

KINGSTON DISTRICT COUNCIL FACT SHEET

MARIA CREEK

SUSTAINABLE INFRASTRUCTURE PROJECT



Background

In December 2019, Council released a fact sheet on the 'Maria Creek Boat Launching Facility' which considered Council's coastal management challenges and complexities surrounding the facility.

At that time, Council acknowledged that short-term solutions to maintain the recreational boating facility were not sustainable and proceeded to focus on providing a long-term solution that is financially sustainable through an affordable capital solution.

Whilst the community, particularly recreational fishers, tend to focus on the facility itself, Council was clear in its position to broaden its attention to a wider set of key objectives for the area, being:

- Provide a **jetty** that services the community and visitors;
- Provide a **boat launching facility** during peak times (October to May) that is **financially sustainable** (low maintenance) through an **affordable capital solution**;
- To create opportunity to **activate open spaces** and facilities;
- Consider **natural processes** of the coastal environment.

Council progressed its objective to find a financially sustainable solution by engaging Wavelength Consulting Pty Ltd to deliver Stage 1 of the *Maria Creek Sustainable Infrastructure Project*. The initial investigation phase is now complete and is summarised in this fact sheet.



Photo: Maria Creek breakwater January 2020; sand accumulation to full length

Outcomes of the study

The project commenced with detailed analysis of coastal processes and scientific modelling to understand the realistic impact of any future changes to the facility and surrounds.

It is extremely important to understand that the coastal processes within the area are highly complex and are driven by differing metocean and physical contributors. These processes and drivers are discussed in detail in the full concept study report, but are broadly considered as 'sand' and 'wrack' (being seagrass).

Understanding the Coastal Processes

The conceptual understanding of key drivers of the coastal processes were based on review of previous studies, modelling of waves, currents and water levels, as well as considering of a 'sediment budget' and longshore transport (being how much sand and wrack is available and how quickly is it likely to move along our coast).

The 'sediment budget' provided that we are likely to see between 30,000 m³ and 56,000m³ of sand move in a net northerly direction each year. However in the past we have seen 'sand slugs' of more than 100,000m³, such as after the extreme July 2016 weather event which was considered to be a '1 in 50' year event. Specifically, this event accelerated the saturation of sand of the southern breakwater in 2017.

In addition to the coastal processes, the Maria Creek drainage system also provides complexities and unique conditions for the facility. Given the low creek flows for the majority of the year, and the incoming tides (tidal currents) being stronger than the outgoing, the creek is a net importer of sand and seagrass. Storm conditions and wave direction mobilises seagrass wrack which accumulates within the creek channel and on the beach.

As we have witnessed, the construction of any 'hard structure' (such as a breakwater) interrupts natural coastal processes, and any future solution needs to consider the short and long term effectiveness for both sand and seagrass management.

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Community knowledge

In February 2020, Wavelength held one-on-one sessions to understand important knowledge and history held by members within our community. Written and verbal submissions were also received outside of the sessions. Key findings from the engagement sessions can be found in Section 3 and Appendix B of the full concept study report.

There were a number of ideas put forward by the community which were considered in the 'first pass assessment' as detailed in Section 5.3 of the report.

What are the modelled options?

The options (concepts) were developed through review of previous studies, solutions put forward by community members, numerical wave and hydrodynamic modelling and analysis of key coastal processes.

The 'first pass assessment' considered a number of options, with three (3) key concepts identified for further modelling and cost development. In each of these concepts, an additional cost to return the shoreline to its 2012 alignment is also considered. These concepts are detailed below:

Concept 1 – Ongoing Management



Capital/upfront campaign required:

- No structural change
- 300,000m³ dredging (southern side)

- 32,500m³ dredging (channel)
- 250m breakwater repairs
- Ineffective change to management of sand/seagrass

Capital cost: \$6.0M

Ongoing maintenance cost: \$505K annual

25 Year NPV (Net Present Value): \$13.8M

Additional cost to reduce shoreline (jetty): \$1.8M

Concept 2 – Extend Breakwaters



Capital/upfront campaign required:

- 310m breakwater extensions
- 80m breakwater removal
- 150m breakwater repairs
- 100,000m³ dredging (southern side)
- 35,000m³ dredging (channel)
- Ineffective change to management of sand
- Effective to minimize management of seagrass

Capital cost: \$10.9M

Ongoing maintenance cost: \$430K annual

25 Year NPV (Net Present Value): \$17.6M

Additional cost to reduce shoreline (jetty): \$3.4M

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Concept 3 – Narrow Entrance



Capital/upfront campaign required:

- 7m (approx.) increase to breakwater width
- 250m breakwater repairs
- 300,000m³ dredging (southern side)
- 31,500m³ dredging (channel)
- Ineffective change to management of sand/seagrass

Capital cost: \$6.6M

Ongoing maintenance cost: \$505K annual

25 Year NPV (Net Present Value): \$14.4M

Additional cost to reduce shoreline (jetty): \$1.8M

Realistically, there is no capital solution to maintain navigability at Maria Creek boat launching facility without significant capital and operational expenditure. The 'ongoing maintenance cost' is based on maintenance dredging of 30,000m³ per year based on the 'sediment budget'. This could increase up to 56,000m³ in any given year.

However, these three (3) concepts were specifically focused on reinstating the current facility. Additional concepts were also considered in context of the broader objectives, particularly the amenity of the jetty and surrounds.

Both Concept 4 and 5 would result in the current facility being accepted as non-operational, with further investigation into alternate locations and service levels. Depending on service levels, indicative costs for alternate options range between \$0.3M and \$10.6M.

Concept 4 – Remove the Breakwaters



- Remove 150m of northern breakwater
- Remove 240m of southern breakwater
- Shoreline change (sand mobilization/reduction) over time
- 5,000m³ annual dredging to ensure creek/drain flows

Capital cost: \$2.4M

Ongoing maintenance cost: \$22.5K annual

25 Year NPV (Net Present Value): \$2.7M

Additional cost to reduce shoreline (jetty): N/A

Further detailed modelling and investigation is recommended if this concept option is to be progressed. These could investigate the likely shoreline change if a lesser portion of the breakwater/s were removed (eg 80m of the southern breakwater to the 'elbow').

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Concept 5 – Do Nothing



- No change or repairs to breakwater structures
- Shoreline change (sand accumulation) over time
- 5,000m³ annual dredging to ensure creek/drain flows

Capital cost: N/A

Ongoing maintenance cost: \$22.5K annual

25 Year NPV (Net Present Value): \$0.3M

Additional cost to reduce shoreline (jetty): N/A

Concept 5 was considered to understand the effect on the shoreline, and particularly of the Kingston Jetty, in the event no ongoing management or structural change was pursued.

The shoreline will continue to widen under this concept, meaning more of the jetty will be inundated with sand and ongoing minor costs to ensure creek/drain flows.

This fact sheet provides a very simplified overview of the concept options. The full concept study report provides further important detail and analysis on the effect of each of these concepts.

How will we be able to afford it?

When considering the magnitude of the works that would need to be undertaken to address the complex issues at the facility to restore it to a navigable condition, there are significant costs involved. This includes up front (capital) costs, as well as ongoing maintenance costs (annual).

To restore the current facility, between \$6.0M and \$11.0M would be required as an immediate cost (capital) and approximately \$500K annually as ongoing maintenance costs (Concept 1 – 3).

Firstly, Council's capacity to fund the capital (up front) component must be considered. Even without any structural changes to the facility, an initial cash injection of \$6.0M would be required to restore the facility to a navigable condition. This is far beyond Council's existing cash reserves and would therefore need to consider a loan facility. Based on Council's current borrowings, income and cash reserves, Council would unlikely be able to facilitate a loan of this amount.

The initial capital cost is a significant challenge for any future pathway for this facility. Additionally, when considering the ongoing maintenance costs required, Council's long-term financial plan is currently projecting an operating deficit until 2024/25 and with only 2,631 rateable properties, Council's ability to increase revenue is limited.

In context, the indicative annual cost to maintain the facility identified in the study (approximately \$500K) represents approximately 14% of annual rate revenue. As a comparison, Council's annual *capital* budget for renewal of our extensive rural road network is \$650K.

Whilst Council will continue to explore grant funding opportunities, there will be limited streams to pursue based on the nature of the project. Grant funding can be highly competitive and complex, with any funding unlikely to be able to contribute the significant amount that Council would need in order to progress any capital project.

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Photo: Maria Creek Seagrass Accumulation June 2020

What about another location in Kingston?

When considering any alternate location or option, it is important to consider the coastal processes (wave, sand, seagrass, wind, storm etc) and the effect on any future structure or facility.

The concept study identifies that there are very limited alternate locations available based on minimal shoreline change over time. Only two (2) appropriate locations are identified, with Johnston Avenue being identified as the recommended alternate location. However, based on wave climate and sand/seagrass transport, any alternate location will have its complexities and ongoing management challenges, as well as initial capital/upfront costs.

Depending on the required service level of an alternate location, costs range between \$0.3M and \$10.6M. As an indication, a 'service level 1' informal beach launch option with temporary panels at Johnston Avenue location has an indicative 25 Year NPV (Net Present Value) of \$0.8M, whereas a 'service level 3' piled two lane boat has an indicative 25 Year NPV of between \$9.6M and \$10.6M.

Any alternate location and ongoing management requirements would need to be considered carefully and are heavily dependent on the concept endorsed for the Maria Creek facility. Any future breakwater structures are not recommended.

The concept study provides more detail on alternate locations and costs, with further investigation required if this were to be pursued.

So what happens now?

The Stage 1 Concept Study report of the *Maria Creek Sustainable Infrastructure Project* was considered at the Council meeting of 21 July 2020 for community release.

The full concept study report can be accessed via Council's website. Alternately, please contact the Council office to request a printed copy of the study. Community members are able to submit comments, or questions for clarification in response to the concept study report. These can be submitted via our website or at the Council office.

Given the importance of this project to the community, Council will form a targeted community focus group comprising of key stakeholders to consider the detail of the concept study report and to provide contribution on behalf of the community. Council will approach key representatives of industry and interest groups to form the community focus group, as well as staff and elected member representation.

Council and the community need to very carefully consider its next step, particularly in regards to Council's realistic financial capacity to deliver any of the concept options requiring a significant up front cost and considerable ongoing financial commitment.

This decision is not easy or simple, and Council is committed to take the time to get it right. This decision not only affects the current community, but future generations.

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