



Coal Creek 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 Coal Creek 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 Coal Creek Rating District Scheme 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 Coal Creek Rating District Scheme
- Convey the long-term strategy for the management of the Coal Creek Rating District Scheme
- 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 Coal Creek Rating District 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 Coal Creek Rating District Scheme 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 Coal Creek 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 Coal Creek Rating District Background

Inundation of the area known as the Coal Creek Flats has occurred since pre-European occupation of the area. Minimal records have been kept of these events prior to 1951. Some minor rockwork had been carried out in the 1930's to prevent erosion of the right bank of the Grey River along this low frontage. The protection works consisted of 1,850 lineal metres of stopbanking to prevent the farmland from flooding. The rock associated with this stopbank was carried out by the Public Works Department in 1938 and was strengthened in 1941 and 1943. The local authorities and ratepayers had made repeated requests to strengthen the deteriorating protection works since 1945.

On 7 March 1951 erosion took place over 300 lineal metres; however, reference was made to future erosion problems over a much larger length of exposed riverbank. An estimate for 9,000 tonnes of rock to be placed as protective rock rip rap was forwarded by the Ministry of Works. This work was delayed due to objections from the Railways Department regarding their ongoing problems at the Omoto Slip, as it felt that the proposed work may be detrimental to their protection works on the true left bank. On 20 March 1957 a design flood of 5,900 cumecs was adopted. This gave 0.9 metre freeboard on the stopbank.

On 7 May 1957 a meeting was held with local ratepayers and representatives from the Westland Catchment Board, Grey County Council and Ministry of Works. The ratepayer's share of costs of the proposed works was \$6,000, payable over a 20-year term. Agreement was reached by the local ratepayers, resulting in the Coal Creek Rating District being established in December 1957. The classification was a single-classed targeted rate based on capital value.

The Westland Catchment Board accepted a tender from Mr B. Piner for the proposed works which included the placing of 18,000 tonnes of rock as rip rap. The final works were completed on 9 June 1958.

On 27 February 1973, H.R. Langridge and Sons Ltd carted 1,000 tonnes of rock to form 8 spur groyne on the mid-section of eroding bank.

A major flood in April 1974 damaged these spurs and an estimate of \$21,000 was prepared to repair the damage.

On 30 September 1977 Cooks Roadmakers carted 5,000 tonnes of rock to top up the existing rock work on the upper and lower section of the eroding bank.

A major flood in 1984 generated erosion problems on the left bank and an estimate was prepared to construct a stopbank on the left bank, and the raising of the Coal Creek stopbank on the right bank. The total estimated cost was \$231,000.

Two major floods occurred in May and September 1988 resulting in major damage to the Coal Creek stopbank caused by overtopping with 600 metres of stopbanking being destroyed.

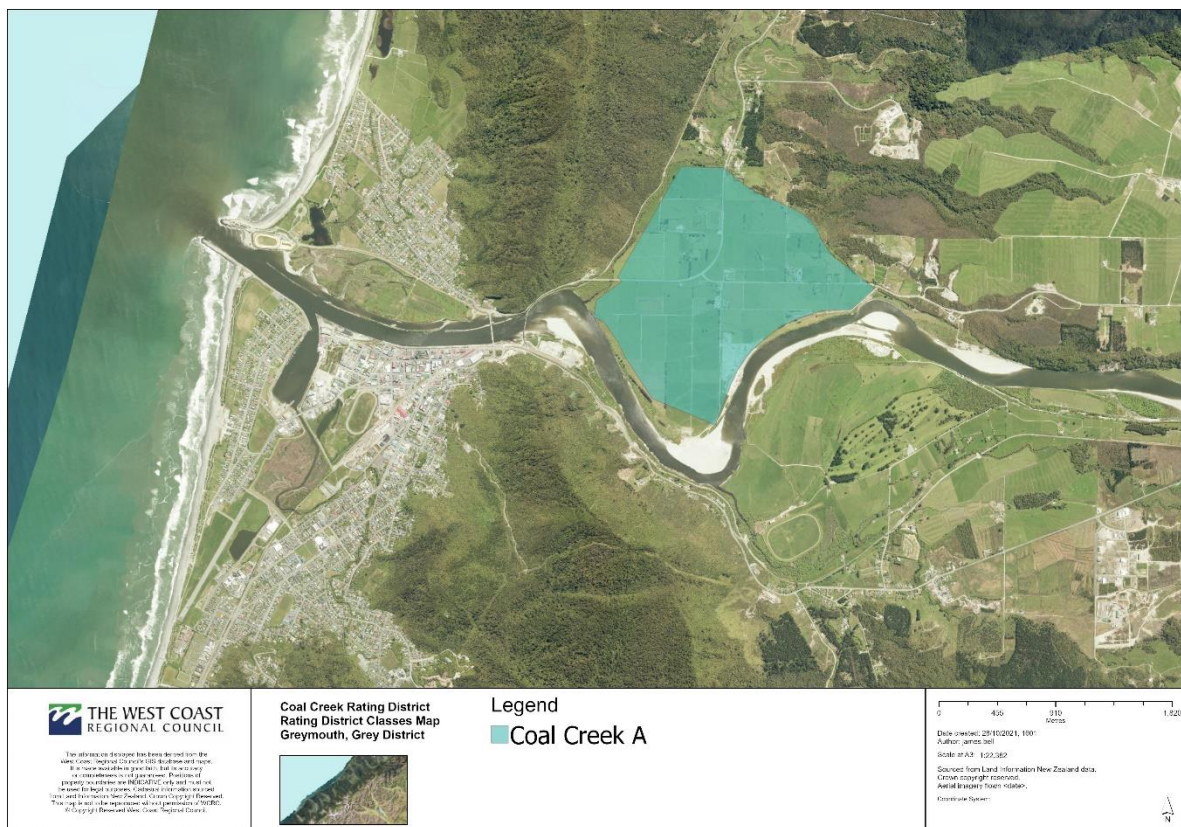
A major flood occurring on 16 December 1997 caused overtopping at the top 150 metre section of the Coal Creek stopbank. This flood was estimated at 5949 cumecs (between a 20-50-year event). The bank was raised over this section by approximately 200mm to prevent possible failure of the bank due to scouring out the back batter. The calculated 50-year return period event was 6346 cumecs.

The upper part of the stopbank (344 metres) was raised by 1.5 metres in 2012 after a flood came very close to overtopping the stopbank at this location. The cost was \$135,284 and involved 3,000 tonnes of rock and 7,200 tonnes of compacted hardfill.

An erosion scour upstream of the upper section of stopbank has been progressively eroding the north bank of the river over the past few decades. The scour had progressed to the extent that it was undermining the toe rock of the upper stopbank. In 2016 a small rock spur was constructed upstream of the erosion scour, and a diversion cut was excavated through the gravel beach opposite the erosion scour.

As a result of the LTP consultation in 2021, the Coal Creek Rating district will be included as part of the Greymouth Rating District from July 1st 2022 and will be disbanded.

3.1 Coal Creek Rating District Map



4.0 Description of Assets

The Coal Creek Rating District manages a 1.9 km stopbank on the right bank of the Grey River, protecting the Coal Creek Flats; this stopbank is protected by 1.8 km of rock rip rap. The area

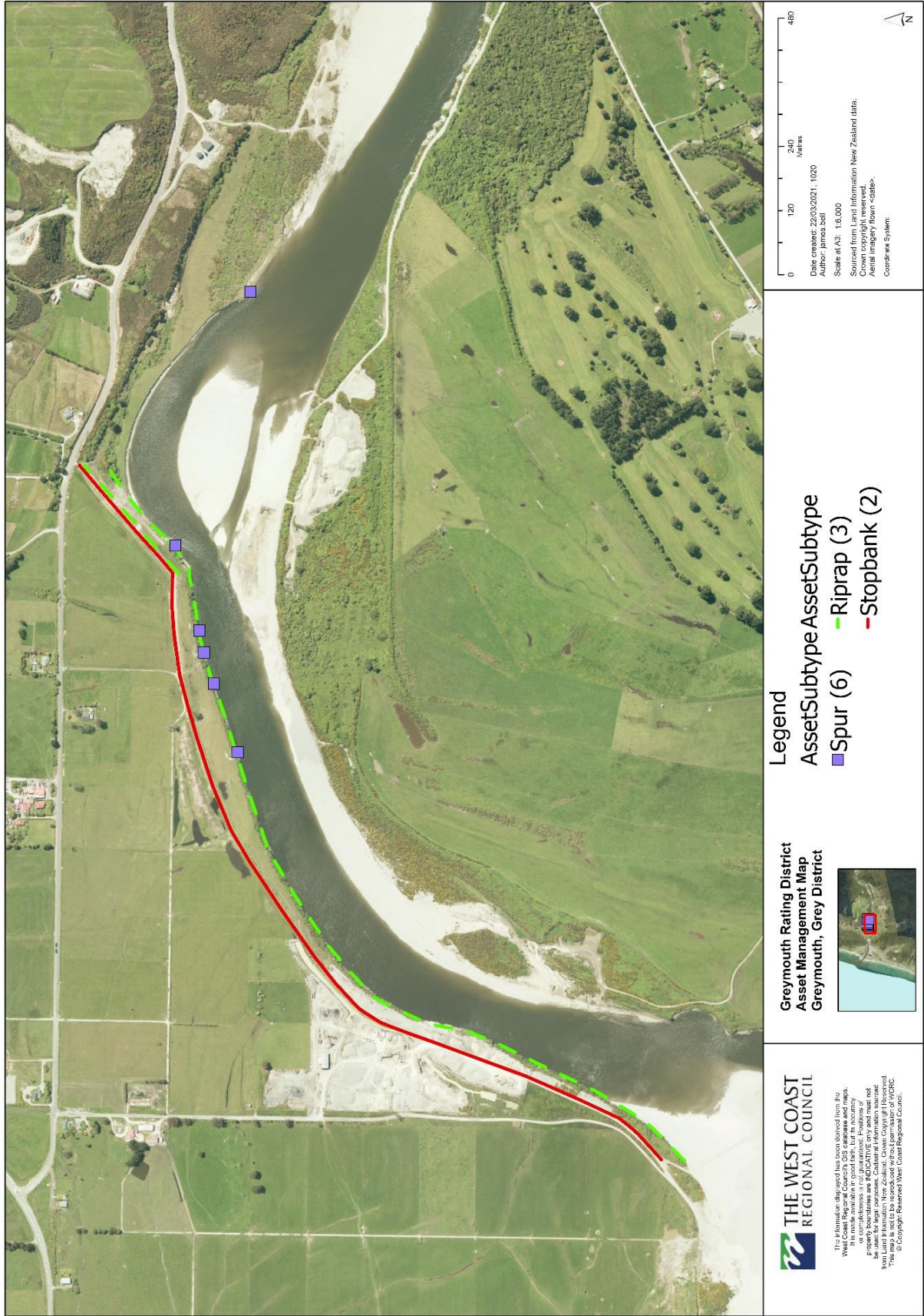
protected is predominantly dairy farming with some dry-stock properties. Community infrastructure such as roads, power and telephone lines all derive benefit from the river control system as well as recreational facilities and industrial properties.

Asset	Quantity	Unit	Rate
Rock	46,099	Tonne	\$50.00
Fill	49,200	m ³	\$12.00
Top course	580		\$28.50
Asset Value			\$2,911,880.00
<i>Contingencies</i>			<i>\$291,188.00</i>
<i>Resource Consents</i>			<i>\$64,061.36</i>
<i>Emergency Work Conditions</i>			<i>\$291,188.00</i>
Total Asset Value			\$3,558,317.36
Asset Value as of 1 July 2020			

4.1 Physical Assets

Asset Type	# of Assets	Asset Components	Quantity	Rate	Value	Total Value
Spur	6	Rock	1627T	\$50.00	\$81,350.00	\$81,350.00
Riprap	3	Rock	41444T	\$50.00	\$2,072,200.00	\$2,074,480.00
		Top Course	80m ³	\$28.50	\$2,280.00	
Stopbank	2	Fill	49200m ³	\$12.00	\$590,400.00	\$756,050.00
		Top Course	500m ³	\$28.50	\$14,250.00	
		Rock	3028T	\$50.00	\$151,400.00	
						\$2,911,880.00

4.2 Asset Map



Date created: 22/03/2021, 10:20
 Author: James Bell
 Scale of A3: 1:6,000
 Source: New Zealand Information New Zealand data.
 Crown copyright reserved.
 Aerial imagery from -state-
 Coordinate System:

Legend
AssetSubtype AssetSubtype
 ■ Spur (6)
 - Riprap (3)
 - Stopbank (2)

**Greymouth Rating District
 Asset Management Map
 Greymouth, Grey District**



**THE WEST COAST
 REGIONAL COUNCIL**
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4.3 Existing Standard

The historic "Existing Standard" was 900mm above the highest known flood. The Council has suggested to the rating district that a new flood capacity analysis should be commissioned. However, the rating district has decided that they do not wish to have any flood analysis undertaken to quantify the actual level of protection that the scheme currently provides.

5.0 Service Level

The Levels of Service represented in this AMP are described and aligned with customer 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 key level of service for the Coal Creek Rating District is to provide flood protection to the scheme area to mitigate the effect of flooding and reduce bank erosion along the Grey River frontage and Coal Creek Flats area.

5.1 Maintenance Programme

An annual maintenance programme will be prepared each year in consultation with the Coal Creek rating district spokesman and liaison committee prior to consideration at the Rating District Annual Meeting and adoption by the Council in the Annual Plan.

In preparing the annual maintenance programme consideration will be given to:

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

5.2 Damage Exposure

River control 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 standard of maintenance is carried out, it is inevitable that damage will occur to structures.

Event size (AEP)	Value	Damage ratio	Damage exposure	Prudent Reserve	Prudent reserve contribution
10%	\$3,558,317.36	5%	\$177,915.87	\$177,915.87	100%
5%	\$3,558,317.36	10%	\$355,831.74	\$249,082.22	70%
2%	\$3,558,317.36	20%	\$711,663.47	\$355,831.74	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.

5.3 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 \$150,000 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*

6.0 Funding

6.1 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) Discussion of the works report and budget with the ratepayers.
- c) 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 stopbank under direct attack from the river, 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.

6.2 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.

6.3 Financial Reserves

Financial reserves are held within the rating district account to:

- 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 unprogrammed works.

6.4 Depreciation

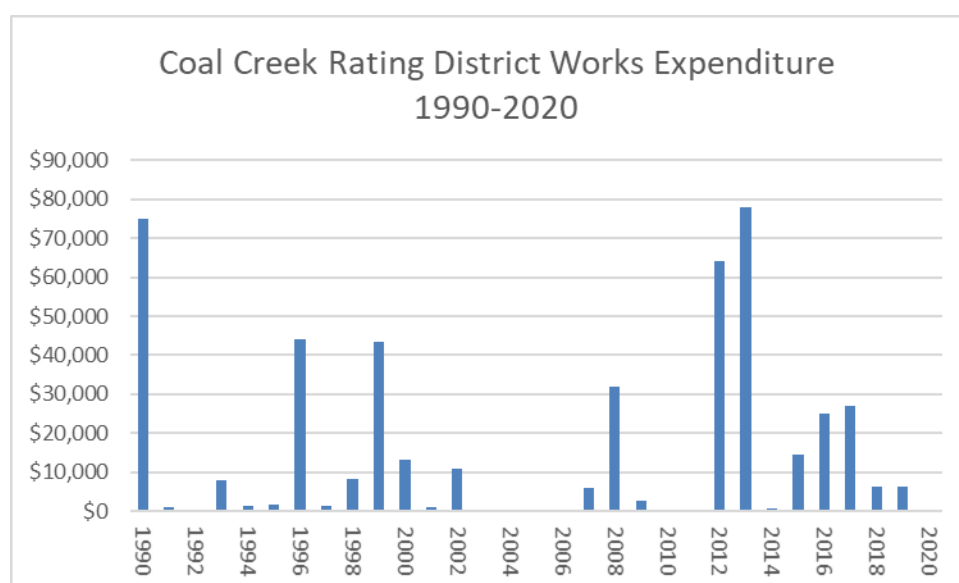
River control schemes are designed to be maintained in perpetuity by constantly repairing and replacing component parts which are damaged by floods or by the constant wear and tear encountered in a river environment.

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.

6.5 Works Expenditure

This graph indicates the expenses related to maintenance of the infrastructure on the Coal Creek Rating District. It is not a reflection of all expenses associated with the administration of the Rating District.



Expenditure 1990 - 2020

Total expenditure	\$472,183
Average expenditure	\$15,739
Total asset value	\$3,558,317

6.6 Cost Sharing

A cost-sharing agreement has been established with the Grey District Council. The District Council will provide an annual contribution of \$8,000 (plus GST).

7.0 Performance Measures

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

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

Period	Procedure	Performance Measure
Annually	Produce annual works reports for the rating district 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, or as identified by the Area Engineer.	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.

7.1 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 Coal Creek 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'.