



Hokitika Rating District 2021-2024 Asset Management Plan



West Coast Regional Council

388 Main South Road
Greymouth
7805

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1.0 Purpose of this Document

The purpose of this document is to summarise the management philosophy that is applied to the Hokitika Rating District including the infrastructure assets and services. This approach ensures that acceptable levels of service are provided in the most cost effective manner and contribute to the achievement of the community outcomes identified in the West Coast Regional Council's Long-Term-Plan (LTP).

This AMP defines the objectives and performance standards of the Hokitika Seawall Rating District for which the West Coast Regional Council bears the maintenance responsibility, including providing a basis upon which the effectiveness can be measured. The key purposes of this AMP are to:

- Provide a history of the Hokitika Seawall and Kaniere protection schemes, and the formation of one Rating District.
- Convey the long-term strategy for the management of the Hokitika Rating District.
- Provide a tool to assist with management assets in a cost effective and sustainable manner.
- Manage the environmental, service delivery and financial risks of asset failure.
- Demonstrate that the service potential of the seawall assets is being maintained.

2.0 Asset Management Objectives

West Coast Regional Council recognises that the Hokitika Asset Management Plan is the fundamental driver of erosion and flood protection for the scheme. This AMP has been developed in accordance with the Local Government Act 2002, with the first AMP completed in 2003 with three yearly updates or earlier where information indicates a significant change from what is stated in the current AMP.

In order to fulfil the outcomes, vision, goals and objectives of these assets, the West Coast Regional Council have adopted a systematic approach to the long-term management of its assets and services on the Hokitika Rating District by preparing this AMP.

West Coast Regional Council is committed to best appropriate practice asset management in order to achieve the following key objectives:

- Meet the service expectations of the Hokitika Seawall community.
- Ensure maintenance activities achieve efficient results with optimal benefits.
- Demonstrate Council's approach to managing risk and meeting growth requirements towards a sustainable future.
- Comply with all statutory requirements.

3.0 Hokitika Beachfront 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 groyne have performed well, with a healthy build-up of sand as a result of the groyne. It is recommended the groyne 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 groyne north of the wall. The Councils have agreed that these groyne 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.

3.1 Kaniere Rating District Background

Prior to 1995 there were no real concerns of erosion or flooding problems in the urban Kaniere Township area upstream of the Kaniere Road Bridge.

In late 1994 and early 1995 consecutive floods seriously eroded the true right bank of the Hokitika River immediately upstream of the road bridge, creating a serious threat both to houses situated between the main road and the river and ultimately to the approaches of the Kaniere Road Bridge.

Due to the emergency nature of the problem a public meeting was held on 16 February 1995 to discuss the formation of a rating district for the purpose of funding required river works. A postal ballot on the options was posted out on 17 February 1995.

This proposal included both flood protection and erosion protection which would have cost an estimated \$225,000. The proposed shares were: Transit \$50,000; Westland District Council \$20,000; total scheme ratepayer contribution \$155,000.

The proposal included rock spurs and riprap (\$135,000) and a 450 metre stopbank (\$90,000) designed to withstand a 50-year return period.

The respondents to the postal ballot rejected the proposal. However, a majority of affected ratepayers signed a petition promising to contribute a total of \$35,000. Based on this promise the West Coast Regional Council succeeded in gaining funding from Transit New Zealand (\$50,000) and the Westland District Council (\$25,000).

In February 1995 construction work commenced on constructing the two large spur groynes with a further spur groyne and rip rap following. The stopbank was not built. The total cost was \$111,380.00.

The Kaniere Rating District was formed by The West Coast Regional Council in June 1995. Since 1995 the middle groyne has been topped with 750 tonnes of rock and a further 250 tonnes of rock rip rap placed upstream of the middle groyne.

Erosion was monitored above most upstream groyne between 2011-2017. The rating district agreed to construct 200m of rock riprap to stop the erosion from worsening. In 2017 4,900T of rock was placed at a cost of \$137,111.

4.0 Hokitika Rating District Map



5.0 Description of Assets Hokitika Seawall

Asset	Quantity	Unit	Rate
Rock	50,086	Tonne	\$41.45
Quarry Waste	13,126	Tonne	\$21.00
Rock Large	3,156	Tonne	\$59.50
Fill	12,593	m ³	\$16.11
Running course	500		\$28.50
Bedding gravel	3,250		\$15.99
Filter fabric	21,800	m ²	\$10.32
Pipes	83	m	\$183.44
Access Way	2	Each	\$11,806.00
Asset Value			\$3,072,305.23
<i>Contingencies</i>			<i>\$307,230.52</i>
<i>Resource Consents</i>			<i>\$67,590.72</i>
<i>Emergency Work Conditions</i>			<i>\$307,230.52</i>
Total Asset Value			\$3,754,356.99

As at 1 July 2020

5.1 Physical Assets Hokitika Seawall

Asset Type	# of Assets	Asset Components	Quantity	Rate	Value	Total Value
Groyne	4	Rock	7100T	\$41.45		\$294,295.00
Riprap	3	Rock	42986t	\$41.45		\$2,001,303.70
		Large Rock	3156T	\$59.50		
		Waste	1512T	\$21.00		
Seawall	1	Waste	11614T	\$21.00		\$776,706.53
		Fill	12593m ³	\$16.11		
		Top Course	500m ³	\$28.50		
		Filter Fabric	21800m ²	\$10.32		
		Bedding Gravel	3250m ³	\$15.99		
		Pipes	82.5m	\$183.44		
		Beach Access	2	\$11,806.00		
Total						\$3,072,305.23

5.2 Description of Assets Kaniere

Asset	Quantity	Unit	Rate
Rock	17120	Tonne	\$39.50
Rubble	2,890	Tonne	\$19.50
Fill	2,890	m ³	\$10.39
Asset Value			\$762,622.10
<i>Contingencies</i>			<i>\$76,262.21</i>
<i>Resource Consents</i>			<i>\$16,777.69</i>
<i>Emergency Work Conditions</i>			<i>\$76,262.21</i>
Total Asset Value			\$931,924.21

5.3 Physical Assets Kaniere

Asset Type	# of Assets	Asset Components	Quantity	Rate	Value	Total Value
Spur	1	Rock	200T	\$39.50	\$7,900.00	\$7,900.00
Stronghead	1	Fill	42m ³	\$10.39	\$436.38	\$74,903.88
		Rubble	39T	\$19.50	\$760.50	
		Rock	1866T	\$39.50	\$73,707.00	
Groyne	3	Fill	2248m ³	\$10.39	\$23,356.72	\$421,544.22
		Rubble	2734T	\$19.50	\$53,313.00	
		Rock	8731T	\$39.50	\$344,874.50	
Riprap	1	Fill	600m ³	\$10.39	\$6,234.00	\$258,274.00
		Rubble	117T	\$19.50	\$2,281.50	
		Rock	6323T	\$39.50	\$249,758.50	
Totals						\$762,622.10

5.4 Total Asset value

Total Estimated Assets as at 31 May 2020	\$ 3,834,927.33
Add 10% Contingencies to cover Design etc	383,492.73
Add 2% for Resource Consent Costs	84,368.40
Add 10% for Emergency Work Conditions	\$ 383,492.73
Total Including Contingencies	\$ 4,686,281.20

5.5 Asset Map Hokitika Seawall



5.6 Asset Map Kaniere



Kaniere Rating District
Rating District Asset Map
Kaniere, Westland District

Legend


	Asset_Subtype	Asset_Subtype
	Spur (1)	Groyne (3)
	Stronghead (1)	Riprap (1)

0 70 140 280
 Meters

Date created: 28/10/2021, 18:01
 Author: James Bell

Scale of A3: 1:3,581

Sourced from Land Information New Zealand data.
 Aerial Imagery from <https://www.linz.govt.nz/aerial-imagery>
 Coordinate System:



THE WEST COAST REGIONAL COUNCIL

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6.0 Existing Standard

6.1 Service level

The Levels of Service represented in this AMP are described and aligned with community values including affordability, quality, safety, community engagement, reliability and sustainability.

Councils in New Zealand will generally adopt one of three methods for determining the level of service provided by a scheme:

- Agreeing on a scope of physical works with the community without reference to a target capacity or return period (low risk schemes)
- Providing physical works with a level of performance provided in terms of a target capacity (medium risk schemes)
- Providing physical works with a level of performance in terms of a target return period (high risk schemes)

Each of the three methods for determining the level of service may be suitable for a given scheme, provided that communities understand event likelihood, scheme and property vulnerability, potential consequences, and residual risk.

Where council staff have recommended physical works or analysis that did not proceed due to community resistance to cost, then councils are only able to track their service delivery through measures around maintenance works programmes or a general description of asset condition.

The objectives of the Hokitika 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.

6.2 Maintenance Programme

An annual maintenance report is prepared each year in consultation with the Hokitika Rating District 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.

6.3 Erosion Control Works

The erosion control works consist of rock placed in continuous rip rap. 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.

6.4 Damage and Risk Exposure Hokitika Rating District

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 out, it is likely that damage will occur from time to time.

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

Event size (AEP)	Value	Damage ratio	Damage exposure	Prudent Reserve	Prudent reserve contribution
10%	\$4,686,281	5%	\$234,314	\$234,314	100%
5%	\$4,686,281	10%	\$468,628	\$328,040	70%
2%	\$4,686,281	20%	\$937,256	\$468,628	50%

It has been deemed, within reason, that all Rating Districts have a prudent reserve target balance that contributes to at least 100% of the damage exposure for a 10% AEP event, 70% for a 5% AEP event and 50% for a 2% AEP event. These percentages define what is an appropriate and acceptable level of risk for Council and the community.

6.5 Prudent Reserve

Why do we need a prudent reserve?

- Minimise the financial impact of unplanned works, such as those caused by weather events
- Ensure the rating district is able to contribute funding that is sustainable and affordable
- Ensure Council's debt level is managed, and that borrowing is still available when required
- Ensure the debt levels of the rating district do not exceed the ability to fund the repayments

This target balance for the 'prudent reserve' for this rating district is \$460,000 as agreed by council. This prudent reserve is immediately available. It is likely the current reserve will only cover a portion of the actual cost of the potential damage that could occur.

If an event were to occur and the prudent reserve does not cover the full repair and rebuild cost of the assets, it is understood by the community that the remaining costs will be paid by loan or the rating district accounts will be in overdraft. In the instance of extreme weather events, NEMA funding and the Council's private insurance will be accessed for cost recovery if the criteria are met. The West Coast Regional Council's insurance policy has a \$400,000 excess. 40% of eligible rebuild costs will be met by this policy.

Below are the key criteria that needs to be met to access the NEMA funding, which can cover up to 60% of eligible rebuild costs

The provisions for government financial support to local authorities apply whether or not a state of emergency is, or has been, in force

Government assistance will not normally be available for assets which receive a subsidy from any other source, unless:

- *the local authority has adequately protected itself through asset and risk management including mitigation, where appropriate, and the proper maintenance of infrastructure assets, or*
- *the local authority has made sound financial provisions (such as the provision of reserve funds, effective insurance or participation in a mutual assistance scheme with other local authorities) to a level sufficient to ensure that the local authority could reasonably be expected to meet its obligation to provide for its own recovery*

Threshold

Threshold for reimbursement; As with other response claims, Government policy is to reimburse 60 percent of the combined eligible costs (response and essential infrastructure costs), above the following thresholds:

- *0.0075 percent of the net capital value of the city council, district council or unitary authority involved*
- *0.002 percent of the net capital value of unitary authorities where the assets in question are of a type that ordinarily are managed by regional councils, or*
- *0.002 percent of net capital value in the case of regional councils*

7.0 Funding

7.1 Maintenance

Maintenance is funded by targeted rates, the level of rating being determined each year in the Annual Plan process. This involves:

- a) Preparation of an annual works programme and corresponding budget.
- b) Adoption of the annual works programme and budget.
- c) Discussion of the works report and budget with the ratepayers.
- d) Adoption of final budget in the Council's Annual Plan.

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.

7.2 Damage Repairs

Routine damage repairs are funded by a combination of:

- a) Carrying out work as scheduled in annual works programme.
- b) Reprioritising works identified in the annual works programme.
- c) 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.

7.3 Financial Reserves

Financial reserves are held within the rating district account to provide the following:

- a) Meet the costs of unscheduled works.
- b) Enable an immediate response to flood damage repairs.
- c) Prevent major fluctuation in rating levels annually.

The levels of financial reserves held in the rating account are determined by the estimated damage exposure and the likely need for un-programmed works.

7.4 Depreciation

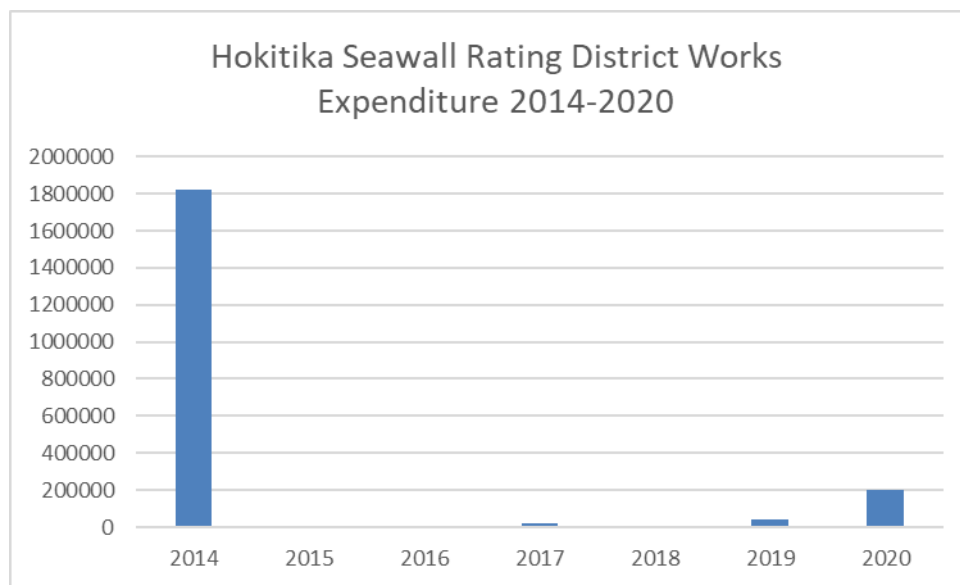
Erosion control schemes are designed to be maintained in perpetuity by constantly repairing and replacing component parts which are damaged by large seas or by the constant wear and tear encountered in the environment.

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

As there is a constant cycle of replacement of elements of the infrastructure as necessary, 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.

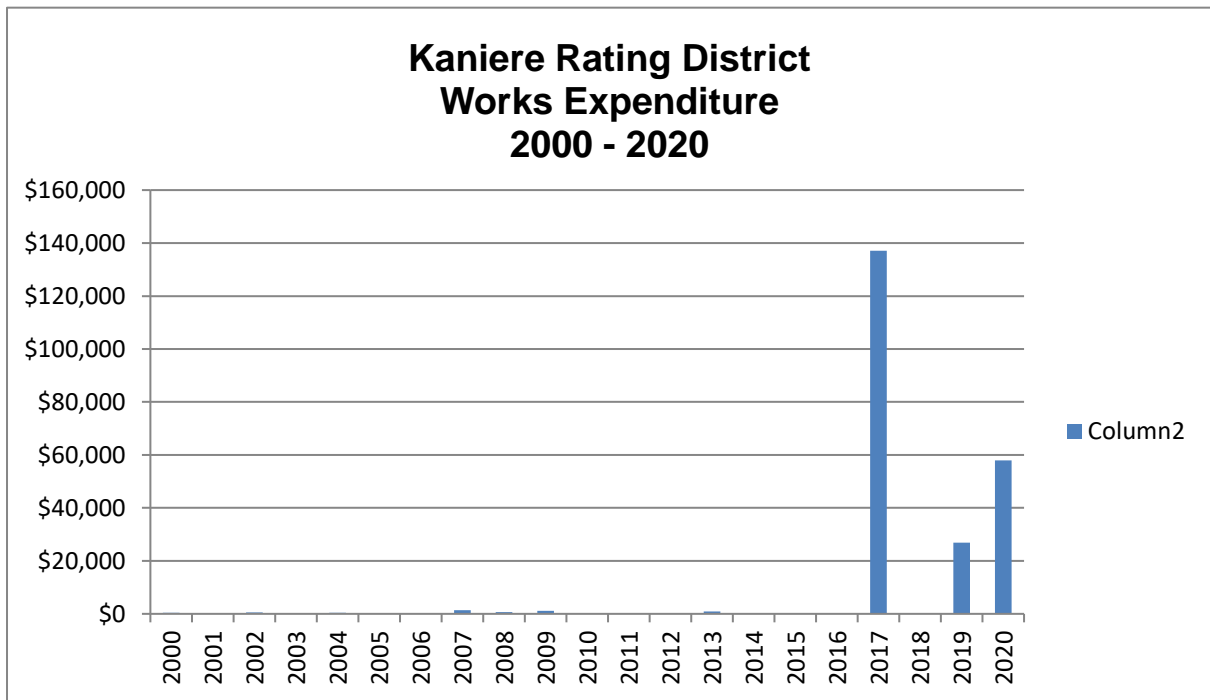
7.5 Works Expenditure Hokitika Seawall

This chart reflects the construction costs of infrastructure assets on the Hokitika Seawall Rating District. This chart **does not** reflect the total annual expense incurred by the Hokitika Rating District.



Expenditure 2014 - 2020	
Total expenditure	\$2,082,188
Average expenditure	\$136,136
Total asset value	\$3,754,356

7.6 Works Expenditure Kaniere



Expenditure 2000- 2020	
Total expenditure	\$227,873
Average expenditure	\$10,851
Total asset value	\$931,924

8.0 Performance Measures

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

1. Ensuring the seawall continues to protect the town from erosion caused by large seas.
2. Maintaining rock rip rap facings of the seawall to prevent active erosion of the seawall core.
3. Maintaining stopbank drainage systems to control seepage flows and prevent internal erosion of the seawall core and foundation and loss of stability.

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

Period	Procedure	Performance Measure
Annually	Produce annual works report for the rating district assets to include type of work to be undertaken, quantities, location and costs.	No reports of stopbanks or erosion protection works requiring repairs without an agreed programme of remedial work in progress. Asset maintenance is current as per level of service.
	Organise contracts for agreed scheme work, oversee contract completion and report to Council.	
	Report on works undertaken during the previous financial period to the joint committee and Council.	
Triennially	Re-measure cross section river profiles to determine whether the sea is stable, or aggrading, and to identify management issues or options.	Report to Council and ratepayers on revaluation of assets and the Plan review.
	Revaluation of the asset schedule to include any additional rock placed on stopbanks and bank protection works over the three year period.	
	Review this Asset Management Plan	
10-yearly	Flood modelling will be undertaken to identify a range of level of services.	Report to council and ratepayers.

8.1 AMP Review and Monitoring

This plan is a living document, which is relevant and integral to daily activity. To ensure the plan remains useful and relevant the following on-going process of AMP monitoring and review activity will be undertaken:

- Formal adoption of the AMP by the West Coast Regional Council.
- Review and formally adopt Levels of Service to comply with the Joint Seawall Committee.
- Revise this AMP three yearly prior to the Long Term Plan (LTP) to incorporate and document changes to works programmes and outcome of service level reviews.
- Quality assurance audits of asset management information to ensure the integrity and cost effectiveness of data collected.
- Peer review and external audits will be undertaken to assess the effectiveness with which this plan meets corporate objectives. Periodic internal audits will be undertaken to assess the adequacy of asset management processes, systems and data and external audits will be undertaken to measure asset management and performance against 'best practice'.