

# **Tasman District Council**

# **Solid Waste Activity Management Plan**

**2012 - 2022**

**October 2011**

Quality Assurance Statement	
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For full Quality Assurance Statement, Refer Appendix Z

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## 1 KEY ISSUES FOR THE SOLID WASTE ACTIVITY

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

**Table 1-1: Key Issues for the Solid Waste Activity**

Key Issue	Council Approach
<p>The potential for Council to provide better and more cost effective solid waste services through joint waste management responsibilities with Nelson City Council needs to be investigated.</p>	<p>Rationalise waste disposal in the Tasman and Nelson districts so as to improve security of income, reduce impacts of the emissions trading scheme and optimise infrastructural investments.</p> <p>The Waste Management and Minimisation Plan (WMMP) being jointly developed with Nelson City Council will address this uncertainty and identify a forward action plan. Joint investigation of a landfill solution is a matter of priority.</p>
<p>Many Resource Recovery Centres (RRCs) need upgrading to meet levels of service in order to encourage waste minimisation.</p>	<p>Strategic Development Plans (SDPs) are completed and are to be implemented at each RRC. These address the upgrade requirements and waste minimisation improvements.</p>
<p>There is uncertainty around customer expectations for kerbside services and how these will meet Council's long term waste diversion requirements.</p>	<p>Consultation projects have been programmed and community survey questionnaires will be revised. Council also intends to review behaviour change and education programmes. Outcomes of these will be considered in the context of WMMP objectives.</p>
<p>Many contracts are due to expire within the first three years of this AMP and require consideration of the type of procurement.</p>	<p>Provide short term contracts either through extending existing contracts or through new contracts so as to enable longer term procurement planning on the basis of operative WMMP.</p>
<p>The Emissions Trading Scheme (ETS) is likely to increase the cost of the activity significantly.</p>	<p>Council has budgeted for the full cost implications in the Long Term Plan (LTP) and is considering the ETS implications as part of investigating a joint landfill solution.</p>

## 2 ACTIVITY DESCRIPTION

### 2.1 What We Do

The Council provides comprehensive waste management and minimisation services. It achieves this through providing kerbside recycling and refuse collection services and five resource recovery centres – at Richmond, Mariri, Takaka, Collingwood and Murchison. Waste disposal from these sites is to a Council owned landfill at Eves Valley and diverted material is processed and on-sold by contractors of Council. All public and commercial refuse disposal is through the resource recovery centres with special waste disposed directly to Eves Valley.

Council promotes waste minimisation through kerbside collection of recyclable materials, ongoing educational programmes, provides drop off facilities for solid waste, green waste, reusable and recyclable materials and manages 22 closed landfills.

A complete description of the assets is in Appendix B.

### 2.2 Why We Do It

The efficient and effective collection and disposal of waste protects both public health and the environment. Waste minimisation activities promote efficient use of resources and extend the life of Council's landfill assets.

## 3 COMMUNITY OUTCOMES AND OUR GOAL

The community outcomes that the solid waste 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 and special natural environment is bountiful, healthy, clean and protected.	All material that is collected by the Council's operators or delivered to Council-owned facilities is processed or disposed of in an appropriate and sustainable manner. These activities will be managed to minimise the impact on the receiving environment.
Our built urban and rural environments are functional, pleasant, safe and sustainably managed.	Our kerbside collections ensure our built urban and rural environments are functional, pleasant and safe by receiving materials from the community and recycling, reusing or disposing of them with a minimum of nuisance and public complaint.
Our transport and essential services are sufficient, efficient and sustainably managed.	Solid waste activities are operated in a safe and efficient manner to provide waste and recycling services that the community is satisfied with and which promote the sustainable use of resources.

### 3.1 Our Goal

Council's long-term goal for solid waste management is to work towards zero waste to landfill or other disposal.

Goals identified in the Waste Management and Minimisation Plan are:

- 1 – Avoid the creation of waste.
- 2 – Improve the efficiency of resource use.
- 3 – Reduce the harmful effects of waste.

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## **4 OPERATIONS, MAINTENANCE AND RENEWALS STRATEGY**

### **4.1 Operations and Maintenance**

Council currently contracts out the day-to-day operation and maintenance of solid waste assets and services with the aim of maintaining required levels of service. The Council's operation and maintenance contracts are let through competitive tendering of the works to ensure optimum value.

The contracts are let on a combination of prescriptive and performance basis with a view to:

- achieving maintenance efficiencies and cost effectiveness by allowing the contractor to be innovative in managing the operation and maintenance activities
- encouraging pro-active maintenance practices rather than reactive practices
- ensure compliance with legislative, monitoring and resource consent requirements
- ensure that Council's waste minimisation strategy is adhered to.

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 and when the risk of failure of the assets is sufficiently high.

Prior to any assets being renewed, the Council and contractor will assess these assets to confirm whether renewal is necessary. In the event it does not need to be renewed, a recommended date of renewal is then inputted back into Council's asset management system. This new date will then be included in the next AMP update.

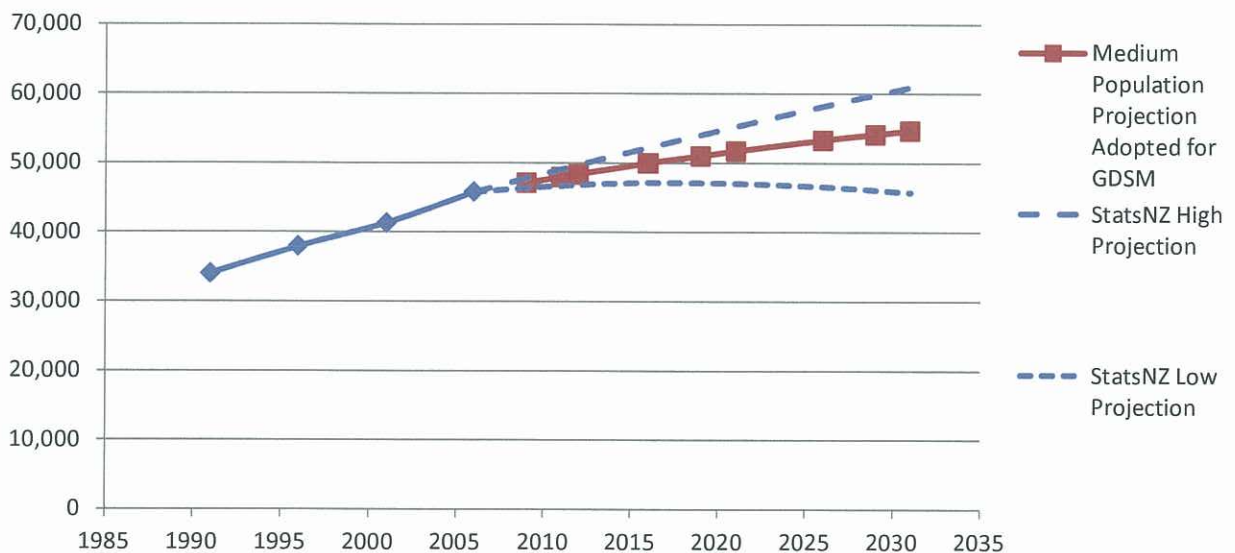
Renewals are discussed in detail in Appendix I.

## 5 EFFECTS OF GROWTH, DEMAND AND SUSTAINABILITY

### 5.1 Population Growth

The Council has developed a Growth Demand and Supply Model (GDSM) to forecast the population and business growth in the district and the implications of this growth on network infrastructure. The GDSM is described in brief in Appendix F and in more detail in a separate model description report.

The ultimate outputs of the GDSM include a projection of the district's population, and forecast of where and when new dwellings and business buildings will be build and a forecast of the number of new water connections. This is summarised in Appendix F. The population projection for Tasman District Council is shown in Figure 5-1.



**Figure 5-1: Projected Population Growth for Tasman District**

The forecast of population growth has been used to determine where and when Council infrastructure needs to be developed and at what capacity. Council has also considered the influence of changing demographics, community expectations, industrial/commercial demand, technology and legislation on the demand for this service.

As a result of the recession and general slowdown in development since 2008, Council has:

- Adopted lower population projections for Richmond and Motueka (in 2008 Council adopted Statistics New Zealand high growth projections), this time they have adopted medium growth projections.
- Assumed there would be no business growth until July 2012 that would have a significant demand on infrastructure.

From these analyses and assumptions, Council has a moderate forecast of growth for the district. However there are a number of projects where growth is a contributing factor and allowance has been made in the design of future works and in funding arrangements. The major growth projects are listed in Table 8-1 and are identifiable by the project driver column.

### 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.



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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 community well-being (economic, social, cultural and environmental) and taking 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 four 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.

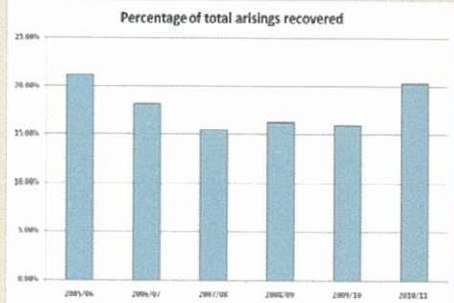
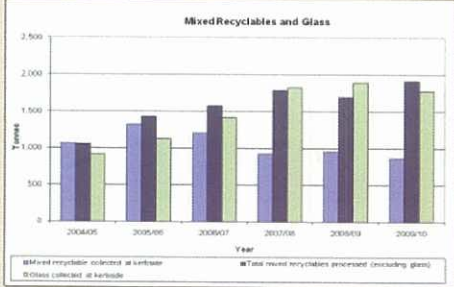
At the activity level, a sustainable development approach is demonstrated by the following:

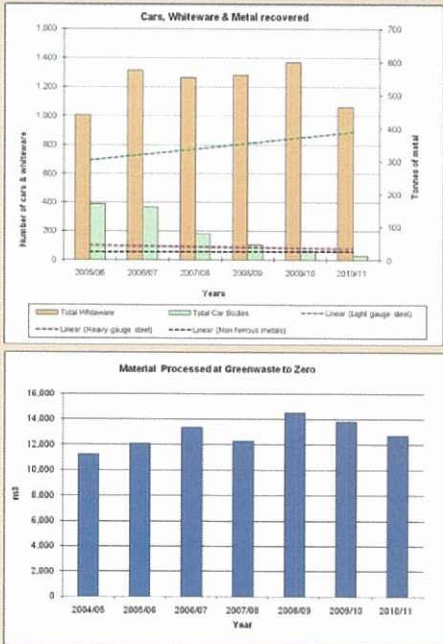
- a strategy of working towards a joint approach with Nelson City Council for regional waste management and minimisation. This approach, if successfully adopted, is expected to result in more sustainable long term management of activities
- a strategy of diversion of material from landfill to improve resource efficiency and prolong asset life of Council's landfill assets.

## 6 LEVEL OF SERVICE AND PERFORMANCE MEASURES

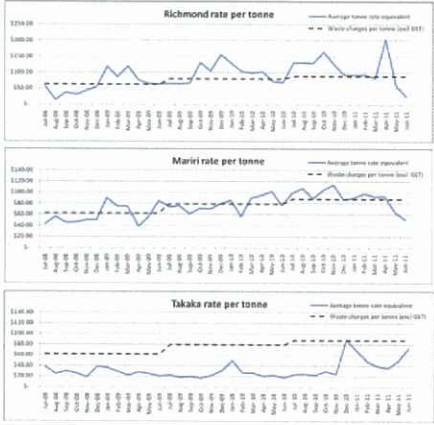
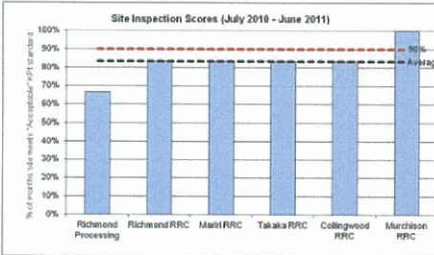
The following table summarises the levels of service and performance measures for the solid waste activity. Development of the levels of service is discussed in detail in Appendix R.

**Table 6-1: Levels of Service**

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if...)	Current Performance (as at end Year 2 2010/11)	Future Performance			Future Performance (targets) in Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	
<b>Community Outcome: Our unique and special natural environment is bountiful, healthy, clean and protected.</b>							
1	We provide effective waste minimisation activities and services.	<i>% of waste diverted from landfill is maintained or increased. As measured monthly and reported annually.</i>	<p>Actual = 20.3%</p>  	23%	25%	25%	25%

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if...)	Current Performance (as at end Year 2 2010/11)	Future Performance			Future Performance (targets) in Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	
			 <p><b>Cars, Whiteware &amp; Metal recovered</b></p> <p><b>Material Processed at Greenwaste to Zero</b></p>				
2		<p>There is a reduction in waste per capita going to landfill.</p> <p>As measured by tonnage recorded at landfill.</p>	<p><b>Actual = 415kg / capita</b></p>	<p>400 kg / capita</p>	<p>395 kg / capita</p>	<p>390kg / capita</p>	<p>390 - 400 kg / capita</p>
3		<p>Participation in Council's waste minimisation services increases.</p> <p>As measured through annual resident surveys of those people provided with the opportunity to use kerbside recycling services.</p>	<p><b>Actual = 83%</b></p> <p>The Communitrak™ survey was undertaken in May/June 2011. This showed that 83% of residents provided with Council's kerbside recycling services used the service in the last 12 months.</p>	<p>75%</p>	<p>80%</p>	<p>85%</p>	<p>90%</p>

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if...)	Current Performance (as at end Yr 2 2010/11)	Future Performance			Future Performance (targets) in Year 10 2021/22
				Year 1	Year 2	Year 1	
				2012/13	2013/14	2012/13	
4		<i>% Compliance with our resource consents.</i>	<b>Actual =</b> Eves Valley Landfill: 95% Murchison RRC: 98% Richmond RRC: 94% Collingwood RRC: 97% Takaka RRC: 99% Mariri RRC: 95% Rototai: 98% Closed Landfills 100%	100%	100%	100%	100%
<b>Community Outcome: Our built urban and rural environments are functional, pleasant, safe and sustainably managed.</b>							
5	<b>Our kerbside recycling and bag collection services are reliable, easy to use.</b>	<i>% of enquiries resolved within 24 hours. As measured through Confirm.</i>	<b>Actual = 90%</b>	95%	95%	95%	95%
6		<i>% customer satisfaction with kerbside recycling and bag collection services. As measured through annual resident survey of those provided with Council's kerbside waste collection services.</i>	<b>Actual = 90%</b> The Communitrak™ survey was undertaken in May/June 2011. 90% of receivers of Council's kerbside service were found to be fairly satisfied or very with the service they receive.	70%	70%	70%	70%

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if...)	Current Performance (as at end Year 2 2010/11)	Future Performance			Future Performance (targets) in Year 10 2021/22
				Year 1	Year 2	Year 1	
				2012/13	2013/14	2012/13	
<b>Community Outcome: Our transport and essential services are sufficient, efficient and sustainably managed.</b>							
7	Our Resource Recovery Centres are easy to use and operated in a reliable manner.	Waste entering and leaving site is accurately accounted and charged for. As measured through average tonne rate equivalent.	<p><b>Actual =</b></p> 	95% waste accounted for.	95% waste accounted for.	95% waste accounted for.	95% waste accounted for.
8		% customer satisfaction based on site surveys. As measured by annual customer surveys at RRCs.	<p><b>Actual =</b> Surveys have been undertaken at the RRCs annually since 2008. The results from the 2010/11 survey showed an overall decrease in the level of satisfaction (fairly satisfied and very satisfied) of users of the RRCs.</p>	75%	75%	75%	75%
9		RRC sites score greater than or equal to 'Acceptable'. As measured by site audits carried out by the Contract Engineer.	<p><b>Actual = 80%</b></p> 	>90%	>90%	>90%	>90%

## 7 CHANGES MADE TO ACTIVITY OR SERVICE

Table 7-1 summaries the key changes for the management of the solid waste activity since the 2009 AMP.

**Table 7-1: Key Changes**

Key Change	Reason for Change
Waste assessment carried out jointly by Nelson City Council and Tasman District Council, and a key issue was the need to optimise waste disposal ie landfills and manage waste streams regionally.	Statutory requirement to carry out an assessment.
Development of a Joint Nelson City Council – Tasman District Council Waste Management and Minimisation Plan (WMMP), which will replace the operative Tasman District Council waste management plan.	Statutory requirement to review operative plan.
The emissions trading scheme will require landfill operators to pay emission units from 1 January 2013; budgeting needs to accommodate this new cost and reconsideration given to use of Eves Valley Landfill.	Statutory requirement.
New Zealand Waste Strategy 2010, which sets two new goals which need to be taken account of in the WMMP.	Revised government policy.
Site Management Plans have been developed and are being implemented at RRCs.	To determine longer terms needs of facilities and how to optimise addressing these needs.
Council identified a number of aspects considered best practice from a RRCs around the country and has taken these into account with strategic development plans.	Moving to adopt best practice within the industry.

## 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 <sup>1</sup>
Eves Valley Landfill - Stage 3 Development	Construction of Stage 3.			\$184,655	\$8,478,733	LoS
Eves Valley Landfill - Consent Renewal and closure plan	Investigations & Consent for Stage 3 (3x discharge consents (NN 970271, NN 970122, NN970272) expire 1/10/2015).	\$529,615	\$141,570			R
Eves Valley Landfill – Stage 2 Capping	Use onsite clay to cap Stage 2 as required by Resource Consent (first two years must be prior to 2019).			\$203,643	\$413,457	LoS
Eves Valley Landfill – Retrofit LFG to Stage 2	Install landfill gas collection system into Stage 2 of Eves Valley Landfill (to mitigate ETS liabilities).		\$752,920	\$1,075,600	\$322,680	LoS
Mariri RRC Site Development	Stage 2 - Improve access to public and commercial recycling drop-off areas, reverse flow direction with ramp construction, and carry out pit modifications with compactor and bin purchase. Stage 3 - Improvements to greenwaste and cleanfill drop-off areas.	\$938,000			\$260,000	LoS
Murchison RRC Site Development	Stage 1 - Install security camera. Install winch to pit cover. Construction of bunkers for glass storage. Install roof to recyclables drop-off area. Stage 2 - Enhance / extend landscaping. Provide storage shed for small quantities of hazardous waste. Sealed and Gravelled Areas. Enhancements to fencing to improve security (H&S).	\$74,300			\$73,591	LoS / R
Richmond RRC Site Development	Enhance / extend landscaping. Expand bin change out area to allow for weighbridge under the compactor bins and also extra space for additional storage. Provide storage bunkers for scrap	\$37,068	\$475,567	\$8,460	\$153,757	LoS / R

<sup>1</sup> Project Drivers – LoS = increasing Levels of Service, G = Growth, R = Renewals

Project Name	Description	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Years 4 to 10 (\$)	Project Driver <sup>1</sup>
	steel, whiteware, cleanfill, and C&D waste. Provide a second road weighbridge. Provide lean-to roof over compactor area 8 x 5m.					
Takaka RRC Site Development	Reseal pavement upper level. Create recycling drop-off loop, cut stormwater off from Labyrinth area, parking for re-use shop and extend bin change out area. Shift kiosk and provide a road weighbridge to allow all vehicles to be weighed. Include stormwater cut off and pond improvements. Enhance / extend landscaping. Provide and install 25,000L firefighting tank. Renew internal fencing to improve security. Seal areas of frequent traffic use. Put hardstand under greenwaste, scrap metal, and other areas. Reseal lower level. Create C&D area, compost bunker, and bunding to vehicle dismantling shed. Improve concrete pond and stormwater controls.		\$564,482	\$61821	\$429,300	LoS / R

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.



## 9 MANAGEMENT OF THE ACTIVITY

### 9.1 Demand Management

Council's approach to the demand management of solid waste centres around three key areas:

- provision of services to divert material from landfill
- education and promotion
- full cost recovery for waste disposal (as much as is practical) and financial support of waste minimisation initiatives.

#### 9.1.1 Diversion of Material from Landfill

To divert waste materials away from landfill, Council provides various public recyclables collection and disposal services within the district including:

- weekly kerbside collections for recyclables and waste
- recycling and disposal facilities at all Resource Recovery Centres (RRCs)
- greenwaste separation and processing.

#### 9.1.2 Education and Promotion

To achieve successful solid waste management, both the public and industrial sectors must be well informed about environmentally appropriate solid waste management and the different options available for waste disposal.

To be effective, education and promotion projects require a high level of consistency with an unambiguous message. Key issues are the availability of educational material and the regularity and consistency of promotion initiatives. Council education and promotion initiatives have included the following activities:

- waste minimisation initiatives'
- waste education to schools, businesses and the wider community
- advertising and resources.

#### 9.1.3 Waste Minimisation

Waste minimisation covers all those initiatives that either seek to reduce the amount of waste being produced, or divert waste from being disposed of in a landfill where it will effectively be lost as a resource.

The most significant drivers for waste minimisation in the Tasman district are the New Zealand Waste Strategy, the Joint Waste Assessment, the Waste Management and Minimisation Plan (WMMP), and the future requirements for waste minimisation set out within the Waste Minimisation Act 2008.

Council's waste minimisation initiatives include the following activities:

- waste minimisation publicity
- zero waste grants
- compost bin incentive scheme
- event recycling
- organic material investigations
- composting initiatives
- cleanfill bylaw
- in-house programme
- paintwise expenses
- agrecovery expenses
- product stewardship.

## 9.2 Significant Effects

The significant negative and significant positive effects are listed below in Table 9-1 and Table 9-2 respectively.

**Table 9-1: Significant Negative Effects**

Effect	Council's Mitigation Measure
<p><b>Broken refuse bags:</b> may cause windblown litter.</p>	<p>This is managed by the contractor as detailed in the contract specifications.</p>
<p><b>Recyclables Processing and Recyclables Collection:</b> loose kerbside materials may become windblown litter. The loss of viable markets for recovered materials can have a negative effect on the economic viability of recycling.</p>	<p>Procurement of recycling services requires contractors to provide evidence of experience and track record in recycling markets. Contractors take on the risk of finding markets - it is not Council's responsibility. Recycling commodities can be stockpiled if market prices reduce significantly.</p>
<p><b>Resource Recovery Centres:</b> can become odorous, dusty and give rise to windblown litter if incorrect operating procedures are not applied. There is also the possibility of stormwater contamination on site.</p>	<p>The development and operation of RRCs must meet certain resource consent conditions. RRCs are also operated in accordance with Site Management Plans. RRC contracts allow for monthly KPI inspections which penalise contractors if the site is untidy or not operated correctly.</p>
<p><b>Operational Landfills:</b> can become odorous, dusty and give rise to windblown litter if incorrect operating procedures are not applied. Landfills produce leachate - this may cause contamination of groundwater or surface water if not collected and treated appropriately. Landfills produce gas, including methane. Methane contributes 15 times the effect that carbon dioxide does to the "greenhouse effect". There is also the possibility of stormwater contamination on site.</p>	<p>The development and operation of the landfill must meet certain resource consent conditions. The landfill is also operated in accordance with a Landfill Management Plan. The landfill operations contract allows for monthly KPI inspections which penalise the contractor if the site is untidy or not operated correctly within the contract specification / resource consent conditions.</p>
<p><b>Closed Landfills:</b> if closed landfills are not capped off and vegetated correctly, they may release additional refuse or leachate to the environment or present an opportunity for illegal dumping to occur. Landfills continue to produce leachate, even after they have closed.</p>	<p>Closed landfills are consented under a 'Global Consent' which requires remediation of certain identified landfills and inspections of all closed landfills every two years to determine if further remediation is required.</p>

**Table 9-2 Significant Positive Effects**

Effect	Description
Kerbside Collections	Council provides consistent services to 80% of the district and properties. Waste collection has public health and environmental benefits.
Greenwaste Services / Composting initiatives	These initiatives reduce methane emissions and demand for landfill space.
Recycling Services	Results in the efficient use of resources and reduced demand for landfill space.

### 9.3 Assumptions

Council has made a number of assumptions in preparing the AMP. These are discussed in detail in Appendix Q. Table 9-3 lists the most significant assumptions and briefly outlines the impact of the assumption.

**Table 9-3: Significant 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 sufficient knowledge of the assets and their condition so that the planned renewal work will allow Council to meet its 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 and Waste Volumes	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 significant impact as waste volumes have been assumed as directly proportional to population growth. If higher, Council may need to advance capital projects. If it is lower, Council may have to defer planned works. Periods of growth provide additional waste volumes (and revenue) while slow or negative growth reduces volumes and revenue.
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 such as: 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 a delay occurs, it could have a significant effect on the level of service.
Funding of Capital Projects	That any projects identified for subsidies will receive subsidy.	If subsidies are not secured, it may have significant effect on the levels of service as projects may be deferred due to lack of funding.
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.

## 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 LTP.

At an asset group level (Level 2), Council has identified 18 high risks and planned mitigations measures to reduce these risks to four high risks. Council has planned controls for the remaining four high risks but even with the controls, they remain high. Council has decided to accept these risks. These are listed in Table 9-4.

**Table 9-4: Significant Risks and Control Measures**

Risk Description	Current Control	Proposed Control	Target Risk Level
<b>Resources:</b> Insufficient or inappropriately trained resources to respond to emergency (contractor, council, consultant).	Contractual requirements.	Monitor.	HIGH
<b>Iwi:</b> Ineffective relationship impacts on renewal of resource consents.	Regular meetings.	Monitor.	HIGH
<b>Fire:</b> Landfill fire - inability to fight, closure of site.	Landfill Management Plan.	Operate at alternative sites.	HIGH
<b>Fire:</b> Damage to infrastructure.	Firefighting equipment. LAPP insurance.	Review contractual risk provisions and insurance provisions.	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:

- investigation into the Joint Waste Management and Minimisation Plan with Nelson City Council
- improve forecasting and data collection.

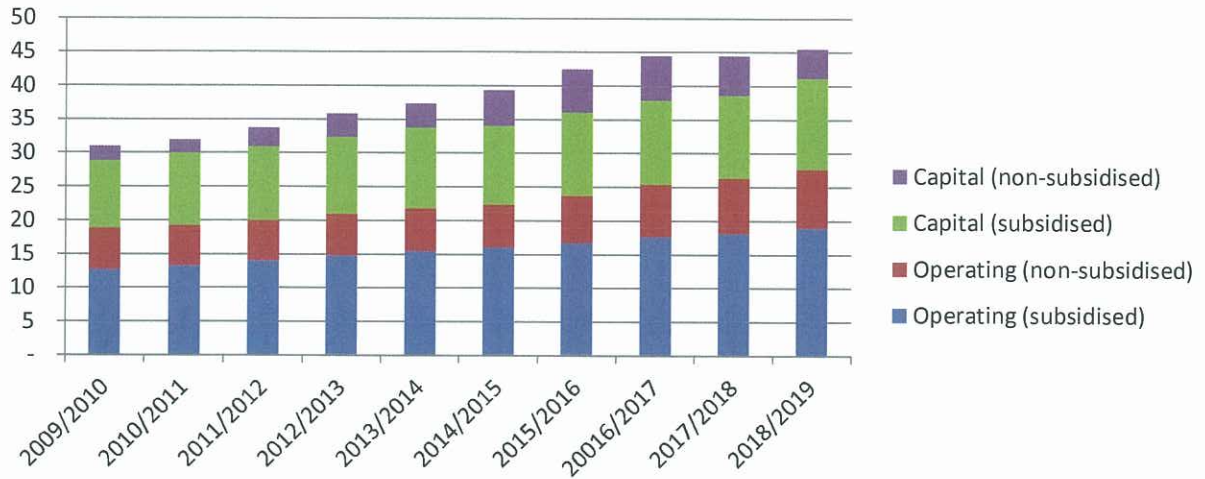
## 9.5 Improvement Plan

Development of the improvement plan is discussed in Appendix V. It includes a table 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 at September 2011. It is intended that the improvement plan is continually updated and monitored as a live document.

Appendix V also includes a summary of the key improvements that have been achieved since the preparation of the 2009 AMP.

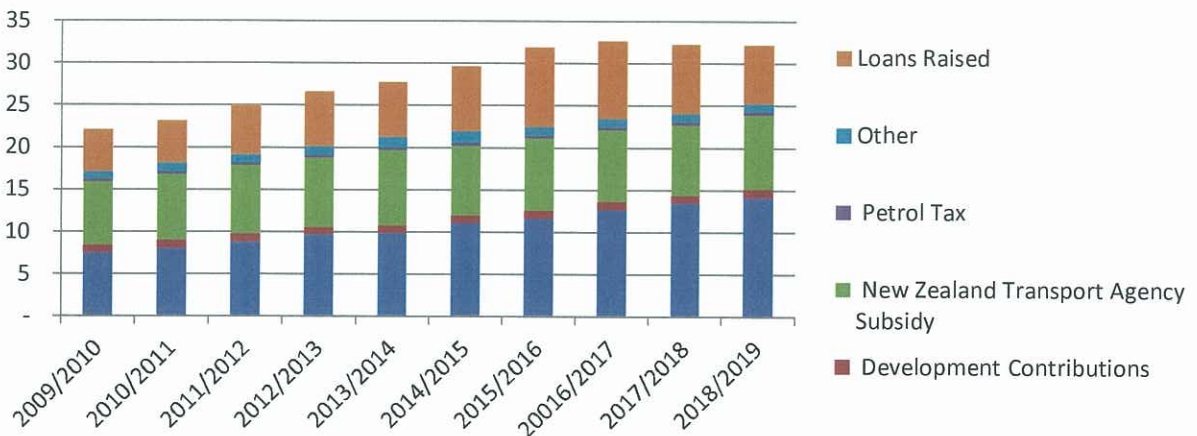
## 10 SUMMARY OF COST FOR ACTIVITY

Figure 10-1: Total Expenditure (\$ million)



- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix E, Appendix F and Appendix I for detailed operating and maintenance, new capital, and renewal projects respectively.

Figure 10-2: Total Income (\$ million)



- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix L for full income details.

**Figure 10-3: Capital Expenditure (\$ million)**



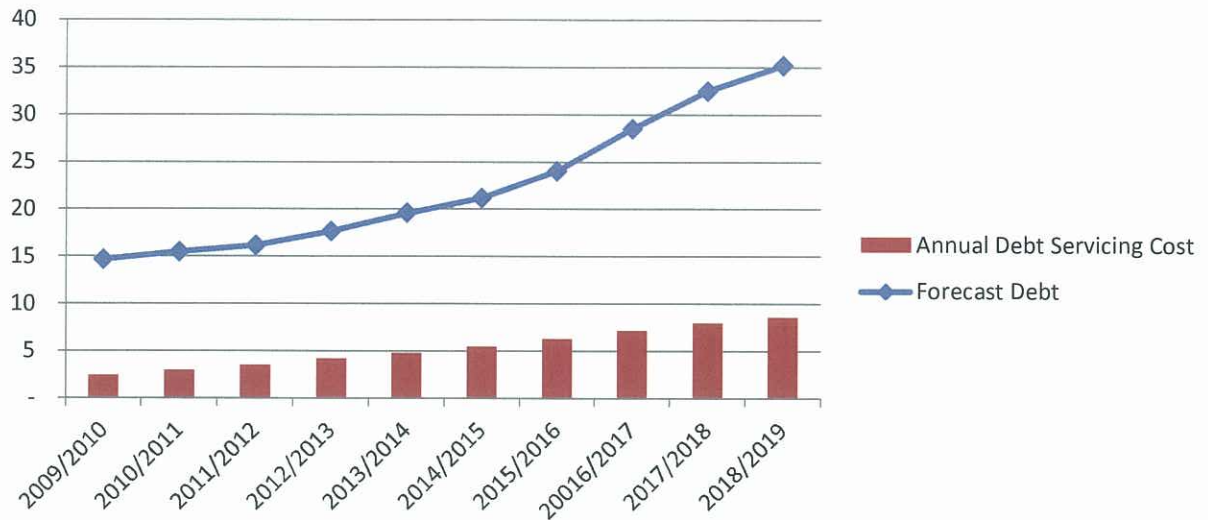
- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix F and Appendix I for a full list of new capital and renewal projects respectively.

**Figure 10-4: Operating Expenditure (\$ million)**



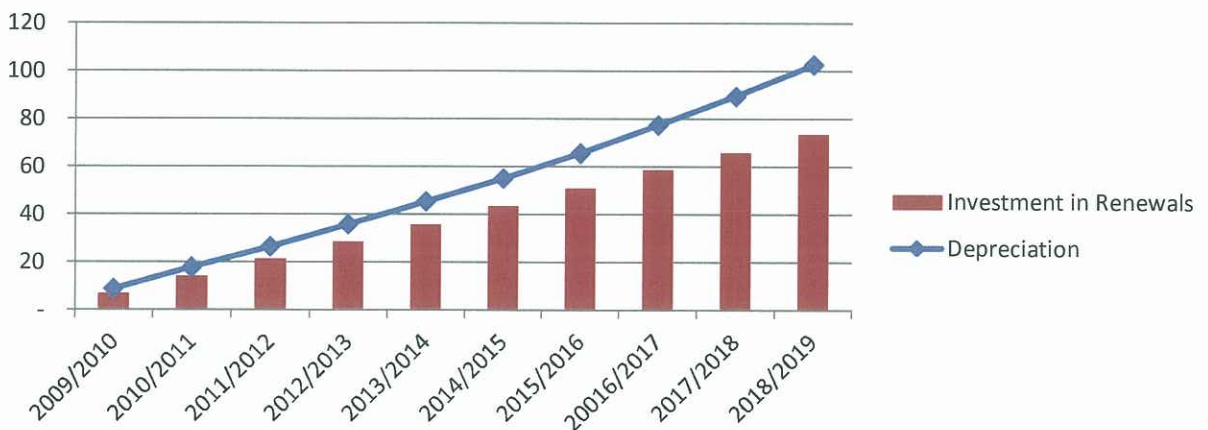
- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Appendix L for full solid waste operating expenditure details

**Figure 10-5: Debt (\$ million)**



- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Appendix L for full solid waste debt details

**Figure 10-6: Investment in Renewals (\$ million)**



- **Place holder** – Discuss key features of what the data is showing and update with 2011 data.
- Refer to Appendix L for full solid waste investment details.

**ALL TABLES ABOVE TO BE UPDATED WITH 2012 WHEN AVAILABLE**