



# Mokihinui Rating District 2021-2024 Asset Management Plan



West Coast Regional Council

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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 Mokihinui 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 Mokihinui 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 Mokihinui protection scheme.
- Convey the long-term strategy for the management of the Mokihinui 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 rivers and drainage assets is being maintained.

## **2.0 Asset Management Objectives**

West Coast Regional Council recognises that the Mokihinui Asset Management Plan is the fundamental driver of 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 Mokihinui 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 Mokihinui 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 Mokihinui Rating District Background**

The Mokihinui riverbank works started in 1952 with rock protection works placed around the river mouth and bay adjacent to the township, on the south side of the Mokihinui river mouth. The gravel bund on the beach was first constructed in 1969.

The river and bay protection works were enhanced by Buller County Council in 1968 with a 2:1 subsidy from Soil Conservation and Rivers Control Council. Repairs occurred in 1974 with a contribution from the Mokihinui Ratepayers Association. That year a rating district was first established with ratepayers contributing \$6 each towards maintenance. This was increased to \$10 per head in 1976.

In 1977 the local community engaged a contractor to improve the sea bund. The sea bund is constructed in two parallel walls, the outermost being a sacrificial bund while the inner one still provides protection when the outer wall is breached by the sea.

In 1978 a 50 metre rock deflector groyne was constructed upstream of the river stopbank. The riverbank rock was topped up again in 1980; and the upstream rock retard was also strengthened. In 1981 the continuous rockwork was extended by 50 metres out to the mouth of the river using 1,000 tonnes of rock.

Maintenance of the rock wall around the river mouth area, and the sea bunds, has continued between 1981 and 2009 when the current rating district was formed by the Regional Council, following a request from the Mokihinui Ratepayers Association.

All other works are the responsibility of either the Buller District Council or individual landowners.

In 2018 the rating district committee agreed to trial a series of small coastal spurs along the front face of the sacrificial bund. Four small spurs of 250 tonnes were constructed in August 2018, plus a top-up of the existing coastal rock groyne with an additional 250 tonnes. The spurs are intended only to provide some additional protection to the sacrificial bund, and not interrupt littoral drift.

#### 4.0 Mokihinui Rating District



## 5.0 Description of Assets

Asset	Quantity	Unit	Rate
Rock	14527	Tonne	\$60
Fill	64,870	m <sup>3</sup>	\$15.00
Top course	634		\$25.00
Culverts	6480	\$	\$1.07
<b>Asset Value</b>			<b>\$1,870,153.60</b>
<i>Contingencies</i>			<i>\$187,015.36</i>
<i>Resource Consents</i>			<i>\$41,143.38</i>
<i>Emergency Work Conditions</i>			<i>\$187,015.60</i>
<b>Asset Value</b>			<b>\$2,285,327.70</b>

## 5.1 Physical Assets

Asset Type	# of Assets	Asset Components	Quantity	Rate	Value	Total Value
Culvert	1	Culvert	6480\$	\$1.07	\$6,933.6	<b>\$6933.6</b>
Spur	4	Rock	1000T	\$60.00	\$60,000.00	<b>\$60,000.00</b>
Groyne	2	Rock	2472T	\$60.00	\$148,320.00	<b>\$148,320.00</b>
Riprap	1	Rock	11,100T	\$60.00	\$666,000.00	<b>\$671,550.00</b>
		Fill	370m <sup>3</sup>	\$15.00	\$5550.00	
Seawall	1	Fill	22400m <sup>3</sup>	\$15.00	\$336,000.00	<b>\$336,000.00</b>
Stopbank	2	Fill	42,100m <sup>3</sup>	\$15.00	\$631,500.00	<b>\$647,350.00</b>
		Top Course	634m <sup>3</sup>	\$25.00	\$15,850.00	
<b>Totals</b>						<b>\$1,870,153.60</b>

## 5.2 Asset Map



## 6.0 Existing Standard

The objective of the Mokihinui Rating District is to minimise erosion to the township on the south bank of the river mouth, due to sea erosion and river flood and erosion impacts.

### 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 channel condition.

There is no hydrological information held on the Mokihinui seawall in respect to past storm events, however it was reported that the seawall was severely damaged in February 1974 and in May 1977, the seawall was breached creating a large pond of seawater against the secondary coastal stopbank with a freeboard of only 150mm from the crest of that bank.

The seawall was designed to handle the historically observed tidal fluctuations and surge patterns of the Tasman Sea in the vicinity. Given that there has been no analysis carried out the scheme structures will be maintained to the dimensions that they were originally constructed.

### 6.2 Maintenance Programme

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

An annual report will be presented to the Rating District outlining the condition of the scheme assets and maintenance works and expenditure required for the coming financial year.

The existing 800m coastal bund works will be maintained to their current (2010) dimensions. Annual inspections will occur in July of each year by the Council rivers engineer. In between inspections any damage that occurs due to high seas should be reported to the Council rivers engineer as soon as they are noticed by members of the rating district, in particular the elected spokesperson.

The existing seawall structure is sacrificial sand and gravel bund only, is not rock lined and was not constructed using filter fabric and other methods to ensure long life. It is expected to require reasonably regular maintenance and is not a long term solution to erosion control in this location. It is acceptable by the ratepayers as a short term solution.

The Mokihinui River stop bank has been constructed of compacted hardfill and armoured with rock rip rap material and is therefore a stronger and more permanent structure. However, due to its location in a high energy and dynamic river mouth environment it will also need regular maintenance and top up of slumped or damaged areas. The rating district committee and spokesman should alert the council rivers engineer if any damage is noted following high flow events. It is very important to ensure repairs to damaged bank protection structures is undertaken swiftly.

### 6.3 Damage and Risk Exposure

Erosion works are constructed in a very high energy environment with the purpose of resisting and absorbing some of that energy. 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 was estimated as below:

Event size (AEP)	Value	Damage ratio	Damage exposure	Prudent Reserve	Prudent reserve contribution
10%	\$2,285,327.70	2%	\$45,707	\$45,707	100%
5%	\$2,285,327.70	4%	\$91,413	\$63,989	70%
2%	\$2,285,327.70	8%	\$182,826	\$91,413	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.

### 6.4 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 \$35,000 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 infrastructure under direct attack from the river, the protection required to maintain the existing infrastructure 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

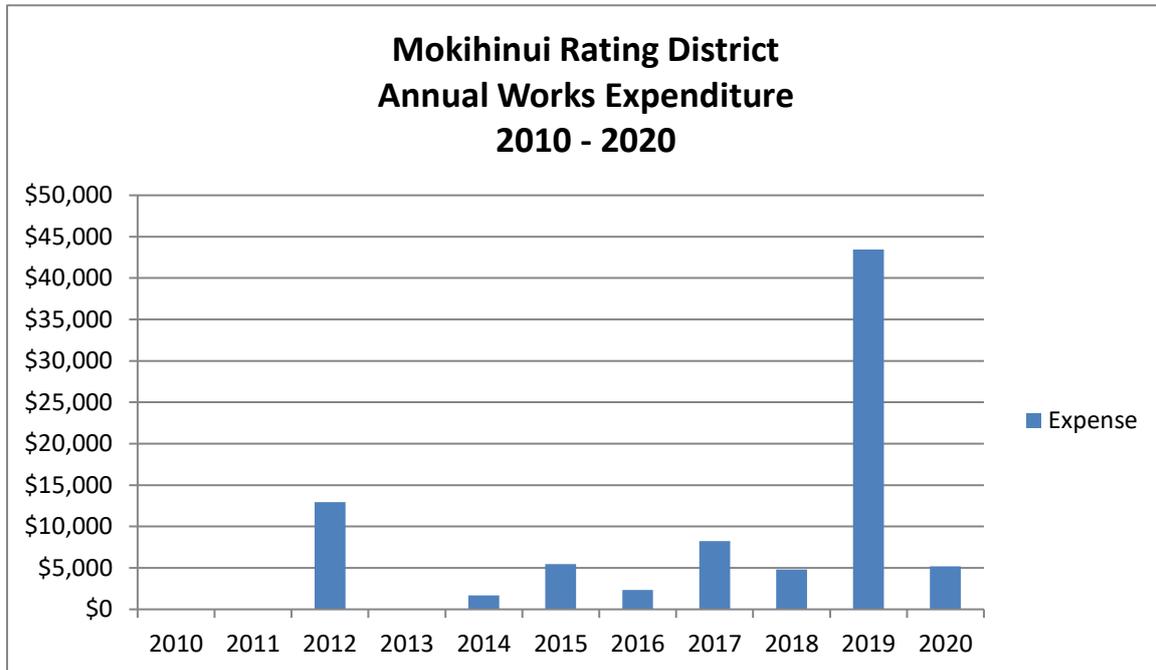
River and erosion control schemes are designed to be maintained in perpetuity by constantly repairing and replacing component parts which are damaged by floods or by the constant wear and tear encountered in a river environment.

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

This chart reflects the construction costs of infrastructure assets on the Mokihinui Rating District. This chart **does not** reflect the total annual expense incurred by the Mokihinui Rating District. Please refer to the annual works and financial report for the total expenses.



Expenditure 2010 - 2020	
Total expenditure	\$84,890
Average expenditure	\$7,644
Total asset value	\$2,285,327

## 8.0 Performance Measures

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 rating district ratepayers and Council.	
Triennially	Re-measure cross section river profiles to determine whether the riverbed 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 Rating District committee
- Revise this AMP three yearly prior to 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'.