



Vine 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 Vine 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 Vine Creek 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 Vine Creek scheme.
- Convey the long-term strategy for the management of the Vine Creek 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

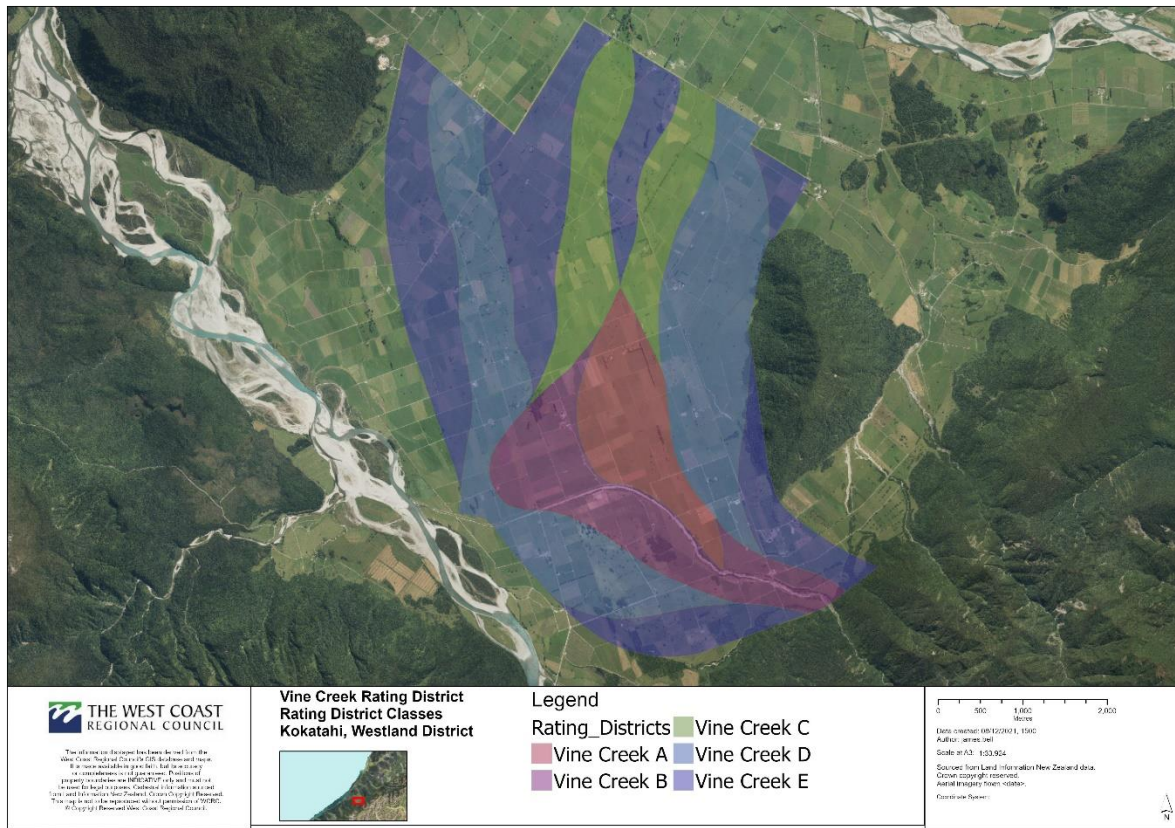
West Coast Regional Council recognises that the Vine Creek Asset Management Plan is the fundamental driver of drainage and infrastructure for the scheme. This AMP has been developed in accordance with the Local Government Act 2002, with the first AMP completed in 2003 with three yearly updates or earlier 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 Vine Creek 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 Vine 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 Vine Creek Rating District



4.0 Vine Creek Rating District Background

Vine Creek rises on the northern slopes of the Diedrichs Ranges and runs out onto the farmed flats of Kowhitirangi. The catchment is steep, ranging from over 1,500 metres to 60 metres above mean sea level over approximately 8 kilometres. The main Alpine Fault crosses the catchment with the result that the creek carries large quantities of detritus from the shatter zone. After leaving the hills, the creek runs out onto a large shingle fan and spreads out on to the flats below. Over the lower part of the fan, the course was quite unstable and meandered widely. Below the fan are three creek systems, namely Harris, Murray, and Lawyer Creeks. These provided the course for Vine Creek over the years, the actual course adopted being dependent on the position of Vine Creek on the fan. These stream systems were inadequate, having been choked up with large quantities of fine schistose material being carried down by Vine Creek, with the result that several properties were suffering severe flooding and frequent silting of pastures.

The Westland Catchment Board recognised this longstanding problem and had been seeking a solution for many years up to 1966. Any permanent solution involved the halting or retarding of a geological process and a remedy could not be found. While the Board was aware that the moving detritus would involve continual and costly maintenance, the Board proposed to divert Vine Creek 2.5 kilometres to the Hokitika River.

The proposed scheme was to excavate a diversion channel along the line of Diedrichs Road Reserve to the Hokitika River. As this would pass through the main Kowhitirangi stopbank, it would be necessary to construct a return bank along the right bank of the new channel (480 metres long).

It was proposed to acquire a 30 metre strip of land on either side of Diedrichs Road to gain an 80 metre strip of land on which to excavate the diversion channel and stockpile spoil. The channel was to be

placed on the south of the road reserve, leaving the remainder of the land for spoil deposition. This changed later due to ratepayer opposition. Above the diversion point it would be necessary to bank off overflows that had been occurring over the right bank for 400 metres above Diedrichs Road Reserve.

The estimated cost of \$36,000 involved the excavation of a diversion channel (6,000m³) the construction of 480 metres of stopbanking (10,500m³), 600 metres of rock riprap, the acquisition of 10 hectares of land and legal riverbed, survey and fencing costs.

The channel was designed to contain 88 cumecs. It should be noted that with this design discharge, some spread over the left bank would occur. The channel width was to be 10 metres wide with 3:1 batters.

A special rating district was set up on 22 August 1966 based on land value. The final land acquisition took place in 1967. The Vine Creek Diversion Scheme was approved by Soil Council in 1963 and construction began in 1967-1968.

In 1969 erosion damage occurred to the Mount Diedrichs Farm Settlement. An estimated rockwork proposal was costed at \$10,000. Since 1969 extensive rock spurs have been placed along the right bank section and extensive channel clearing operations have been carried out.

The classification was revised and adopted by the Westland Catchment Board on 24 June 1985. Land Value was used as the Classification base.

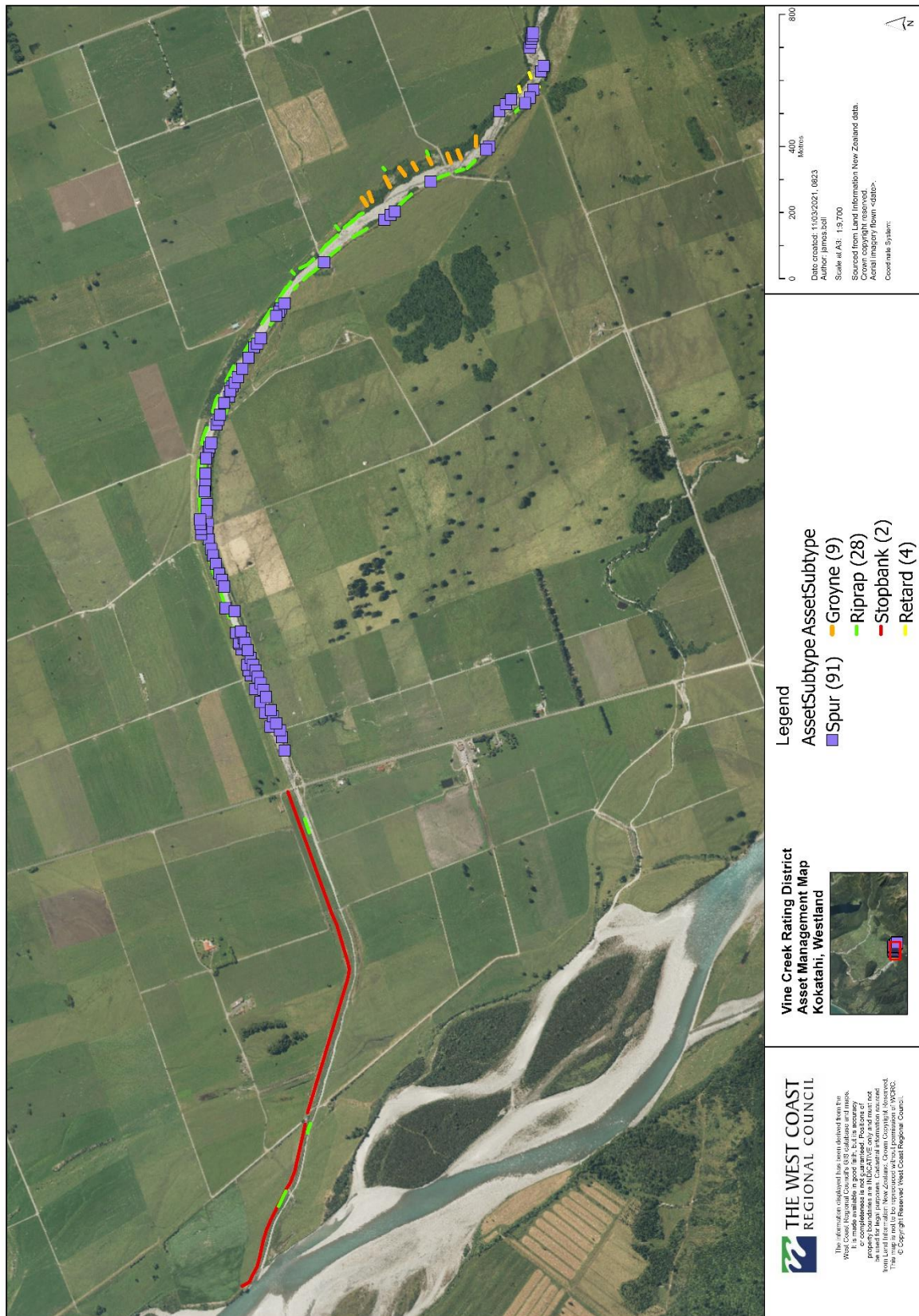
5.0 Description of Assets

Asset	Quantity	Unit	Rate
Rock	31,314	Tonne	\$36.55
Rubble	5,087.12	Tonne	\$16.55
Fill	106,355	m ³	\$10.39
Culvert	24,345.36	\$	\$1.07
Total Estimated Assets as of 1 July 2020			\$ 2,359,796.52
Contingencies			\$ 235,979.65
Resource Consent			\$ 51,915.52
Emergency Work Conditions			\$ 235,979.65
Total Including Contingencies			\$ 2,883,671.35

5.1 Physical Assets

Asset Type	# Of Assets	Asset Components	Quantity	Rate	Value	Total Value
Spur	116	Rock	5961T	\$36.55	\$217,874.55	\$224,494.55
		Rubble	400T	\$16.55	\$6,620.00	
Groyne	9	Fill	4845m ³	\$10.39	\$50,339.55	\$158,527.55
		Rock	2960T	\$36.55	\$108,188.00	
Riprap	44	Rock	21271T	\$36.55	\$777,564.70	\$849,492.99
		Rubble	4346.12T	\$16.55	\$71,928.29	
Stopbank	5	Fill	101510m ³	\$10.39	\$1,054,688.90	\$1,054,688.90
Retard	6	Rock	968T	\$36.55	\$35,380.40	\$35,380.40
Pipes	1	Rubble	20T	\$16.55	\$331.00	\$331.00
Culvert	7	Rock	82T	\$36.55	\$2,997.10	\$34,359.19
		Rubble	321T	\$16.55	\$5,312.55	
		Culvert	24,345.36	\$1.07	\$26,049.54	
Totals						\$2,359,796.52

5.2 Asset Map



Note: Not all assets have been added to the asset map due to having no spatial data to represent them at this current time.

6.0 Existing Standard

The historic "Existing Standard" was 300mm above the then 50-year design flood. While new cross sections were measured in 2007, the rating district has not decided yet to have flood flow analysis undertaken to re-quantify the level of protection that the scheme currently provides.

Given that there has been no recent analysis carried out the scheme structures will be maintained to the dimensions that they were originally constructed.

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. The scheme structures will be maintained to the dimensions that they were originally constructed.

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.

6.2 Maintenance Programme

An annual maintenance report is prepared each year in consultation with the Vine Creek 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 maintenance of the Vine Creek Rating District can be broken into two zones. Stopbank Maintenance and Erosion Control.

6.3 Damage and Risk Exposure

Event size (AEP)	Value	Damage ratio	Damage exposure	Prudent Reserve	Prudent reserve contribution
10%	\$2,880,589.53	5%	\$144,029	\$144,029	100%
5%	\$2,880,589.53	10%	\$288,059	\$201,641	70%
2%	\$2,880,589.53	20%	\$576,118	\$288,059	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 \$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*

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 creek, 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

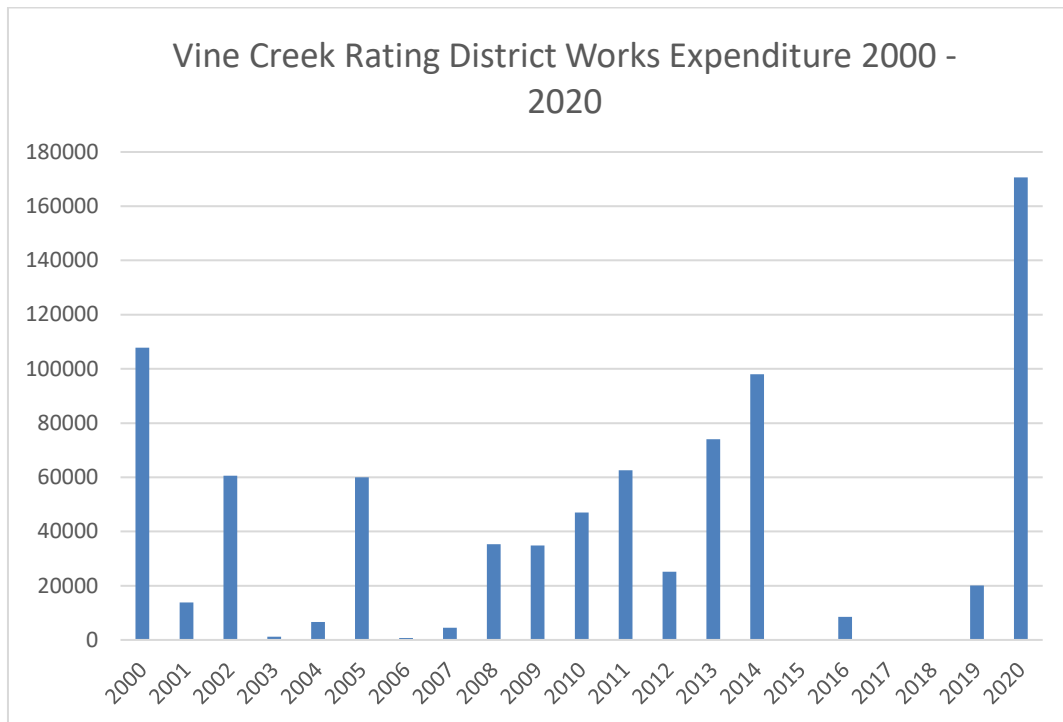
River and erosion control schemes are designed to be maintained in perpetuity by constantly repairing and replacing component parts which are damaged by floods or by the constant wear and tear encountered in a river environment.

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 Vine Creek Rating District. This chart **does not** reflect the total annual expense incurred by the Vine Creek Rating District. Please refer to the annual works and financial report for the total expenses.



Expenditure 2000 – 2020	
Total expenditure	\$831,167
Average expenditure	\$39,579
Total asset value	\$2,883,671

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 channel or creek 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 excavation and channel clearance 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'.