

Tasman District Council

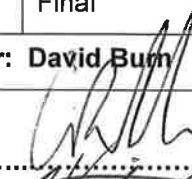

Rivers

Activity Management Plan

2012 - 2022

July 2012

Quality Assurance Statement

Tasman District Council 189 Queen Street Private Bag 4 Richmond 7050 Telephone: (03) 543 8400 Fax: (03) 543 9524	Version:	V5 July 2012
	Status:	Final
	Project Manager:	David Burn
	Prepared by:	
	Asset Manager	
	AMP Author	
	Approved for issue by:	
	Engineering Manager	

For full Quality Assurance Statement, Refer Appendix Z

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1 KEY ISSUES FOR THE RIVERS ACTIVITY

The most important issues relating to the rivers activity are shown below in Table 1-1.

Table 1-1: Key Issues for the Rivers Activity

Key Issue	Discussion
<p>On-going damage to the flood protection and river control assets from storms and heavy rainfall events.</p>	<p>In December 2010 and December 2011 the Tasman District experienced extremely heavy rainfall which led to flooding, slips and debris flows resulting in damage to Council infrastructure and private property. This was particularly destructive in Golden Bay in 2011 and in Murchison and Golden Bay in 2010. Both these events depleted Council's disaster funds. The full extent and cost of the damage to Council infrastructure for the December 2011 event, including flood protection structures, is estimated to be approximately \$10.1 million. Of these costs around \$6.7 million should be recoverable from the Ministry of Civil Defence and Emergency Management or from insurance, which leaves a Council liability of around \$3.4 million. Most of the repair work will be undertaken in the current 2011/2012 year. Much of the Council funding for river works repairs is likely to come from the Classified Rivers Protection Fund.</p>
<p>Lower Motueka Valley flood control project.</p>	<p>Council had been planning to provide an adequate flood control system for the Lower Motueka Valley (Brooklyn, Motueka and Riwaka communities) that is acceptable and affordable. Council has been undertaking consultation with the local communities on the project and considered the communities views at each of the decision making stages for the project over the last three years.</p> <p>A preferred option for the flood control in the Lower Motueka Valley was identified and incorporated in the Draft Long Term Plan for further consultation. The proposal was to refurbish the existing stopbanks over a 13 year period at a cost of \$16.35 million. Refurbishment was to commence in 2017/2018 and be completed in 2029/30.</p> <p>Council has asked staff to review the scope, proposed risks and levels of flood protection, and funding for the project over the coming years. The project has been reduced to \$5 million for the duration of the Long Term Plan. Further consultation will need to be undertaken with the public on the scope of the project and the level of flood protection that will be provided.</p> <p>Council has also developed a funding model for the Lower Motueka Valley flood control project. The project will be funded by three groups of ratepayers:</p> <ol style="list-style-type: none"> 1. Those properties that directly benefit from the refurbished stopbanks by not getting flooded in a 1 in 100 year (1% annual exceedence period) in the year 2090 will pay 30% of the project costs. 2. Those properties in the Motueka Ward that are deemed to receive an indirect benefit from the flood control works will pay 40% of the project costs. 3. All rateable properties in the Tasman District will pay 30% of the project costs.
<p>Riwaka flood control project.</p>	<p>The Riwaka community faces risks of flooding from both the Motueka and Riwaka rivers. The risks from the Motueka River are addressed in the above project. Council is planning to investigate the stopbanks along the lower part of the Riwaka River to better understand their design capacity and ability to protect the Riwaka community from flooding. The original design of the stopbanks is unlikely to meet current best practice. The level of risk to the Riwaka community needs to be considered and addressed, where appropriate. There are also landownership issues and responsibilities associated with the current stopbanks that will need to be resolved to ensure this asset is maintained.</p>

Takaka flood control project.	Council is undertaking a project to look at flooding issues and land zoning for Takaka. Council has initiated the first stages of the consultation with the Takaka community on the flooding issues. The Takaka River poses a flood risk to a number of commercial and residential buildings in Takaka, and to public infrastructure. Indicative funding for a project proposed to commence in 2019/2020 has been included in this Activity Management Plan. Further investigation, consultation and development of a solution are required. The outcomes from this work will be considered in future Activity Management Plans where more detailed funding options will be proposed for consideration by the community.
Unclassified rivers asset information.	Council needs to improve the asset database for the 'unclassified' (River Z) flood protection and river control works.
Management of crack willow.	Council manages the removal of crack willow under its maintenance regime. Crack willow management can be controversial with some members of the public. The management of crack willow is required as this particular species is invasive and overtime constricts the river floodplain creating potential risks for adjacent property owners.
Community expectations.	Community expectations of the levels of service Council will provide to their communities can change dramatically following heavy rainfall and flood events. These increased expectations can be difficult for Council to manage in relation to ratepayers' willingness to pay for flood protection and affordability of rates.

2 ACTIVITY DESCRIPTION

2.1 What We Do

Tasman District Council maintains 285 kilometres of the district's X and Y classified rivers in order to carry out its statutory roles to promote soil conservation and mitigate damage caused by floods and riverbank erosion. These classified rivers are funded by a differential river rating system based on land value. The rivers works in the classified rivers, such as stopbanks and willows, are owned, maintained and improved by Council.

There are many more rivers, streams and creeks that are on private, Council and Crown (Department of Conservation, Land Information New Zealand) lands, which are not classified. These unclassified rivers have associated river protection works such as rock walls, groynes and river training works that form part of the river system. These are typically owned and maintained by private property owners and may be partly funded by Council.

This activity does not include stormwater or coastal structures, which are covered as individual activities and have their own Activity Management Plan respectively.

A complete description of the assets included in the rivers activity is in Appendix B.

2.2 Why We Do It

By implementing and maintaining quality river control and flood protection schemes, Council improves protection to neighbouring properties and mitigates the damage caused during the flood events. In 1992 river control functions under the Soil Conservation and Rivers Control Act 1941 for the Tasman district were transferred to Tasman District Council.

3 COMMUNITY OUTCOMES AND OUR GOAL

The community outcomes that the rivers activity contributes to most are shown in Table 3-1.

Table 3-1: Community Outcomes

Community Outcomes	How Our Activity Contributes to the Community Outcome
Our unique natural environment is healthy and protected.	Our flood protection and mitigation activities are carried out so that the impacts on the natural river environments are minimised to a practical but sustainable level, and use best practices in the use of the district’s natural resources.
Our urban and rural environments are pleasant, safe and sustainably managed.	Our flood protection works and flood control structures protect our most “at risk” communities and rural areas from flooding and are maintained in a safe and cost-effective manner.
Our infrastructure is safe, efficient and sustainably managed.	Our flood protection and mitigation structures are maintained in an environmentally sustainable manner to a level supported by the community.

3.1 Our Goal

We aim to maintain river systems in a cost effective manner in such a way that the community and individual landowners are provided with protection and management systems to a level acceptable to that community, taking into account affordability.

4 OPERATIONS, MAINTENANCE AND RENEWALS STRATEGY

4.1 Operations and Maintenance

The Council currently contracts out to commercial contractors the day-to-day operation and maintenance of the X and Y classified river works with the aim of maintaining the required levels of service. The Council’s operation and maintenance contracts are let through competitive tendering to ensure a true market value.

The rivers activity is currently maintained under Contract 840. This contract sets out the operations and maintenance requirements for X and Y rated areas over a five year period and which must also be operated in accordance with Resource Consent NN010109 (River Protection and Maintenance Works). Taylors Contracting Co Ltd were awarded Contract 840 in 2011, the contract is a three year, plus one year, plus one year format.

Council’s consultant undertakes an annual assessment of the classified rivers network (prior to the start of the financial year). A draft annual works programme, the Annual Operating and Maintenance Plan (AOMP), is provided to Council’s Engineering Manager. All stakeholders including landowners, iwi, Department of Conservation (DoC), Fish and Game, and Council’s compliance are consulted on the draft programme. During the assessment a priority ranking of P1, P2 or P3 is given to each proposed work item. The draft programme also includes identification of gravel sites where extraction will facilitate river management.

Operation and maintenance is discussed in detail in Appendix E.

4.2 Renewals

Assets are considered for renewal as they near the end of their effective working life or where the cost of maintenance becomes uneconomical. Renewal decisions are based on the Asset Manager’s judgment on the cost effectiveness of renewing the asset and their assessment of the acceptability of the risk of asset failure.

The renewal programme is reviewed in detail during each Activity Management Plan update (ie. three yearly), and every year the annual renewal programme is reviewed and planned with the input of the maintenance contractor and consultant via the Annual Operation and Maintenance Plan (AOMP) process.

Renewals are discussed in detail in Appendix I.

5 EFFECTS OF GROWTH, DEMAND AND SUSTAINABILITY

5.1 Population Growth

A comprehensive Growth Demand and Supply Model (GDSM or growth model) has been developed to provide predictive information for population growth and business growth, and from that, information about dwelling and building development across the district and demand for infrastructure services. The Growth Demand and Supply Model underpins the Council's long term planning through the Activity Management Plans, Long Term Plans (LTPs) and supporting policies (eg. Development Contributions Policy).

The 2011 Growth Demand and Supply Model is a third generation growth model with previous versions being completed in 2005 and 2008.

Population growth within the district does not have a direct effect on the rivers activity. Therefore, the model outputs are not directly relevant to this activity. However, generally population growth leads to intensification of land use and demand for further housing development in areas vulnerable to flooding. This may lead to a desired increase in the level of flood protection historically provided. Council addresses the potential increase in community demand by consulting with the affected communities, and management of development through the Tasman Resource Management Plan (TRMP).

5.2 Sustainability

The Local Government Act 2002 requires local authorities to take a sustainable development approach while conducting its business, taking into account the social, economic and cultural well-being of people and communities; the need to maintain and enhance the quality of the environment and the reasonably foreseeable needs of future generations.

Sustainable development is a fundamental philosophy that is embraced in Council's Vision, Mission and Objectives, and that shapes the community outcomes. The levels of service and the performance measures that flow from these inherently incorporate the achievement of sustainable outcomes.

Many of the Council's cross-organisational initiatives are shaped around the community well-being (economic, social, cultural and environmental) and take into consideration the well-being of future generations. This is demonstrated in:

- Council's Integrated Risk Management approach which analyses risks and particularly risk consequences in terms of community well-being
- Council's Growth Demand and Supply Model which seeks to forecast how and where urban growth should occur taking into account opportunities and risks associated with community well-being
- Council adopting a 20 year forecast in the Activity Management Plans to ensure the long term financial implications of decisions made now are considered.

At the activity level, a sustainable development approach is demonstrated by the following:

- ensuring minimal impact on the environment by the activity
- ensuring that the district's likely future river requirements are identified at an early stage and that they and the financial risks and shocks are competently managed over the long term without the Council having to resort to disruptive revenue or expenditure measures
- enabling potentially flood prone land to be utilised to provide economic benefits to local communities and New Zealand.

6 LEVEL OF SERVICE AND PERFORMANCE MEASURES

The following table summarises the levels of service and performance measures for the rivers activity. Development of the levels of service is discussed in detail in Appendix R. Shaded rows are the levels of service and performance measures to be included in the Long Term Plan.

Table 6-1: Levels of Service

ID	Levels of Service (we provide)	Performance Measures (We will know we are meeting the level of service if...)	Current Performance (to end June 2011)	Future Performance			Future Performance (targets) by Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	

Community Outcome: Our unique natural environment is healthy and protected.

1	Our works are carried out so that the impacts on the natural river environments are minimised to a practical but sustainable level.	Resource consents are held and complied with for works undertaken by Council or its contractors in the rivers in the district. As measured by the number of abatement notices issued to Council's flood protection and rivers control activity.	Actual = No abatement notices issued <i>Resource consents held are:</i> <i>Global</i> – for works in rivers and some gravel extraction; and vegetation spraying. Contracts include the conditions of the consents and performance measures include requirements to meet the Resource Consent conditions. The Council or its contractor have not received any non-compliance with respect to the resource consents or any abatement notices.	No abatement notices issued	No abatement notices issued	No abatement notices issued	No abatement notices issued
2		Over time Council manages crack willow from banks and berm areas. As measured by kilometres of river bank cleared of crack willow per year.	Actual = 2009/10 - 18.5 km Actual = 2010/11 - 14.9 km	15km/yr	15km/yr	15km/yr	15km/yr
3	We manage waste/rubbish in the river system.	Complaints about illegal dumping in the X and Y classified rivers and on adjacent beaches on public land are responded to within 10 days. As measured through Customer Service Requests in Council's database.	Actual = Not currently measured	90%	90%	90%	90%

ID	Levels of Service (we provide)	Performance Measures (We will know we are meeting the level of service if...)	Current Performance (to end June 2011)	Future Performance			Future Performance (targets) by Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	

Community Outcome: Our urban and rural environments are pleasant, safe and sustainably managed.

4	We maintain Council's stopbank assets in River X classified areas to deliver flood protection to the level that the stopbanks were originally constructed.	Our stopbanks are maintained to their original constructed standard. (Riwaka River = 1 in 10 yr flood return). (Lower Motueka River = 1 in 50 yr flood return). (Waimea River = 1 in 50 yr flood return). As measured by their performance in flood events and/or flood modelling where this has been undertaken.	Actual Riwaka River = 88% Motueka River = 100% Waimea River = 100%	88% 100% 100%	88% 100% 100%	88% 100% 100%	88% 100% 100%
5	In River Y classified areas Council manages the river to minimise bank erosion up to an annual event.	Maintenance work in River Y classified areas is undertaken to rectify or minimise bank erosion as identified through annual river care group meetings and incorporated in the Annual Operating Maintenance Programme (AOMP). As measured through completion of scheduled works detailed in the AOMP.	Actual = 98% of scheduled works The year saw some disruption to the annual works programme due the significant flood event that occurred in December 2010.	100%	100%	100%	100%
6	In River Z rating areas we provide technical support and partial funding assistance when available to protect private property from river damage.	Council funding for River Z related works is allocated on a first-in, first-served basis and the budget is fully spent/committed by year end. As measured through date of receipt of acceptable proposals for River Z works completed.	Actual = 14 completed of 29 approved Because of the significant flood event of 28 December 2010 and subsequent high number of River Z enquires some of the requests were not able to be responded to within 10 days.	100% completed	100% completed	100% completed	100% completed

ID	Levels of Service (we provide)	Performance Measures (We will know we are meeting the level of service if...)	Current Performance (to end June 2011)	Future Performance			Future Performance (targets) by Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	

Community Outcome: Our infrastructure is safe, efficient and sustainably managed.

7	River maintenance works are planned with community input and professionally implemented.	An annual meeting is held with River care Groups to provide input into the development of the Annual Operating Maintenance Programme. As recorded in minutes of the meeting.	Actual = Council consult with River Care groups, iwi, Fish and Game and DoC on its annual maintenance programmes.	Yes	Yes	Yes	Yes
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7 CHANGES MADE TO ACTIVITY OR SERVICE

Table 7-1 summarises the key changes for the management of the rivers activity since the 2009 Activity Management Plan.

Table 7-1: Key Changes

Key Change	Reason for Change
Majority of rock protection work is scheduled as new capital works, rather than a split between new capital and renewal works.	Rock protection work is undertaken with durable rock and the rock is generally not lost to the river system. Under flood conditions the rock can be shifted or settled into the bed and then become the toe protection rock for the riverworks that follow a flood. Therefore additional rock is a new asset and is therefore capital works.
The start of construction for the Lower Motueka Flood control project has been deferred from 2012/13 to 2017/18.	The scale and cost of the project required robust consultation with the community and has been delayed accordingly.
Increased funding allocation to Rivers Z works.	In order to provide additional funding for river works in River Z classified rivers, In 2011/12 Council decided, through the Annual Plan process, to transfer \$100,000 that would generally be paid into the Council's Classified Rivers Protection Fund (subject to the fund balance being above \$1 million as at June 2011) into the River Z works budget. Council also increased the river rate, by 18.64 percent to generate around an additional \$200,000 to go towards the River Z budget. These changes provided a total of around \$400,000 in the River Z budget for 2011/12, and \$300,000 in subsequent years, when added to the existing funding. The funding is being used for maintenance of River Z classified rivers and to assist landowners adjacent to River Z classified rivers with river projection works and assist with crack willow management.

8 KEY PROJECTS

Table 8-1 details the key capital and renewal work programmed for years 2012 to 2022.

Table 8-1: Significant Projects

Project Name	Description	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Years 4 to 10 (\$)	Project Driver ¹
Lower Motueka Flood Control Project	Consultation, scoping, consent application and hearing, detailed design and construction monitoring.	300,000	700,000	100,000	986,460	LoS
Lower Motueka Flood Control Project	Construction.	0	0	0	2,026,800	LoS
Takaka Stopbank Project	Consultation, Design and Monitoring.	0	0	0	76,125	LoS
Takaka Stopbank Project	Construction.	0	0	0	685,125	LoS
Borlase Catchment Project	Resource Consent and Detailed Design.	109,000	32,500	32,500	0	LoS
Borlase Catchment Project	Land Acquisition.	100,000	0	0	0	LoS
Borlase Catchment Project	Construction.	0	465,000	465,000	0	LoS

Note:

1. See Appendix F for a full detailed list of new capital works projects driven by growth and or an increase in level of service.
2. See Appendix I for a full detailed list of renewal projects.

¹ LoS = Levels of Service

9 MANAGEMENT OF THE ACTIVITY

9.1 Management

The Council undertakes the management of the “classified” rivers system using three levels of classification.

These are described as follows:

- Class X – river sections with stopbanks maintained by Council
- Class Y – river sections maintained by Council without stopbanks
- Class Z – the balance of the district (considered to receive an indirect benefit).

Council has considered the demand management issues listed in Table 9-1 during development of this Activity Management Plan.

Table 9-1: Demand Management Strategies

Factor	Effect	Mitigation Measure
Gravel extraction	Over extraction of gravel may create bank erosion.	Access to the gravel resource is controlled by Council's staff, with input from external agencies eg. Fish and Game and Department of Conservation.
Urban development	Increase in impermeable areas may affect the runoff volume (likely to be relevant to small catchments only). Increase in population density may result in an increased demand for protection due to increased value of land and assets being protected.	Managed through the development process and the TRMP conditions. Managed via an increased level of service as developed in consultation with the community and decided by Council eg. Motueka Flood Control Project.
Land use	Forestry operations such as clear felling may temporarily change catchment characteristics and increase debris runoff, possibly affecting fairway clearing and bank erosion.	Management of forestry operations, and restrictions on sediment control and site clearance through the TRMP, and compliance with the Soil Conservation and Rivers Control Act.
Dams	Construction of dams (specifically the Lee Dam) is expected to have a positive effect on the management of a river due to the reduced flow peaks and more consistent flows.	Accept.

9.2 Significant Effects

The significant negative and significant positive effects are listed below in Table 9-2 and Table 9-3 respectively.

Table 9-2: Significant Negative Effects

Effect	Council's Mitigation Measure
<p>Over extraction of gravel in some areas has the potential to destabilise banks and change groundwater levels.</p>	<p>Gravel availability within the river berms is assessed on various factors, including the annual inspection process and Council's environment and planning sustainable quota. Generally the sustainable extraction rate of gravel from all rivers has been set at zero by the Council's Rivers Scientist. Gravel available for relocation or extraction is assessed using river cross-section data, river management purposes and resource consent criteria (NN010109). The lowering of groundwater levels has been mitigated using weir structures e.g. Wai-iti River.</p>
<p>Management of crack willow may have a major effect on the bank protection works if suitable replacements cannot be found.</p> <p>The burning of crack willow following removal from riverbanks can create an air pollution issue if suitable weather conditions are not present.</p>	<p>The Ministry of Agriculture and Forestry (MAF) requires no propagation of crack willow. Native species and bitter willow are used extensively and other species are being trialled as a replacement for crack willow.</p> <p>The Council's contractor monitors weather conditions and undertakes burning of the crack willow when suitable weather conditions are present.</p>
<p>Inappropriate use of river berms can cause nuisance to the public, for example dumping of refuse and car bodies.</p>	<p>Given the vast uncontrolled areas of river berm (predominantly privately owned), there is unfortunately plenty of opportunity for waste dumping activities to occur. Council has undertaken to trial closing a section of the Waimea River berm (Appleby Bridge to Lower Queen Street, right bank) to determine what benefit this has on increasing the standard of recreational use in that area. This concept has been included in a proposal to develop a regional park from the estuary on the Waimea River up to the State Highway 6 Bridge at Brightwater. Refer to the Waimea River Park Management Plan, Items 9.1 and 9.2 for further information.</p>
<p>The costs of providing the services.</p>	<p>Council uses competitive tendering processes to achieve best value for money for works it undertakes.</p>
<p>Potential to affect historic and wahi tapu sites.</p>	<p>Council undertakes consultation with affected parties prior to undertaking works. Council also maintains a record of known heritage sites.</p>

Table 9-3: Significant Positive Effects

Effect	Description
Economic development.	Provision and maintenance of flood control schemes allow for the development of land for higher value uses (eg. residential or horticultural purposes) thereby allowing economic growth and prosperity in the Tasman district.
Safety and personal security.	Flood protection and river control works contribute to community well-being by improving protection of communities, life, property and livelihoods.
Environmental sustainability.	Council aims to achieve environmental sustainability whilst managing the rivers activity. This is generally managed by the resource consent process, the TRMP, and compliance with the Soil Conservation and Rivers Control Act.
Economic efficiency.	Council's management of the rivers activity uses best practice and competitive tendering to provide the value for money for the ratepayers and provides jobs for contractors.

9.3 Assumptions

Council has made a number of assumptions in preparing the Activity Management Plan. These are discussed in detail in Appendix Q. Table 9-4 lists the most significant assumptions and uncertainties that underline the approach taken for this activity.

Table 9-4: Major Assumptions

Assumption Type	Assumption	Discussion
Financial Assumptions	That all expenditure has been stated in 1 July 2011 dollar values and no allowance has been made for inflation.	The LTP will incorporate inflation factors. This could have a significant impact on the affordability of the plans if inflation is higher than allowed for, but Council is using the best information practically available from Business and Economic Research Limited (BERL).
Asset Data Knowledge	That Council has adequate knowledge of the assets and their condition so that the planned renewal work will allow Council to meet the proposed levels of service.	There are several areas where Council needs to improve its knowledge and assessments but there is a low risk that the improved knowledge will cause a significant change to the level of expenditure required.
Growth Forecasts	That the district will grow as forecast in the Growth Demand and Supply Model (refer to Appendix F).	If the growth is significantly different it will have a low impact. The reason being population growth in the district does not directly affect the demand for river services.
Major Events	That no major flood events occur above the flood protection and erosion control assets ability to cope with.	If a major flood event occurs it may have major effect on the operations and maintenance budgets due to the extent of reinstatement required and associated costs. Council will need to prioritise expenditure. The risk of this occurring is high. Note a major flood is generally greater than AEP 20%/five year return period for areas without stopbanks.

Assumption Type	Assumption	Discussion
Timing of capital projects.	That capital projects will be undertaken when planned.	The risk of the timing of projects changing is high due to factors like, resource consents, funding and land purchase. Council tries to mitigate this issue by undertaking the consultation, investigation and design phases sufficiently in advance of the construction phase. If delays are to occur, it could have significant effects on the level of service.
Funding of capital projects.	That the projects identified will receive funding.	The risk of Council not funding capital projects is moderate due to community affordability issues. If funding is not secured, it may have significant effect on the levels of service as projects may be deferred. The risk is managed by consulting with the affected community and appropriate distribution of targeted rates.
Accuracy of capital project cost estimates.	That the capital project cost estimates are sufficiently accurate enough to determine the required funding level.	The risk of large under estimation is low; however the significance is moderate as Council may not be able to afford the true cost of the projects. Council tries to reduce the risk by including a standard contingency based on the projects lifecycle.
Changes in legislation and policy.	That there will be no major changes in legislation or policy.	The risk of major change is high due to the changing nature of the government and politics. If major changes occur it is likely to have an impact on the required expenditure. Council has not mitigated the effect of this.

The major capital projects and their potential uncertainties are listed in Appendix Q.

9.4 Risk Management

Council's risk management approach is described in detail in Appendix Q.

This approach includes risk management at an organisational level (Level 1). The treatment measures and outcomes of the organisational level risk management are included within the Long Term Plan.

At an asset group level (Level 2), Council has identified 25 high risks and planned mitigations measures to reduce these risks to 14 high risks. Council has planned controls for the remaining 14 high risks but even with the controls, they remain high. Council has decided to accept these risks. These are listed in Table 9-5.

Table 9-5: Significant Risks and Control Measures

Risk Description	Current Control	Proposed Control	Target Risk Level
Communications: Failure of operational communications (contractors.)	Cellphone. Radio Telephone. Call care system.	Manual response during emergencies.	HIGH
Communications: Failure of operational communications (affected parties).	Internet website. Staged communication system. Call care system.	Manual response during emergencies. Public training (Rivercare).	HIGH
Resources: Insufficient or inappropriately trained resources to respond to emergency (contractor, council, consultant).	Contract training agreement.	Regular training and auditing compliance.	HIGH

Risk Description	Current Control	Proposed Control	Target Risk Level
Internal (Engineering): Ineffective planning of maintenance and renewal works.	Annual Planning. Informal meetings.		HIGH
Emergency Services: Ineffective communication and planning of maintenance and renewal works (Rural Fire Service, DoC (Motueka, Golden Bay)).	Regular exercises with Civil Defence.	Review communications plan.	HIGH
Earthquake (1:400): Major damage to infrastructure (eg. stop banks).	None	None	HIGH
River Floods (1:400): Impacts infrastructure.	None	None	HIGH
Catastrophic Failure: Catastrophic failure of stop banks.	Stopbank maintenance	Stopbank maintenance	HIGH
Extreme Weather (Rain): Increased volumes overload infrastructure (increased debris).	AOMP. Regular maintenance.	Undertake as required.	VERY HIGH
Storm and Tidal Surge: Damage to infrastructure.		Determine jurisdiction.	HIGH
Information Technology: Failure of control systems (Hydrology).	See emergencies (reduce).		HIGH
Telemetry: Failure of telemetry.	See emergencies.	Manual response during emergencies.	HIGH
Power: Failure of power.	See emergencies.	Manual response during emergencies.	HIGH
Telecommunications: Failure of telecommunications.	See emergencies.	Manual response during emergencies.	HIGH

Council has also identified and assessed critical assets (Level 3), the physical risks to these assets and the measures in place to address the risks to the asset. This has led to a list of projects to mitigate the risks to acceptable levels. This includes:

- on-going rock protection of banks
- Motueka Flood Control
- Borlase Flood Control
- Takaka Flood Control.

9.5 Improvement Plan

This Activity Management Plan document was subject to a peer review in its Draft format by Waugh Infrastructure Management Ltd in October 2011. The document was reviewed for compliance with the requirements of the LGA 2002. The findings and suggestions were assessed and prioritised by the asset management team and either implemented for the final version of the document or added to the Improvement Plan.

Development of the improvement plan is discussed in Appendix V. It includes a table (Table V-3) of planned improvements that are still to be implemented and information on how they have been budgeted. It is a snapshot of the improvement plan as at February 2012 and includes. It is intended that the Improvement Plan is continually updated and monitored as a live document.

Version 4 of this document and the Improvement Plan was then reviewed a final time by Waugh Infrastructure Management Ltd in May 2012. The report produced has been included in Appendix V along with key improvements that have been achieved since the 2009 AMP.

10 SUMMARY OF COST FOR ACTIVITY

The following figures have been generated from the Funding Impact Statement held in Appendix L and the Public Debt and Loan Servicing Cost information held in Appendix K. Further detail is held in Appendix E, F and I for operating and maintenance, new capital and renewal costs respectively. All of the following graphs include inflation.

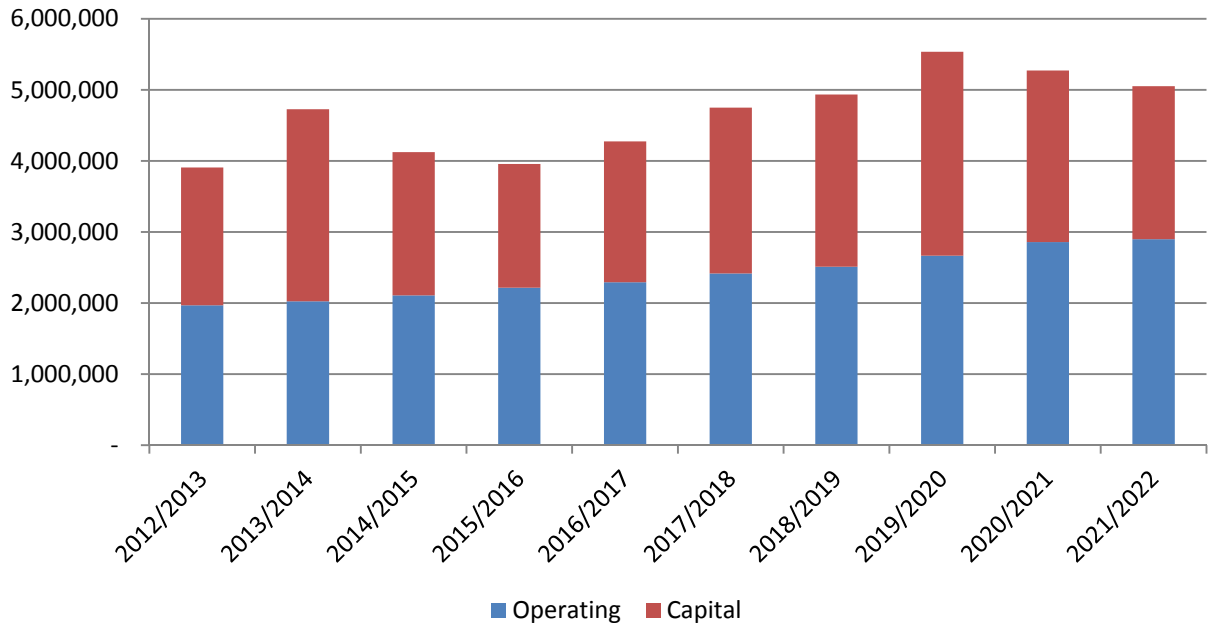


Figure 10-1: Total Expenditure

- Year 2 shows an increase in expenditure relating to the Lower Motueka Flood Control and Borlase Catchment projects. Further increases from Year 8 and beyond relate to the Takaka Flood Control project.
- Operating expenditure increases from \$2 to \$2.9 million over the 10 year period. This is due to inflation.

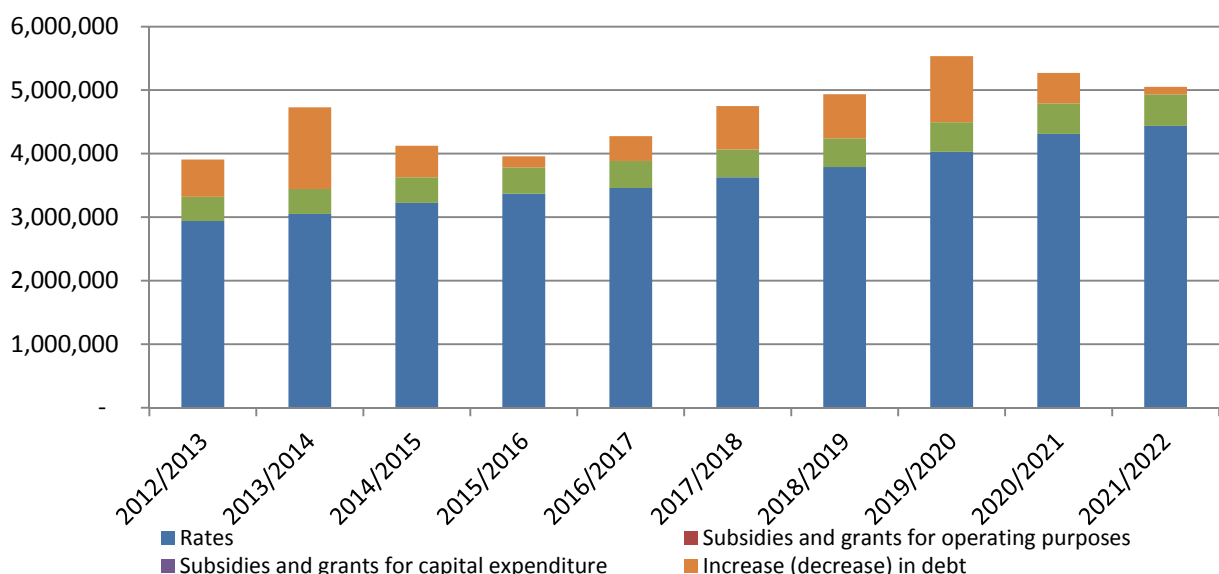


Figure 10-2: Total Income

- The income proposed for the next 10 years corresponds with the proposed expenditure in Table 10-1.
- Rate increases account for the majority of the increase in income. Debt increases are in conjunction with major capital projects.

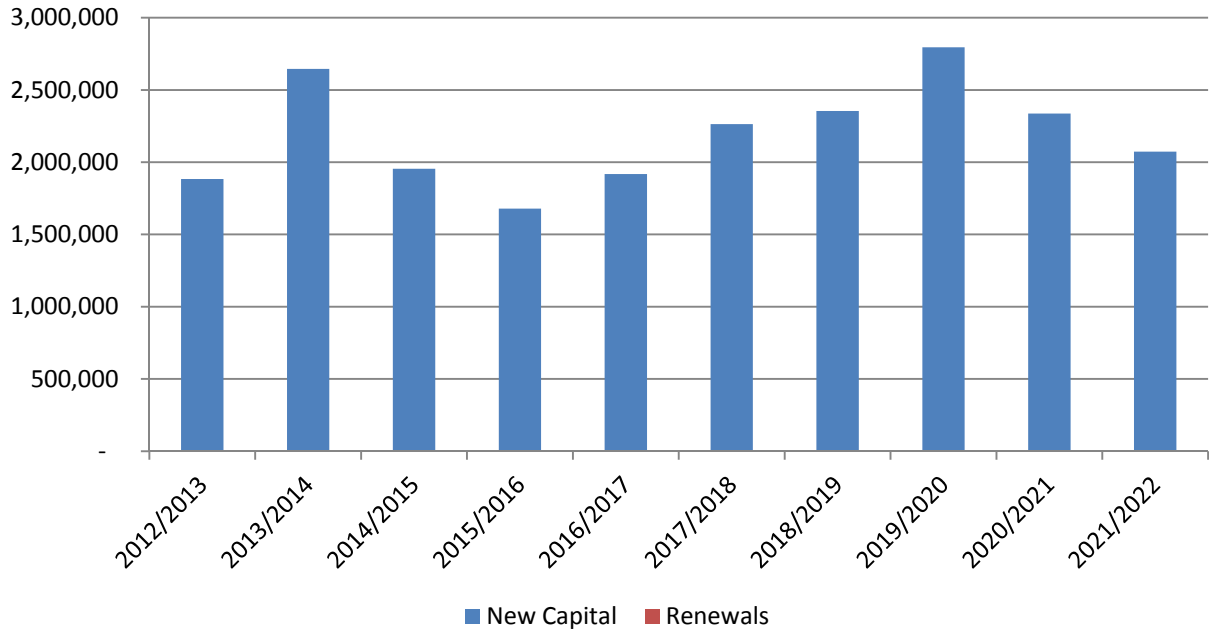


Figure 10-3: Capital Expenditure

- The apparent lack of renewals is associated the majority of rock protection works being scheduled as new capital, rather than a split between new capital and renewal. The reason for this has been discussed in Table 7-1.

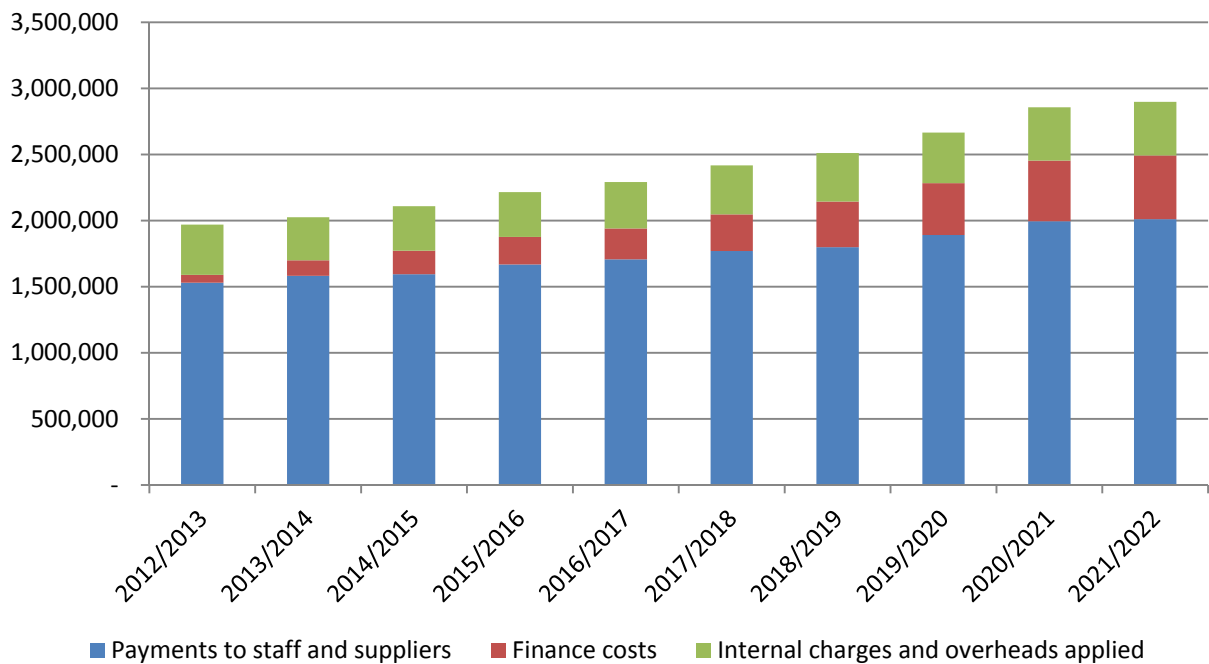


Figure 10-4: Operating Expenditure

- The Payments to Staff and Suppliers includes maintenance contract costs and professional service fees.
- Finance costs increase over the next 10 years due to an increase in the level of debt shown in Figure 10-5.

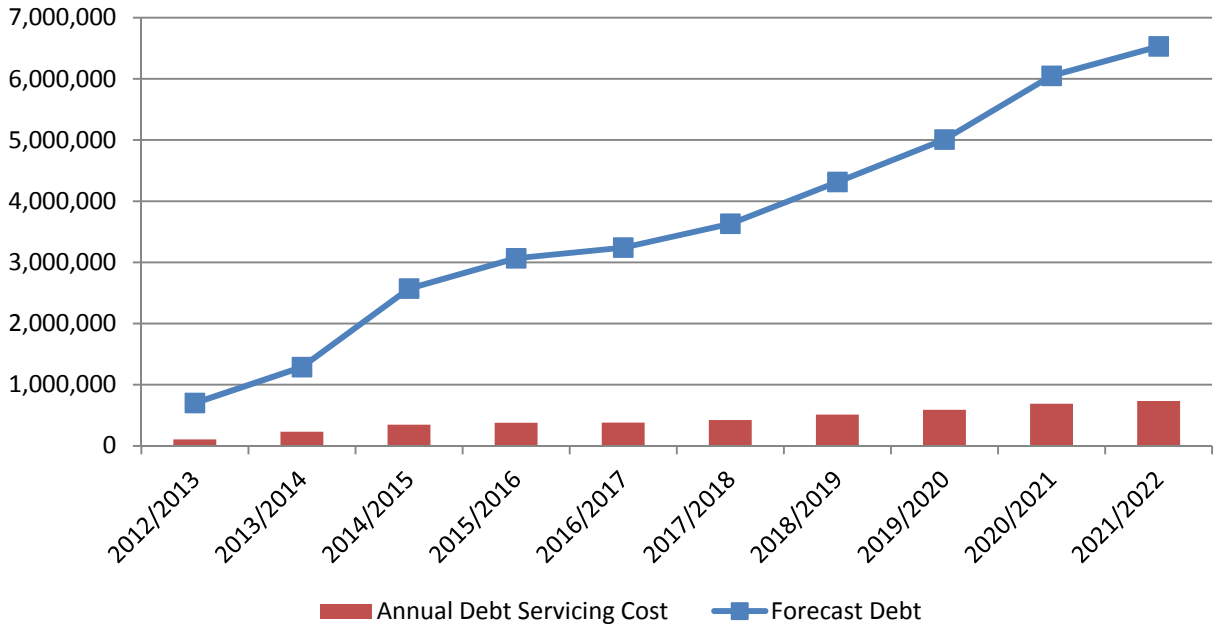


Figure 10-5: Debt

- Council's debt associated with the Rivers activity is forecast to increase from \$0.7 to \$6.5 million over the next 10 years. This will also increase the debt servicing costs as shown.

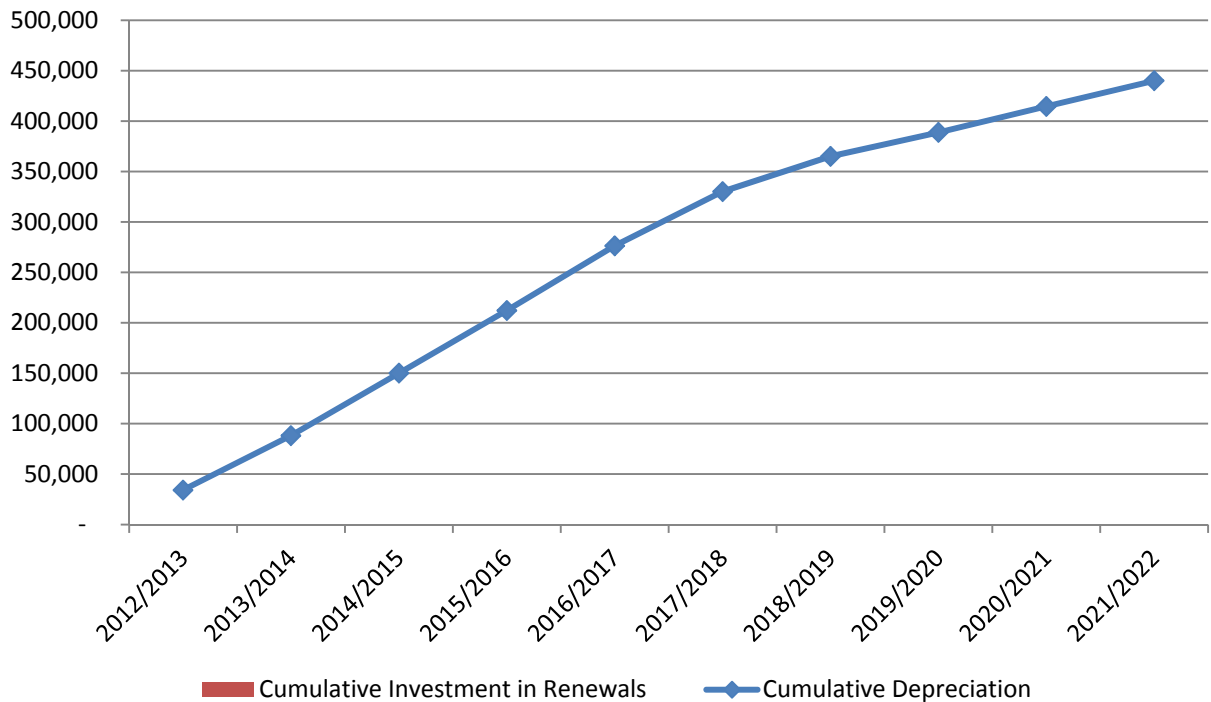


Figure 10-6: Investment in Renewals

- The apparent lack of renewals is primarily associated with Council's decision to classify the majority of rock protection works as new capital. This is discussed further in Appendix I.
- The above figure covers a relatively short time period when compared with the useful life span of the rivers assets. The apparent lack of renewals will be further investigated when Council reviews its renewals strategy.