

Cooks Beach Erosion Protection

TO Mercury Bay Community Board
FROM Allan Tiplady - Acting Mercury Bay Area Manager
DATE 3 November 2015
SUBJECT **Cooks Beach Erosion Protection**

1 Purpose of Report

To provide the Community Board with options to protect Purangi Reserve and associated public wastewater pumpstation from end effect erosion.

2 Background

Accelerated erosion of the Purangi Reserve adjacent to the constructed Cooks Beach seawall is evident. Since June 2013 up to 10 meters of the reserve has been lost to erosion that has resulted in the requirement to relocate the Cooks monument, the loss of the public seat, and the threat of inundation of the public wastewater pump station located within the reserve. Staff are convinced that there is a relationship between the construction of the rock seawall located immediately west of the reserve, and the accelerated erosion occurring (an end effect occurring at the end of the seawall - a relatively common occurrence with hard sea wall structures).

In 2014, Tonkin and Taylor Ltd (T & T) were engaged to provide design of a solution plus to obtain Thames-Coromandel District Council (TCDC) resource consent to undertake remedial works. Waikato Regional Council consent was not required as any solution is above the coastal marine area (CMA).

T & T designed an extension of the existing consented rock seawall and applied for consent from TCDC. An independent commissioner was appointed by TCDC to determine resource consent conditions. They determined that the consent application was required to be public notified and that additional coastal and landscape assessment was required. The T & T Coastal Assessment as attached has been undertaken with a number of alternatives being offered. Once a decision has been determined on the alternative to be pursued, the Landscape Assessment will be undertaken.

3 Issue

There are three issues that need Board consideration, being:

a) Protection of the public infrastructure including Purangi Reserve, wastewater pump station, stormwater reticulation, and to a lesser extend at this present time, Captain Cook Road from the effects of coastal erosion.

b) If protection of the public infrastructure is recommended by the Board, then a decision is required as to construction material for any seawall construction.

c) Either to continue with public notification and hearing, or submit a new resource consent application.

All of these options require more reports to be obtained from T & T, the quantum of reports are related to the options chosen.

4 Discussion

a) Erosion mitigation (Infrastructure protection):

A possible do nothing approach has been looked at, but it has been concluded that this approach will compromise strategic Council infrastructure located within the immediate erosion zone, therefore other options require investigation, which include avoidance, adaption and protection.

Avoidance includes managed retreat; adaption includes dune restoration and beach nourishment, while protection includes a timber or rock seawall.

These options vary in their levels of effectiveness, timeframes, capital costs, operational costs, and environmental effects.

The following is a summary of mitigation solutions, costs and timeframes.

Mitigation Solution	Avoidance - managed retreat
Pros	-No effect on hazard
	-Natural character maintained
	-Natural processes maintained
Cons	-Medium to low risk of damage to assets when removing or relocating
	- Ongoing loss of recreation reserve during erosion phase
	- Require alternative route to Purangi Reserve and boat ramp in Captain Cook Rd
Timeframe	- Short term to medium term effect
Costs	- Costs associated with relocating assets as risks are identified. This could include the public wastewater pump station (approx \$250,000), 80m of public stormwater reticulation (approx \$50,000), 40m of public road - Captain Cook Road (approx \$100,000 plus inconvenience for public access to Purangi Reserve, Purangi Boat ramp and access to private properties on Captain Cook Road)
Mitigation Solution	Protection rock wall or wood sea wall
Pros	- Reducing the current erosion hazard during storm events
	- Natural character maintained

	- natural processes maintained
	- Improved visual aesthetics and public access
	- Improved short term protection during storm events
Cons	- Medium risk to assets
	- Little effect on long term effects of erosion due to a sea level rise
	- Ongoing loss of the Purangi Reserve , public assets and infrastructure assets over the long term if not maintained.
Timeframe	- Short term effect
Costs	- Ongoing maintenance costs for push ups and replacement dune planting .
	- May require replacement of assets due to major storm events
Mitigation Solution	Protection - rock or wood seawall
Pros	- Erosion of shoreline ceases at time of construction over medium term
	- Protection of reserve and infrastructure
	- Rock would blend in with existing rock wall
Cons	- Low risk of failure
	- Limited life of structure (50 years)
	- Loss of natural character of beach and backshore
	- Loss of existing recreational area on beach
	- Potential beach lowering
	- Potential end effects during an erosion phase
	- Wood would not blend in with existing rock wall
Timeframe	- Medium term effect
Costs	\$200,000

-c) Resource Consent:

As indicated above, the resource consent application for a rock revetment was lodged with

the TCDC in 2014. An independent commissioner was appointed and ruled that the application was to be a publically notified hearing, and that there was further information required that included a coastal processes assessment (now undertaken and attached as Attachment A), plus a landscape and visual assessment (not undertaken yet).

The hearing process was placed on hold, pending the completion of the further information assessments.

Once the Board has decided on the options they wish for the protection of Purangi Reserve, Council will complete the landscape and visual assessment.

Council has two ways forward with the resource consent process once the further assessments are completed, being:

- Continue with the publically notified hearing
- Withdraw the current application and re-submit a new application including all of the further information. T & T anticipate that a new application including the further information, should negate the requirement for a publically notified hearing, and the consent should be approved as is.

Either option will have costs, both in time and money. These need to be discussed in the meeting.

5 Suggested Resolution(s)

That the Mercury Bay Community Board:

1. Receives the 'Cooks Beach Erosion Protection' report, dated 3 November 2015.
2. Recommend that protection of Purangi Reserve and all associated public infrastructure is a priority.
3. Recommend that a sloped rock revetment wall is constructed to protect Purangi Reserve so as to blend in with the existing rock wall, and to offer the maximum protection to Council infrastructure.
4. Recommend continuation with the public notification of the existing submitted resource consent.

References-Tabled/Agenda Attachments

Attachment A *Cooks Beach East Coastal Processes Assessment - Draft - July 2015 - Tonkin and Taylor Ltd.*

Attachment A Cooks Beach Assessment draft