

**THE WEST COAST REGIONAL COUNCIL**

**HOKITIKA SEAWALL RATING DISTRICT**

**ASSET MANAGEMENT PLAN**

Chris Ingle, West Coast Regional Council, 2015.

## **EXECUTIVE SUMMARY**

Under the Local Government Act 2002 Councils are required to develop 'Asset Management Plans' to demonstrate that they are managing the infrastructure for which they have responsibility.

This plan sets out the history of the seawall scheme so there is a record of the major decisions, including expenditure. It identifies the objective of the scheme as well as the methods of monitoring the condition of the assets, and estimating the annual maintenance funding needed to retain the service level.

The Hokitika Seawall starts at the seaward end of Stafford Street, extending 650 metres southwards towards the river mouth. The wall protects the central business district of Hokitika from the cyclical sea erosion events experienced at this location. In 2013 20m – 30m of foreshore was lost to the sea in a short period of time.

The rating district funding was established in 2013 from a special rating area set across the townspeople of the old borough of Hokitika - the town was arranged into four classifications according to the benefit derived from the wall. In 2015 a new rating class outside of the town boundary is being established to broaden the funding base.

The Hokitika Seawall Joint Committee is made up of three elected members of the West Coast Regional Council and three elected members of the Westland District Council. This committee is responsible for administering the seawall and related issues. The committee has an agreement which sets out the roles & responsibilities of each of the councils.

This plan also includes the Infrastructural Asset Register which details all of the Scheme's assets and their latest valuation.

### **Maintenance Expenditure vs Capital Expenditure**

The aim of maintenance is to ensure the infrastructure assets are kept at a standard where they can always perform to their service level. Where rock is required to be placed on an existing seawall under direct attack from the sea, the protection required to maintain the existing seawall at its same service potential would be charged to the scheme maintenance account.

Capital works are generally defined as works which increase the service level of the scheme. Such work would include increasing the design standard or the area covered by a scheme and works to increase security or performance of an erosion control system or structure over and above that identified in the asset plan.

## **SECTION 1: INTRODUCTION**

### **1.1 PURPOSE OF AN ASSET MANAGEMENT PLAN**

This Asset Management Plan defines the objectives and performance standards of the Hokitika Seawall Rating District scheme for which the Regional Council has the maintenance responsibility. It also provides a basis upon which the effectiveness of maintenance performance can be measured.

This asset management plan:

- Describes the history of the rating district and identifies its assets.
- Describes the methods used to maintain the service level of these assets.
- Complies with the regulatory requirements of the Local Government Act 2002.

### **1.2 BACKGROUND**

Historically the Hokitika beach front area has undergone periods of erosion and build-up. These erosion events are cyclic. Short term erosion phases peaked in the 1860's, 1880's, 1910's, 1940's, 1950's and 1980's (J Gibb, 1987). Serious erosion damaged buildings on Revell Street in 1914.

In 2012 erosion at sunset point began and proceeded to migrate northwards into 2013 when a series of storm events in April and May caused Council to assess the risk to the township. An opinion survey was circulated among residents in June 2013 to see whether ratepayers wanted the Council to take remedial action. The proposal was:

"The Council proposes a 650m seawall as a last line of defence, preventing the sea from entering the town. The seawall will run from Stafford Street, for approximately 650 metres southwards along Beach Street. The wall will become covered by sand – but it will always remain there as a last line of defence.

South of this permanent structure would be managed by rock rip rap work, similar to that used at sunset point, installed as required. The sunset point area has no private land behind it so does not justify a permanent protection option, however the current ad hoc rock work needs to be maintained.

North of Hampden Street the groynes have performed well, with a healthy build up of sand as a result of the groynes. It is recommended the groynes are built up in height and length and minor repairs are addressed as needed, but at this stage no rock wall is proposed north of Stafford Street. This approach can be revised if the situation changes."

On 9 July Council decided to build the 650m seawall 15-20 metres seawards of the current erosion line. This essentially reclaimed some of the foreshore land taken by the sea and allowed a grassed area with seaside amenities to be re-created. Council sought advice from Dr Hicks from NIWA on coastal dynamics and Ian Goss from OCEL on rock

wall design. The option of a raised bund (1 metre high) to prevent seawater run up in heavy seas was not adopted. It was left as an option for the future, if needed.

In February 2015 the Seawall Committee looked at setting a new maintenance rate for the seawall and also for the three groynes north of the wall. The Councils have agreed that these groynes will be transferred to the regional council, who will maintain them from now onwards. This decision has been recorded in the seawall committee agreement. The rate to maintain the seawall was established in 2015, at \$30,000 per year.

The maintenance rate fund may also be partially utilised (if needed) to protect the foreshore south of the seawall as far as sunset point, which the councils have agreed should be a shared responsibility of the two councils.

### 1.3 DESCRIPTION OF ASSETS

The Rating District assets consist of all those works outlined in the Infrastructural Asset Register. The total replacement value of these works was \$1,714,021 as at 30 June 2014.

<b>Asset Class</b>	<b>Value</b>
Quarry Rubble	\$186,404
Stopbank Fill	\$183,605
Rockwork	\$916,695
Running Course	\$10,060
Filter Fabric	\$169,069
Bedding Gravel	\$29,802
Pipes	\$13,452
Beach Access Ways	\$21,455
Groynes	\$187,596
Contingencies and Administration	\$206,152
<b>TOTAL</b>	<b>\$1,924,290</b>

Note that a 10% contingency to cover design and a 2% estimate for administration of the work including resource consent costs has been added to more fairly indicate total replacement costs. This total does not include staff time, some consultant's costs, vehicle running and other incidental costs.

The assets also now include the three groynes at Richards Drive, Tudor Street, and Hampden Street, which are 150m long, 99m long and 99m long respectively. The amount of rock for each is not known but has been estimated in the asset register.

## SECTION 2: SERVICE LEVELS

### 2.1 OBJECTIVES

The objectives of the Hokitika Seawall Rating District are to protect Beach Street and the land, dwellings and businesses behind the wall from the threat of sea erosion.

The seawall built in 2013 has been designed to handle the historically observed tidal fluctuations and surge patterns of the Tasman Sea in the vicinity. The scheme structures will be maintained to the dimensions that they were originally constructed.

The groynes' purpose is to help build a wide sandy beach from Hampden Street to Richards Drive. Consideration will be given to extending the height and length of each groyne to maximize the beach width and sand retention within that area.

### 2.2 MAINTENANCE PROGRAMME

An annual maintenance report is prepared each year in consultation with the Hokitika Sea Wall Joint Committee prior to adoption by the Council for inclusion in its annual budgets.

In preparing the annual maintenance report the following will be considered:

- An inspection to identify works requiring immediate repair.
- works anticipated as being required given a 'normal' season.
- flexibility to meet unbudgeted damages.

#### **Erosion Control Works**

The erosion control works consist of rock placed in continuous riprap. It is built to absorb the energy of the waves and is subject to significant exposure and damage during storm events. It is very important to ensure damage to the sea protection structure is undertaken swiftly and to ensure any slumping of rock is topped up.

### 2.3 DAMAGE EXPOSURE

Erosion works are constructed in a very high energy environment with the purpose of resisting and absorbing some of that energy. Depending on the volume of sand build up or depletion in front of the seawall, it is considered that no matter what the standard of maintenance carried, it is likely that damage will occur from time to time.

An assessment of maximum damage potential (seawall only) was estimated as below:

<u>EVENT SIZE</u>	<u>VALUE</u>	<u>DAMAGE RATIO</u>	<u>DAMAGE EXPOSURE</u>
20 Year	\$1,714,021	10%	\$171,402
100 Year	\$1,714,021	20%	\$342,804
500 Year	\$1,714,021	20%	\$342,804

## **SECTION 3: FUNDING**

### **3.1 MAINTENANCE**

Maintenance is funded by targeted rates, the level of rating being determined each year in the annual budgeting process following:

- Preparation of an annual works programme and corresponding budget.
- Consultation with the Rating District.
- Adoption of draft programme and budget by Council.
- Adoption of final Annual Plan by Council.

### **3.2 DAMAGE REPAIRS**

Routine damage repairs are funded by a combination of:

- carrying out work as scheduled in annual works programme.
- reprioritising works identified in the annual works programme.
- use of financial reserves.

Major damage repairs would be funded by loans raised by the Council and repaid by targeted rating over a number of years.

### **3.3 FINANCIAL RESERVES**

Financial reserves are held within each rating districts account to provide the following.

- meet the costs of unscheduled works.
- enable an immediate response to flood damage repairs.
- prevent major fluctuation in rating levels annually.

The level of financial reserves held in each rating account is determined by the assessment of risk damage and the need for unprogrammed works.

### **3.4 DEPRECIATION**

Rating District schemes are designed to be maintained in perpetuity by constantly repairing and replacing component parts which are damaged by the constant wear and tear. Because there is a constant cycle of replacement of elements of the infrastructure, depreciation of the value of the assets is not appropriate and funding of depreciation is not necessary. This approach is consistent with the NZ Infrastructure Asset Valuation and Depreciation Guidelines (Section 5.4.4).

### **3.5 MAINTENANCE VS CAPITAL EXPENDITURE**

The aim of maintenance is to ensure the infrastructure assets are kept at a standard where they can always perform to their service level. Where rock is required to be placed on an existing stopbank under direct attack from the sea, the protection required to maintain the existing stopbank at its same service potential would be charged to the scheme maintenance account.

Capital works are generally defined as works which increase the service level of the scheme. Such work would include increasing the design standard or the area covered by a scheme and works to increase security or performance of an erosion control system or structure over and above that identified in the asset plan.

## **SECTION 4: PERFORMANCE MEASURES**

The overall performance measure is that the infrastructure assets are maintained to meet their service levels at all times.

The following procedures will be adopted to ensure the adequacy of maintenance.

### Annually

- (i) Produce annual works report for the rating district assets to include type of work to be undertaken, quantities, location and costs.
- (ii) Organise contracts for agreed scheme work, oversee contract completion and report to Council.
- (iii) Report on works undertaken during the previous financial period to the joint committee and Council.

### Performance Measure

No reports of erosion protection works requiring repairs without an agreed programme of remedial work in progress.

### Triennially

- (i) Re-fly aerial photographs of the area, analysing these photographs to assess changes in sea meander patterns that could impact on Rating District Assets.
- (ii) Re-measure cross section river profiles to determine whether the sea is stable, or aggrading, and to identify management issues or options.
- (iii) Revaluation of the asset schedule to include any additional rock placed on stopbanks and bank protection works over the three year period.
- (iv) Review this Asset Management Plan

### Performance Measure

Report to Council and ratepayers on revaluation of assets and the Plan review.



**APPENDIX 1: EXPENDITURE SINCE 2013**

**2014**

1,818,881

