

---

## Coastal Management

---

### Purpose

1. Provide options for increased investment for coastal protection, access and amenity structures including coastal asset renewals. Specifically to develop coastal compartment management plans to inform a comprehensive coastal asset management plan for the Auckland region.

### Summary

2. Auckland Council owns approximately \$350 million of coastal assets. Historically, maintenance and renewals have been on a reactive basis with limited funding, resulting in an asset base in relatively poor condition.
3. This proposal has been developed in response to the Environment and Community Committee resolution (set out below). It also responds to the Mayoral Intent in relation to “protecting our environment” and “addressing climate change challenges”.
4. Three main options have been developed for consideration in the Long-term Plan (LTP) 2018-2028 as set out in the attached table.
  - Option One: Status quo.
  - Option Two: Strategic approach which reduces reactionary asset renewals, whilst addressing the increased demand for new works in response to climate change impacts (rising sea level and increased erosion rates). This will require additional funding of an estimated \$117 million of capex over 10 years and additional opex to support development of the coastal asset management plan.
  - Option Three: Replace coastal assets when they are assessed to be in poor condition and new construction works as required. This will require additional funding of an estimated \$150 million - \$200 million over 10 years.
5. Option Two would help Auckland Council to better manage and protect the coastal assets it is responsible for.

### Background

6. Auckland Council owns and manages approximately \$350M of coastal protection, access and amenity related assets over Auckland's 3,200km of coastline. Historic under investment that has primarily addressed reactive works has resulted in an asset base that is in relatively poor condition with insufficient funds available to renew all damaged assets for the next 10 years. The predicted impacts of climate change, coupled with failing assets, has led to community groups requesting improved coastal protection, with calls to better manage our coastal assets.
7. An Auckland Council Coastal Management Framework was developed to help council better manage its coastal assets, and to better mitigate the risks associated with coastal erosion and the combined effects of predicted climate change. The framework was approved by the Environment and Community Committee in August 2017 with a specific request to:
 

*“... request a report on funding implications to address issues of coastal erosion, inundation and safety, as part of the Long-term Plan 2018-2028.”*
8. This framework will enable council to move from the current default position of reactionary ‘like-for-like’ renewals to a prioritised work programme that is based on improved asset management planning underpinned by business cases leading to improved asset investment.
9. Currently there is no funding for capital asset investment after mid-2020, even if current expenditure were to be reduced. Future investment after 2019/2020 will be required to replace failing coastal assets, especially those that provide protection to high value or critical infrastructure.

## Options

10. Three options have been developed for consideration in the Long-term Plan (LTP) 2018-2028 (Attachment A):
- **Option One** (status quo) involves reactive investment when coastal assets fail. The current capex budget of \$9M (2018/2019) and \$6M (2019/2020) will be exhausted by 2019/2020.
  - **Option Two** involves moving to a delivery model where asset replacement is based on prioritised need for protection and development of new assets. This requires initial investment to develop coastal compartment management plans that include public engagement, which will then inform a coastal asset management plan (AMP). The opex funding required for the development of compartment management plans and a coastal asset management plan is \$900,000 pa for the first two years of the LTP. This AMP will more accurately inform the funding requirements for the remainder of the LTP. However, at this stage the increased investment is estimated to be in the order of \$120 million over the 10 years - with \$2 million and \$8 million of the additional amount required in years 1-2 of the LTP respectively to fund the Orewa seawall project and other pressing renewals.
  - **Option Three** involves replacing assets when they are assessed to be in poor condition, infrequent new works, and construction of the Orewa seawall during the first 2 years of the LTP 2018-2028. Current demand for renewals and larger scale interventions is assumed to continue. Without the benefit of a coastal asset management plan, it is accepted that capital expenditure would be more ad-hoc and therefore potentially higher. Total capex has been estimated at \$150 - \$200 million over the 10 years with \$2 million and \$8 million of the additional amount required in years 1-2 of the LTP to fund the Orewa seawall project and other pressing renewals. This approach is less likely to deliver long term sustainable solutions than option 2.
11. Under option three, it is estimated that future demand for ongoing investment could be up to \$20M per year for renewals and new projects from 2020. Option 2 proposes an asset plan which would inform prioritised investment from 2020 onwards, and reduce investment required, by 25% or more. The assessment of future demand for capital investment assumes that up to 35-40 per cent of assets could require replacement and additional work in the next 10 year, without prioritisation in place.
12. All options propose that maintenance opex of \$600k/year is continued.
13. Based on current data, all options have certainty for the first two years. Figures after year two are assumptions, to be verified in the next LTP review.

## Attachments

No.	Title
A	Options table

## Signatories

<b>Authors</b>	Sarah Sinclair, Chief Engineer Paul Klinac, Manager Coastal and Geotechnical Services
<b>Authorisers</b>	Barry Potter Director Infrastructure & Environmental Services Ian Maxwell, Director Community Services

## Attachment A: Options Table

	Rationale and Description	Delivery and Implementation	Funding	Outcome and Risk
<b>Option One:</b>	<p>Replace assets when perceived to be in poor condition, within limited budget Renewals after FY20 not currently funded. Maintenance OPEX continues as is.</p>	<p>There is no AMP driving the forward work programme. Implementation often based on local budgets, making large projects difficult to plan and fund. Capital investment continues until fund exhausted (2020).</p> <p>Approach means procurement of design and construction has no opportunities to programme work for procurement or delivery efficiencies.</p>	<p>\$15M CAPEX LTP 2018-2028. Spent by 2020.</p> <p>\$6M OPEX (600k/ year) for maintenance works</p>	<p>Level of service not defined.</p> <p>Assets replaced on or after failure until funding exhausted. 6 per cent renewed in next 10 years. Renewal demand will not stop in FY20. Underinvestment indicated.</p> <p>Maintenance OPEX will not be sufficient to address or resolve deterioration issues.</p>
<b>Option Two:</b>	<p>Increase CAPEX investment to fund current renewal demand plus Orewa seawall for first 3 years.</p> <p>Develop Coastal compartment management plans and coastal AMP, with understood funding requirements.</p> <p>Maintenance OPEX continues as is.</p>	<p>Review and reprioritise first 3 years CAPEX renewals and allow budget for Orewa seawall.</p> <p>15 CCMPs from 2017-2020. Plans developed with AT and Panuku, although assets funded separately.</p> <p>CCMPs and condition survey delivered by Council. Specialist staff involved to improve outcomes. AMP will allow consideration of future delivery model such as panels for contractors and consultants with relevant technical expertise.</p>	<p>\$117M CAPEX LTP 2018-2028. Require \$25M 2018-2020.</p> <p>AMP to determine future funding need and priority in more detail. Future spend estimated 2021 onwards.</p> <p>\$8.6M OPEX (\$1.2M for 2019 and 2020 for Asset plans, technical support and maintenance, \$780k/year thereafter, for technical support and maintenance.)</p>	<p>Prioritised and budgeted regional asset management programme will enable reduced CAPEX investment due to demand management.</p> <p>Reduced CAPEX from current demand, approximately 30 per cent of assets renewed in next 10 years</p> <p>Prioritised AMP exists, to inform prioritisation and risk assessment post storms.</p>
<b>Option Three:</b>	<p>Replace assets when assessed to be in poor condition, and new works. Current demand for renewals and larger scale interventions assumed to continue.</p> <p>Maintenance OPEX continues as is.</p>	<p>Work will be prioritised based on high level condition survey and demand for additional seawalls and amenity assets</p> <p>Specialist staff involved to improve outcomes. No CCMPs undertaken.</p>	<p>\$150-200M CAPEX LTP 2018-2028.</p> <p>Require \$25M 2018-2020.</p> <p>\$7.8M OPEX (\$780k/year) for technical support and maintenance</p>	<p>35-40 per cent of coastal assets will be replaced within the next 10 years. All assets are renewed like for like, with new assets built where erosion problems occur. Approach creates problems with sustainability long term.</p>