Nelson Creek Rating District
2023-2026 Asset Management Plan

West Coast Regional Council

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Table of Contents

1.0 Purpose of this Document

The purpose of this document is to summarise the management philosophy that is applied to the Nelson 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 Nelson Creek Rating District for which the West Coast Regional Council bares 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 Nelson Creek protection scheme.
- Convey the long-term strategy for the management of the Nelson 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 Nelson Creek 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 Nelson 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 Nelson 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 Nelson Creek Rating District Background

Prior to 1945 the Lower Nelson Creek area upstream of the State Highway Bridge had been prone to severe floods and erosion, causing problems of inundation of farmland and the closure of 1 kilometer of State Highway 7. Individual landowners had carried out simple and cheap forms of river protection works. Old dredge screens and galvanized iron tanks filled with stones were used to form spur groynes to protect land from erosion.

On 18 May 1945 the Westland Catchment Board held its first meeting. The importance of this date is significant in that direct access to central government resources through the Soil Conservation and Rivers Control Council were made available for river protection works.

Flooding and erosion between the old Road Bridge and the downstream new State Highway Bridge continued until 1961. Minimal works in the form of tree, rope and drum groynes with some rock groynes were carried out in an attempt to halt the erosion and flooding processes.

On 18 December 1961 the Ministry of Works requested the Westland Catchment Board to prepare an estimate of river training works to alleviate flooding of State Highway 7 at Nelson Creek. An investigation of a river control scheme over a length of 1.2 kilometres between Drennan's Bridge and the State Highway Bridge was undertaken. Minor channel reconstruction works were carried out during this period.

On 29 March 1963 a serious flood occurred, crossing the main highway from the bridge to the hill on the north side of the valley. On 3 May 1966 work worth $7,700 was approved and work commenced on the construction of permeable groynes, channel work, and the driving of rails and placement of heavy wire rope over a distance of 760 metres. Work had been in progress for 4 months, when on the 8 November 1963 a flood again overtopped the stopbank, flooded 3 properties and blocked the State Highway.

Between 1963 and 1973 a considerable amount of work was carried out, mainly in the form of channel clearing with some additional rockwork in the form of spur groynes. Between 1973 and 1978 rock was used more extensively to increase stability along both banks.

In April 1978 floodwater breached a stopbank on the right bank 400 metres downstream of the old Drennan's bridge and again inundated farmland and the State Highway.

The Ministry of Works again sought costs of a comprehensive river control scheme. In 1980 the existing stopbank was raised by 1 metre over a length of 240 lineal metres. Also in January 1980 New Zealand Railways sought advice on remedial action required to alleviate erosion problems at the rail bridge. In October 1980 New Zealand Railways carried out its own protection works, 13,000 tonnes of rock being utilised to protect the rail embankment.

On 18 February 1981 the Westland Catchment Board presented a proposal to protection land on the right bank, above the State Highway Bridge. The design was based on protecting the land from a 50 year return flood. The works involved construction of a stopbank 1.8m high from the State Highway Bridge upstream for 1.6 kilometres and the placement of 1,000 tonnes of rock.

On 5 March 1982 National Roads Board approved 50% funding as its share of the proposed works.

On 8 September 1983 a revised estimate, due to floods on 9 and 10 July 1983, was put forward to those involved. The revised estimate was accepted which involved 21,400m^3 of fill and 1,200 tonnes of rock at a total cost of $56,000. The contract was let to H. Langridge and Sons on 25 November 1983.

On 23 July 1984 a classification covering all works on Nelson Creek between the old Grey County Bridge and the Tranz Rail Bridge. The proposed left bank costs totalled $31,000 (NZR Share 50%) and the right bank costs totalled $32,500 (NZR Share 50%).

The proposal gained New Zealand Railway's approval on 10 December 1984.

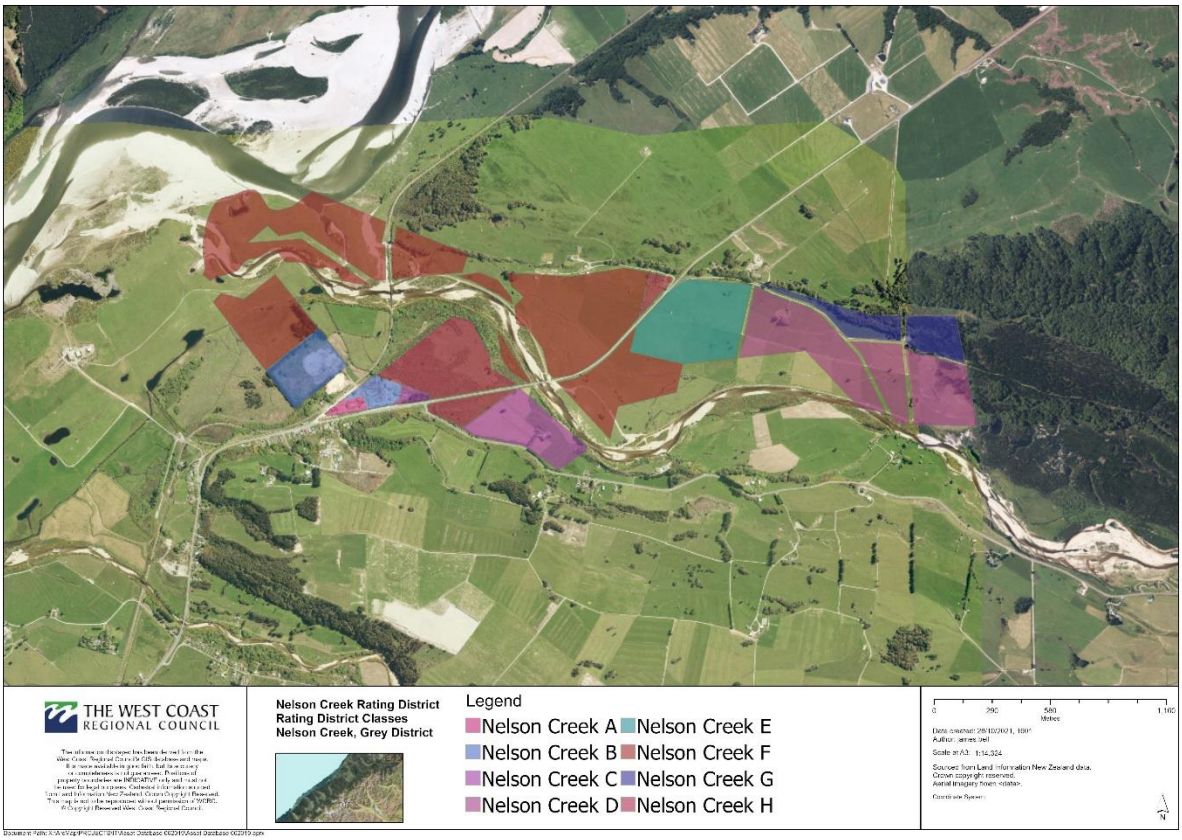
At a ratepayers meeting on 22 July 1985 it was agreed to extend the Rating District Classification to include all works downstream to the rail bridge. The classification would be based on Land Value. This classification was adopted by the Westland Catchment Board on 26 May 1986. This was later changed to Land Area basis on 20 April 1993.

In the period 1996 to 2001 several ratepayers expressed concern at apparent anomalies at residential rating within the Mill site (Savage's property).

A request was made to carry out a reclassification at the rating District's Annual General Meeting on 3 April 2001.

A revised differential, land area based rating district was prepared and was approved by Special Order, by the West Coast Regional Council on 9 July 2002.

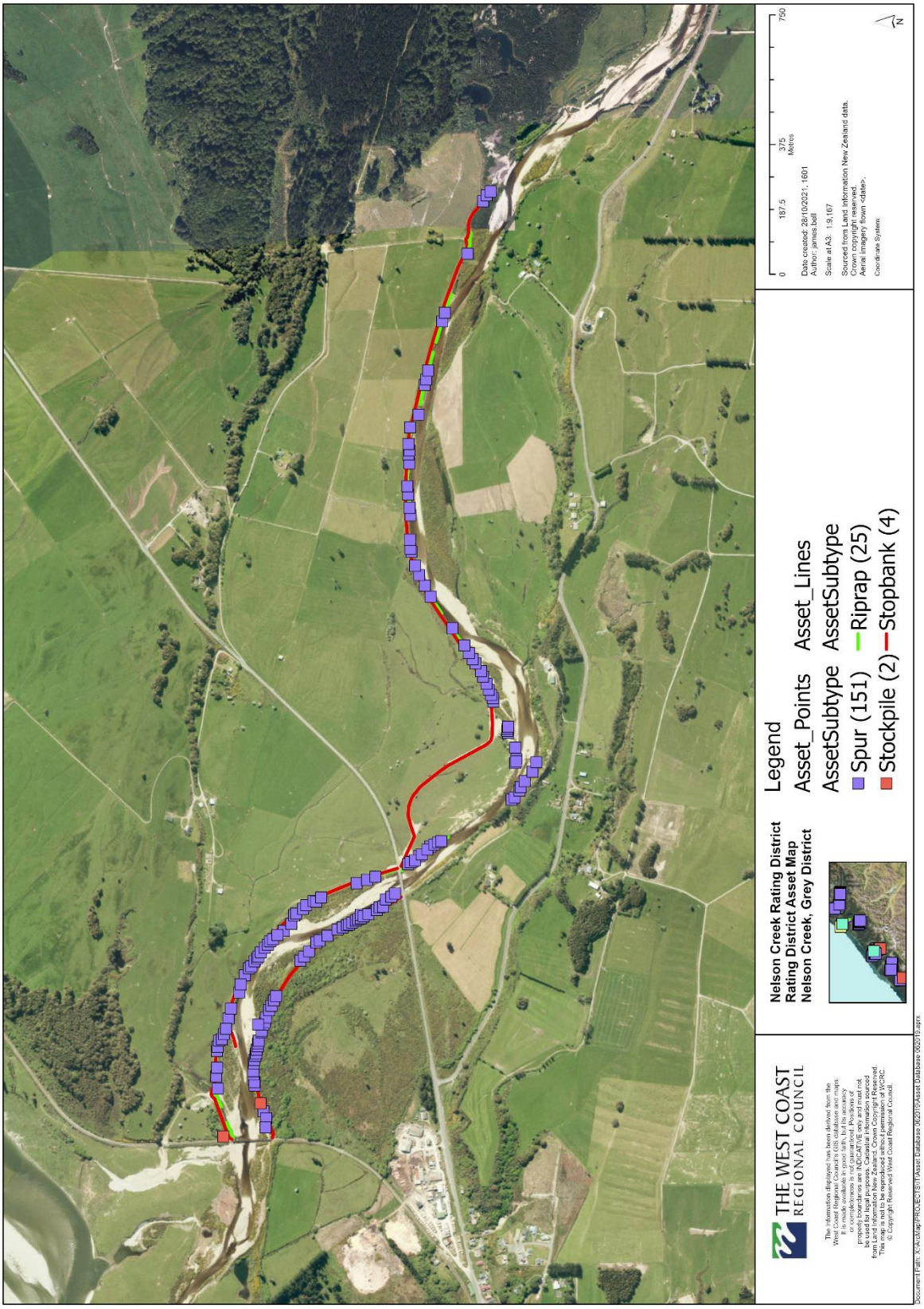
4.0 Nelson Creek Rating District



5.0 Description of Assets

Asset	Quantity	Unit	Rate
Rock	44,894	Tonne	$62.00
Fill	109,070	m^3	$26.00
Stockpiled rock	70	Tonne	$62.00
Asset Value			**$5,623,588.00**
On-costs (15%)			*$843,538.20*
Resource Consents (2%)			*$129,342.52*
Asset Value			**$6,596,468.72**

5.2 Asset Map



Note: Not all assets have been added to the asset map due to having no spatial data to represent them

6.0 Existing Standard

The objective of the Nelson Creek Rating District is to reduce bank erosion and flooding along the upper and lower reaches of Nelson Creek.

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 has been a mix of design standards during the life of this scheme. The original stopbanks were built to 900mm above the highest known flood. After 1983, sections of stopbank were built to contain a flood of 539 cumecs which at that time was estimated to be a 1 in 50 year return period flood. However, no recent flood flow analysis has been undertaken for this river therefore the current level of protection given by the stopbanks is unclear and any service level that has been identified in the past should be treated with caution.

The Council has suggested that an analysis be commissioned to quantify the actual level of protection that the scheme currently provides. The rating district has not yet decided if they wish to have any new flood analysis undertaken. Given that there has been no analysis carried out the scheme structures will continue to be maintained to the dimensions that they were originally constructed.

In 2023 a cross section survey was undertaken to analyse bed level changes that have occurred over the previous 10 year period.

6.2 Maintenance Programme

An annual maintenance report is prepared each year in consultation with the Nelson 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.

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%	$6,596,469	5%	$329,823	$329,823	100%
5%	$6,596,469	10%	$659,647	$461,753	70%
2%	$6,596,469	20%	$1,319,294	$659,647	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 $160,000 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 $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

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

Both NZ Transport Agency and Kiwi Rail make contributions at a fixed percentage rate to the annual maintenance of the Nelson Creek scheme. NZTA pays 35% of maintenance costs above the State Highway Bridge and Kiwi Rail pays 50% of any maintenance works between the rail and road bridges.

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’.