

Mercury Bay Coastal Erosion Work Programme - Implementation Plan

TO	Mercury Bay Community Board
FROM	Allan Tiplady - Mercury Bay Area Manager
DATE	3 March 2017
SUBJECT	Mercury Bay Coastal Erosion Work Programme - Implementation Plan

1 Purpose of Report

To seek approval for the implementation plan for the Mercury Bay Coastal Erosion Work Programme.

2 Background

The Mercury bay Community Board has adopted a Mercury Bay Coastal Erosion Work Programme and Action Plan. Work has now been completed on the development of an implementation plan. This plan sets out the detail in relation to the work required, priority, timing and methodology, costs and budgets required to effectively implement the Programme.

3 Issue

To consider the detailed implementation plan for coastal erosion in Mercury Bay and associated costs and budgets required.

4 Discussion

Under the Finance section below is a summary of the costs broken down into priorities and the years in which the work is to be undertaken.

Attachment A is the detailed Implementation Plan setting out the work required specified and costed on a beach by beach basis. It should be noted that the year specified in the plan should be moved out by one year as the work is suggested to start in 2016/17, which is not practically feasible to achieve.

Methodology

The following is a brief summary of the sequence in which the various tasks will need to be completed.

- a) Generate wider involvement of the community. This includes establishing local community groups in each location and enlisting their support to undertake preparation, planting, protection, promotion and maintenance of the dunes.
- b) Plant purchase and storage
- c) Weed control before planting
- d) Planting / fertilising by the community
- e) Ongoing weed control.

Resources

How the programme is implemented will need to be decided. The options range from engaging staff to manage the programme and its delivery through to the engagement of external contractors to deliver it. An analysis of the cost / benefit of the options will need to be undertaken before making this decision.

In addition Council will need to provide for:

- a) A secure plant holding facility with watering capability
- b) Planting materials
- c) Transportation of plants to sites
- d) Pest control

Finance

The plan proposes the following costs and budget requirements:

	2017/18	2018/19	2019/20	2020/21	Total
Whangapoua	35,750	22,550	19,250	9,900	87,450
Matarangi	49,500	38,970	32,985	41,985	163,440
Grays Beach	8,250	8,800	11,000	11,000	39,050
Kuaotunu	18,800	16,650	11,000	24,000	70,450
Opito	13,950	14,850	11,250	22,500	62,550
Wharekaho	17,000	24,500	16,500	27,500	85,500
Brophys Beach	27,500				27,500
Taputapuatea Spit	13,000				13,000
Yacht Club Area	9,000				9,000
Buffalo Beach	27,000	22,500	31,500	22,500	103,500
Front Beach	9,675	12,000	6,250		27,925
Flaxmill Bay	1,500	4,500	3,150		9,150
Cooks Beach	29,700	26,325	31,050	23,500	110,575
Hahei Beach	12,500	14,000	8,250	34,500	69,250
Hot Water Beach	12,500	25,200	28,800	30,150	96,650
Contingency	14,206	11,392	10,616	12,534	48,748
Supervision	36,936	29,619	27,602	32,588	126,745
Total	336,767	271,856	249,203	292,657	1,150,483

The initial budget for 2016/17 coastal erosion work in Mercury Bay was:

Project	2016/17 Budget	Revised Budget	Funds To Be Carried Forward To 2017/18
Cooks Beach	269,820	10,000	259,820
Buffalo Beach	537,955	21,471	516,484
Macrocarpa Reserve	100,000	60,000	40,000
Total	\$918,425	\$91,471	\$816,304

The Programme adopted for the control of coastal erosion in Mercury Bay has moved from the development of rock revetment wall structures to the restoration of the natural beach environment and dune systems. The costings outlined above demonstrate that this can be achieved at significantly less cost and that over a four year period all 15 of the beach areas could be restored at a total cost of \$1.15million.

As the work is ruled under accounting standards not to be a permanent structure in the same manner as a rock wall it will have to be treated as an operational cost rather than capital cost. The work will however, still be delivered as a project and loan funded.

The proposal is that the funds currently identified to be carried forward from 2016/17 to the 2017/18 year be reduced from \$816,304 to \$336,767 and that the operational project budget required for the following three years, as set out above, be included in subsequent years annual plans.

Funding

A question that arises is whether the costs of the programme should continue to be a District cost. The purpose for which the funds are required has not changed. They are still to be used for the development of a permanent solution to the prevention of erosion on the Mercury Bay coastline. It will also continue to be managed and implemented as a project in the same manner as a rock wall construction project would. It is therefore proposed that the funding of the programme remain as a district funded operational project cost.

Groynes

Part of the project costs initially proposed were the construction of two groynes. One was a groyne to be built alongside the Te Waiti Stream at Macrocarpa Reserve. It is proposed that this construction continue as planned. The cost of this is estimated at \$60,000. The funding for this is retained in the 2016/17 years budget figures set out above.

The second groyne proposed was to build a structure on a right angle at the end of the existing rock wall on Buffalo Beach going to the low tide line. The recommendation from the Council's Engineering advisers was a wooden structure be built for a length of 35 metres in the intertidal area. Various views have been expressed in relation to whether the groyne should be constructed or not and if it is the type of material to be used.

The engineering advice received was that the purpose of the groyne would be to trap sediments transported along the shore to attempt to build up the beach in front of the seawall and prevent the end effects of the existing rock revetment wall. Wood was chosen as the groyne was proposed as a trial and it would be easily modified to improve performance if necessary or easily removed if the trial was not successful.

The proposal was that if the trial was successful then it would be replaced with a more permanent structure. The cost was estimated at \$70,000.

The view expressed by the person who has advised the Community Board in relation to the Coastal Erosion Programme advises that the groyne would do no harm but be of little practical benefit as the dune restoration work would create reestablishment of the dunes and beach at a greater rate than the groyne would.

On the basis of this advice it is proposed that the trial groyne on Buffalo Beach not be installed.

If it is decided that the trial groyne should proceed then the figures above would need to be amended with \$70,000 retained from the Buffalo Beach 2016/17 budget for this purpose.

Flaxmill Bay

The question of how to deal with the coastal erosion issue at Flaxmill Bay has been under discussion for some time. The erosion provides a risk to Purangi Road. To mitigate the risk a process was commenced to obtain resource consent to build a rock revetment wall in the event the threat got within a metre of the road. This application was lodged with Waikato Regional Council but was opposed by a group of residents. As a result it has been put on hold.

The Coastal Erosion advice received is that the dune and coastal environment restoration is the most appropriate method of protecting Flaxmill Bay and the road in the long term. This has commenced with dune planting having been undertaken, which to date has been successful. It must be noted though that there has been favourable weather conditions and how it would cope has yet to be tested with a severe weather event. The advice is also that in the event the road does become threatened then the most appropriate mitigation if a hard structure is required would be the use of gabion mattresses rather than a rock revetment wall. These have the benefit of being more adaptable to having dune restoration implemented over them so that they become a backstop rather than front line protection. The down side of this is that they have a limited life span with the wire containing the rocks being susceptible to deterioration over time.

Cooks Beach

The budget for Cooks Beach was for the construction of a rock revetment wall from the existing home owners wall to the Purangi Point. This has not proceeded as the advice received was that a dune planting programme would be a more successful long term solution. This has been implemented with large scale planting taking place, which has been largely successful. The front end of the dune has had some damage but this can be restored with additional planting and restoration.

Buffalo Beach Home Owners Wall

The consent for the home owners wall which runs from the private properties adjacent to the Macrocarpa Reserve and a small portion of Council wall has expired. The home owners are in the process of developing a new resource consent application for the wall to be restored / rebuilt. Whilst this is likely to continue the coastal protection advice received and included in the Mercury Bay Programme is that dune restoration and planting is the most effective long term solution.

Buffalo Beach Transit Wall

The consent for the existing "Transit" wall which runs from Albert Street to the Council wall close to the Buffalo Beach public toilet facility is due to expire. Work is currently being done to have the consent renewed.

5 Suggested Resolution(s)

That the Mercury Bay Community Board:

1. Receives the 'Mercury Bay Coastal Erosion Work Programme - Implementation Plan' report, dated 3 March 2017.
2. Recommends to Council that it approve the implementation plan for the Mercury Bay Coastal Erosion Programme and the associated budget to be spread over four years from 2017/18 to 2020/21 with an accumulated total of \$1,150,483 as set out in Section 4, Finance of the report to the Mercury Bay Community Board dated 3rd March 2017.
3. Recommends to Council that it discontinues the Cooks Beach, Buffalo Beach and Macrocarpa Reserve coastal erosion rock revetment projects and the Buffalo Beach groyne project programmed for 2016/17, with a total budget of \$816,304.
4. Approves the resource consent process for the Flaxmill Bay rock revetment wall remaining "on hold" pending further assessment of the success of the dunes restoration work and of the gabion mattress option.
5. Recommends to Council that the Chief Executive be authorised to take all actions necessary to implement the decisions.

References-Tabled/Agenda Attachments

Attachment A *Coastal erosion enhancement programme for Mercury Bay Beaches*

