Tasman District Council

Transportation
Activity Management Plan

DRAFT

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 TRANSPORTATION ACTIVITY

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

Table 1-1: Key Issues for the Transportation Activity

Key Issue	Council Approach
Reducing levels of government subsidy.	Council has implemented robust prioritisation procedures, and is continually looking for innovative ways to achieve more for less.
Value for money.	Council currently spends significantly more on the sealed road network compared with the unsealed road network. Considering the proportions of each are very similar, Council may consider reverting sections of sealed roads back to unsealed to reduce maintenance costs. Council may amend maintenance standards when preparing new contracts to better provide value for money.
Increasing debt level.	Place holder – awaiting information from finances.
Increasing traffic volumes in Richmond causing congestion.	Intersection reconstruction to improve traffic flow (eg. Salisbury Road and Queen Street Intersection). Construction of the Richmond CBD Ring Route.
Rising demand for personal mobility and freight movement is placing the transportation network under increasing strain.	Council has developed a new level of service which targets a reduction in the restrictions on critical freight routes for heavy vehicles (eg. High Productivity Motor Vehicle route upgrades).
The unacceptably high number of crashes occurring on the road network.	Council has planned a number of intersection upgrades such as Lower Queen Street and Lansdowne Road in order to achieve safer layouts. Carrying out of minor improvement projects (eg. shoulder widening on curves, clear zone improvements, delineation).
The high number of single occupancy cars having an effect both on the efficiency and sustainability of the transport network.	Council has developed a new level of service which targets 32 bus trips in the peak hours between Nelson and Richmond. Council plans to educate users on the use of the transportation network via community programmes (eg. school travel plans).
The lack of alternative transport modes which results in people without access to a private motor vehicle being limited in their ability to participate in social and economic activities in the district.	Council has identified construction of 1km per year of new walkways or cycleways as a level of service target. Council has developed a new level of service which targets 32 bus trips in the peak hours between Nelson and Richmond.
Growth in main urban settlements (eg. Richmond) and along coastal margins (eg. Coastal Tasman).	Upgrade of existing arterial routes such as Lower Queen Street to provide for future traffic flows. Upgrade of road linking growth areas and arterial routes (eg. Tasman View Road and Maisey Road).

2 ACTIVITY DESCRIPTION

2.1 What We Do

Tasman District Council is responsible for the management of a transportation network that comprises approximately 1,700km of roads, (944km sealed and 757km unsealed), 475 bridges (including footbridges), 234km of footpaths and walkways, 23 carparks, 2,723 streetlights, 9,241 traffic signs and 8,771 culvert pipes. Each road in the transportation network has been categorised into a transportation hierarchy based on the road's purpose and level of use.

The Tasman district transportation network encompasses and requires:

- ownership or authority to use the land under roads
- road pavements and surfacings to provide a carriageway for the safe movement of people and goods
- culverts, water tables and a stormwater system to provide drainage
- signs, barriers and pavement markings to provide road user information and safe transport
- bridges to carry traffic over waterways
- footpaths, walkways and cycleways to provide for the needs of pedestrians and cyclists
- street lighting to provide safe and comfortable movement of vehicular and pedestrian traffic at night
- car parking facilities where on-road car parking is not able to be provided adjacent to traffic lanes.

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

2.2 Why We Do It

By providing a high quality transportation network, the Council enables the safe and efficient movement of people and goods which improves the economic and social wellbeing of the district.

3 COMMUNITY OUTCOMES AND OUR GOAL

The community outcomes that the transportation 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 built urban and rural environments are functional, pleasant, safe and sustainably managed.	Our network of roads, footpaths, cycleways and carparks are safe, uncongested and maintained cost-effectively.
Our transport and essential services are sufficient, efficient and sustainably managed.	Our urban communities have a means of travel for pedestrians, cyclists and commuters that is safe and efficient. Our rural communities have safe and effective access to our transportation network.

Table 3-2: Our Goal

Council will progressively move towards managing all of its transportation responsibilities in a more holistic, integrated and cost effective way.

4 OPERATIONS, MAINTENANCE AND RENEWALS STRATEGY

4.1 Operations and Maintenance

The Council has determined that the most effective way to achieve its objectives is to contract out the professional engineering services and physical maintenance works to commercial consultants and contractors in order to procure this work at true market value. By using a competitive tendering model in accordance with national requirements the Council is eligible to receive financial assistance (currently set at 49% for the three year period 2012-2015) through the New Zealand Transport Agency on an approved programme of work.

The district is split into four road network maintenance contracts which include sealed and unsealed pavement maintenance, drainage systems maintenance, routine bridge maintenance (detritus, cleanliness and vegetation), footpath and walkway maintenance, vegetation control, detritus removal, street cleaning, litter removal, signs maintenance, barrier maintenance, and road marking. Structural bridge maintenance and street lighting are maintained under separate maintenance contracts.

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 critical assets is sufficiently high.

For most transportation assets, the main parameter that signals the need for road renewals is the asset condition.

For pavements and surfacings, Council utilise modelling software to optimise the renewals programme. For other assets such as footpaths and drainage structures, a combination of the condition, expected life and engineering judgement is used to programme renewals.

The quantity of renewals undertaken may be affected by the requirement to justify planned works with the New Zealand Transport Agency prior to funding approval. Works which cannot be justified will not receive subsidy, and therefore may be deferred. Funding applications are yet to be completed for the renewals work identified within the financial forecast; therefore at this stage the extent of deferred renewals is unknown.

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 built. This is summarised in Appendix F. The population projection for Tasman district is shown in Figure 5-1.

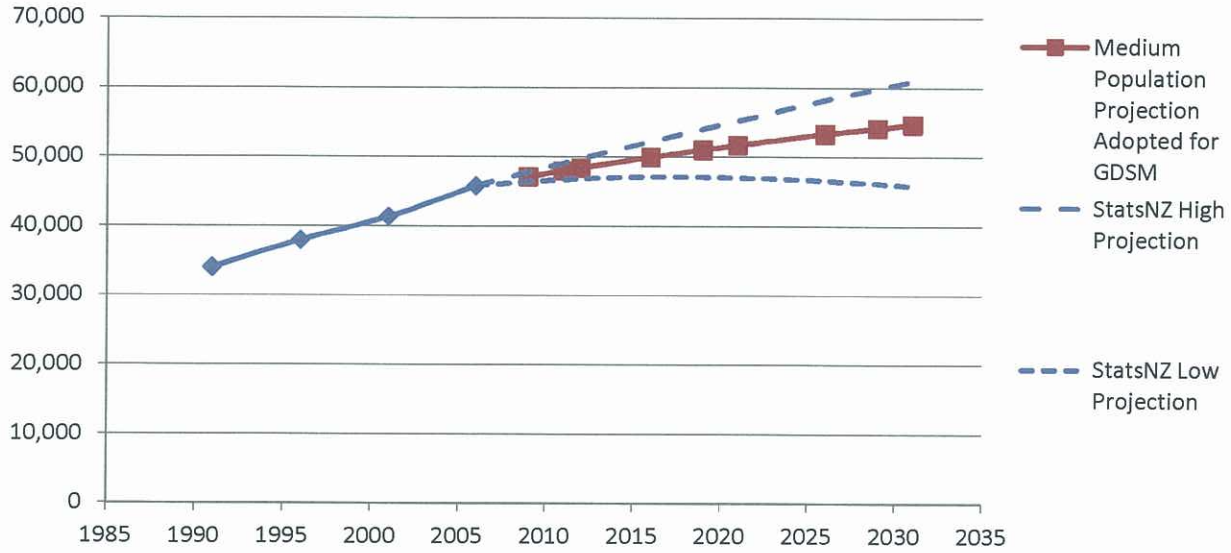


Figure 5-1: Projected Population Growth for Tasman District

The forecast of population and traffic 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 s 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.

The change in growth projections has resulted in the deferral of some growth related projects due to lower demand than previously expected.

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 wellbeing 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 the 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 wellbeing (economic, social, cultural and environmental) and taking into consideration the wellbeing of future generations. This is demonstrated in:

- Council's Integrated Risk Management approach which analyses risks and particularly risk consequences in terms of community wellbeing
- 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 wellbeing
- Council adopting a 20 year forecast in the Activity Management Plans to ensure the long term financial implications of decisions made now are considered.

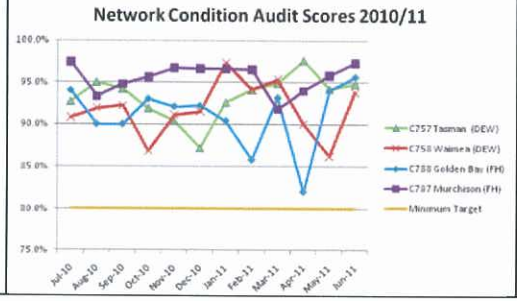
At the activity level, a sustainable development approach is demonstrated by the following:

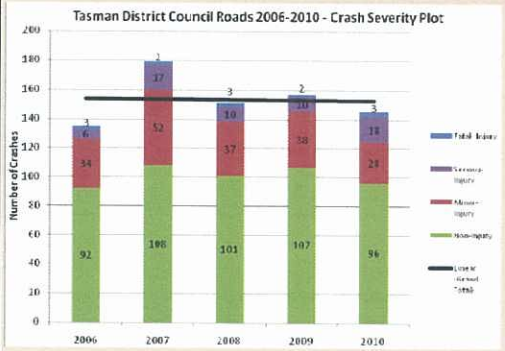
- Providing for, and encouraging alternative modes of travel, for example:
    - promoting School Travel Plans (walking to school buses)
    - promoting of Workplace Travel Plans
    - providing incentives to employers to support alternative forms of transport
    - implementing a carpooling scheme and promotion campaign
    - providing walking, cycling and public transport opportunities
    - consider providing funding towards Nelson City Council's passenger transport.
- Recycling natural resources where possible though stabilisation of existing pavements as an alternative to 'digging out'.
- Ensuring minimal impact on the environment by the activity.
- Ensuring that the district's likely future transportation 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.

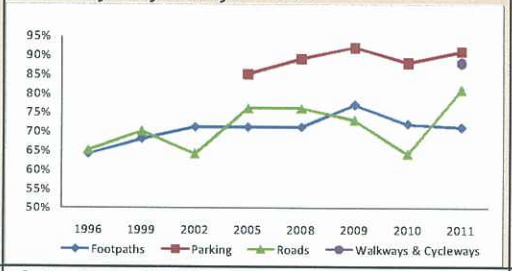
6 LEVEL OF SERVICE AND PERFORMANCE MEASURES

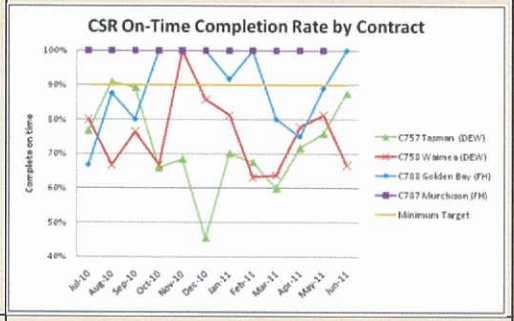
Table 6-1 summarises the levels of service and performance measures for the transportation activity. Development of the levels of service is discussed in detail in Appendix R.

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	Future Performance			Future Performance (targets) by Year 10 2021/22
				Year 1 2012/13	Year 2 2013/14	Year 3 2014/15	
Community Outcome: Our built urban and rural environments are functional, pleasant, safe and sustainably managed.							
1	**Our network of roads, bridges, footpaths, cycleways and carparks are safe, uncongested and maintained cost effectively.**	*Number of Customer Service Request complaints relating to the maintenance of footpaths.* *As measured through records held in Council's databases.*	**Actual = 61**	*<55*	*<50*	*<45*	*<35*
2		Council keeps its Condition Index (CI) for sealed roads at or below current levels. As measured and recorded through contracts.	**Actual = 2.1 CI** As reported by RAMM reports at the end of June.	2.1	2.1	2.0	2.0
3		Council keeps its Pavement Integrity Index (PII) at or below 3.7. As measured and recorded through contracts.	**Actual = 3.8**	3.7	3.7	3.7	3.7
4		Council's roads are maintained in accordance with the requirements in Council's road maintenance contracts. As measured through contract audits.	**Actual = 93%** 	>80%	>85%	>90%	>90%

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if.....)	Current Performance	Future Performance			Future Performance (targets) by Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	
5		*There is a downward trend in the total number of crashes (excludes state highways).* *As analysed by interrogating the New Zealand Transport Agency Crash database system.*	***Actual = 145*** 	*Downward Trend*	*Downward Trend*	*Downward Trend*	*Downward Trend*
6		The Crash rate in the Tasman district is lower than the National Average. As measured by the Tasman Nelson Marlborough Road Safety Report (produced annually).	**Actual = Lower than the national average** *Crashes per 100 million vehicle kilometres travelled* Tasman: Urban 35, Rural 22 All NZ: Urban 37, Rural 29	Lower than the national average	Lower than the national average	Lower than the national average	Lower than the national average
7		The average quality of the ride on sealed roads experienced by motorists is maintained at current levels. As measured by the Smooth Travel Exposure index (STE).	**Actual = 96%** This information is taken from the New Zealand Transport Agency's RAMM report and covers all roads urban/rural.	94%	94%	94%	94%
8		Critical Freight Routes are identified and restrictions reduced. As measured by the reduction of weight and speed posted bridges on.	**Actual** = Currently there are 8 speed or weight restricted bridges remain on high productivity motor vehicle routes (restricted to high productivity motor vehicles only). 7 bridges are unknown due to lack of data.	8	7	7	5

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if.....)	Current Performance	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 transport and essential services are sufficient, efficient and sustainably managed.							
9	**Our community has access to a range of transportation options.**	*Increase in the length of Council's walkways and cycleways in the district.*	**Actual = 1.4 km** *Tasman Trail Trust widened the footpath to a shared use path on Ranzau Road.*	*1km/yr*	*1km/yr*	*1km/yr*	*1km/yr*
10		*The number of passenger transport trips between Richmond and Nelson is improved from current levels, undertaken in collaboration with Nelson City Council.* *As measured by the number of peak hour bus trips per working day.*	**Actual = 17** *SBL operates 19 bus trips between Richmond and Nelson between 7.00am and 9.00am, and between 3.00pm and 6.00pm on weekdays.*	*32 peak hour trips/day*	*Retained at least to Year 1 levels*	*Retained at least to Year 1 levels*	*Retained at least to Year 1 levels*
11	**Our roads and footpaths are managed at a level that satisfies the community.**	*Residents are satisfied with the Council's roads and footpaths in the district.* *As measured through the annual residents survey.*	**Actual =** *Footpaths =71%,* *Roads = 81%* *Parking = 91%* *Walkway & cycleways = 88%* 	*Footpaths =70%, Roads = 75% Parking = 85% Walkway & cycleways = 80%*	*Footpaths =70%, Roads = 75% Parking = 85% Walkway & cycleways = 80%*	*Footpaths =70%, Roads = 75% Parking = 85% Walkway & cycleways = 80%*	*Footpaths =75%, Roads = 75% Parking = 85% Walkway & cycleways = 85%*
12		Road maintenance and renewals expenditures are managed to within the range ± 2% of budgets.	**Actual = + 0.05%** Variance of + 0.05% across the subsidised maintenance, reseals and pavement rehabilitation budgets.	+/-2%	+/-2%	+/-2%	+/-2%

ID	Levels of Service (we provide)	Performance Measure (We will know we are meeting the level of service if.....)	Current Performance	Future Performance			Future Performance (targets) by Year 10 2021/22
				Year 1	Year 2	Year 3	
				2012/13	2013/14	2014/15	
13	**Faults in the transportation network are responded to and fixed promptly.**	*Customer Service Request complaints relating to the maintenance of roads, footpaths and related activities are completed on time in accordance with the requirements in Council's road maintenance contracts.* *As measured through contract audits.*	**Actual = 75.0%** of Customer Service Requests were completed within the specified timeframes. Tasman = 87.5% Waimea = 66.7% Golden Bay = 100% Murchison = 100% 	*>90%*	*>90%*	*>90%*	*>90%*
14	**Following emergency events our community is provided with a road network that is accessible.**	*All unplanned road closures are responded to as outlined in Council's Emergency Procedures Manual.* *As reported in the Contract Operations Report.*	**Actual** = *This is not currently being measured. An Emergency Procedures Manual for road closures is being developed in 2011/12.*	*100%*	*100%*	*100%*	*100%*

7 CHANGES MADE TO ACTIVITY OR SERVICE

Table 7-1 summarises the key changes for the management of the transportation activity since the 2009 AMP.

Table 7-1: Key Changes

Key Change	Reason for Change
Council has developed a number of matrices for the prioritisation of capital and renewal works. These currently exist for new footpaths, footpath rehabilitation, walkway rehabilitation, carpark resurfacing, major projects, seal extensions, bridge renewals, slips, minor improvements, cycleways, street lighting, and clear zone upgrades.	The matrices have been developed to provide a transparent prioritisation tool for Council's projects. The matrices address the needs of the community over wants of the community.
Subsidies from the New Zealand Transport Agency are becoming harder to secure for a number of activities in particular cycleways and seal extensions. Accordingly these activities are now shown as non subsidised works.	The New Zealand Transport Agency is under increasing pressure to reduce expenditure due to the release of the latest Government Policy Statement (GPS) by the Ministry of Transport. In response the New Zealand Transport Agency's Investment and Revenue Strategy has indicated a reduction in funding levels.
Pavement rehabilitation and associated improvements budgets have been reduced from previous years. Accordingly the maintenance and resurfacing budgets have been increased to allow for the expectation of increased deterioration.	In anticipation that fewer rehabilitation sites will be completed compared with previous years. A subsidy for pavement rehabilitation works is harder to secure due to the revised New Zealand Transport Agency criteria.
Bridge renewals have historically been targeted at Class 1 weight or speed restricted bridges. Bridge renewals will now be targeted at High Productivity Motor Vehicle (HPMV) routes.	The New Zealand Transport Agency has identified High Productivity Motor Vehicle routes to assist with economic development.
Council has deferred a number of the growth projects identified in the 2009 AMP beyond the 20 year horizon; only key routes have been retained.	The updated Growth Demand and Supply Model (GDSM or growth model) has indicated that the anticipated growth in the Coastal Tasman area is lower than expected in 2009.
The 2009 AMP included a number of Parks and Reserves maintained shared use paths which were identified for upgrade. These have been removed from the Transportation 2012 AMP.	These paths were included with the aim of receiving government subsidy for sealing of the existing pavements. Considering they are recreational paths they are not subject to New Zealand Transport Agency subsidy, and therefore have been removed as there is no longer a subsidy benefit to Council. These are currently funded and managed by Parks and Reserves.
The New Zealand Transport Agency financial assistance rates (FARs) for the Regional Land Transport Planning and Studies work categories have been reduced.	The New Zealand Transport Agency is under increasing pressure to reduce expenditure due to the release of the latest GPS by the Ministry of Transport.
The Regional Land Transport Strategy and included strategies (eg. cycling and walking) have been used to guide decision making and prioritisation matrices.	The Regional Land Transport Strategy – Connecting Tasman (RLTS) was updated in 2010.
Some Class 1 weight or speed restricted bridges which have little community value (ie. servicing one property) may now be divested where possible rather than upgrading, Council accept some of the remaining bridges will remain weight or speed restricted.	Council is under increasing pressure to provide value. The bridges of concern provide very little benefits to the community, and it is therefore questionable as to why Council owns them.

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]
Tasman Great Taste Trails Construction	Construction of the Tasman Great Taste Trail.	284,000	900,000	905,000	1,758,000	G/LOS
District Kerb and Channel	New kerb and channel, priority driven from Minor Improvement Matrix.	120,000	120,000	120,000	840,000	G/LOS
Richmond Streetscape	Streetscaping of CBD including Queen Street, Cambridge Street and McIndoe Place.	105,000	315,000	288,750	4,334,050	G/LOS
Richmond Construction – Moutere Highway/Waimea West Road Intersection	Intersection layout improvements.	0	53,500	77,300	950,200	G/LOS
Richmond Construction – Queen Street/Salisbury Road Intersection	Construction of new intersection layout with traffic signals.	0	0	99,000	920,200	G/LOS
Brightwater Streetscape	Streetscaping to Ellis Street between Starveall Street and petrol station.	0	0	0	1,530,100	G/LOS
Mapua Streetscape Town Centre	Town centre area between Higgs Road and tennis courts.	0	0	0	1,636,900	G/LOS
Kaiteriteri Construction – Martin Farm Road Upgrade	Upgrade of Martin Farm Road to match speed environment of new adjoining road section.	48,300	55,500	0	1,025,300	G/LOS/R
Kaiteriteri Construction – New Road	Construction of a new road alignment between Cederman Drive and Martin Farm Road.	25,300	150,700	1,274,700	0	G/LOS/R
Kaiteriteri Construction – Turners Bluff to Tapu Bay	Reconstruction of Riwaka-Kaiteriteri Road between Turners Bluff and Tapu Bay.	22,800	109,100	0	1,081,300	G/LOS/R
Richmond Construction – Wensley Road	Route improvements from Oxford Street to Bateup Road	0	0	0	1,211,500	G/LOS/R
Kaiteriteri Construction – Tapu Bay to Cederman Drive	Reconstruction of Riwaka-Kaiteriteri Road between Tapu Bay and Cederman Drive.	29,800	99,100	0	948,000	G/LOS/R
New Footpaths	New footpath construction, priority driven by New Footpath Matrix.	338,000	338,000	338,000	2,366,000	G/LOS
District Wide Streetscaping	District wide minor improvements and residential street	0	300,000	300,000	2,100,000	LOS

[1] G = Growth, LOS = Levels of Service, R = Renewal

Project Name	Description	Year 1 ($)	Year 2 ($)	Year 3 ($)	Years 4 to 10 ($)	Project Driver[1]
Improvements	upgrades eg. pedestrian streets.					
Golden Bay Cycle Facilities – Abel Tasman Drive	New shared use path to Pohara	0	0	0	651,544	LOS
Motueka Valley Construction – Motueka Valley Highway Widening	Corner widening between College Street and Mytton Heights.	0	0	150,400	929,600	LOS
Graham Valley Road	Seal extension to south branch intersection.	0	0	81,200	1,137,000	LOS
Brooklyn Valley Road	Seal extension to last residential house.	0	0	0	2,111,000	LOS
Motueka Valley Construction – Narrow Bridge Realignment	Replacement of Narrow Bridge with two lane bridge and realignment of approaches.	0	0	0	1,255,700	LOS/R
Minor Safety Improvements	Minor improvements, sites identified in priority matrix.	1,469,686	1,471,668	1,498,830	10,719,837	LOS
Sealed Road Resurfacing	Resurfacing of sealed roads.	2,632,200	2,632,200	2,632,200	17,837,360	R
Drainage Renewals	Renewal of drainage assets including kerb and channel, culverts, sumps and water tables.	1,443,817	1,453,817	1,464,017	10,551,376	R
Pavement Rehabilitation	Pavement rehabilitation of sites which meet New Zealand Transport Agency funding criteria.	580,000	638,000	696,000	6,496,000	R
Bridge Renewals	Sites yet to be determined, selection will be based on priority matrix, the New Zealand Transport Agency's funding criteria, and high productivity motor vehicle routes.	500,000	500,000	500,000	3,500,000	R
Traffic Services Renewals	Renewal of signs, edge marker posts and street lighting.	397,600	403,220	408,952	3,033,099	R
Structures Component Replacements	Bridge component replacements.	300,000	300,000	300,000	2,100,000	R
Associated Improvements	Seal widening associated with pavement rehabilitations.	205,800	218,000	230,000	2,261,400	R
Preventative Works	Preventative projects based on geotechnical risk matrix.	150,000	130,000	210,000	985,000	R
Footpath Rehabilitation	Footpath and walkway rehabilitation, sites identified in priority matrix.	131,000	131,000	131,000	917,000	R
Unsealed Road Metalling	Routine metalling of unsealed roads to replace lost aggregate.	1,090,000	1,090,000	1,090,000	7,630,000	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 Management

The Council developed the Connecting Tasman – Regional Land Transport Strategy (RLTS) in 2010. This document is used at a high level to guide the management of the transportation activity and outlines the key issues and direction for the transportation activity in accordance with current national strategies and policies. The structure of the strategy is diagrammatically represented below in Figure 9-1.

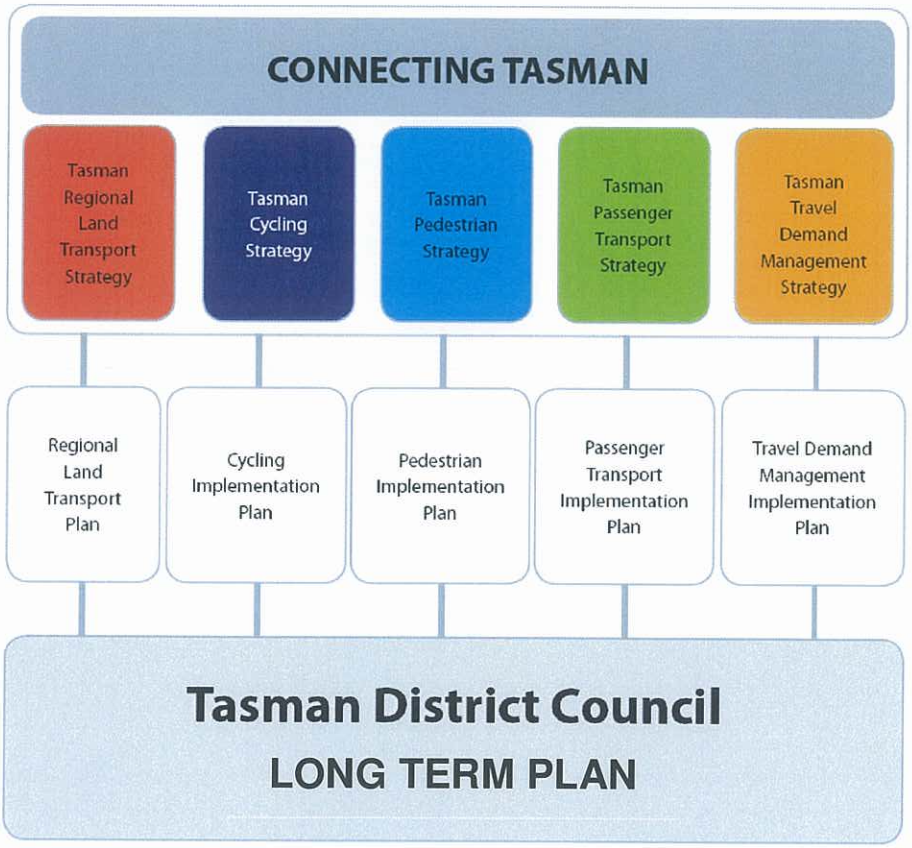


Figure 9-1: Connecting Tasman – Regional Land Transport Strategy Structure

The Council also utilises matrices to transparently prioritise the majority of the planned capital works in a way which addresses the needs of the community over the wants of the community.

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
The travel of vehicles within the network produces noise from the contact of the tyres and the surface. The level of noise created depends on the speed of vehicles and the type of surface. Noise in urban areas can have a negative effect on neighbouring residents.	Council addresses noise generation using different surfacing materials such as chip seal or asphaltic concrete during the treatment selection for resurfacing programmes. In the urban areas, smaller size sealing chips or asphalt surfacing may be used to reduce noise. Asphalt is the most effective; however it is also the most expensive but does provide a longer surface life. Council can also reduce noise by encouraging slow streets, implementing street calming and ensuring the hierarchy of roads is followed in accordance with the Council's Engineering Standards.
Council installs lighting in public areas and roads to improve the safety and amenity of the area. This can have an adverse affect on neighbouring properties due to light spill. Upward light spill can adversely affect user groups by 'polluting' the night skies.	Council aims to reduce or prevent light spill through the use of a shield or cut-off luminaries. It is also possible where upgrading light fittings to install units which have improved design in the reflectors that target light on the road and minimise spill (including upward waste light). Council has planned to develop a street lighting strategy in 2012 / 13 which will include mitigation measures
Vehicle emissions from traffic using the road network have a negative effect on the air quality. Air quality can also be affected by dust generation from vehicles travelling on unsealed roads.	Compliance with vehicle emission standards is targeted at a national level with requirements for all vehicles to meet at warrant/certificate of inspection checks. Vehicle emissions are increased under times of acceleration and braking, Council can reduce the effect of this by the use of traffic engineering design which allows smooth flow of traffic on the main routes. Council has a seal extension matrix identifying potential sites (subject to funding approval) and a policy that allows person(s) on unsealed roads to contribute approximately 40% of the cost of sealing a section of road, usually past their frontages.
Increasing traffic volumes may result in congestion of urban arterial links.	Council has identified a number of capital projects such as intersection upgrades and the Richmond Ring Route to allow for future traffic flows.
Whilst providing a road network allows users mobility, it also increases the exposure to potential for vehicle crashes and therefore has a negative effect on safety.	The detrimental impact of crashes can be reduced through undertaking design of new roads and improvement to existing roads in accordance with best practise design. The Council undertakes works so that the effect of the crashes are minimised, eg. through the use of protective barriers, clear zones, recovery areas, use of signs, road marking and inspections and safety audits. Council also aims to prevent crashes by undertaking road and intersection alignment improvements, along with road safety education programmes.

Table 9-2: Significant Positive Effects

Effect	Description
Economic development.	Provision of an efficient road network allows for the movement of freight between key hubs, therefore allowing economic growth and prosperity.
Safety and personal security.	Council is continuously aiming to improve the safety of the transportation network for all modes of travel, for example this includes the implementation of the minor improvements programme and lighting for pedestrian.
Access and mobility.	Council aims to provide a transport system that is integrated with land use planning, optimising access and mobility for all. Providing access also allows emergency services to access the majority of the community with ease.
Public health.	Council's management of the transport network encourages active modes of travel e.g. walkways and cycleways.
Environmental sustainability.	Council aims to achieve environmental sustainability whilst managing the transportation activity. This is generally managed by the resource consent process and the TRMP.
Economic efficiency.	Council's management of the transportation activity using best practice and competitive tendering aims to provide the economic efficiency (ie. best value for money) for the ratepayers.

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: 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). The bitumen cost index is subject to high fluctuations and is difficult to predict and manage.
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	That the district will grow as forecast in the Growth Demand and Supply Model (refer to Appendix F).	If the growth is very different it will have a moderate impact. If higher, Council may need to advance capital projects. If it is lower, Council may have to defer planned works.

Assumption Type	Assumption	Discussion
Network Capacity	That Council's knowledge of network capacity is sufficient enough to accurately programme capital works.	If the network capacity is higher than assumed, Council may be able to defer works. The risk of this occurring is low and will have little significance. If the network capacity is lower than assumed, Council may be required to advance capital works projects to address congestion. The risk of this occurring is low; however the impact on expenditure would be significant.
Emergency Funding	That the level of funding provided will be adequate to cover reinstatement following emergency events.	Funding levels are based on historic requirements. The risk of requiring additional funding is moderate and may have a moderate effect on planned works due to reprioritisation of funds.
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 these issues 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 for subsidies will receive subsidy.	The risk of Council not receiving project subsidy is high due to the current New Zealand Transport Agency's criteria. 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 importance 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, and Financial Assistance	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 LTP.

At an asset group level (Level 2), Council has identified 17 high risks and planned mitigations measures to reduce these risks to 10 high risks. Council has planned controls for the remaining 10 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
Emergency Services: ineffective communication and planning of maintenance and renewal works impacts all emergency services.	Contract documents ensure that contractors inform emergency services of closures.	Review communication structure.	HIGH
Landowners: inadequate access agreements to access infrastructure (orphan bridges and access to culverts).	Ad-hoc co-ordination.	Divest assets.	HIGH
Earthquake (1:400): significant damage to bridges.	Implementation of Lifelines Bridges Report recommendations. Design standards. Seismic testing.	Seismic testing and strengthening. Review planning.	HIGH
Earthquake (1:400): significant damage to critical routes.	Lifelines Report has identified critical routes.	Review Civil Defence strategy.	HIGH
Earthquake (1:400): significant damage to retaining structures.	Design standards.	Develop contingency plan.	HIGH
Earthquake (1:400): significant damage to sealed roads.			HIGH
Extreme Weather (Rain): surface water impacts road safety.	Contractor response and resources. Road hierarchy. Maintenance programme.		HIGH
Contamination (Land): accident results in chemical spill on network.	Emergency services response. Response part of maintenance contracts.	Review response plans.	High
Terrorism (Political): incident.	Monitor.		HIGH
Terrorism (Issue): incident.	Monitor.		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. These include:

- an allowance for emergency funds
- a preventative maintenance programme, particularly in relation to drainage structures and retaining structures
- bridge seismic assessments upgrade programme
- detailed structural bridge assessments
- General Disaster Fund.

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

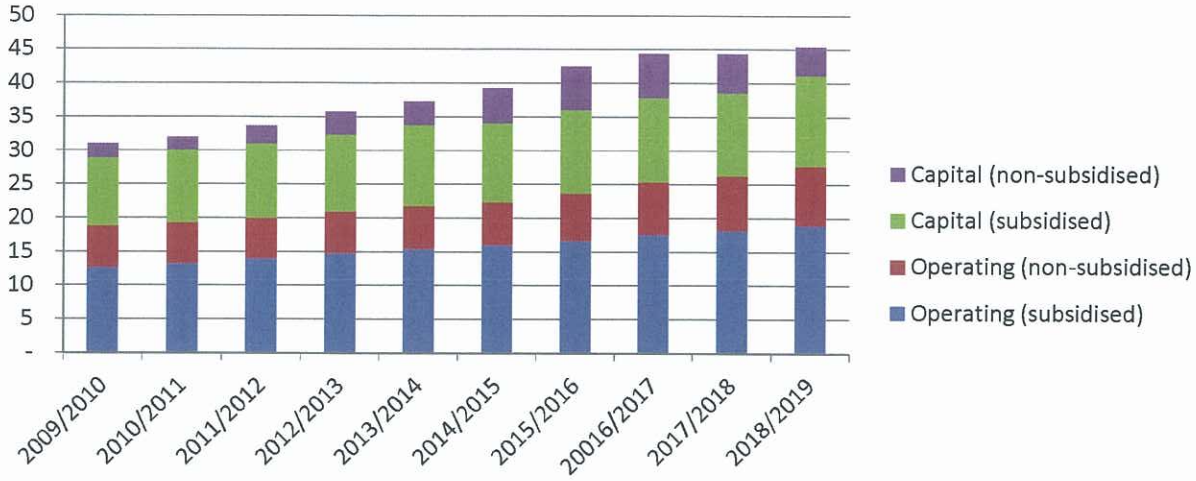


Figure 10-1: Total Expenditure ($ million)

- **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.

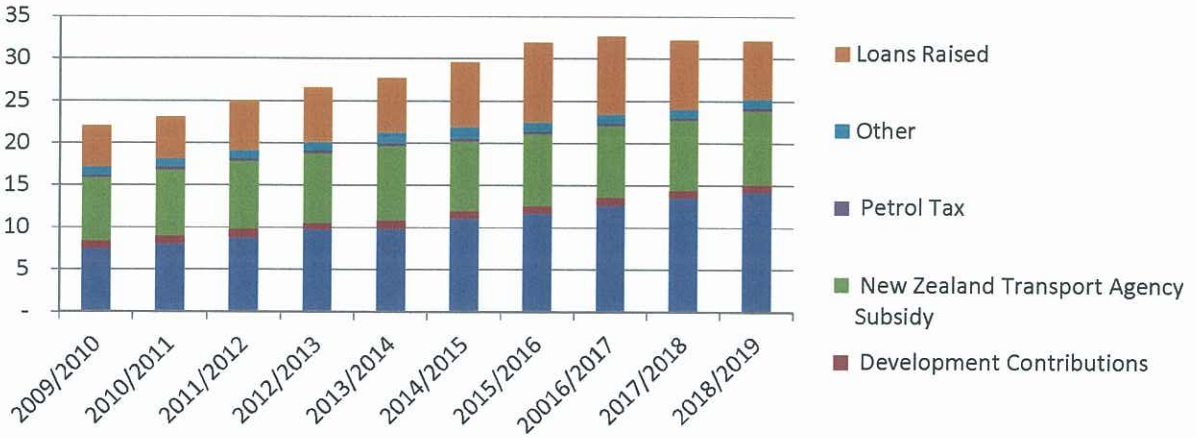


Figure 10-2: Total Income ($ million)

- **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.

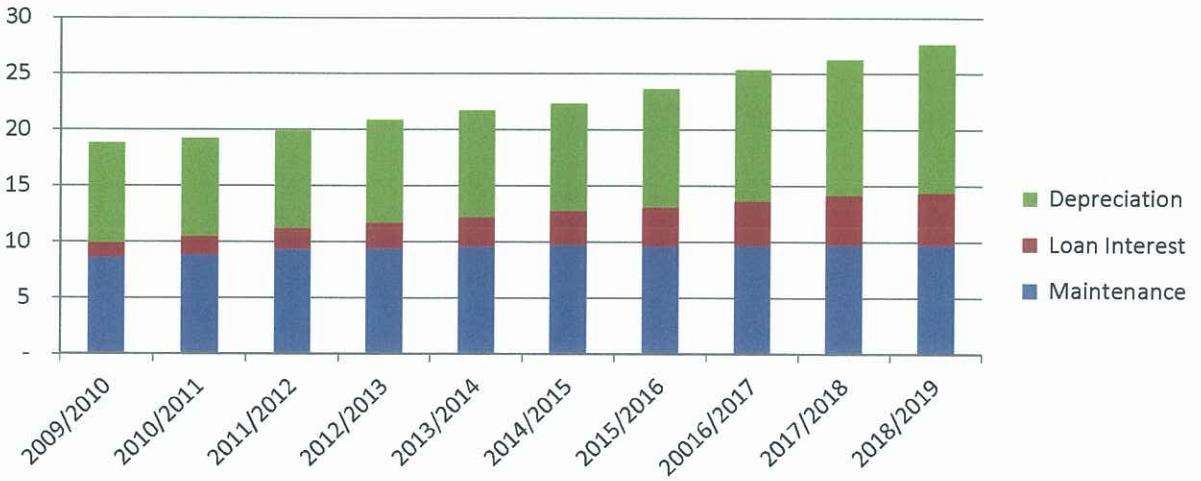


Figure 10-4: Operating Expenditure ($ million)

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

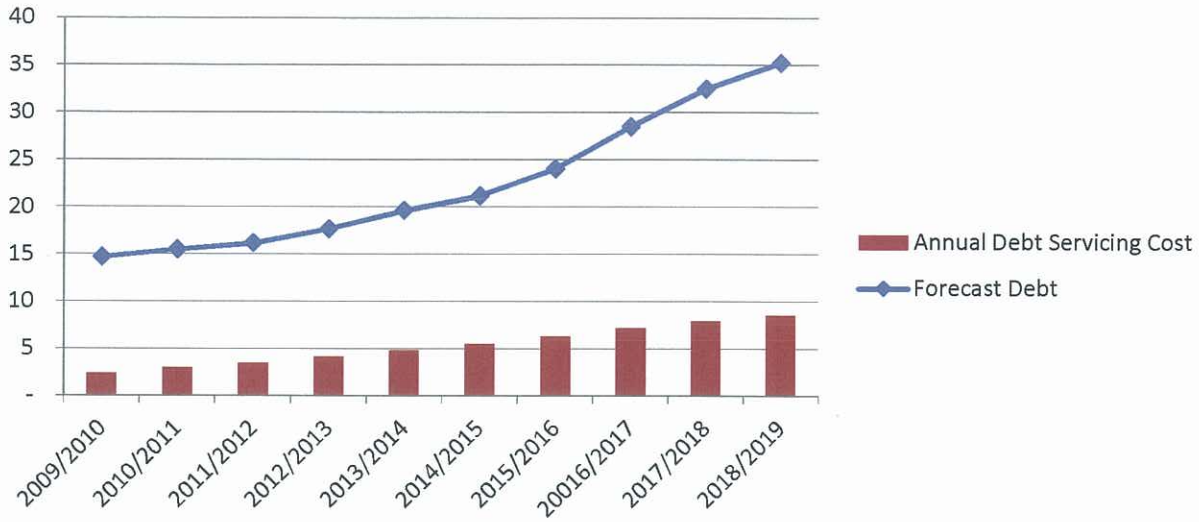


Figure 10-5: Debt ($ million)

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

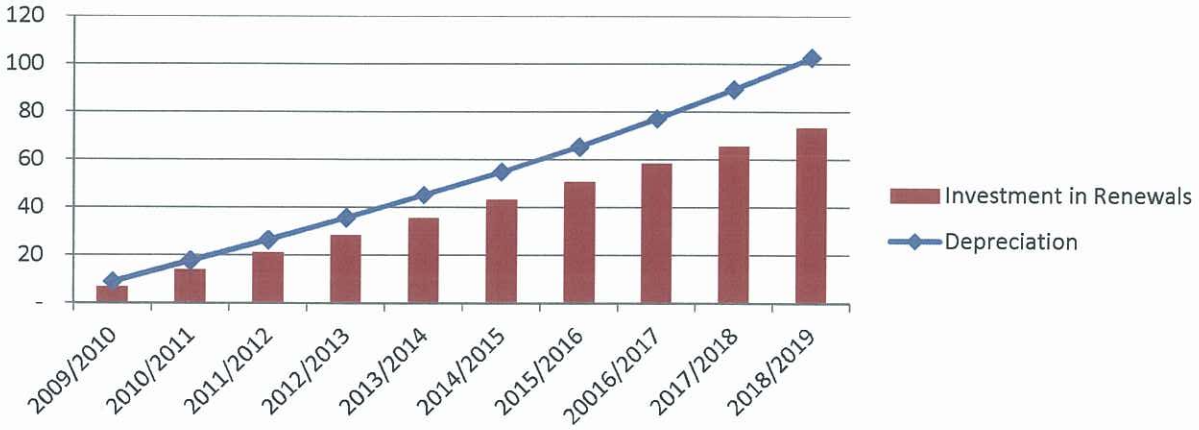


Figure 10-6: Investment in Renewals ($ million)

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