



Inchbonnie Rating District 2023-2026 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 Inchbonnie 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 Inchbonnie 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 Inchbonnie protection scheme.
- Convey the long-term strategy for the management of the Inchbonnie 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 Inchbonnie 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 Inchbonnie 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 Inchbonnie 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 Inchbonnie Background

With the Taramakau River overflowing into the Orangipuku River at Inchbonnie from time to time in the early 1900's, the threat of a "break-through" to Lake Brunner has given cause for concern for a considerable period. This concern has not only been for the Inchbonnie farming area, but also for the potential effect of increased flood flows on those areas including Lake Brunner, Arnold River and Grey Valley lands and the town of Greymouth and associated environs.

Prior to the 1940's, the Orangipuku River had been flowing parallel to the Taramakau River for approximately 2.5 kilometres. Erosion had occurred on the right bank of the Taramakau River and had increased the threat of a break-through and had necessitated minor protection works being placed from time to time. Although sporadic, these works contained any immediate threat, but the need for a more comprehensive scheme had been long recognised, with an investigation for such a scheme being carried out as early as 1907.

On 12 February 1946, floodwaters flowed from the Taramakau River into the Orangipuku River causing serious problems. On 8 October 1946 the area was inspected by the Public Works Department and on 21 October 1946 a proposal to erect a stopbank along the right bank of the Taramakau River adjacent to the Orangipuku River was forwarded. The total cost was \$32,000 (\$25,600 from the Soils Council and \$6,400 from local contributions. In addition, both the Railways Department and the State Hydro Department were to pay \$1,000 each)

On 27 March 1951, 12 local ratepayers agreed to pay \$200 per year for 10 years, Greymouth Harbour Board \$150 per year, Grey Borough Council \$150 per year and the Grey County Council \$200 per year to service a loan to carry out works.

On 21 June 1951 a description of the original proposed classification was prepared by the Westland Catchment Board.

In June 1951, a combination of tree and rock protection works were proposed to halt erosion (1,400 tonnes of rock was proposed). Permission was gained to extract the rock from McArthur's Quarry.

On 31 August 1953 it was reported that rapid deterioration of the main Taramakau channel had occurred resulting in a net channel degradation of approximately 2 metres. A new estimate was prepared at a cost of \$50,000.

On 28 October 1953, the Minister of Public Works approved the construction of 80 metres of rockwork and 60 metres of tree protection.

On 30 January 1958 it was reported that the erosion problem on the Taramakau was so acute that only 5 metres of undisturbed land remained between the two rivers. Emergency works were carried out until a major scheme plan was produced.

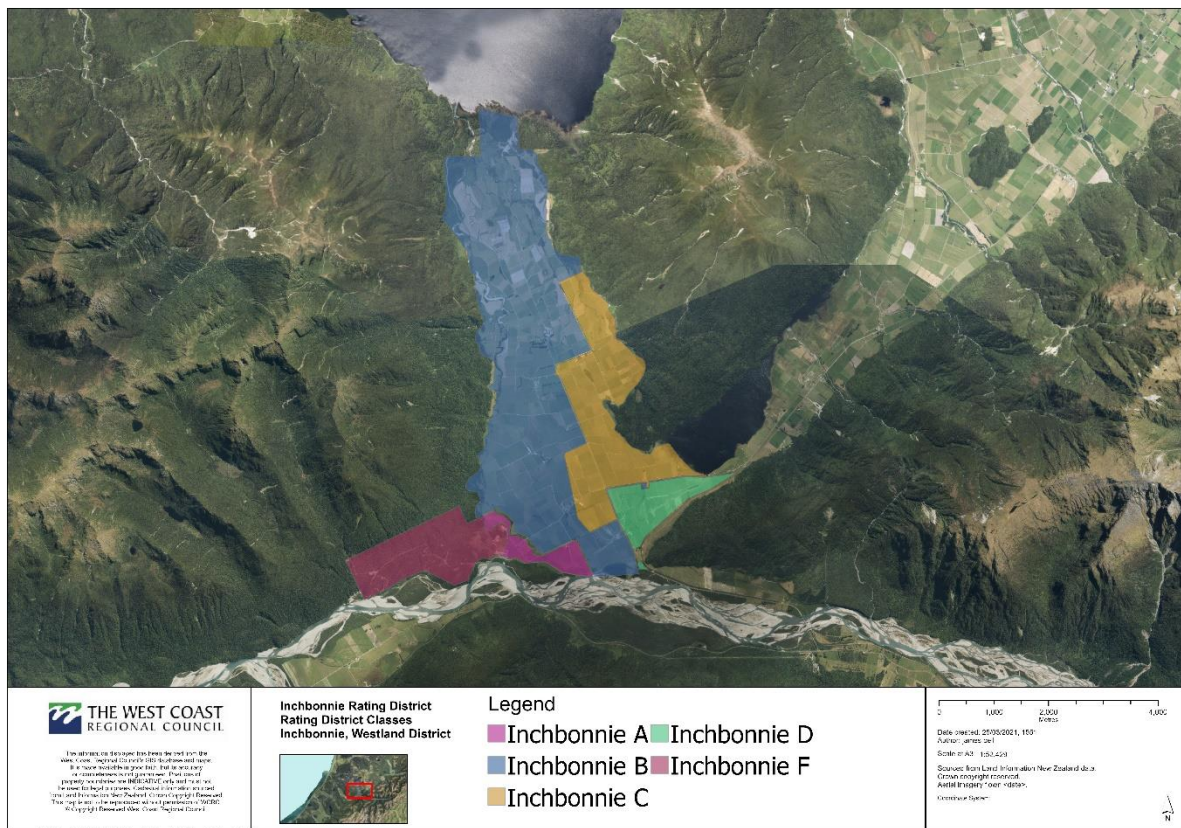
An engineering report was prepared on 23 March 1959. This involved the construction of 2.5 kilometres of new stopbanking, raising and strengthening 1.2 kilometres of existing stopbanking, 2.5 kilometres of new rock rip rap, and channel work involving the diversion of the upper section of the Orangipuku River into the Taramakau River. The total estimated cost being \$112,000.

After local meetings had indicated ratepayer support, a partial scheme involving \$44,000 was approved. This involved some 900 metres of rock riprap, and the raising and strengthening of the stopbanking where freeboard was inadequate. The proposed rating area covered an area of 2,108 hectares with a total Capital Value of \$82,000.

On 3 August 1959 the NZ Soil Conservation and River Control Council granted approval on a 3:1 subsidy basis. The work involved 17,300 tonnes of rock, 9,000 cubic metres of fill for stopbanking and 3,200 tonnes of “topping-up” rock.

The classification for the Inchbonnie Rating District was finally approved by the Westland Catchment Board on 31 July 1959.

4.0 Inchbonnie Rating District



5.0 Description of Assets

Asset	Quantity	Unit	Rate
Rock	70,847	Tonne	\$44.20
Rubble	1,010	Tonne	\$17.20
Stockpiled rock	900	Tonne	\$44.20
Fill	117,225	m ³	\$26.00
AP65	1,800	M3	\$30.71
AP40	856	M3	\$36.85
Asset Value			\$6,323,261.00
<i>On-costs (15%)</i>			<i>\$715,680.30</i>
<i>Resource Consents (2%)</i>			<i>\$109,737.65</i>
Replacement Cost			\$7,417,185.15
Depreciating Assets			
Culverts			\$168,514.70
All Assets Replacement Cost			\$7,585,699.86

As at 1 July 2023

6.0 Existing Standard

The stopbank has been built to contain 2,620m³/s plus 900mm freeboard (which is the current modelled estimate of a 400 year flow).

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 Inchbonnie Rating District are:

1. To reduce bank erosion and flooding between the upper and lower extremities of the Inchbonnie Rating District protecting the farms and
2. Reduce the risk of the Taramakau River breaking through into the Orangipuku River which would enable it to then flow into Lake Brunner and on into the Grey River.

The stopbank has been built to contain 2,620m³/s plus 900mm freeboard (which is the current modelled estimate of a 400 year flow).

6.2 Maintenance Programme

An annual maintenance report is prepared each year in consultation with the Inchbonnie Rating District to be adopted 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 Damage 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 out, 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%	\$7,585,700	5%	\$379,285	\$379,285	100%
5%	\$7,585,700	10%	\$758,570	\$530,999	70%
2%	\$7,585,700	20%	\$1,517,140	\$758,570	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 \$550,000 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 Councils private insurance will be accessed for cost recovery if the criteria are met. The West Coast Regional Council's insurance policy has a \$250,000 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

The bulk of WCRC's assets comprise bulk formation of excavation, fill and heavy rock protection. These assets are considered to have an infinite Useful Life (UL) with a strategy to maintain in perpetuity. The predominant mechanisms for deterioration are slumping and or storm or flood event damage. In these circumstances the performance and level of service is brought back to specification by remedial and / or emergency works from operational and maintenance budgets. Otherwise, these assets do exist in perpetuity.

From 2023 WCRC have recognized the difference between operational and maintenance expenditure (typically to remediate after an event) and capital expenditure that improves performance or level of service, or reduces risk. The former are not capitalised, the latter are capitalised and are added to the asset register and valuation.

Assets with an infinite Useful Life do not depreciate, so these assets are valued separately as non-depreciating.

Asset components in this category include:

- Excavation
- Cleanout (of natural water courses for utilisation as drains)
- Fill
- Rock protection
- Top course, differentiated from normal road assets in that life and deterioration mechanisms are the same as for the stopbanks they traverse
- Bedding gravel and filter fabric noting that even if fabric deteriorates it would not be replaced unless the stopbank itself was being replaced, or it was being replaced as part of an event remedy operation and maintenance.

Around 3.4%, by replacement cost value, of WCRC's assets are of a nature that will deteriorate, have a limited useful life, and hence are depreciating. These include:

- Culverts and associated assets
- Constructed assets such as concrete flood walls in Greymouth
- Miscellaneous assets.

7.6 Cost Sharing

A cost-sharing agreement was negotiated with the Grey District Council in 2014. The Council resolved to contribute up to \$27,000 (plus GST) per year to the Scheme.

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 Inchbonnie Rating District community.
- 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'.