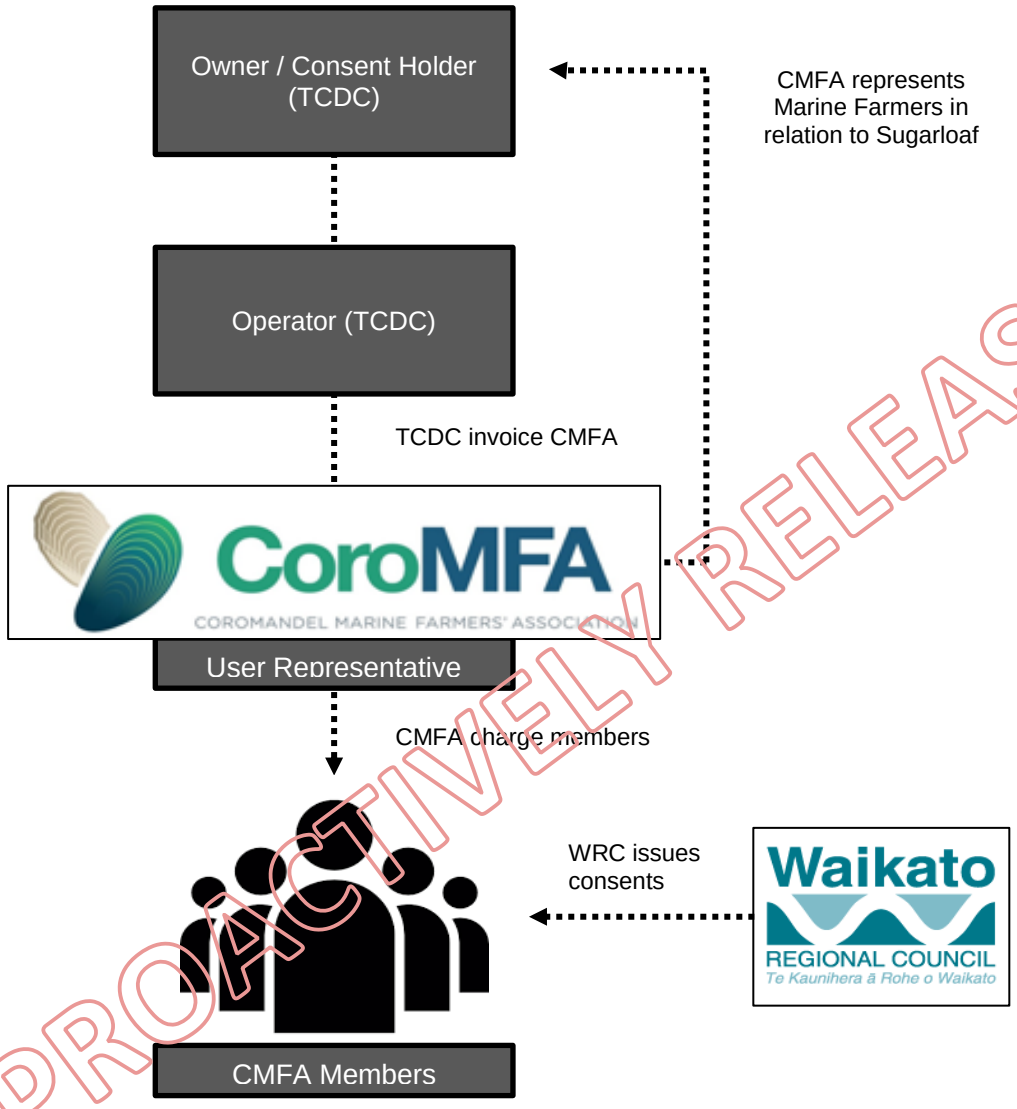
Commercial Informa ion was engaged by the CMFA to undertake Financial Modelling and a Commercial Analysis with respect to the Sugarloaf Wharf development (see Appendix H).

5.1.1 Summary of Key Points

- Currently the wharf is effectively owned and operated by TCDC with allocation of costs being levied to Marine Farmers through the CMFA based on number of lines in the water.
- The wharf is critical infrastructure for the regional economy and is part of TCDC's wider portfolio of marine assets. There are no surrounding or feasible alternatives to Sugarloaf Wharf in the region that can support the significant volumes of mussels projected to come over the following decades.
- Key commercial objectives of the upgrade are to:
    - increase capacity,
    - improve safety
    - provide appropriate access to the wharf
    - keep costs as low as possible
    - encourage further industry investment in water-space and associated plant and equipment over the next 30 years.
- Without an upgrade the willingness and ability for Marine Farmers to continue to invest in growth is constrained and at risk
- Who owns the upgraded wharf is a key determinant in assessing or selecting the preferred commercial model to operate the wharf.
- The preferred option is the continuation of TCDC as owner and operator as it presents the least amount of change and therefore risk and cost to Marine Farmers and the Industry; debt will be serviced on a 'cost recovery' basis.
- TCDC ownership will allow Marine Farmers to allocate their own capital and efforts on growing their respective businesses and not on-land infrastructure.

5.1.2 Current Commercial Model

- The Sugarloaf Wharf is currently operated by TCDC who set the budget annually and charge CMFA who re-charge or invoice the member users based on lines in the water.
- WRC issue the consents for water-space.
- There is no legal restriction on the right to use the wharf currently.



Key Commercial Arrangements	
Governance	The ownership structure ensures the wharf is included in the overall governance responsibilities of TCDC. The CMFA represents Marine Farmers in discussions with TCDC and other national industry bodies.
Operational Costs	TCDC set the operating budget annually and consult with the CMFA in doing so, input is particularly relevant in terms of maintenance and capital expenditure of the wharf and the resulting cost to Marine Farmers.
Access	Access is not legally restricted; however all Marine Farmers are members of CMFA and there are no other high-volume commercial users currently.
Invoicing	TCDC invoices the CMFA for Commerci % of the operating costs for Sugarloaf, the remaining Commerci % is attributed to recreational users and partially recovered by TCDC through a ramp fee or usage charge.

	CMFA then invoices members monthly, based on the number of lines in the water, the risk of recoverability sits with CMFA.

5.1.3 Commercial Rationale for Wharf Upgrade

Further to the issues facing current users of the wharf detailed in Section 2.3, the commercial rationale for the wharf upgrade is:

> ***The current wharf is at capacity resulting in lost productivity, health and safety issues and the risk of reduced, or halted, future development of water-space by Marine Farmers.***

Capacity and Future Growth

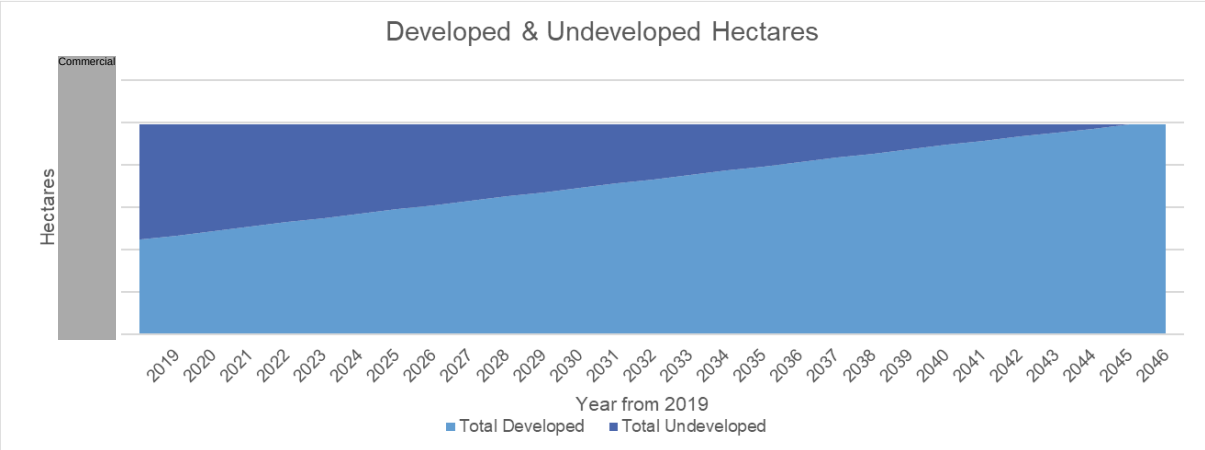
- The current wharf was designed for approximately Commercial Info t which is currently being exceeded.
- Waikato Regional Council has issued consents to farm Commercial Ha of mussels in the Thames / Coromandel region of which Commercial Ha is currently developed. The industry has also identified Commerc Ha of waterspace in Wilson Bay Area C and Colville for which consents will likely be granted for.
- Based on existing wharf structures in the Coromandel and Auckland regions the majority, if not all, of the Commercial Ha of consented but not developed waterspace would access Sugarloaf once developed.

Summary of waterspace developments	Ha
Consented and developed	Commercial
Consented and not developed	Commercial
Future waterspace	Commerc
Total waterspace	Commercial

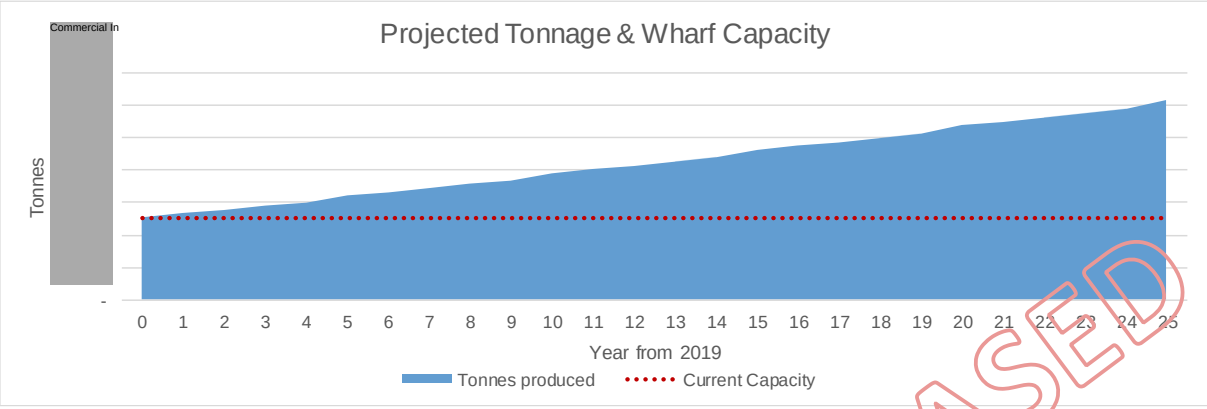
Source: CMFA

Rate of Development

- The average rate of growth over the last eight years to 2018 is Commercial Ha per year. Based on historical averages and discussion with CMFA members it is believed that the unconsented space will continue to be developed at a similar speed, therefore the growth assumptions is that Commercial ha are developed per year. Based on the rate of development of consented space the total hectares developed is projected to reach Commercial Ha by year 27 (2045) as illustrated below:



- Including the assumed productivity gain of Comme% achieved every 5 years this will equate to projected tonnage of Commercial Info tonnes (2053) compared to an estimate of Commercial Info tonnes currently.



- Without the wharf upgrade the rate of development is expected to slow as the issues worsen based on increased tonnage over the wharf.

Cost of inefficiency / lost productivity

Marine Farmers

- A lack of berths (2) in the current facility results in inefficiency within the industry as all Marine Farmers wish to leave early in the morning and return to the wharf and unload gear and mussels at the end of the day to maximise the daylight hours.
- This bottleneck results in additional fuel and wages being incurred by Marine Farmers as they wait or delay berthing.
- It also leads to health and safety issues as berthing often occurs after dusk with unloading being performed under the vessel lights only.
- There is a direct monetary cost and also a time cost as staff and owners have more hours on the water and ultimately less hours with their families.

Transport Sector / Processors

- Typically, mussel processors meet the cost of transport from Sugarloaf to their respective factories in Coromandel, Tauranga and Auckland.
- Delays in berthing and unloading mussels result in significant delays for transport companies.
- A lack of parking and working space at the wharf results in trucks parking on the road creating a hazard for other motorists.
- Although not quantified, a reduction in delays would likely result in reduced transport time and cost.

5.1.4 Levy or Charging Model Options

Mechanism Base	Commentary
Hectare *The levy is allocated per hectare of water space consented by the*	+ The consent documentation from WRC clearly states the hectares allocated. + Expertise and efficiency of the individual farming operations do not influence the application of levies.

Waikato Regional Council (WRC).	+	Allows for the levying of both developed and undeveloped water space.
	+	New entrants are not disadvantaged by levies compared to already existing operators.
	-	May not be a true measure of productivity or volumes
	-	Not all hectares are equal in terms of environmental conditions.
	-	Operational and legal difficulties noted with levies on the consents
Line *The levy is allocated per longline*	+	Current status quo in Coromandel
	+	Mapping technology alongside WRC consent information could allow reasonable accuracy of lines
	-	Not all lines are equal in terms of water temperature, depth and sea currents. Lines per hectare and productivity per line may not be consistent across the water space holders.
	-	The mechanism relies on accurate reporting of spat on a "trust basis". Spat lines are not typically included as part of the mechanism base.
	-	Undeveloped water space does not have lines and is therefore unable to be levied
Tonne *The levy is allocated per gross tonne of mussel harvested*	+	Best measure of production and the use of the wharf.
	-	The application of this option will require a weighbridge and an accurate measurement and record keeping process. This will increase the additional capital and operating expenditure requirements.
	-	Undeveloped water space are unable to be levied on this basis.

Note: CMFA members pay the levy voluntarily, there is no legal right or obligation for them to pay. Again, there is no legal right for consent holders to pay a wharf related levy and industry feedback is that is not fair or equitable to pay a wharf charge if you are not using the wharf.

Current arrangements

- TCDC set the annual budget for Sugarloaf Wharf and invoice the CMFA, who then levy or charge the CMFA members on a monthly basis with a wash-up charge at year end.
- The mechanism for setting the charge per member is based on the number lines in the water.

Port Marlborough Feedback

- Feedback from Marlborough industry and port representatives suggest that a non-complex mechanism has the greatest acceptance from wharf users.
- Port Marlborough charge per meter of backbone line providing some variability of charging based on the length of lines enabled by the water-space location and conditions.
- There is little or no consented and undeveloped water-space and the aquaculture and commercial fishing industries have multiple wharfs to choose from in the greater region.

Recommendation on levy mechanism

- To continue with the number of lines as the mechanism for setting charges.
- Its simplicity, familiarity in the aquaculture industry and low administrative cost are important features that provide confidence in the mechanism.

- The levy mechanism will include the flexibility to adapt in the future for other wharf users (i.e. wet fish,) who will be charged based on expected wharf use.

5.1.5 Future Commercial Operating Model

Commercial Objectives

- The key commercial objectives for the future Sugarloaf Wharf include:
    - To separate ownership and operation of the wharf if the continuation of TCDC ownership does not continue.
    - To ensure a stable ownership structure which enables access for both current and future users who are licenced or approved by the Wharf operator.
    - To ensure that the cost or toll to use the wharf does not:
        - unreasonably restrict usage
        - provide an obstacle or delay in Marine Farmers further developing water-space
        - does not risk the underlying profitability of Marine Farming.
    - That the wharf structure enables a safe working environment for Marine Farmers and transport providers.

Commercial constraints

- Commercial Information

Preferred Ownership Structure and impact on operations

The preferred ownership model, detailed in Section 4 sets out the preferred options, being:

1 A continuation of TCDC ownership
2 Defined period of ownership in a SPV or perpetual ownership by a Trust

The ownership will have flow on implications on who operates the wharf, a high-level assessment of options includes:

Option 1: Continuation of TCDC ownership

- TCDC continues to operate under the same commercial arrangements with CMFA that exist currently.
- It is acknowledged that the enlarged wharf facility will likely require additional operating costs and potential revision of the allocation of cost to commercial users and recreational users.

Option 2: Change in ownership: SPV or Trust

- As above the preference of CMFA would be for TCDC to continue to operate the wharf.
- Alternatives considered:

Structure	Comments

Company	- Limited liability entity.
	- Would likely involve a significant increase in operating costs, including:
	  ○ Stand-alone governance
	  ○ Insurance of a single asset rather than a portfolio approach to risk.

	○ The requirement of direct employees or outsourcing of administration to third parties. ○ Outsourced health and safety plan and compliance.
Outsourced Operator	- The ability to limit risk through a commercial contract for a third party to operate the wharf. - Give the lack of scale and geographic isolation of Sugarloaf this would likely be challenging to attract an operator and if successful likely to be at a considerably greater cost than the current ownership structure.

Based on the assessment of the preferred ownership model we have presented the potential ownership options and relationship to cost below.

5.1.6 High Level Commercial Risk Assessment

Summarised below is a high-level assessment of the risks associated with the future commercial models:

Preferred Option: TCDC Operate the Wharf		
Risk	Explanation	Mitigation / Comment
1 Price Risk	The actual cost to construct the wharf is materially different to forecast and the PGF do not fund [redacted]% of cost escalation.	• Procurement processes and contractual terms. • A [redacted]% contingency is included in cost estimates.
2 Wharf Continuity	That construction is delayed, and access is restricted at key times impacting operations.	• Scheduling works to minimise disruption.
3 Operating Costs	TCDC operating costs escalate based on the larger wharf, improve processes and a change to the allocation model.	• The impact on Marine Farmers and the issue of affordability will be dependent on the level of debt (if any).
4 Credit Risk	The CMFA carry the credit risk and charge members based on lines in the water, with higher charges there is a risk that recoverability of charges becomes an issue.	• No issues are expected with existing CMFA members based on the cost or charges discussed in Section 5.2.4.
5 Repayment of debt	Aquaculture relies upon the environment meaning yields and profitability can vary significantly based on environmental factors such as: weather, pests and disease. The ability to meet debt repayments may be impacted in a poor season.	• This risk can be mitigated through the structuring of debt and the underlying security and also the balance sheet strength of Marine Farmers. i.e. ability to meet a minimum levy charge irrespective of volume.

6 Wharf Access	The ownership structure influences the ability to restrict access either through an approval process or through pricing.	• The continuation of council ownership would appear to fully mitigate this risk.

Secondary Option: Stand Alone or Third-Party Operator		
Risk	Explanation	Mitigation / Comment
1 Price Risk	The actual cost to construct the wharf is materially different to forecast and the PGF do not fund [redacted]% of cost escalation.	• Procurement processes and contractual terms. • A [redacted]% contingency is included in cost estimates.
2 Wharf Continuity	That construction is delayed, and access is restricted at key times impacting operations.	• Scheduling works to minimise disruption.
3 Operating Costs	A stand-alone entity will have a higher cost base to include: governance, direct employees, insurance and administration costs.	• Governance could be at minimal cost, encompassing Industry, Iwi, Council representation.
4 Ability to secure a third-party operator	Given the scale and geographic location of Sugarloaf can it attract a third-party operator at a fair and reasonable price.	• A market search and pricing exercise would likely be required outside of Ports of Auckland and Ports of Tauranga.
5 Credit Risk	The CMFA carry the credit risk and charge members based on lines in the water, with higher charges there is a risk that recoverability of charges becomes an issue.	• No issues are expected with existing CMFA members based on the cost or charges discussed in Section 5.2.4.
6 Repayment of debt	Aquaculture relies upon the environment meaning yields and profitability can vary significantly based on environmental factors such as: weather, pests and disease. The ability to meet debt repayments may be impacted in a poor season.	• This risk can be mitigated through the structuring of debt and the underlying security and also the balance sheet strength of Marine Farmers. i.e. ability to meet a minimum levy charge irrespective of volume.
7 Wharf Access	The ownership structure influences the ability to restrict access either through an approval process or through pricing.	• The intention of the SPV would be for ownership to vest with TCDC once debt is repaid. • The Trust ownership structure is to take the debate around ownership

		and financial return on capital cost out of the equation.

5.2 The Financial Case – Is It Affordable

- In assessing the issue of affordability, we have analysed the cost to construct, operate and fund the proposed upgraded Sugarloaf Wharf.
- **Key findings**
  - The current Sugarloaf Wharf is a public infrastructure asset, owned and operated by TCDC. Being an infrastructure asset, it is not viable to be funded by industry.
  - Commercial Information
  - This would set a cost per tonne of a considerably higher rate than Marlborough's $Commercial per tonne.
  - It is critical that any charge does not provide an excessive constraint or disincentive for investment by marine farmers into growth.

5.2.1 *Construction Costs*

- A detailed summary of the wharf options and cost is located in Appendix E (inserted with and without inflation).
- The inflation rates have been provided by Commercial Info based on their experience and expectations of inflationary pressure on the construction and engineering sector.
- We have presented a 7 berth wharf that can be constructed in a single or two-phased approach:

Before Inflation

Approach	Commercial	Recreational	Cost
Single phase	Commercial Information	Commercial Information	Commercial Information
Two phase			
Phase One	Commercial Information	Commercial Information	Commercial Information
Phase Two	Commercial Information	-	Commercial Information
Total	Commercial Information	Commercial Information	Commercial Information

Source: Commercial Info

Post Commercial Inform Construction Inflation

Inflation Assumption

Year 1 (2019)	Commerci %
Year 2 (2020)	Commerci %
Year 3 and beyond	Commerci %

Approach	Commercial	Recreational	Cost
Single phase	Commercial Information	Commercial Information	Commercial Information
Two phase			
Phase One	Commercial Information	Commercial Information	Commercial Information
Phase Two	Commercial Information	-	Commercial Information
Total	Commercial Information	Commercial Information	Commercial Information

Source: Commercial Information analysis

- We note that a two phased approach results in additional cost for the commercial wharf of $[redacted] after inflation.
- The phase two construction is assumed to occur in Year 14 based on industry volume projections. [redacted] berths are required to cater for [redacted] tonnes per annum, excluding the maintenance berth, so a total of [redacted] berths will be required to meet the long-term annual production target. Assuming a confidence level of [redacted]%, the sample size of 17 days has a margin of error of [redacted]%.

5.2.2 Funding Assessment

The current Sugarloaf Wharf is a public infrastructure asset, owned and operated by TCDC. Being an infrastructure asset, it is not viable to be funded by industry. The PGF process has requested consideration of an industry contribution towards the wharf upgrade.

Principles of a capital charge

- Ensuring a 'fair and equitable' charge on any capital contribution is critical to secure the confidence of lenders, the support of current users and incentivise future growth in the industry.
- Any capital contribution by industry will be in addition to the cost of developing water space and associated aquaculture operations would incur:
    - Debt servicing costs (principal and interest); and / or
    - Other capital charges (for example, a required return on equity) depending on the ownership structure of the wharf.

Impact of capital charge:

- The quantum of capital that the marine farmers will be responsible for will have a significant impact on their operating profitability.
- There is a limited ability for marine farmers to service and repay a significant portion of the total wharf cost as it is an upgrade of publicly owned infrastructure and not a viable project.
- The chart and table below are based on current volumes:

Commercial Information

Commercial Information

5.2.3 Operating Costs

Current state

- The table below presents a summary of the indicative costs of operating the Sugarloaf Wharf as analysed by TCDC in determining the commercial levy. For the purposes of our analysis, we have not included costs incurred by CMFA.

Cost of Wharf Operations

$	TCDC (10yr average)	Marine Farmer Share (Commerci %)
Direct costs		
Staff Wages	Commercial Info	Commercial Info
Management and consents	Commercial I	Commercial I
Other Operating	Commerc	Commerc
Sub-total	Commercial Info	Commercial Info
Overheads		
Overheads - General	Commercial Info	Commercial Info
Overheads - Wages	Commercial Info	Commercial I
Overheads - Wages (Management)	-	-
Overheads - Governance	-	-
Sub-total	Commercial Info	Commercial Info
Maintenance programme		
Maintenance and Works	Commercial Inform	Commercial Info
Sub-total	Commercial Inform	Commercial Info
Total Costs	Commercial Inform	Commercial Info

Source: TCDC, CMFA

Metrics		
Current volumes (t)	Commercial Info	Commercial Info
Total costs ($/t)	Commercia	Commerci
Total costs ex. Maintenance ($/t)	Commercia	Commerci

- TCDC currently operate the Sugarloaf wharf facilities for a total operating cost of approximately $Commerc, of which the marine farmers are responsible (by way of a line levy charge) for Commercia%. Given current volumes, this translates into a cost to marine farmers of $Commerci per tonne.

- Significant operating costs have historically included: staff wages, consent management, wharf maintenance, administrative wages and general overheads.
- Commercial Information
- The commercial users of the wharf have benefitted in a financial sense from the TCDC operation given the local authority's ability to absorb and leverage overhead costs such as governance, management, administration and insurance premiums into the wider operation of TCDC.
- The operating costs (excluding capital maintenance or depreciation) currently incurred to operate the Sugarloaf wharf represents Comme% of the total operating budget for TCDC and therefore is a very small part of the overall TCDC operation.[8]

Future state

- The ownership model has a significant impact on the efficiency of the operating model.
- While the aquaculture industry is motivated to keep costs as lean as possible, all stakeholders accept that additional cost is necessary to ensure the facility is operated safely, efficiently and to allow for future users of the wharf.
- We have developed a low and high cost structure (the Low and High Scenarios shown assume Commer% use by marine farmers) .
    - The low scenario represents a model similar to the current ownership and operating structure as part of local council with enhanced requirements for health, safety and operational aspects as the industry growth occurs.
    - The high scenario represents a more standalone ownership and governance structure i.e. asset owning trust or mixed ownership company. Overhead costs are likely to be significant greater in a standalone structure given the relative size of the operation and reduced economies of scale. If TCDC ownership is not an option, then this scenario becomes more likely.
- The financial details of these scenarios are as follows:

[8] TCDC Annual Report 2017/2018

Cost of Wharf Operations

$	Low Marine Farmer Share (Commer%)	High Marine Farmer Share (Commer%)
Direct costs		
Staff Wages	Commercial Info	Commercial Info
Management and consents	Commercial I	Commercial Info
Other Operating	Commercial I	Commercial I
Sub-total	Commercial Info	Commercial Info
Overheads		
Overheads - General	Commercial Info	Commercial Info
Overheads - Wages	Commercial Info	Commercial Info
Overheads - Wages (Management)	Commercial Info	Commercial Info
Overheads - Governance	-	Commercial Info
Sub-total	Commercial Info	Commercial Info
Maintenance programme		
Maintenance and Works	Commercial Inform	Commercial Inform
Sub-total	Commercial Inform	Commercial Inform
Total Costs	Commercial Inform	Commercial Inform
Source: TCDC, CMFA		
Metrics		
Current volumes (t)	Commercial Info	Commercial Info
Total costs ($/t)	Commercia	Commercial I
Total costs ex. Maintenance ($/t)	Commercia	Commercia

Table 5. Operative costs at wharf.

- We have assumed for modelling purposes that these costs will grow at inflation of Com% p.a. based on the Producers Price Index (PPI).
- We have assumed a maintenance budget of $Commercia per annum based on the advice of Commercial Inform; a detailed summary of the maintenance programme has been included as an Appendix [F].
- We have compared these two scenarios against the current state using current volumes and we comment:
    - Under the low scenario, this would result in the direct and overhead costs per tonne paid by farmers to more than double to $Commerci. The expected overall costs would increase to $Commercia per tonne.
    - The high scenario represents a 5-fold increase in the direct and overhead costs per tonne and carries significantly more risk as the ability to insure as a standalone owner and operator is untested as are many other costs.
        - Governance costs of $Commer, for example, provides for one paid independent governance member with the remainder being on a volunteer basis. Should more paid governors be required, costs would significantly increase.

Under the high scenario, overall costs would be expected to increase to $Commercial I per tonne.

Commercial Information

5.2.4 Determining Affordability

We have measured the impact of a future levy charge against current levy charges, relevant industry peers, immediate efficiencies received from a fit for purpose wharf and current marine farmers appetite to invest for the future.

Comparison to current charges

- The current rate of $[redacted] per tonne is low and has been at this level for a number of years. The upgraded wharf will likely double operating cost and any capital charge will have a significant impact on the levy that marine farmers pay.
- Current operators are likely to bear all of the responsibility and burden of any increases and there are limited options to share this cost with others (e.g. future users and other parts of the supply chain).
- Marine farmers are price takers and have limited ability to pass on cost increases in the short term.
- Significant and immediate increases in charges may also have an impact on the short-term ability of marine farmers to invest in growth.

Comparison to industry benchmarks

The table below provides a high-level comparison of the operating environments of Marlborough and Coromandel.

Variable	Coromandel	Marlborough
Hectares	[redacted]	[redacted]
Tonnes	[redacted]kt	[redacted]kt
Levy Charge (p.a.)	$[redacted] per longline	$[redacted]
Implied levy (per tonne)	c. $[redacted]	$[redacted]
Wharves	[redacted]	[redacted]
Implied yield (tonnes / Ha)	[redacted] t/Ha	[redacted] t/Ha

Table 6. Operating model comparison between Coromandel and Marlborough marine farmers.

- Yields per annum are similar at c. [redacted] tonnes per hectare. Coromandel benefits from faster growth cycles than Marlborough however the depth of water mean that Marlborough farms are able to grow more mussels per hectare.
- The difference in environmental conditions result in a greater effect from biofouling for Coromandel, this leads to a higher cost of production with impacts on maintenance of equipment and vessels (including man power effort) and greater fuel use from excess weight and drag on boats.
- The congestion on the wharf at Coromandel leads to inefficiency (i.e. wait times) that result in higher costs for Coromandel marine farmers.
- Based on the comparison of yields only it is reasonable to assume the PMNZ charge $[redacted] per tonne is a relevant benchmark of affordability.

Impact of debt contribution

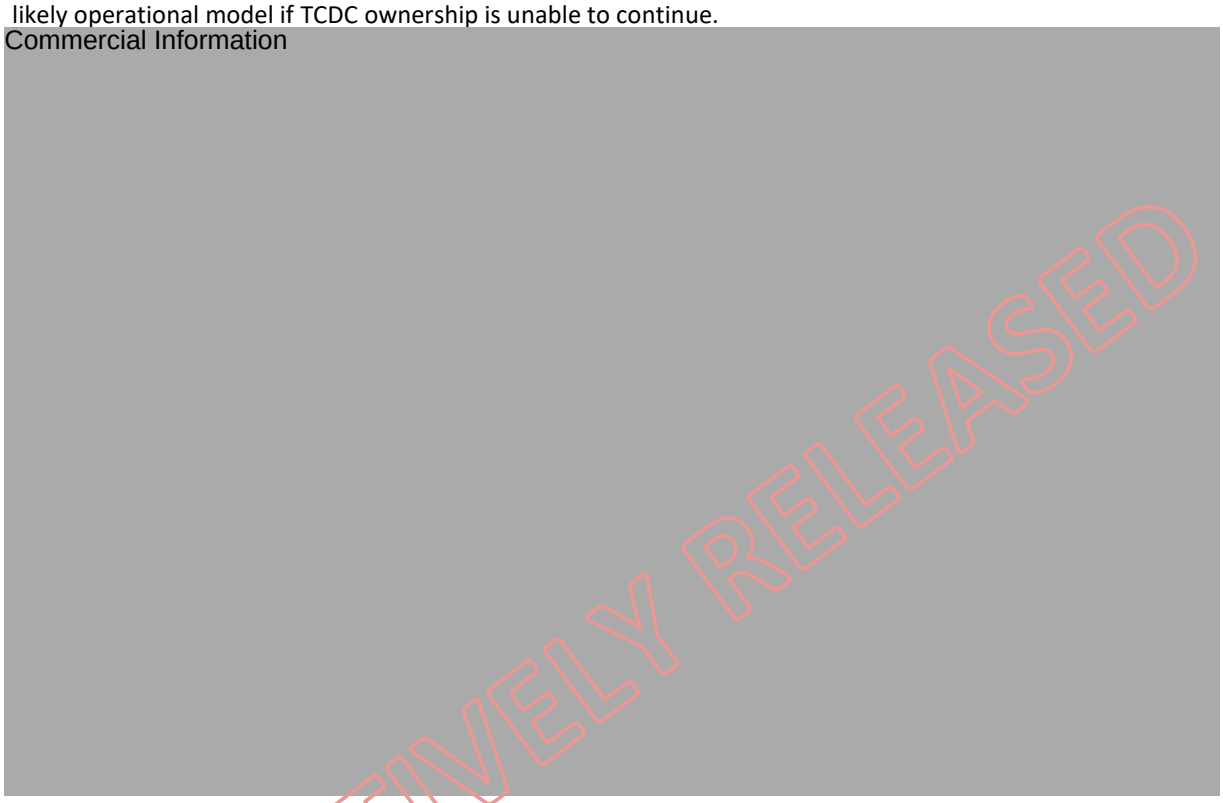
- The preference of marine farmers is to retain their capital and capital servicing ability to further invest further in the development and growth of the industry.
- Nonetheless, they are committed to the industry and therefore the likelihood of the success of the project relies on their willingness to unite and contribute.
- Feedback from the meetings with the marine farmer representatives determined that:
    - Marlborough farming is a relevant benchmark for affordability although the differences in operating conditions were noted.
    - Any gains in efficiency from the upgraded wharf that benefits the industry should be used to support any debt repayments or justify differences to other benchmarks.
    - Based on current volumes, the marine farmers would support a debt of $5m if it did not constrain their ability to invest in and grow their own businesses.

Summary of affordability

Feedback from the marine farmer representatives determined that:

[redacted]

The chart below summarises the impact of the operating and capital charge per tonne on Coromandel marine farmers under different debt scenarios. We have presented the high operating scenario, as this is the most likely operational model if TCDC ownership is unable to continue.



- Commercial Information
  - [redacted]
  - [redacted]
- Commercial Information
  - [redacted]
  - [redacted]

The table below summarises the affordability assessment in separate format and also presents the low operating scenario:

Commercial Information

- This analysis implies that even a modest debt of $[redacted] will be challenging, particularly given the immediate impact on current marine farmers compared to the best industry benchmark.
- We would recommend the assistance of an extended period of no or limited repayments to provide adequate time for the industry to grow and to be able to spread the cost of the facility across a wider base.

Funding from other parts of the value chain

Charging undeveloped waterspace holders

- The benefits of a charge against undeveloped waterspace holders would likely be challenging and incur significant administrative costs.
- We explored the possibility of charging undeveloped waterspace holders to act as an incentive for industry growth, ease tensions amongst existing operators and provide a mechanism to spread the capital charge across a wider base.
- Significant challenges of imposing the charge included:
    - Commercial Information .
    - No guarantee that future users will require access to the wharf.
    - No certainty over the collection of funds given the doubts over enforceability.
    - High administration and compliance costs to impose and monitor charges.

The majority of undeveloped waterspace consent holders are already operators in the aquaculture industry and wider supply chain and therefore the financial incentives are already present to develop waterspace. The most recent consents require lines to be constructed within 5 years; so, there is already a strong incentive to develop waterspace.

Charging transport operators, processors and exporters

- We have explored the concept in principle of seeking investment from parts across the value chain who will benefit from the increase in supply and greater efficiencies the come from scale.
- The primary challenge is that both processors and exporters are largely price takers and they have a limited ability to pass increased costs on to customers without having an impact on demand. Gradual changes in price may be possible however are uncertain.
- By way of example, if a charge was enforced against transport operators for using the upgraded wharf, this cost would be on-charged to processors who would in turn reduce the price paid to marine farmers per tonne of mussels.

5.3 The Economic Case – Determining Value for Money

The CMFA engaged Market Economics Ltd to provide a high-level assessment of the economic effects (costs and benefits, economic impacts, and employment impacts) of developing Sugarloaf Wharf. The assessment used a Cost-benefit Analysis (CBA) structure and Economic Impact was expressed via Value Added (see Appendix M).

5.3.1 Cost Benefit Analysis

The analysis timeframe covers 35 years, allowing for the gradual uptake of the marine opportunity. This also spreads the costs and benefits out over a longer timeframe. A discounting process is used to translate future costs and benefits into a single value, i.e. how much is the future costs/benefits worth today. A discount rate of Com% is used (together with Com% and Com% to show the range). Table 7 summarises the results.

Item	Estimates ($'m; NPV over 35 years)		
	Com%	Com%	Com%
Benefits			
Processing	Commercial	Commercial	Commercial Info
Farming	Commercial	Commercial	Commercial
Labour	Commerc	Commerc	Commercial
Total	Commercial	Commercial Info	Commercial Info
Costs			
Capital expenditure (including deadweight losses)	Commerc	Commerc	Commerc
Cost to develop the marine farms	Commerc	Commerc	Commerc
Wharf costs (operating costs)	Comme	Comme	Comme
Other investments (vessels, factory, transport)	Commerc	Commerc	Commerc
Farming (cost to deliver goods)	Commercial	Commercial	Commercial
Processing (cost to deliver goods)	Commercial	Commercial	Commercial
Total	Commercial	Commercial Info	Commercial Info
Ratios			
Net position (benefits less costs)		Commerc	
Net annual position (Net/35years)		Comme	
Return on government investment* ($1: $...)**		Commerc	
Cost-benefit ratio	Commerc	Commerc	Commerc

* After accounting for displacement and substitution effects.
** Includes deadweight loss.
*** Includes a deadweight loss allowance.

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In terms of employment, the number of people employed across the entire project (farming and processing) is expected to increase as production ramps up. Looking across the entire period, the average[9] number of (additional) employees that the investment will support is estimated between Commer and Commer (during the early years, this will be lower and during the later years, this will be higher). This figure reflects the 'new employment' and is based on annual salary and wage costs as estimated using the cost ratios. The

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5.3.2 Economic Impact Analysis

Having established the direct expenditure into the Thames-Coromandel District, Waikato and Bay of Plenty regional economies that will be enabled by investing in Sugarloaf Wharf, it is possible to assess the wider, economic flow-on effects associated with the capital expenditure and facilitated activity. The focus is on the additional spending and activity, and the flow-on impacts are included.

The wharf, mussel farms and processors will interact with other businesses throughout New Zealand. For the economic impact analysis, we considered the export products (i.e. mussels) and the linkages with other businesses (e.g. farmers, transporters and processors) and the location of those businesses. For example, processers in Tauranga will interact with other Tauranga-based businesses but they will also interact with non-Tauranga businesses (e.g. buying mussels from the farms in Thames-Coromandel District). All businesses employ staff and pay them salaries and wages. In turn, workers then purchase goods and services, supporting other businesses, creating further rounds of business activity.

The findings are presented at an average annual level as well as a total/cumulative level. The cumulative impacts are summarised into a range of values using discounted cash flow[10] (DCF) analysis. The economic impacts are expressed in Value Added (VA) and employment. VA, as a measure, reflects the value of the work complete after accounting for inputs.

Delivering the wharf infrastructure will facilitate a lift in activity, ranging from more on-water activity, to additional processing. In turn this will trigger other economic activity. Some effects are one-offs and other are ongoing; construction and the investment in new vessels are examples of one-off impacts. Once operational, the impacts are ongoing, felt every year. Figure 13 shows the temporal distribution of the one-off and ongoing value- added impacts.

[10] In effect, this relates to expressing future cash flows in current (today's) terms.

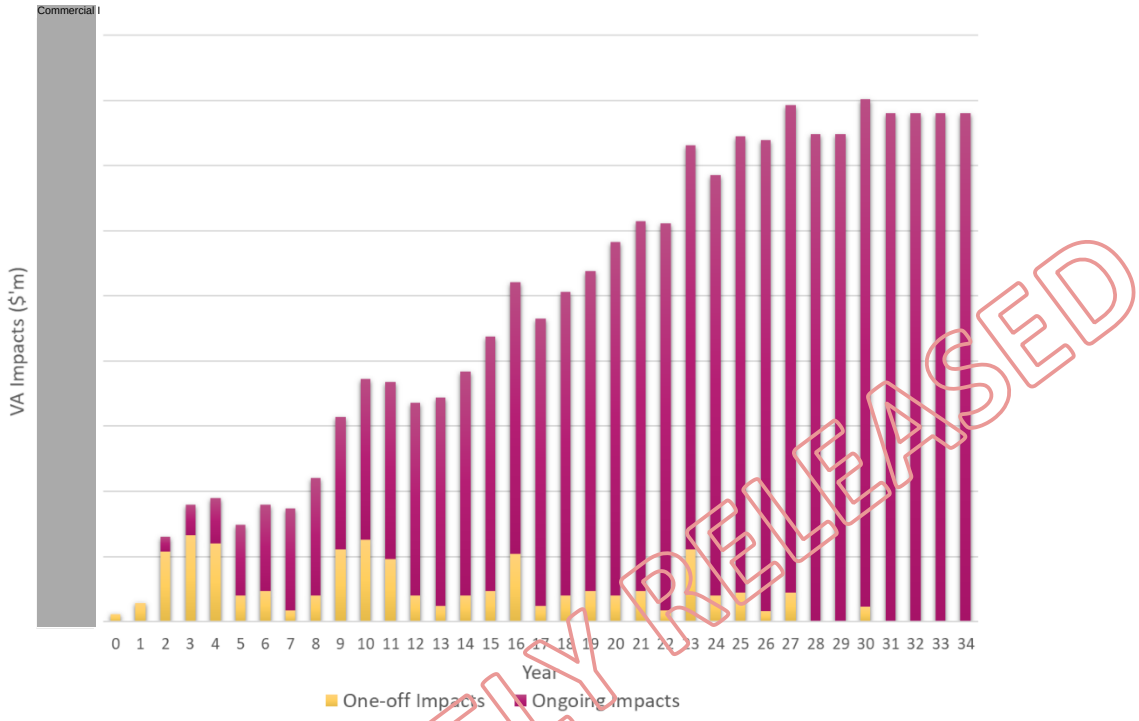


Figure 13. Impacts over time (VA)

The analysis illustrates that the ongoing activities will deliver most of the economic impacts. This is not surprising given the overall scale of change that the wharf expansion will unlock. The lift in economic impact is not a single, step change; impacts will grow over time.

Over the assessment period, the capital expenditure is expected to deliver peak value-add of $[redacted] in year 4. This coincides with the development of the wharf, transport and marine farms. On <u>average</u> (over the entire assessment period), the annual value-add impact associated with the capital expenditure is $[redacted]. On average, the capital investment-related impacts account for [redacted]% of annual impacts. In terms of the ongoing effects, the impacts are expected to grow to $[redacted] once fully operational.

Taking the annual values and expressing these in current terms provides an ability to consider the 'value' of the future impacts in a single figure. Table 8 summarises the economic impacts. The table shows the results:

- Using three discount rates ([redacted]%, [redacted]% and [redacted]%), the undiscounted results are also shown. The [redacted]% rate is used as the base result.
- For different components i.e. the capital expenditure, the ongoing activity and the combined impacts.
- Spatially disaggregated to six areas.

		Total Value Added $'m			
		[illegible]%	[illegible]%	[illegible]%	*No Discounting*
CAPEX	Thames-Coromandel	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of Waikato	[illegible]	[illegible]	[illegible]	[illegible]
	Tauranga City	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of Bay of Plenty	[illegible]	[illegible]	[illegible]	[illegible]
	Auckland	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of New Zealand	[illegible]	[illegible]	[illegible]	[illegible]
	SUM	[illegible]	[illegible]	[illegible]	[illegible]
ONGOING ACTIVITY	Thames-Coromandel	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of Waikato	[illegible]	[illegible]	[illegible]	[illegible]
	Tauranga City	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of Bay of Plenty	[illegible]	[illegible]	[illegible]	[illegible]
	Auckland	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of New Zealand	[illegible]	[illegible]	[illegible]	[illegible]
	SUM	[illegible]	[illegible]	[illegible]	[illegible]
COMBINED	Thames-Coromandel	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of Waikato	[illegible]	[illegible]	[illegible]	[illegible]
	Tauranga City	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of Bay of Plenty	[illegible]	[illegible]	[illegible]	[illegible]
	Auckland	[illegible]	[illegible]	[illegible]	[illegible]
	Rest of New Zealand	[illegible]	[illegible]	[illegible]	[illegible]
	SUM	[illegible]	[illegible]	[illegible]	[illegible]

Table 8. Summary of the economic impacts.

The overall (combined) economic impact of the entire project (wharf, other investment and the facilitated activity) is estimated at between $[illegible] and $[illegible] with a mid-value of $[illegible]. The value added impacts associated with the capital expenditure is estimated at between $[illegible] and $[illegible] with $[illegible] as the midpoint. The values of the ongoing effects are substantially greater, and the mid-point is $[illegible] – approximately five times the size of the capital expenditure-related impacts.

Looking at the regional distribution of the impacts:

- Overall, a large portion of the impacts flow to Auckland (around [illegible]%) and the rest of New Zealand. This is as expected because of the proximity to Auckland and the fact that a large share of the construction activity can not be supported by local businesses (based on the scale and expertise needed for the project). In addition, most construction inputs will be sourced from Auckland, either directly or indirectly (via supply chains). Similarly, a portion [illegible]%) of the VA impacts are felt in the rest of NZ. Almost [illegible] ([illegible]%) of the VA impacts are expected locally (Thames-Coromandel, Tauranga, the rest of Waikato, and the rest of Bay of Plenty).
- In terms of the ongoing impacts (i.e. when operational), almost half ([illegible]%) of the impacts will be felt locally. In $-terms, this is between $[illegible] and $[illegible] with the mid-point being $[illegible]. Looking at the spatial patterns, Thames-Coromandel and Tauranga will both capture sizable impacts (VA); $[illegible] and $[illegible] of VA respectively. The rest of Waikato and the rest of Bay of Plenty will receive impacts of $[illegible] and $[illegible] each.

- Around a third of the capital expenditure-related impacts will be felt locally. The modelling suggest that this is worth between $[redacted] and $[redacted] to the local economies. The mid-point is estimated at $[redacted].
- If the VA is spread evenly over 35 years, then ongoing impacts average $[redacted] per year. The capital expenditure impacts felt locally averages $[redacted]/year.

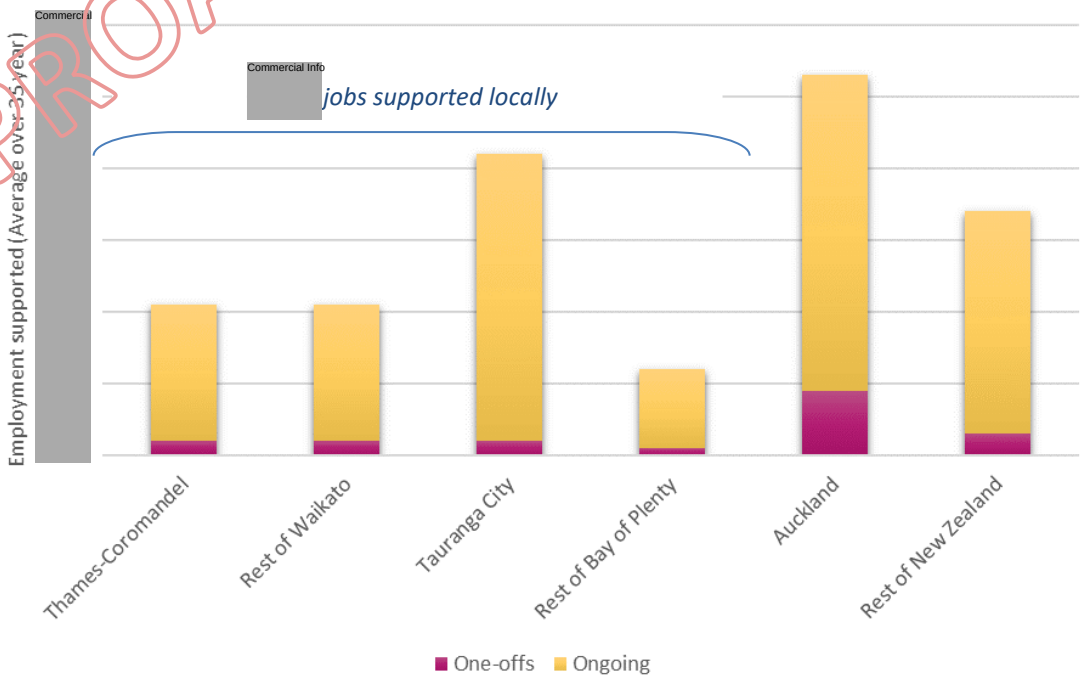
These figures represent the present value of future VA impacts. When looking at the undiscounted values, the scale of impact become even more apparent; $[redacted].

5.3.3 Employment Impacts

Value added includes salary and wage payments. As the opportunities unlocked by the wharf are developed and translated into business activity, additional economic impact assessment will be needed to complete/undertake the work. It is important to note that the economic impact assessment translates the total level of work associated with all the flow on impacts into employment. Again, it is not suggested that this employment is 'new' to economy because, for example, some employees could work longer hours. Instead, the employment impacts illustrate the number of workers that will be needed to do the work associated with the flow on impacts.

Error! Reference source not found. shows the average number of jobs supported in the respective economies; t his is the average employment (per year) needed to undertake the work. A large share of the employment impacts will be felt in Auckland, which is consistent with the observations about the value added impacts. Regardless, more than half (54%) of the employment effects will be felt in the Waikato and Bay of Plenty regions, and in particular in Thames-Coromandel and Tauranga districts, with 12% and 24% of the employment impacts (based on the average annual impacts for ongoing activity). The employees supported every year (on average) is estimated at [redacted] for the ongoing activity and [redacted] for the capital works programme. Some [redacted] of the employees associated with the ongoing activity are in Thames-Coromandel and Tauranga districts. Another [redacted] are in the rest of Waikato and the rest of Bay of Plenty. Including the employment effects associated with the capital expenditure, this lifts the employment felt locally to [redacted].

Figure 14. Employment supported (average per year).



The preceding discussion reflects the average values (over 35 years) so it does not reflect the maximum employment levels. The maximum reflects the situation toward the end of the assessment period. At this

point, the new farms have been developed and are operational, the new factories have been built and are operating, and the maximum volume of mussels are exported. Once operating at the peak, the number of jobs supported in the entire economy (i.e. including all the supply chain links) is estimated at over Commercial). The number of jobs that will be supported across the regions are:

- Thames-Coromandel Commerc
- Tauranga City Commerc
- Rest of Waikato Commerc
- Rest of Bay of Plenty Commerc
- Auckland Commerc
- Rest of New Zealand Commerc

These figures include those jobs supported by both the capital expenditure (one-offs) as well as the ongoing activities.

6 Option 2: Staged Infrastructure Upgrade

6.1.1 Context

Although the CMFA is seeking Comme grant funding from the PDU to carry-out an infrastructure upgrade to the publicly-owned Sugarloaf Wharf, the CMFA has considered alternate staged wharf options based on certain 'trigger' production levels to reduce costs should grant funding be unavailable (see Appendix O). Staging would however increase long term resource consent and construction costs well over the single stage approach.

6.1.2 Alternate designs

The ability to phase the construction works provides the CMFA flexibility to size the works should there be funding constraints from the Provincial Development Unit. Commercial Inform prepared four staged options for the CMFA's consideration. Of the four options, the CMFA executive expressed a preference for a flat parallel wharf extension as illustrated below:

Figure 13. Preferred alternate staged option for Sugarloaf Wharf Development. Source: Preliminary Design Plan (2019), Prepared by Commercial In .

The following aspects are noted for the parallel wharf design staged option:

- Provides four commercial deep berths (three less than the full development option) so could cater for up to Commercial Information / year production;
- This option will ultimately not be able to cater for the total projected volumes of mussels coming out of the Coromandel marine farming zones;
- Areas for storage and truck movements are maintained, however the ability for B-trains to park on piers is removed, increasing traffic congestion on public roads;
- Contingency and fees have been prorated from fully developed option;
- Fender pile costs are abortive in areas of future pier extension so would add significant additional cost when extending;

- The recreational wharf design remains unchanged.

Recommendation:

Although a staged approach over many years is technically feasible it is not commercially or operationally feasible:

- A staged approach would impact ongoing wharf operations during future upgrades;
- Future public funding uncertainty impacts commercial feasibility;
- Overall capital costs would increase significantly due to additional resource consent costs and the physical infrastructure that would have to be replaced.

Appendix A: Strategic Alignment

The Sugarloaf project meets most objectives of the PGF, with broad benefits for regional New Zealand:

<table>
<tr><th>PGF Outcome</th><th>How will the project positively or negatively impact this outcome in the region(s) identified?</th></tr>
<tr><td>Increase economic output</td><td>Estimated total net economic contribution from aquaculture of ~$Commercial Information over 35 years, comprising:

<table>
<tr><th>Item</th><th></th></tr>
<tr><td></td><td>Com%</td></tr>
<tr><td>Benefits</td><td></td></tr>
<tr><td>Processing</td><td>Commercial</td></tr>
<tr><td>Farming</td><td>Commercial</td></tr>
<tr><td>Labour</td><td>Commerc</td></tr>
<tr><td>Total</td><td>Commercial Info</td></tr>
<tr><td>Costs</td><td></td></tr>
<tr><td>Capital expenditure (including deadweight losses)</td><td>Commerc</td></tr>
<tr><td>Cost to develop the marine farms</td><td>Commerc</td></tr>
<tr><td>Wharf costs (operating costs)</td><td>Comme</td></tr>
<tr><td>Other investments (vessels, factory, transport)</td><td>Commerc</td></tr>
<tr><td>Farming (cost to deliver goods)</td><td>Commercial</td></tr>
<tr><td>Processing (cost to deliver goods)</td><td>Commercial</td></tr>
<tr><td>Total</td><td>Commercial Info</td></tr>
<tr><td>Ratios</td><td></td></tr>
<tr><td>Net position (benefits less costs)</td><td>Commerc</td></tr>
<tr><td>Net annual position (Net/35years)</td><td>Comme</td></tr>
<tr><td>Return on government investment*** ($1: $...)</td><td>Commerc</td></tr>
<tr><td>Cost-benefit ratio</td><td>Commerc</td></tr>
</table>

($’m; NPV @Com% over 35years)</td></tr>
</table>

Enhance utilisation of and/or returns for Māori assets	Iwi are invested in the aquaculture sector in several ways: • Pare Hauraki Asset Holdings Ltd (also trading as Pare Hauraki Kaimoana (PHK)); the Treaty of Waitangi commercial fisheries and aquaculture asset holding company for Pare Hauraki. Owns C % of the consented water space in the Coromandel. Successful tenderer for the Co -hectare Finfish farming zone. Negotiated for the creation of a new Colville marine farming zone as part of its aquaculture settlement. All these initiatives reflect Pare Hauraki's strategic commitment to growing aquaculture in their rohe. • PHK also have investments in mussel farming in Opotiki and provide support to new spat initiatives in Aotea Harbour, Kawhia and Te Hiku. • Commercial Information • Commercial Information • Commercial Information • Commercial Information
Increase productivity and growth	Aquaculture growth will provide a significant boost to the region in terms of jobs; estimated direct net job growth within Thames-Coromandel District is likely to increase to Commercial Informatio new FTEs.
Increase local employment and wages (in general and for Māori)	Aquaculture growth will provide a significant boost to the region in terms of jobs; estimated job growth within Thames-Coromandel District is likely to increase from the current Commerc full-time equivalents to Commerc + FTE, with direct jobs in adjacent regions rising from Commerc to Commercial + FTEs when Commercial Info tonnes / year is reached.
Increase local employment, education and/or training opportunities for youth (in general and for Māori)	Aquaculture is a key part of the social and economic fabric in the communities of Coromandel (Town), Manaia and Whitianga where the majority of sector employees live and work. Iwi-owned aquaculture assists community wellbeing with contributions from marine farming co-funding education services (NZIER 2017) The CMFA maintains strong links to the local community, employing local people and supporting learning opportunities for youth including the Maritime New Zealand 'Seafarer Training' and 'Qualified Deck Crew' courses. The sector will expand its successful tertiary institutions employment readiness programme to attract and retain staff. Increased production will stimulate education, research and training.

Contribute to mitigating or adapting to climate change	The upgraded Sugarloaf facility will take into account the effects of climate change, including sea level rise and increased frequency of weather-related events.
Increase the sustainable use of and benefit from natural assets	Mussel production is a long-established industry in the area with a proven track record of very low environmental impact. As filter feeders, mussels take all their nutrients from the seawater and are considered one of the best ways to naturally remediate the marine environment. International conservation organisation Blue Ocean Institute ranks New Zealand Greenshell Mussels as one of the top two 'eco-friendly seafoods' in the world.
Enhance wellbeing, within and/or between regions	Aquaculture development in Coromandel enhances the wellbeing of communities across the district and in other regions. The provision of jobs ranging from farming through to processing enables people to obtain work across a wide geographic area, with many processing roles in the Coromandel, Auckland, Waikato and Bay of Plenty. The social wellbeing for rural employees working in the aquaculture sector is strongly linked to the overall economic wellbeing for the wider district(s).

The proposed expansion at Sugarloaf Wharf is aligned with a range of strategic perspectives across national, regional and local government levels.

National Alignment	
Organisation / Strategy / Document	***Description***
Central Government Outlook	This project demonstrates strong alignment with the central government outlook on long-term, innovative aquaculture with positive market prospects: *"Shane Jones and myself* [Hon. Stuart Nash] *are very keen to see applications from innovative aquaculture players who have done the testing, know their markets and just need start-up capital to get across the line".* (Hon. Stuart Nash, Aquaculture New Zealand Annual Conference, 27/09/2018).
2017 Coalition Agreement: New Zealand Labour Party & New Zealand First, *Coalition Priorities*.	The New Zealand First – Labour 2017 Coalition Agreement provides the following with regard to central government priorities to progress regional development: **Regional Economic Development and Primary Industries** • *Recognise the potential for aquaculture in promoting regional economic growth."*

Ministry for Primary Industries: *Aquaculture Strategy and Five-year Action Plan to Support Aquaculture*	To meet the goal of $1 billion in aquaculture product sales by 2025, the Ministry for Primary Industries has created a roadmap to facilitate the sustainable growth required to meet this target, this included the following of particular relevance to the proposed development: *"**Secure and promote investment in aquaculture**:* • *Regional Coastal Planning for Aquaculture* • *District Planning for Infrastructure* ***Promote Māori success in aquaculture:*** • *Māori Objectives Understood* • *Actively Consider Māori Objectives Across the Aquaculture Programme* • *Services to Support Māori Objectives".*
New Zealand Coastal Policy Statement	The 2010 New Zealand Coastal Policy Statement, Policy 8 provides the following with regard to aquaculture growth: *"Recognise the significant existing and potential contribution of aquaculture to the social, economic and cultural well-being of people and communities by:* *a. including in regional policy statements and regional coastal plans provision for aquaculture activities in appropriate places in the coastal environment, recognising that relevant considerations may include:* *ii. <u>the need for land-based facilities associated with marine farming;</u>* *iii. taking account of the social and economic benefits of aquaculture, including any available assessments of national and regional economic benefits…"*
Hauraki Gulf Marine Park Act (2000)	*"The Gulf must be managed in a manner that crosses territorial jurisdictions, crosses land and water boundaries, and crosses cultures and that respects both conservation and development needs."* **Part 1: Management of Hauraki Gulf** **Recognition of national significance of Hauraki Gulf** *2) "The life-supporting capacity of the environment of the Gulf and its islands includes the capacity:* *a) To provide for:* *i)…*

	ii) the social, economic, recreational, and cultural well-being of people and communities: b) *to use the resources of the Gulf by the people and communities of the Gulf and New Zealand for economic activities and recreation."*
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Regional Alignment	
Organisation / Strategy / Document	***Description***
Waikato Regional Council Long Term Plan (2018-2028)	*"Climate change is likely to increase flood hazard and risk due to sea level rise, more frequent and more intensive storm events, ... This will place pressure on the council's assets and their services."* The CMFA recognise the existing issues that Sugarloaf Wharf faces in regard to climate resilience, which are already placing significant stress on the ageing infrastructure and threatening future use of the port. *"The region's economic conditions have an impact on the ability of communities to pay for the services provided and there are increasing pressures on the current level of funding to deliver more."* The aquaculture sector provides a significant contribution to the overall GDP of the Coromandel District, providing substantial funding for local infrastructure maintenance and services through rates and taxes.
Waikato Regional Economic Development Agency / *Te Waka* (*formerly Waikato Means Business*)	The Te Waka Regional Economic Development Programme 2018-2022 repeatedly identifies aquaculture sector projects as top priorities for the development of Primary-Production & Agri-Technology in Waikato: *"Section F.1. Develop the Waikato aquaculture (marine farming) industry to reach its full potential for the Waikato and New Zealand including as priority projects:*

	• *Development of the Sugarloaf Wharf at Coromandel* • *Kopu marine precinct – marine servicing, manufacturing and processing* • *Develop finfish opportunities in the Hauraki Gulf* • *Build local employment opportunities through greater processing and value-add in the Waikato".* One of the 'Waikato Means Business' (WMB) Economic Strategy (2014) flagship initiatives highlights the need to maximise value from primary production: *"the Waikato advantage includes natural resources … more value could be extracted from our … aquaculture and materials sectors through further processing and innovation… the connections are not as strong as they could be. Bringing these strengths together could secure the region's reputation as New Zealand's centre of production, engineering and manufacturing".* Additional value-add through new primary production growth and processing facilities for the burgeoning aquaculture industry in the Coromandel would meet many of the region's economic development strategy's major objectives (WMB Annual Report, 2017), including: • to leverage value from our location and connections as the key servicing hub of the North Island; • to be New Zealand's premier engineering and primary processing hub; and • to be known for excellence in sustainable food production... WMB also notes *"Waikato Iwi are active investors in property and finance, geothermal energy, aquaculture, dairy and tourism, which offers significant potential for our region."* The Waikato Regional Economic Development Agency; Te Waka, has recognised the regional significance of the Sugarloaf project in providing a letter of support for the proposed expansion: *"For the industry to succeed, a reliable, safe and fit for purpose supply chain is absolutely essential and the most pressing infrastructure need is for an adequate wharf facility to land produce. There is significant potential for marine farming in the Hauraki Gulf to grow considerably beyond its current scale."* (*Te Waka*, Letter of Support).
Sea Change – Tai Timu Tai Pari (Hauraki Gulf Marine Spatial Plan)	Growth in the Hauraki Gulf's aquaculture sector was also a key theme throughout the Sea Change Tai Timu Tai Pari Marine Spatial Plan in 2016, which identified Sugarloaf as the main current landing facility for aquaculture products, and noted the need for the Regional Coastal Plan to provide the planning framework for future growth. Sea Change also identifies *"a strong need within the Hauraki Gulf to provide for the expansion, readjustment and/or relocation of existing marine farms, particularly in areas like the Firth of Thames/Coromandel where aquaculture has large growth potential and is viewed positively by most of the community."*

Waikato Regional Council - Draft Regional Aquaculture strategy	Waikato Regional Council (WRC) has been heavily involved in aquaculture since the early days of the industry, both as a regulator and as a promoter of sustainable economic growth. In the Firth of Thames WRC was key to the establishment of the Wilson Bay marine farming zone. ~[redacted]% of the currently consented aquaculture areas in the Hauraki Gulf are within the WRC boundaries. WRC requires through its consents that all mussel farm landings occur only at approved landing sites, among which Sugarloaf is the only functional option. The WRC has recognised that aquaculture is particularly important to the Region by convening (and chairing) an Aquaculture Forum to consult with industry and inform the Regional Plan renewal process. It has also prepared a draft Aquaculture Strategy to guide future development and growth in the Region. WRC has identified five future focus areas to facilitate aquaculture development, these include: • Sustainable Environment and Community; • Leadership and Collaboration; • Infrastructure Support for Aquaculture and Marine Industries; • New Opportunities in Aquaculture Development; • Develop Marine Science, Technology, Education and Training.
Waikato Regional Council Coastal Plan	**Section 6: (Marine Farming)** *"Marine farming is an industry of increasing social and economic importance, and can be a sustainable and efficient use of the CMA if it is appropriately located and managed. Some of the benefits of marine farming include:* • *economic and social benefits, including direct and indirect employment opportunities…* **Section 12.1.1: (Key Principles)** a. *"Ensuring that any proposal to use or develop the CMA incorporates 'public benefit' opportunities. Use and development should demonstrate that there is public benefit to be derived from the activity.* *Recognising benefits and costs.* *Where practicable, the benefits and costs associated with a proposed activity will be clearly identified and analysed when a decision on a coastal permit application is being made."*
Waikato Regional Policy Statement	The Waikato Regional Policy Statement framework set out several policies that align closely with the outcomes of the proposed development: **Built Environment:**

	"Requires that development in the coastal environment occurs in a way that protects … public access, … amenity and the natural hazard mitigation functions of the coastal marine area." **Integrated Management:** *"Takes into consideration the important role of regionally significant industry and primary production in the economic, social and cultural wellbeing of people and communities."* **Coastal Marine Area:** *"Helps to allocate space to activities in a way that resolves conflicting uses and provides for ecosystem functioning as well as people's social, economic and cultural aspirations."*
Waikato Plan (2017)	The Waikato Plan identified '10 Key Actions' to deliver on regional priorities, including: *"Identify the regional priorities for service and technical infrastructure We will clearly understand what infrastructure assets exist, what further infrastructure will be needed in the future (and where) and what will be affordable. This will involve:* • *Assessing what infrastructure is needed to make communities successful* • *Understanding communities' ability to pay* • *Identifying the urgency and scale of what's needed* • *Identifying the top priority infrastructure investments needed.* *"Assist in implementing the Waikato Economic Development Strategy (Waikato Means Business) … Specifically we will:* • *Review and identify opportunities in the innovation sector* • *Develop a plan for greater regional economic development capacity* • *Support the Regional Labour Market Strategy* • *Consider green growth initiatives."*

Local Alignment	
Organisation / Strategy / Document	***Description***

PGF Coromandel Marine and Aquaculture Applications for Kopu Marine Service Precinct and The Coromandel Marine Gateway	The Sugarloaf Wharf Expansion aligns and complements other Coromandel marine and aquaculture related PGF initiatives, namely the Kopu Marine Precinct and the Coromandel Marine Gateway Project – refer to Appendix C. **<u>Kopu Marine Service Precinct (TCDC – applicant):</u>** A feasibility study to enhance existing marine service facilities in Kopu Township that will support vessel servicing jobs that would traditionally go to Whangarei or Auckland. This investment will allow for cluster development and multi-use facilities growth in marine servicing, bulk storage, research and water-based tourism related activities. The Sugarloaf project has a high degree of alignment with potential development at Kopu and aquaculture industry growth will support the economic development potential of Kopu by keeping important marine servicing industries in the District. **<u>Coromandel Gateway Project (Pita Street Developments Ltd – applicant):</u>** A business case that seeks funding to develop a new centrally located marine facility at Coromandel Town. This tourism and recreationally-focused development will provide a marina for commercial ferries and alternative landing facilities for recreational boat owners away from the aquaculture activities.
Thames Coromandel District Council, 2018-2028 Long Term Plan	TCDC has identified infrastructure resilience as a key issue for the District (with many coastal assets at risk of sea level rise and flooding through climate change-related issues), and is focused on ensuring the long-term sustainability of these assets. This development addresses the sustainability of Sugarloaf with a long-term (50 year) outlook that builds-in climate change resilience by designing for the future sea-level rise projections. ***"Critical coastal assets include … Sugarloaf wharf and jetty, …" (Thames-Coromandel District Council Long Term Plan 2018-2028).*** Aquaculture has been identified as an industry with significant growth potential and has therefore been identified as an economic growth priority for the Thames-Coromandel District Council. The Infrastructure Strategy outlined in the Plan describes *"a conservative approach to spending that ensures existing assets are managed efficiently and effectively, and that investment in new infrastructure assets will be based on the following principles:* 1. *Making best use of existing infrastructure and ensuring good stewardship of the investments already made.* 2. *Managing assets based on quality information.* 3. *"Right sizing" infrastructure assets.* 4. *Ensuring that investment in new infrastructure is only where demand is certain and long-term.* 5. *Taking a careful approach to adopting increased service levels."* This project aligns with TCDC infrastructure priorities by: 1. addressing existing concerns regarding the current health and safety issues at Sugarloaf, including the spatial congestion between farmers and recreational users;

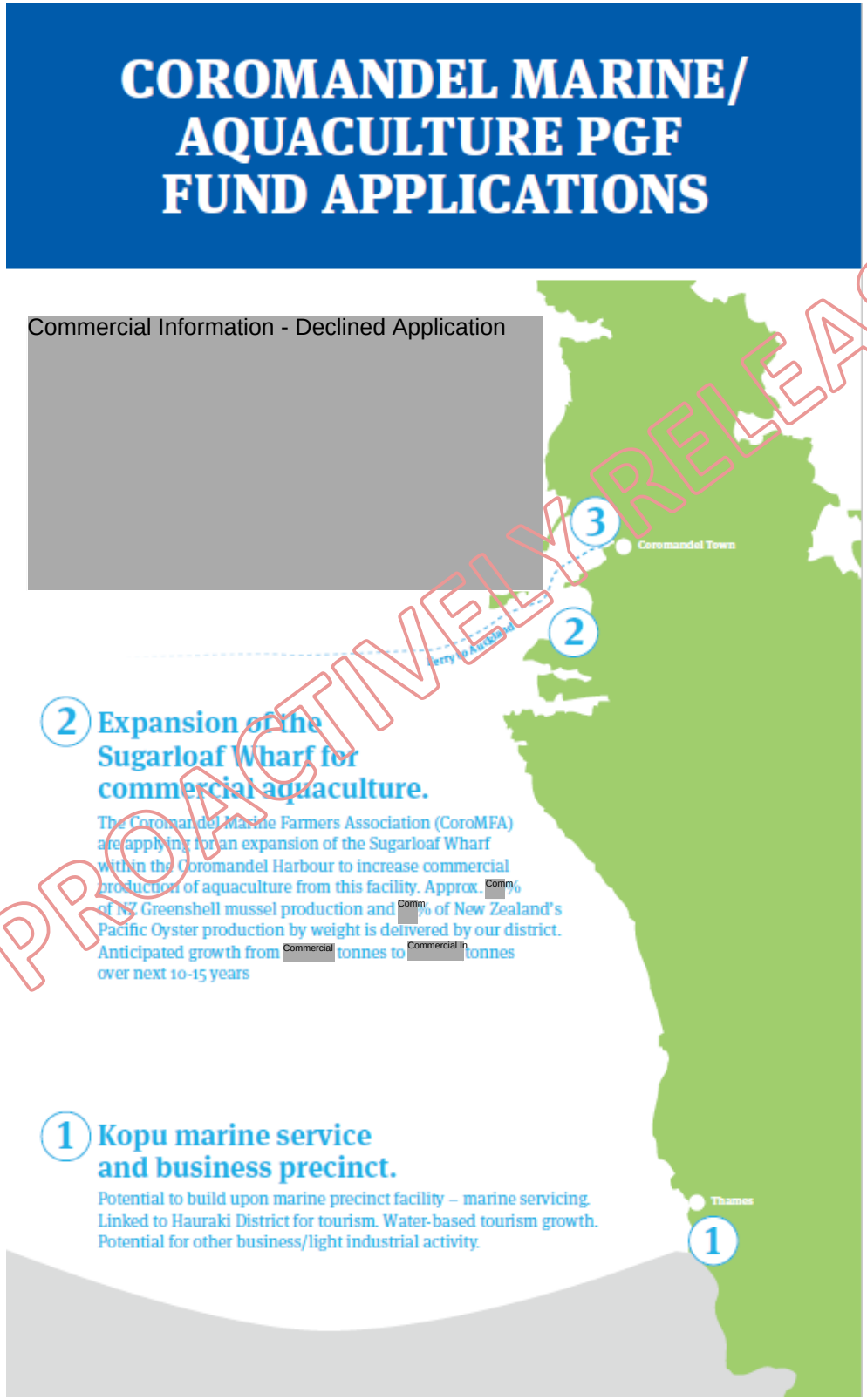
	2. recognising that job opportunities are limited in Thames-Coromandel and Hauraki Districts and that creating infrastructure services for the growing marine farming industry will help address this issue; 3. synthesising a range of high-quality information from industry, community, Iwi, and local government to allow stakeholders to identify the appropriate mix of infrastructure that will facilitate long-term growth in the Region; 4. recognising that Sugarloaf is a critical coastal asset as the only all-tide access boat ramp in the Coromandel, and is the preferential location for aquaculture-related activity; 5. seeking a circular economy solution to minimise waste associated with significant long-term future growth; 6. ensuring future development will provide for climate change adaptation and low carbon economic transition.
Business Productivity Plan – Thames-Coromandel District Council	TCDC's Business Productivity plan application is focused on high value opportunities, with five targeted workstreams proposed: *Land use, Land productivity, Connected journeys, Aquaculture, and Destination Management.* CMFA recognise that the resilience of transport routes around Sugarloaf and in the District overall, are critical to the success of growth in this part of the country and supports this project. The primary focus will be on improving transport networks across all modes to enable growth using a network approach, supporting and progressing resilience, and connecting economic drivers around aquaculture.
Thames-Coromandel District Council Marine & Harbour Facilities Strategy	The Strategy sets out a long-term plan for the boat ramps, wharves and jetties across the District and helps to inform the 2018-2028 Long-Term Plan (specifically in relation to marine and harbour assets and facilities). It takes into account health and safety, access, growing visitor demand and potential funding partnership opportunities. This project aligns strongly with all the objectives outlined in the Strategy Action Plan, which includes: • *"Prioritising upgrades of facilities from a district-wide perspective* • *Identifying the most appropriate initial and on-going funding mechanism for each facility (user-pays, partnership models).* • *Developing a funding strategy, which creates opportunities for specific investment and joint ventures.* • *Work with private owners, government organisations, Iwi to resolve and clarify ownership and consenting anomalies in relation to existing facilities.* • *Work with interested parties on appropriate marine/harbour development at Coromandel Harbour."*

Appendix B: Direct Investment Summary

Direct Investment Summary	*Units*	*Inputs*	*'Total' investment (not adjusted for inflation)*
Lines			Commercial Information
Cost per line	*$*	Commercial Info	
Lines to be developed	*lines*	Commercial I	
Annual volume	*t / line / yr*	Comm	
Vessels			Commercial Information
Cost per vessel	*$ / vessel*	Commercial Informatio	
Capacity per vessel	*t / vessel / yr*	Commercial I	
Vessels required	*#*	Comm	
Factories			Commercial Information
Cost per factory	*$ / factory*	Commercial Information	
Capacity per factory	*t / factory / yr*	Commercial Info	
Factories required	*#*	Com	
Transport			Commercial Information
Cost per truck	*$ / truck*	Commercial Inform	
Capacity per truck	*t / truck / yr*	Commercial I	
Trucks required	*#*	Comm	
Spat			Commercial Information
Commercial hatchery	*$*	Commercial Information	
Total Industry Investment	*$*		Commercial Information

Source: Discussion from Steering Group

Appendix C: Coromandel PGF Projects



Appendix D: Schedule of Consented Space

Commercial Information

Appendix E: Construction Costs for Option 7

Schedule of Construction Costs

Single Phase Approach

	2020	2021	2022	2023	2024	2033	Total
Design and Planning	Commercial Inform	Commercial Inform	-	-	-		Commercial Inform
Commercial Construction	-	-	Commercial Inform	Commercial Infor	Commercial Inform		Commercial Informa
Recreational Construction	-	-	Commercial In	Commercial In	Commercial In		Commercial Inform
MSQA	-	-	Commercial In	Commercial In	Commercial In		Commercial In
Contingency	Commercial In	Commercial In	Commercial Inform	Commercial Infor	Commercial Inform		Commercial Inform
Total	Commercial Inform	Commercial Inform	Commercial Informa	Commercial Informa	Commercial Informa		Commercial Informa
Inflation	Commercial In	Commercial In	Commercial Inform	Commercial Infor	Commercial Inform		Commercial Inform
Total incl. Inflation	Commercial Inform	Commercial Inform	Commercial Informa	Commercial Informa	Commercia Informa	-	Commercial Informa
Cumulative	Commercial Inform	Commercial Inform	Commercial Informa	Commercial Informa	Commercial Informa		

Two Phase Approach

	2020	2021	2022	2023	2024	2033	Total
Design and Planning	Commercial Inform	Commercial Inform	-	-	-	-	Commercial Inform
Commercial Construction	-	-	Commercial Inform	Commercial Infor	Commercial Inform	Commercial Inform	Commercial Informa
Recreational Construction	-	-	Commercial In	Commercial In	Commercial In	-	Commercial Inform
MSQA	-	-	Commercial In	Commercial In	Commercial In	-	Commercial In
Phasing Costs	-	-	-	-	-	Commercial Inform	Commercial Inform
Contingency	Commercial In	Commercial In	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Inform
Total	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Infor	Commercial Inform	Commercial Informa	Commercial Informa
Inflation	Commercial In	Commercial In	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Informa
Total incl. Inflation	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Inform	Commercial Informa	Commercial Informa
Cumulative	Commercial Inform	Commercial Inform	Commercial Informa	Commercial Informa	Commercial Informa	Commercial Informa	

Source: Commercia + calculations

Appendix F: Detailed maintenance programme costs for Option 7

Detailed maintenance programme

Description	Total cost ($)	Spread over (yrs)	Cost per annum ($)
General inspection every 2 years comprising a visual inspection;	Commercia	Co	Commerci
Principal inspec ion every 6 years comprising a visual inspec ion, topographic survey, bathymetric survey and photographic records;	Commercial	Co	Commerci
Safety inspection following storm events, comprising an ini ial visual inspection to identify any damage and topographic and	Commercial	Comm	C mn erci
Mobilisation, supply and placement of rock revetment protection	Commercial Inf	Comm	Commercial
Maintenance dredging (assume 5 events at ~ 5000m3)	Commercial Inform	Comm	Commercial
Wharf maintenance (Fenders (assume 1 damaged beyond repair per year), asphalt resurfacing (year 15), painting of wharf furniture,	Commercial Inf	Co mn	Commercial
Replacement PV battery after 10yrs	Commercial Inf	Con m	Commercial
Maintenance of aids to navigation.	Commercia	Co	Commerci
Total costs			Commercial Inf

Source: Commercia