



**Land Transport Network
Asset Management Plan**

1 July 2012 – 30 June 2022

Land Transport Asset Management Plan 2012 - 2022

Framework:

| | |
|----------------------------|---|
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EXECUTIVE SUMMARY

INTRODUCTION

This Asset Management Plan (AMP) for Land Transport Network 2012 describes in detail how the District's land transport network will be managed to support the Council's Vision and Strategies for the South Waikato District, particularly over the next 10 years as encapsulated in the Long Term Plan 2012 – 22. The strategies will also include National and Regional Land Transport strategies including National and Regional Land Transport programmes and Government Policy Statement.

Chapter 1 – INTRODUCTION: describes how the AMP is a "tactical" management tool within Council's strategic framework of planning processes. The purpose of the AMP is to ensure that assets are operated and maintained in a sustainable and cost effective manner, so that they provide the required level of service for present and future customers. A description of the Land Transport Network activity is provided and issues that may arise during the 10-year planning horizon are identified.

Chapter 2 – CONTRIBUTION TO THE COUNCIL OUTCOMES: explains how the Land Transport Network activities undertaken over the next 10 years will contribute to Council's goals and strategies in terms of the Social, Economic, Cultural and Environmental well beings and the justification for Council's involvement in the activity.

Chapter 3 – CURRENT LEVELS OF SERVICE: sets out the levels of service the Council provides within the land transport network for the community and how these were determined, including statutory requirements, service gaps and how they are met or improved.

Chapter 4 – PLANNING FOR FUTURE NEEDS: looks at the current capacity of the land transport network service, compares this with estimated future demands and addresses how these will be met in a reliable and sustainable way.

Chapter 5 – LIFECYCLE MANAGEMENT PLANS: provides a detailed description of the Land Transport Network assets, the maintenance and operation plan for the assets and future programmes for renewal and new works.

Chapter 6 – QUANTIFYING AND MANAGING RISK: describes Council's risk management strategy and profiles the risk in this activity. It identifies any critical assets that deserve special consideration and actions taken or to be taken to mitigate those risks.

Chapter 7 – FINANCIAL FORECASTS: sets out the budget projections for the 2012-22 Long Term Plan periods with estimated costs of operation and maintenance, renewal and new assets based on the lifecycle management plans in Chapter 5.

Chapter 8 – ASSET MANAGEMENT SYSTEMS AND PROCESSES describes the systems and processes that are used by the assets managers for the South Waikato District.

Chapter 9 – MONITORING AND IMPROVING ASSET MANAGEMENT: identifies the improvements that have been made to asset management over the last three years, an assessment of current practice and future improvements that are intended to be made over the next three years.

WHAT WE DO

The South Waikato District Council (SWDC) is in the business of owning, operating and maintaining the roading network (excluding State Highways) because

- The provision of roads is vital to the needs and aspirations of all who live in the District. They provide the primary means of safe access to residents homes, schools, and businesses 24 hours a day, 365 days a year

- Through Council, local communities have representation regarding their transportation needs and the regional road corridors
- The existing road network is a community asset which should be controlled by Council for the reasons above

CONTRIBUTION TO COUNCIL OUTCOMES (AMP Chapter 2)

Council's Land Transport Network services are provided for the benefit of the community to ensure that the Vision of "Healthy people thriving in a safe, vibrant and sustainable community", as expressed in the Long Term Plan, is achieved.

Following an extensive community consultation process, Council developed a number of Outcomes and Strategies that took a balanced approach to the four well beings (economic, social, environmental and cultural), which together are intended to support the Vision through delivering sustainable, long term growth and development.

To ensure that transport is underpinned by the principles of sustainability and integration, transport policy will need to focus on improving the transport system in ways that enhance economic, social and environmental well-being, and that promote resilience and flexibility. It will also need to take account of the needs of future generations, and be guided by medium- and long-term costs and benefits.

LEVELS OF SERVICE (AMP Chapter 3)

The Council has adopted a series of measures which are intended to indicate how well the road network infrastructure contributes to the community's well-being. Both Customer Service Levels and Technical Standards are used. Some of the measures are reproduced below. New measures will be monitored and achievements reported in future AMPs.

Council has adopted a series of Customer Service Levels with related Technical Standards and Performance indicators that are monitored and reported to indicate how well the infrastructure supports the Council Outcomes. The key performance targets address road quality, service response, safety and financial management.

PLANNING (AMP Chapter 4)

The focus for the previous six years (2006 – 2012) has been the successful initiation and development of asset management practices associated with:

- Improved knowledge of the assets
- Ensuring the asset register continues at the appropriate standard
- Continuity of the asset knowledge within Council
- Consultation framework and implementation

Council's emphasis for the period 2012 to 2022 for the Land Transport Activity will be focused on

- Meeting changing NZTA requirements outlined in the 2012 Government Policy Statement
- National and Regional transport network co-ordination
- Long term sustainability associated with Asset Management, including Risk Management practices and procedures and Renewals requirements within the Land Transport Network.
- Sustainability focus to enable long term options to be considered
- Continued modelling of network performance, asset serviceability and appropriate funding requirements.
- NZTA and Legislative Compliance

- Road safety through Safer Journeys taking a safe systems approach
- District Land Transport Strategy which is a guiding document for the South Waikato Land Transport System for the next 30 years

The following issues have been identified within the 10 year planning horizon:

- NZTA funding allocation (financial assistance) for subsidised roading
- Government emphasis on National and Regional priorities
- Cost impact arising from the introduction of the Emission Trading legislation
- Upgrading roads to accommodate High productivity motor vehicles

Resident Population Trends

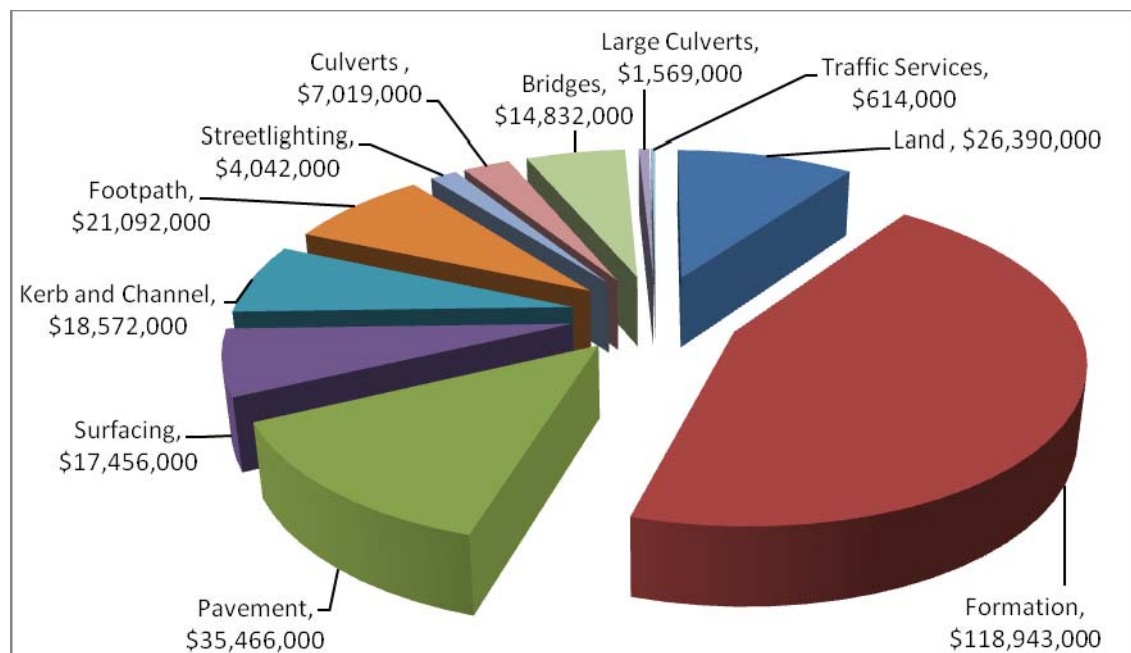
Due to the 2011 Census being deferred as a result of the Canterbury earthquakes, Council has concluded that the conclusions of the 2008 report on population projection, which indicated a relatively stable population, remained valid for the next decade.

LIFECYCLE MANAGEMENT (AMP Chapter 5)

South Waikato District Council's 538 kilometres of road network, if laid end-to-end, would reach from Tirau to Wellington. The surface area totals about 3.55 million square metres – equivalent to 330 rugby fields. The extent and distribution of road assets is shown below, based on replacement cost using today's methods and materials (i.e. 'optimised').

A significant proportion of the assets are not visible to motorists. The following table highlights the current (30/06/11) value of Land Transport components:

Replacement Value Total \$266 Million



- **Earthworks:** this represents the shaping and strengthening of the natural ground forming the lowest foundation layer of the road when originally constructed or when road width is increased, alignment is re-graded to reduce steep sections, or lines of sight are improved by cutting back roadside banks
- **Pavement:** this is the crushed rock material which is compacted over the finished earthworks. It provides the increased strength required to support traffic

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- **Drainage:** Sometimes visible as formed earth channels (in urban areas, concrete kerb and channel) on either side of the roadway. Less obviously, reinforced concrete culvert pipes which allow water to cross under the road rather than running over it
- **Surfacing:** Represents the top skin of the road, usually crushed rock sealing chip bonded to the road with bitumen, which is a by-product of the refining of crude oil into fuel and lubricants. Surfacing seals the pavement from damage caused by the combination of water and traffic wheel abrasion and creates the required skid resistance. It is the condition and shape of the pavement which determines the smoothness of the road and its ability to carry loads without losing its shape.

Details of these assets are recorded in a nationally-used management software system named Road Assessment and Maintenance Management ('RAMM'). This enables the individual components to be tracked including size, age, depreciated and replacement value, and reports can be produced to predict theoretical replacement requirements.

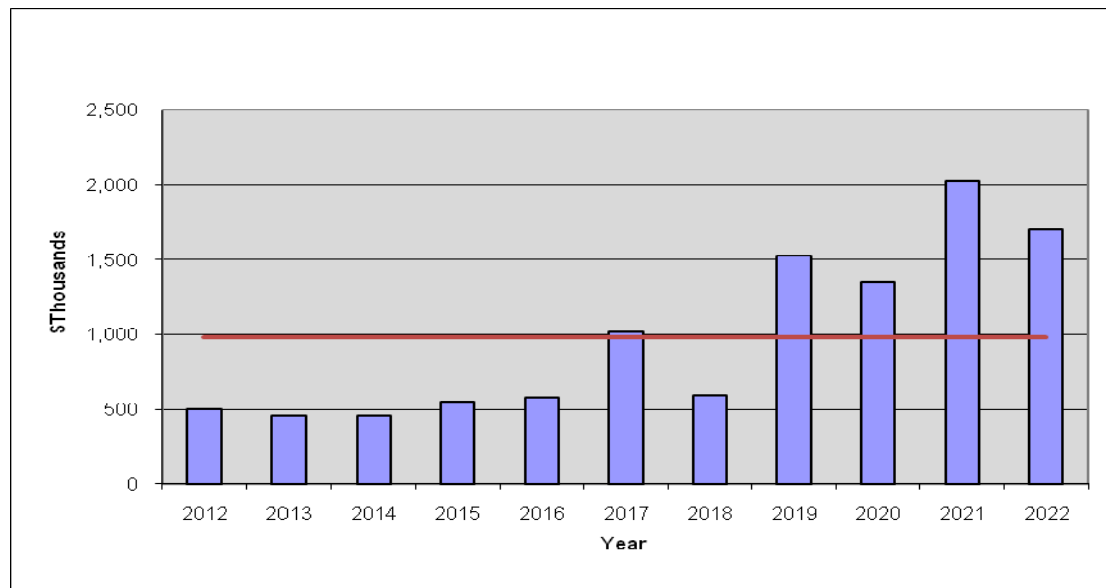
The bulk of maintenance on local roads is carried out under a three-year, competitively-tendered contract for approximately \$1,800,000 per year. Signs, roadmarking and lighting maintenance are carried out by specialist Contractors for about \$30,000, \$212,000 and \$270,000 per year respectively. The current Contracts will expire in 2012 but allowance was made to extend for a further two years.

Council's asset manager engages in discussions with NZ Transport Agency and prepares justification reports to support subsidy applications for maintenance, renewals, capital improvements, and Community Focused activities. Funding is approved on a three year rolling programme, therefore the projected 10 year budgets are indications only, and cannot be confirmed over the planning period. Council receives approximately 50% of subsidised funding from the NZTA for its annual roading programme. The level of this subsidy is reviewed by the NZTA on a three-yearly basis. Currently our Maintenance subsidy is 49%, Improvements 59% and Community Coordination (road safety education) 75%. The level of base assistance takes into account the size of Council's roading programme and the net equalised land value (NELV). Council has been informed by NZTA through the review of the funding assistance rate that the base rate has increased by 1%. This will come into effect in the next three year programme starting in 2012/13 and while there is a 1% increase across both maintenance and renewals there is a significant drop to the community coordination subsidy. There is a reduction of 15% and Council will fund the shortfall to continue with the planned programme.

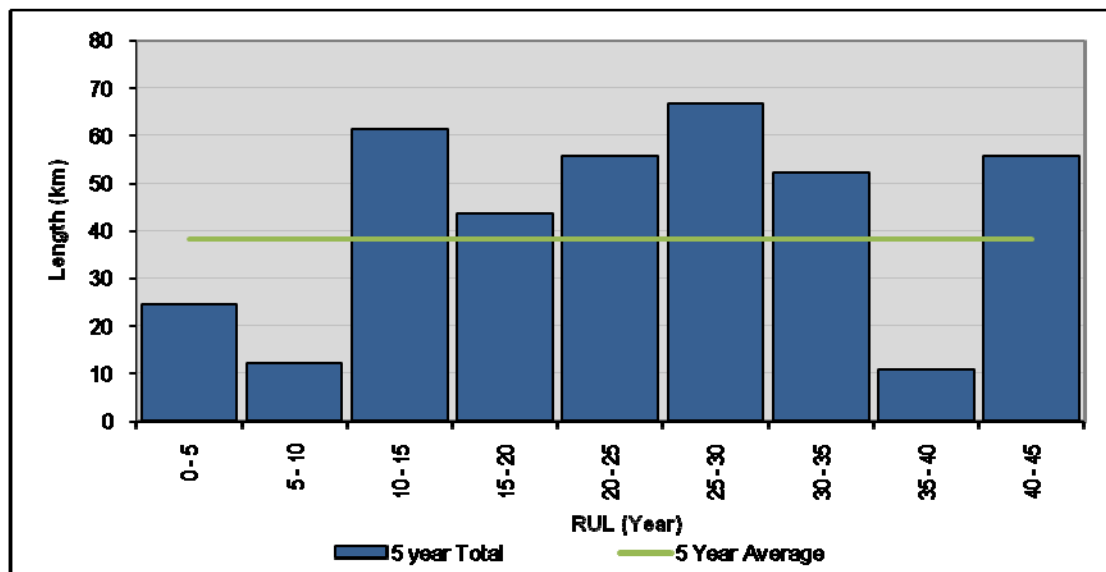
Major road renewal works are subdivided into five main categories:

- "Pavement Rehabilitation" (full width rebuilding of pavement and surfacing) \$868,000 projected for 2011/12
- "Drainage Renewals" (renewal of culverts and kerblines) \$148,000 projected for 2011/12
- "Sealed Road Resurfacing" (applying new layers of chip seal or asphalt over the existing surface) \$1,036,800 projected for 2011/12
- "Traffic Services Renewals" (Signs, marker posts, and carriageway lighting) \$212,000 projected for 2011/12
- "Associated Improvements" (Minor improvements, seal widening carried out with associated road renewal activities) \$157,000 projected for 2011/12. Although this activity has been on-going over a number of years, Council as a result of the review of budgets during the Long Term Plan process has opted to remove the Associated Improvements over the next three years starting in 2012/13 and hopes to resume the activity in the Fourth year of the Long Term Plan.

Surfacing: Age-based Replacement Costs in AMP Period



Total Pavement Remaining Life vs. Length in 5 year blocks effective 30th June, 2011



The figures above indicate the tools available in "RAMM" to project asset renewal needs over a long period of time. In these two examples "resurfacing" (sealing) shows an increasing need over the next 10 year planning period. In the second example "pavements" indicates the need to renew an average of 35km for each 5 year period throughout the 45 years. Asset management activities include re-prioritising the predicted requirements to achieve a smooth investment programme, extending the life of some road sections and bringing forward others which may be deteriorating faster than projected.

"Minor Improvements" planned for the next ten years are estimated at \$2.7 million, and the activity is designed for "low cost/ low risk" improvements to the network with individual projects limited to a maximum value of \$250,000. These are mostly rural road seal widening projects, intersection improvements, visibility improvements, minor safety improvements etc. The increase of dairy farming in the district will generate milk tanker traffic, including use of roads which were not constructed with sufficient width to allow other

vehicles to pass oncoming tankers without one or both pulling partially off the sealed road pavement.

RISK – (AMP Chapter 6)

Sustainable and reliable delivery of the Land Transport Network service requires careful consideration of the various types of risk associated with the service.

The major risks addressed in this Asset Management Plan include:

Business

The Corporate Risk Management Policy addresses the four well beings, vision statement and strategic themes. Full details can be found in the South Waikato Risk Register and Risk Profile, which ranks the risks and includes control measures, where they exist.

Asset management

The 2007 Asset Criticality and Risk Assessment report addressed the consequences of infrastructure failure in terms of the four well beings (with assumed weightings) and identified the critical assets that required further investigation in order to ensure that they would continue to perform reliably delivering the agreed Levels of Service.

Insurance

Council is a member of the LAPP fund, which is provided by local authorities to provide funds for reconstruction following major catastrophic events. This type of cover is not available through private insurance providers. Membership requires that all participants undergo a full risk management assessment.

Risk Pool

Council is a member of Risk Pool, which is provided by local authorities for long term legal and professional liability.

Civil Defence

Council participates in a region wide Civil Defence Emergency Management Group, as required by legislation. The scope includes co-ordinated planning, training, public awareness and response to major events that affect the safety of its residents.

Waikato Engineering Lifelines Group

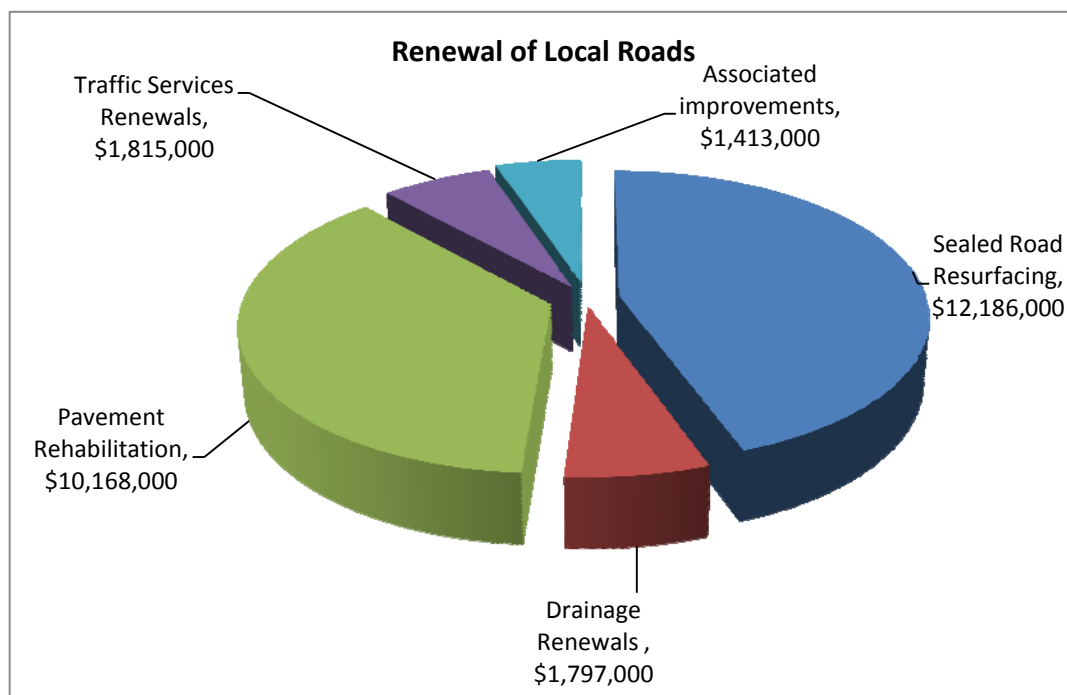
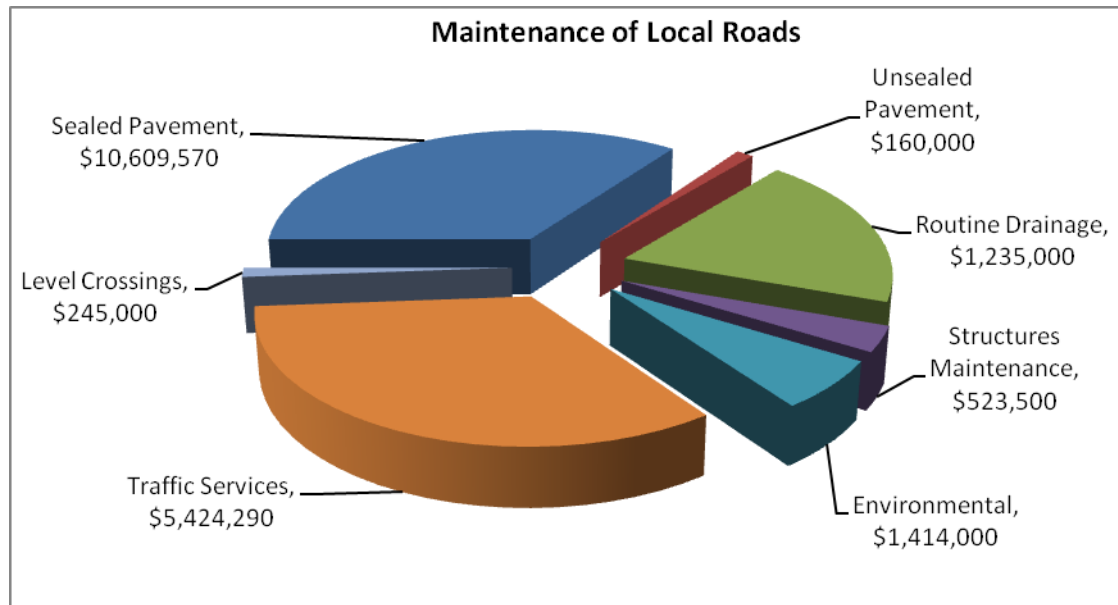
Council participates in the co-ordinated assessment of risks and responses to events that are likely to affect a range of services, some of which are not Council's responsibility, such as communications and energy utilities.

Business Continuity

Council is developing Business Continuity Plans that address the continuation of service delivery, such as fire at its head office or Watermark depot.

FINANCIAL FORECASTS

(AMP Chapter 7) (*this is what it will cost over the next 10 yrs*)



Expenditure components are as follows:

- **Improvement Works:** Capital investment is required to widen roads and for minor safety improvements. Both types of work increase the service level, providing additional safety for road users. The Council's share of costs is generally funded from loans
- **Renewals:** This capital cost is for replacing signs, lighting, surfacing, pavement and other assets which deteriorate due to use and weather exposure. In contrast to water and drainage pipes, the roads assets (excepting bridges) have all completed at least one life-cycle, meaning that there is a stable level of replacement work required over

Executive Summary

the planning period as various roads require attention according to their age, and condition The Council's share of renewal work costs is funded by drawing from the depreciation reserve

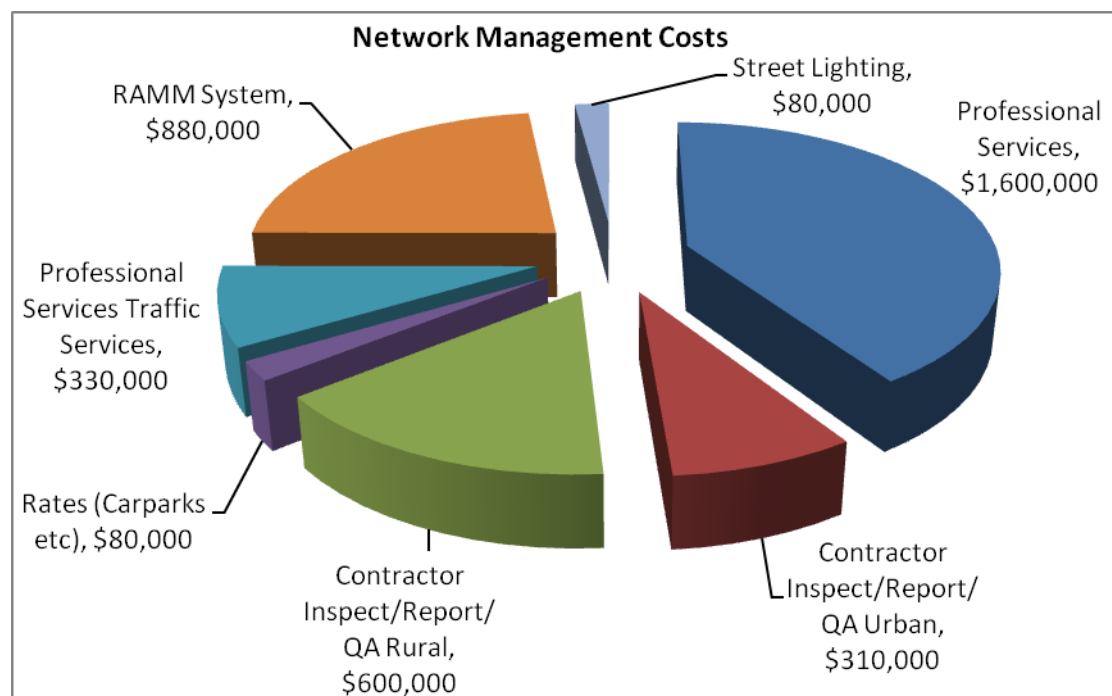
- Depreciation: To ensure that renewal funds are available when needed, depreciation is charged as an expense and accumulated over the useful life of each asset. Base lives are tabulated in Chapter 7, and vary depending on many factors:

Different components have different life expectancies

Historical installation standards, and service conditions such as culverts, also affect lives

Surfacing has varying "useful lives" depending on traffic use

- Interest and Principal: The Council's share of new works costs may be funded by borrowing. These items cover the cost of the loans
- Support: This item covers the share of corporate support costs apportioned to the Roads activity



- Direct Costs: The composition of this major expense is illustrated in the 'pie' chart above. It covers the direct costs of managing the network; including all the cyclic maintenance tasks, data gathering, contract administration, streetlights, invoicing, payments, reporting by "SouthTech" and a limited number of external consultants. By contrast all renewal, and improvement

'Network Management' includes oversight of operational contracts, design, planning and external assistance.

Renewal of ageing infrastructure is funded from the depreciation reserves, based on the projected replacement costs and depreciated values have been derived from the Council's current fixed asset register. Analysis shows the escalating replacement cost of the assets and their depreciated value with age. The projected value of the assets is approximately keeping pace with their total replacement cost. This represents an equilibrium situation with the average condition of most assets less than that of brand-new ones, but performing safely and adequately.

Since road asset lives are well established through observation of their entire life cycle, Council believes it is taking a correct position regarding the level of depreciation funding, maintaining its ability to construct replacement roads that will sustain the service to the district. Further work, identified in the improvement plan, will be carried out to ensure the projected depreciation account balance will be adequate in the future.

SYSTEMS AND PROCESSES (AMP Chapter 8)

The Group Manager Assets is responsible for all the activities described in the Asset Management Plans, while the Group Manager Corporate is responsible for corporate risk management.

The Land Transport Network activity uses Road Assessment and Maintenance Management ('RAMM') for recording all relevant information regarding the individual infrastructure items and is updated regularly to include all additions and deletions. The information is used for regular reporting on depreciation and revaluations.

Accounting is processed via Council's NCS financial system.

Geographic data is managed electronically, using Council's GIS software.

Various other information flows and processes are used to develop the Long Term Plans, establish service agreements, and manage contracts, update standard operating procedures, monitor performance and report on resource consent compliance.

IMPROVEMENT (AMP Chapter 9)

Council's asset management target is to achieve the "core plus" level, which is considered to be appropriate for an organisation of its size. Following guidance from the Office of the Auditor General and the NAMS manual, a number of Improvement Plans have been developed and implemented historically, while others are ongoing.

Further improvement proposals are based on a review of the current status of compliance with the requirements of "core plus" and the recently updated IIMM, which refers to "intermediate" rather than "core plus".

The 2015 AMP's are planned to be completely restructured to make them more useful and to streamline their structure and content.

Further Reading

Where necessary, the reader is encouraged to refer to the full Asset Management Plan document for further discussion and information on the topics in this summary.

1.0 INTRODUCTION

1.1 Background to the AMP

This AMP is one of an integrated suite of six AMP's covering Council's infrastructural assets, community facilities and property.

The AMP's support the Long Term Plan (LTP) and are of similar format and structure to each other.

The planning and process linkages relate to the LTP as described below.

Council's Vision and Strategy

The overarching Vision for the District is expressed as "Healthy people thriving in a safe, vibrant and sustainable community".

The Vision is implemented through the concept of Sustainability, described in terms of the four well-beings (Social, Economic, Environmental and Cultural).

Outcomes have been developed for each of the well-beings, together with related Strategies for their implementation.

The relationships are shown in Appendix B2.

Further information regarding the processes behind the above framework is found in the LTP.

In terms of Council's planning processes, these AMP's sit at a tactical level "between" the LTP (a strategic document) and several activity and process plans (operational documents). It is Council's intention that each of the six AMP's will be a significant management tool that will guide and influence decision making and behaviour, and ultimately shape community outcomes that are well aligned to the LTP.

1.2 Purpose of the Plan

The purpose of this Asset Management Plan (AMP) is to ensure that assets are operated and maintained in a sustainable and cost effective manner, so that they provide the required level of service for the present and future customers.

The AMP supports the purpose by:

- Demonstrating responsible management and operation of roading assets which represent a significant, strategic and valuable asset belonging to the South Waikato District Council
- Justifying funding requirements
- Demonstrating regulatory compliance, of note is section 94(1) of the LGA 2002 which in summary requires the LTP to be supported by:
 - Quality information and assumptions underlying forecast information
 - A framework for forecast information and performance measures that are appropriate to assessing meaningful levels of service
- Demonstrating clear linkage to community agreed outcomes with stated levels of service

Introduction

For Land Transport, there is an additional external linkage which represents regionally-administered funding (the Regional and National Land Transport Programmes - RLTP/NLTP) to subsidise the district's transport infrastructure, and regional planning based on the NZ Transport Strategy.

Priorities for “regionally significant activities” are established by the Regional Land Transport Committee (RLTC), which forwards its recommendations (the Regional Programme) to the New Zealand Transport Agency. Inclusion in the National Land Transport Programme is conditional on the proposals’ alignment with the current “Government Policy Statement” (GPS), and relevant national and regional policy statements.

The current co-investment (funding assistance rates) for local roads is 49% for maintenance and renewal activities and 59% for "improvement" expenditure. Some land transport activities do not qualify for subsidy: footpath, mobility crossings, berms maintenance, paratransit, car parks and some seal widening and extension projects are not able to secure funding from central Government. NZTA has proposed changes to the funding assistance rates (FAR's) to specific investment categories. The proposed changes are a result of recent policy, priority and /or delivery model changes. Any possible changes would be implemented through the 2012 NLTP following consultation.

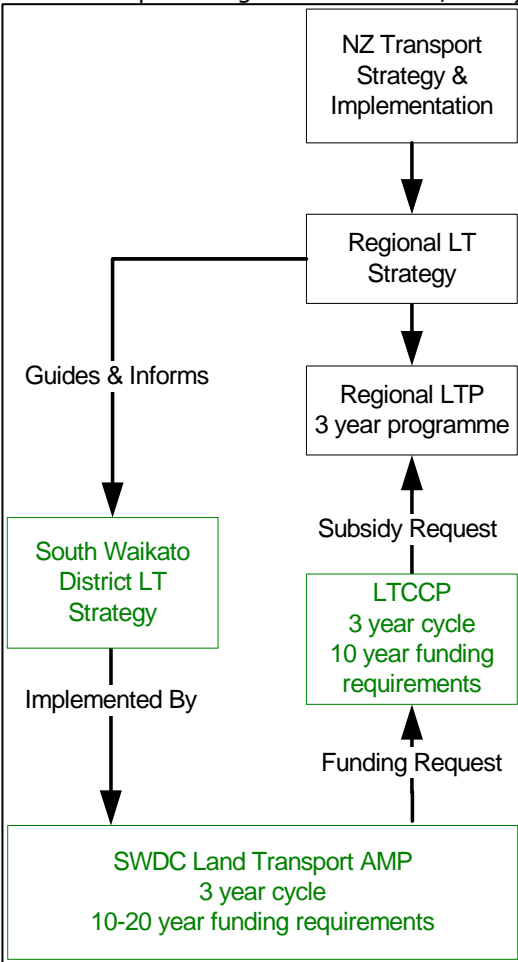


Figure 1: Land Transport Network

The objectives of this suite of AMP's are to demonstrate that Council:

- Understands how the outcomes delivered by the assets link to the wider community outcomes
- Understands what asset capacity will be required in the future, and what issues drive this capacity requirement
- Has an ever-increasing knowledge of its asset locations, ages and conditions
- Has robust and transparent processes in place for managing, operating, maintaining, renewing and extending assets
- Has adequately considered the classes of risk its activities face, and has systematic processes in place to mitigate identified risks
- Provides adequate funding for asset operations, maintenance, renewals, improvements, extensions and depreciation
- Delivers outcomes that are aligned to the community's wishes and to other internally and externally imposed levels

1.3 Focus

The focus for the previous six years (2006 – 2012) has been the successful initiation and development of asset management practices associated with:

- Improved knowledge of the assets
- Ensuring the asset register was at the appropriate standard
- Continuity of the asset knowledge within Council
- Consultation framework and implementation
- Compliance with resource consent conditions

Council's emphasis for the period 2012 to 2022 for the Land Transport Activity will be focused on

- Meeting changing NZTA requirements outlined in the 2012 Government Statement Policy.
- National and Regional transport network co-ordination
- Long term sustainability associated with Asset Management, including Risk Management practices and procedures and Renewals requirements within the Land Transport Network.

Asset Management

- Sustainability focus to enable long term options to be considered
- Continued modelling of network performance asset serviceability and appropriate funding requirements.

Land Transport Network

- NZTA and Legislative Compliance
- Road safety through Safer Journeys taking a safe systems approach
- District Land Transport Strategy which is a guiding document for the South Waikato Land Transport System for the next 30 years

Risk Management Practices and Procedures

- Contingency Planning
- Critical assets - integrate criticality into the on-going operation, renewals and capital programme

1.4 Corporate Asset Management Policy

The South Waikato District Council Asset Management Policy Statement for the Land Transport Network Activity is outlined below. It is intended that this Policy Statement be added to the introduction of the Asset Management Plan, to set the direction of the Land Transport Network Asset Management process.

Objective of the Land Transport Network Asset Management Policy

The objective of the South Waikato District Council's Asset Management Policy for the Land Transport Network Activity is to ensure that Council's service delivery is optimised to deliver agreed community outcomes and levels of service, manage related risks, and optimise expenditure over the entire life cycle of the service delivery, using appropriate assets as required.

The Asset Management Policy requires that the management of assets be in a systematic process to guide planning, acquisition, operation and maintenance, renewal and disposal of the required assets.

Delivery of service is required to be sustainable in the long term and deliver on Council's economic, environmental, social, and cultural objectives.

Introduction

This Asset Management Policy sets the appropriate level of asset management practice for Council's Land Transport Network Activity, as defined by the Audit Office and good practice, as described in the 2006 International Infrastructure Management Manual, issued by the National Asset Management Steering Group (NAMS). The Policy is described in the Structured Assessment of Asset Management Practice (refer to 1.4.4 below).

Asset Management Policy Principles

The following principles will be used by Council to guide asset management planning and decision making:

- Effective consultation to determine appropriate Levels of Service
- Ensuring service delivery and appropriate funding needs form the basis of asset management
- Integration of asset management with corporate, financial, business and budgetary planning to align AMP's and Council's LTP
- Integration with neighbouring authorities and other agencies including District Land Transport Strategy, National Transport Strategy, Regional and National Land Transport Programme, National and Regional Road Safety Strategy and the Regional Land Transport Strategy
- Integration of asset management within Council's strategic, tactical and operational planning frameworks
- Informed decision making taking a lifecycle management and inter-generational approach to asset planning
- Transparent and accountable asset management decision making
- Sustainable management providing for present needs whilst sustaining resources for future generations

Policy Linkages to Other Plans

This Asset Management Policy links to Council's LTP, the Regional Council Land Transport Strategy, Regional Road Safety Strategy and Land Transport Network Asset Management Plan.

Structured Assessment of Asset Management Practice

Council undertook a structured assessment of the appropriate level of asset management practice for the Land Transport assets in 2008. Refer to References "Selecting the Appropriate AM Level" (Waugh, October 2008). The assessment followed the guidance provided in Section 2.2.4 of the 2006 International Infrastructure Management Manual and the results are shown in Table 1 below.

Based on the assessment, it was considered that the appropriate level of asset management should be "core plus".

Table 1: Land Transport Network Activity Factor Assessment Results

| Criteria | Assessment | Commentary |
|---------------------------------------|--|--|
| Population | Core Plus | The initial population risk screen for urban areas, all township populations, and total district population showed that asset management practice should be 'Core Plus' |
| District Wide Risks | Core Plus | Based on the identified district wide risk factors, the suggested level of appropriate asset management practice for South Waikato District Council is 'Core Plus' |
| Costs and Benefits | \$6.8 million (annual expenditure) | The Land Transport budget is the largest in Council and represents higher risks if AM practice is not at an appropriate level. These budgets also allow more scope to develop asset management practice as appropriate The New Zealand Transport Agency requires three-year block programme to be submitted |
| Legislative Requirements | Level of service focus | Level of service driven approach, this may exceed or comply with legislative requirements |
| Size, Condition, Complexity of Assets | Average | The land transport network and range of associated assets are generally in good condition and perform well meeting customer requirements |
| Risks Associated with Failures | Average | The risk of failure of funding or project implementation within the Land Transport activity requires a pro-active management approach integrating with neighbouring authorities and other agencies. Any reduction in the Financial assistance rate from the New Zealand Transport Agency poses an economic risk Overall risks associated with asset failure are well understood and have been assessed to be average |
| Organisational Skills and Resources | Average | SWDC is a mid-sized local authority with competent management and services in place. Attracting and retaining staff is an on-going issue, and partnerships with consultants are integral to achieving a range of functions |
| Customer Expectations | Average | The District has a range of community assets that are of a high standard and the community is justifiably proud of them, and has high expectations of their on-going development and maintenance Comprehensive Levels of Service consultation undertaken in 2008 so services and affordability issues are well understood |
| Sustainability | A corporate sustainability policy will be developed as required by legislation or community demand | South Waikato District Council is following the sustainability regimes of the Land Transport Management Act 2003, New Zealand Transport Strategy and Regional Land Transport Strategy requirements (including subsequent amendments and revisions) for Land Transport; otherwise Council is still in the process of developing its corporate sustainability policies. This will include incorporating legislative changes and any national or regional policies or plans and will also be focussed on economic sustainability and affordability Any impact of these on asset management practice will be incorporated into the next review of Asset Management Policies |

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| Criteria | Assessment | Commentary |
|----------------|------------|---|
| Final AM Level | Core Plus | Analysis of factors suggests that asset management practice should be more sophisticated than Core and nearer to a comprehensive approach, with an emphasis on sustainable delivery of agreed service levels and ensuring there is provision for adequate funding to meet quality and performance standards |

Implementation and Review of Policy

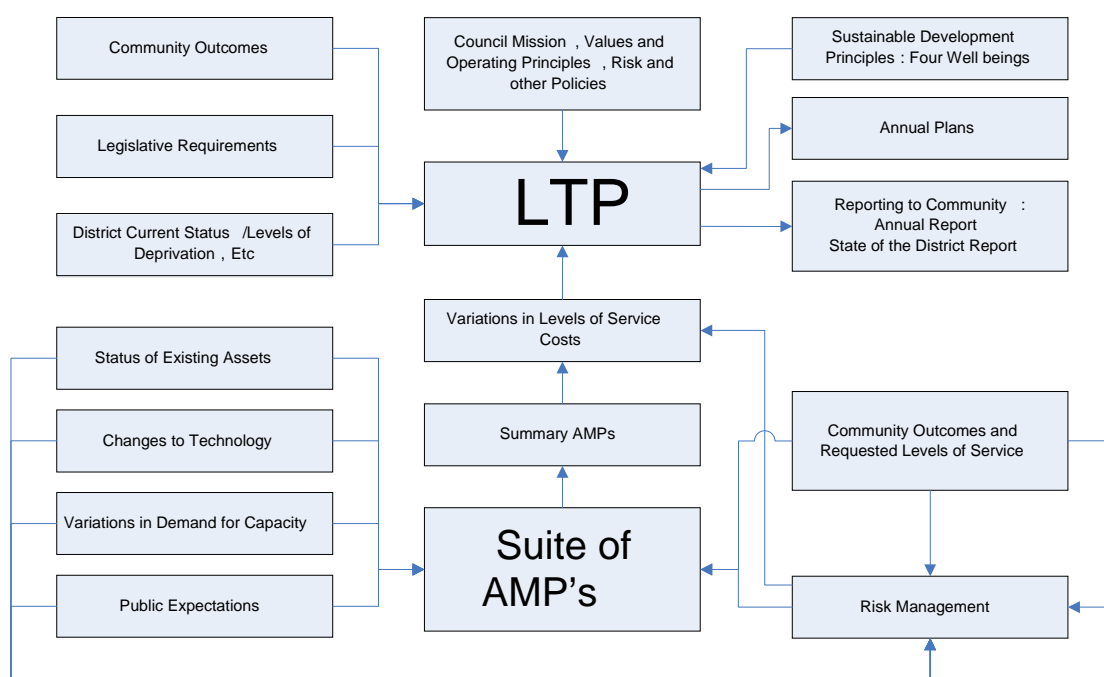
This Asset Management Policy was implemented through the 2009 Asset Management Plans and 2009 LTCCP.

This next major review of this Asset Management Policy will be completed prior to completing asset plan updates to support the 2015 LTP.

1.5 AMP Links to the LTP

The diagram below sets the context for this AMP within the wider Council planning framework. It details the linkages between this AMP, Council's LTP, other policy and planning documents and key Council processes and drivers.

Figure 2: Linkages between this AMP, LTCCP, Policy and Planning Documents and Key Council Processes and Drivers



1.6 Description of the Land Transport Network Activity

Physical Parameters

The geology of the South Waikato District has resulted from major historic volcanic events in the Taupo, Rotorua and Tirau areas and influenced by the action of the Waikato River and other waterways. The soils are a mix with approximately 3% of the area of the District

being sandy soils (bordering the Waikato River), 11% sandy loam with some peat (northern areas) and 86% ash/pumice soils (generally south of a line through Arapuni - Putaruru - Tapapa. The soils are relatively 'recent' in geological terms and the ash/pumice soils in particular are poorly compacted and contain lenses of 'sensitive' allophanic clay (brown ash). These factors often lead to unforeseen difficulties in road construction and require special techniques to achieve a satisfactory result.

The topography of the District is generally flat to rolling with very few roads in what could be termed mountainous topography.

The temperate climate provides an annual rainfall of approximately 1,500 mm and the prevailing wind is from the south west. The Kaimai and Mamaku ranges to the east - south east and the significant area around Tokoroa and south in forestry have an influence on weather patterns and air temperature.

The construction season is from mid-September to early May. Difficulties with reducing high moisture contents in pavements and application of seal coats outside those months can be expected.

Historic Factors

The farming community in the District has enjoyed a high quality of rural roading since the 1950 -1960's period when a large proportion of the roads were sealed. There have been many benefits to farmers from this even though sealed roads generally cost more than unsealed roads to maintain. The benefits have included lack of dust, making road frontage pasture (the "long acre") more palatable, lower maintenance costs for farm vehicles, lower transportation costs for produce and higher land values.

The roading standard in this District is at the higher end of the scale. However, on the low traffic roads which are sealed, the savings in vehicle operating cost are unlikely to exceed the higher costs of sealed road maintenance. Nevertheless there is strong support in the farming community to have all roads sealed.

The rural roading network still has a reasonable length of pavement which was designed for the traffic volumes and loading that could be predicted in the late 1950's. In those days roads were either Classes I, II, III or IV (based on design axle loadings) with most rural locals being Class II or less. Since then the number, speed, size and gross allowable loads of vehicles has continued to increase at a steady rate and all roads are now required to be Class I.

As a result some roads are under-strength and under-width for the traffic of today. There has been an on-going programme of pavement rehabilitation and seal widening for some years now to bring the network up to the required standards. This activity is expensive, and the amount completed each year has been limited to the budget available. It has been necessary to supplement this work with some "heavy maintenance" to hold and extend the useful lives of roads that are failing until they can be included in the rehabilitation programme. The "heavy maintenance" has been in the form of lime/cement stabilised patching, digouts, resurfacing and high shoulder clearances. This picks up the worst areas of a road and basically 'recycles' in situ materials putting the road back into a safe trafficable state and extending its remaining life.

The towns and the street networks serving them developed at different times. Tirau was established as a railhead in the 1880's, Putaruru developed as a forestry and farming service centre from the 1920's and Arapuni was originally a hydro village when Arapuni dam was built in 1927. Tokoroa only began to grow in the late 1940's when the Kinleith forest became the major source of exotic timber in New Zealand.

The roading infrastructure from development prior to the 1940's has since been replaced and upgraded to standards appropriate to more recent times. Old road standards and early efforts at town planning are still evident however and continue to shape the towns and influence their development.

Introduction

The total roading network in the District comprises Local Roads, State Highways, private (mainly forestry) roads and unformed (paper) roads. In addition to the carriageway, the Roads infrastructure also includes bridges and large culverts, signs and marking, footpaths, street lighting drainage and carparks.

The District is criss-crossed by State Highways 1, 5, 27, 28, 30 and 32 which have a significant bearing on the traffic that travels through the District and the use made of local roads Council exercises its interest in the operation and management of state highways directly by close liaison with NZ Transport Agency and indirectly through input to the Regional Land Transport Programme through the Regional Land Transport Committee. There is a total of 171 km of State Highway in the District.

The Road Network activity requires the Council's infrastructure to be provided, operated, maintained, renewed, added-to, upgraded, extended, improve and in rare cases, dismantled or abandoned.

In addition to these physical activities, administrative activities include:-

- Responding to requests from consumers or other residents
- Obtaining and complying with resource consents and building consents
- Applying to NZTA for funding subsidy for maintaining and operating, renewing and improving the network
- Reporting to NZTA annually on works completed
- Recording and costing of expenditure
- Risk identification and management
- Complying with legislative requirements, accepted standards and resource consents through:
 - Controlling new land development that links to existing roads
 - Managing stormwater runoff
 - Managing the asset inventory
 - Promoting road safety through education, engineering and enforcement
- Supervising the design and carrying-out of physical work:
 - Managing the assets through performance based Contracts
 - Monitoring, recording asset condition, and performance
- Maintaining an accurate roading infrastructure database (RAMM)

This Asset Management Plan records the activities, providing a reference to policies, management decisions and programmes. At the same time it is intended to demonstrate that the activity is being conducted in a responsible and cost-effective way which is sustainable over the long term.

1.7 Issues Arising

This section describes the future issues that are expected to arise.

Issues Arising

The following issues have been identified within the 10 year planning horizon:

Table 2: Issues within the Planning Horizon

| Issue No # | Description | Identified | 10 Year Will/May Arise | Resolution/Comments |
|------------|--|------------|------------------------|---|
| | Changes, effective now, to the way national funding (financial assistance) is rated and categorised. This more accurately reflects local government's definitions of Renewal Capex and New Works/Improvements Capex, making alignment of budgets simpler | Yes | Will | In progress |
| | Changes, effective July 2012, to the way regionally-distributed capital funding ('R Funding') may be allocated, permitting it to be used for renewals above the normal programme of work, as well as for improvement projects (as originally intended). Liaison between the representatives of the regional authorities will become more important in order to gain support for South Waikato District's proposals | Yes | Will | Council has representation within the Regional Advisory Group (RAG) at Regional Council |
| | An end to regionally-distributed 'R' funding in June 2015 when it becomes a nationally distributed fund | Yes | May | Council to monitor progress on funding |
| | NZ Transport Agency has been formed, to better implement the NZ Transport Strategy. The strategy has an emphasis on other modes of transport as well as private road transport, and the integration of modes | Yes | Will | Both Council's Land Transport Strategy as well as the NZ Transport Strategy has included other modes of transport within the Strategies |
| | Planning cycles will be 3-yearly rather than annual, providing more continuity. This matches local authority LTP cycles | Yes | Will | Done |
| | Government Policy Statements which will guide National and Regional Land Transport programmes | Yes | Will | The GPS 2012 is currently in effect |
| | The amendments to the Rooding Programme as a result of budget constraints. | Yes | Will | SWDC to prioritise roading programme to suit budgets |
| | The District Land Transport Strategy which will guide the Local Land Transport programmes | Yes | Will | In progress |
| | Emphasis on National and Regional planning and prioritising (including RON's, State Highway works) | Yes | Will | On-going |
| | The Regional Land Transport Plan and Regional Committee will become the key document and | Yes | Will | Council has representation on Regional Land Transport Committee |

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| Issue No # | Description | Identified | 10 Year Will/May Arise | Resolution/Comments |
|------------|--|------------|------------------------|---|
| | forum for funding SWDC Land Transport Activities | | | |
| | Emissions Trading Scheme cost impacts commencing 1 Jan 2011 | Yes | Will | Council to investigate consequences and impacts |
| | Conversion of forest land into dairy farms will increase traffic on the public roading network, and increase the length of publicly funded roading network (vested roads) | Yes | Will | Provision has been made in funding application to NZTA for increase to the network |
| | Identify a suitable local network capable of accommodating heavier loads as a result of the High Performance Motor Vehicles and determine what upgrades are required to strengthen infrastructure and pavement | Yes | Will | Working closely with NZTA to accommodate HPMV routes within the District and provide for upgrades |

Issues Arising beyond the Planning Horizon

The following issues may arise beyond the 10 year planning horizon:

Further Reduction in Population: Although currently it is believed that the conversion of forestry land back to dairy production will arrest the historic population decrease, this scenario may not be a long-term one:

- Improved automation of dairy activities and the opportunity to amalgamate into larger production units may result in a reduction in the rural population
- The current attractiveness of dairy over other primary production activities may reverse at some time in the future, depending on various factors, including market demand, pricing and the sustainability of increased dairy production
- Changes required to deliver investment and efficiency gains in the wood and meat industries, difficulties in labour relations, increased transport (fuel) costs and variations in foreign exchange rate will all influence the viability of the District's industries

While population numbers remain substantially static, changes in demographic distribution will result in changes in demand for various modes of transport, and in the ability of the community to finance the needs.

Population losses potentially impose higher financial burdens on ratepayers for the cost of operating, maintaining and renewing infrastructure. This issue will have to be confronted if the current projection of a stable population changes to population decline.

1.8 Key Elements of the Plan

The key elements of this AMP are shown in Table 3 below.

Table 3: Key Elements of Plan

| Section | Content |
|--|---|
| Executive Summary | Provides an overview of the entire AMP and emphasises the key issues contained in the body of the document for inclusion in the LTP |
| Section 1: Introduction | Provides the background to the AMP and the framework of the plan |
| Section 2: Contributions to the Four Well beings | Provides the contributions that the services provide to the four well beings and details the linkages to the community outcomes |
| Section 3: Levels of Service | Defines the current and proposed Levels of Service and Performance measures for assessing the achievement of the standards |
| Section 4: Planning and Future Needs | Provides details of growth forecasts, which affect the management and utilisation of assets |
| Section 5: Lifecycle Management Plan | Outlines what measures are in place to manage and operate the assets at the agreed Levels of Service. While optimising lifecycle costs, it can also include sustainability Outlines the processes set up by SWDC for assessing and managing sustainability for the Activity and its integration with Council's other activities |
| Section 6: Quantifying And Managing Risk | Outlines the risk management processes set up by SWDC for assessing and managing risk |
| Section 7: Financial Forecasts | Identifies the financial requirements resulting from all of the information presented in the previous sections |
| Section 8: Asset Management Systems And Processes | Outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. Provides details on planning for monitoring the performance of the AMP |
| Section 9: Monitoring And Improving Asset Management | Details the improvements to AM systems that will increase the level of confidence in the AMP |
| Appendices | Detailed supporting information for summarised formation in AMP |

2.0 CONTRIBUTION TO THE COUNCIL OUTCOMES

2.1 Activity Goals & Objectives

The Vision for the LTP is expressed as “Healthy people thriving in a safe, vibrant and sustainable community”.

All of Council’s activities work towards implementing the Vision, which is implemented through the four well-beings (Economic, Environmental, Social and Cultural), each of which is associated with related Outcomes and Strategies.

The Strategies are implemented by the appropriate groups within the Council organisation. The Strategies are further defined in terms of Levels of Service, which are expressed initially in terms that can be understood by the community and are further expressed in more technical terms that can be measured, monitored and reported by staff. Further description of the Levels of Service is found in Chapter 3 of the AMP.

In 2010 the definition of “Community Outcomes” in the Local Government Act 2002 was changed to include only those outcomes for which Council was responsible. As a result, Council consulted with the community via a residents’ panel of over 300 people (the CONNECT panel), which produced the Council Outcomes in 2011.

The revised Council Outcomes are as follows:

1. An engaged community: We encourage and support an engaged social community through the provision of our services and facilities
2. Safe and healthy community: We advocate for and support, where we can, improved safety and health for our people
3. Improving image: We focus on improving the image and perception of the South Waikato District
4. Growing economy: We support and encourage existing businesses and endeavour to attract new business to the district
5. Diverse economy: We encourage the economic base in the district to diversify, especially in relation to tourism
6. Sustainable environment: We want the South Waikato District to lead the community in sustainable environmental development
7. Well managed environment: Council’s water and waste systems are sustainable and contribute positively to the district environment
8. Celebration of culture: We celebrate the artistic and cultural achievements of our people and the diversity of their cultures
9. Cultural leadership: We support and encourage cultural leadership and capacity building

The Land Transport Activity contributes to economic, social, environmental and cultural well-being. The following sections summarise the objectives required to ensure a positive contribution by the activity, and explain how the negative effects are prevented, minimized or balanced against the overall needs of the community. These objectives are consistent with, and basic to, the provision of a Land Transport service to those parts of the District for which it is economical, and only those residents and business operators who receive the service are required to contribute to its cost.

Figure 2 shows the links between the Well-beings, Outcomes and related Strategies applicable to the Land Transport service.

A more detailed description of the Outcomes framework is provided in Appendix B1.

The Land Transport Management Act 2003 exists to contribute to central government's overall vision for transport, the aim of which is to achieve an affordable, integrated, safe, responsive and sustainable land transport system. This is set out in the New Zealand Transport Strategy. The vision is underpinned by the principles of sustainability, integration, safety and responsiveness. These are incorporated in the Waikato Regional Land Transport Strategy (RLTS). The 2008 amendment to this act gives further emphasis to the achievement of agreed regional goals. South Waikato District is part of the "South Waikato, Rotorua, and Taupo" sub region.

From Waikato RLTS 2011-2416:

Passenger transport services initiated in the region between 2004 and 2006 included:

- A collaborative inter-agency exercise with community, Work and Income NZ and local government agencies, a workers service started between Tokoroa and Taupo in May 2005, and Tokoroa to Atiamuri. Both these services were cancelled in 2007 through lack of patronage
- A service between Tokoroa and Mangakino also began in May 2005 as a collaborative interagency service, and continues in 2011
- A long standing "Total Mobility" service in Tokoroa

Walking and cycling activities within the sub-region are generally confined to urban centres. The review of 2004 Walking and Cycling Strategy will identify appropriate measures with regard to these modes. Within smaller urban centres, and centres which are experiencing ageing and/or declining populations, initiatives may be confined to working with schools to promote walking and cycling and the support of Total Mobility to service ageing communities.

Within the South Waikato District, the maintenance of the existing network will be the focus, and working with NZ Transport Agency for long-term strategic planning of routes through centres such as Tirau and Putaruru. Passenger transport initiatives will continue and the sub-region is likely to see an expansion of Total Mobility services as the population ages, and significant developments centre on catering for the elderly, especially in South Waikato.

Although the rail network within the region is not well utilised, talks between the South Waikato District Council and Regional Council are underway revisiting sidings in Tokoroa with an increasing role for rail freight, particularly from forestry and other industries that needs to be encouraged. The opportunities to utilise existing forestry roads as local roads has also been promoted by developers, and Council.

To achieve the desired outcomes of the strategy, the funding profile in the South Waikato, Taupo and Rotorua sub-region will continue to focus on roading maintenance and improvements. However, a transition over the 10-year period to higher expenditure on alternative modes such as passenger transport will be required. The strategy has identified a greater emphasis on passenger transport in, and to, rural communities, expansion of Total Mobility, and larger spending on active modes such as cycling and walking. The strategy also recognises that roading will continue to be the biggest expenditure item in the sub-region, however over time expenditure on other modes will increase.

Actions identified in the RLTS which involve Council are shown below:

Table 4: Actions Identified in the RLTS

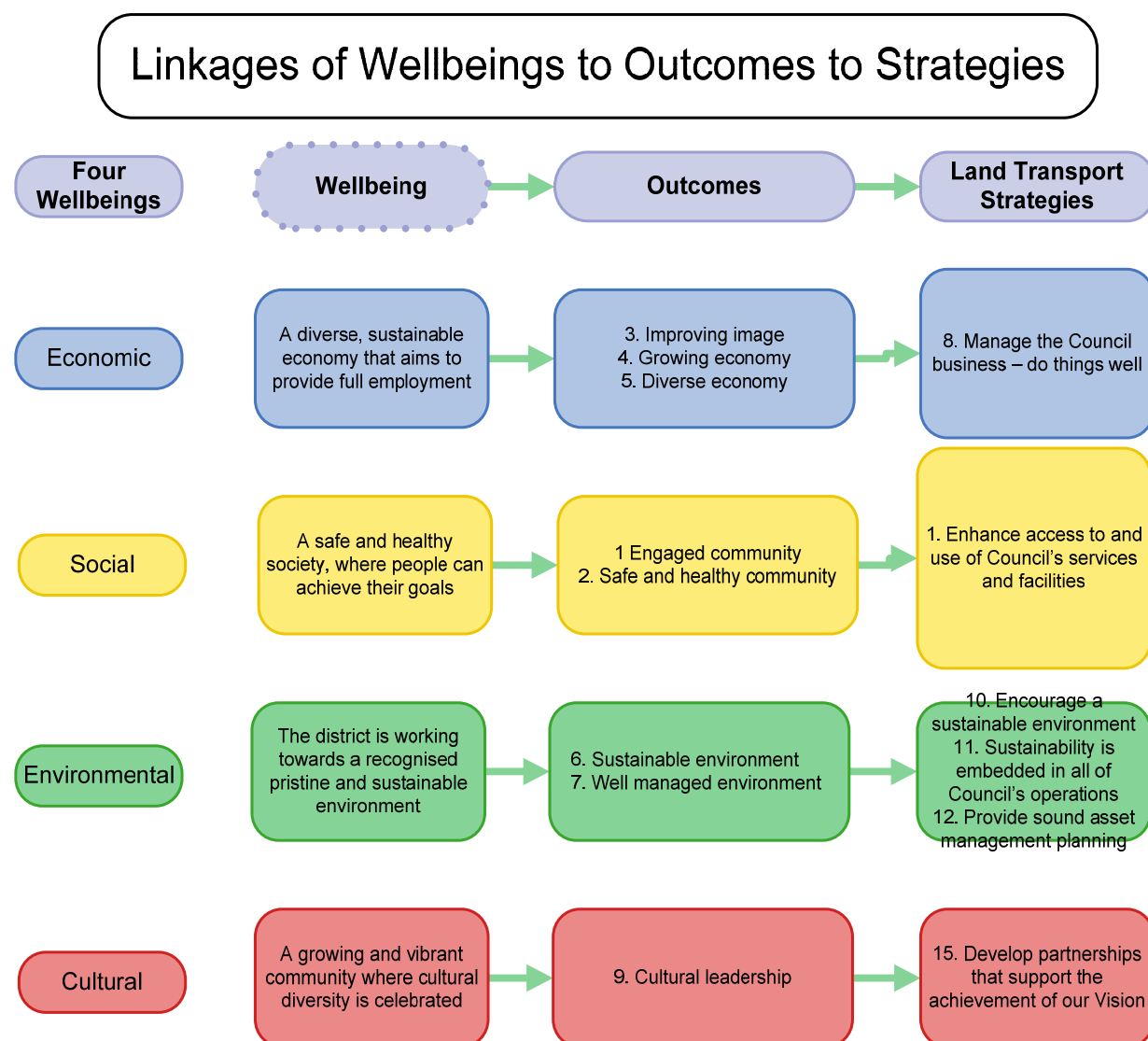
| NO. | ACTIONS | SUPPORT AGENCIES | TIMING |
|-------|---|---|----------------------|
| A15.1 | NZ Transport Agency to undertake a transport corridor study and structure plan for Tirau to provide for development of the town in an integrated way | South Waikato District Council | Complete |
| A15.2 | NZ Transport Agency to identify and develop a three-year implementation plan for a suite of safety improvements to be undertaken within the sub-region to address deficiencies at strategic locations including: <ul style="list-style-type: none"> – SH1/SH5 intersection at Tirau – SH1 between Taupo and Waiouru – SH5 between Taupo and Rotorua – SH5/SH28 intersection | South Waikato District Council Taupo District Council Rotorua District Council | On-going |
| A15.3 | Regional Council to continue to investigate, support and where feasible implement, passenger transport initiatives which provide access to essential services for rural communities and employment opportunities within the sub-region (in conjunction with the review of the Regional Passenger Transport Plan) | Taupo District Council South Waikato District Council Waikato District Health Board Lakes District Health Board NZ Transport Agency | 2006/07 and on-going |
| A15.4 | Road controlling agencies, and road safety partners to develop and support initiatives which encourage driver behaviour change, especially with regard to addressing fatigue, and modal shift | Regional Council Waikato District HB Lakes District HB (South Waikato DC) | On-going |
| A15.5 | NZTA to undertake and progress the implementation of recommendations of a Passing Lane Study for State Highway 1 and State Highway 5 | South Waikato District Council Taupo District Council Rotorua District Council | On-going |
| A15.8 | South Waikato District Council to <i>review</i> and implement cycling and walking strategies | Regional Council | On-going |
| A15.9 | Road controlling authorities protect existing and future rail corridors to ensure that the future expansion or increased use of the existing rail corridor is not compromised | ONTRACK Kiwi Rail Territorial Authorities | On-going |

Contribution to the Community Outcomes

Demand management strategy for the South Waikato/Taupo sub-region in the 2011/41 Proposed RLTS

| MODE/ACTIVITY | DEMAND MANAGEMENT APPROACH | SUPPORT AGENCIES | TIMING |
|---------------------|--|--|---------|
| Land use planning | Implementation of the Taupo Growth Strategy is incorporated within the Waikato Regional Policy Statement and will integrate land use and transportation planning. Ensuring that any land use growth occurs in appropriate locations in the South Waikato district. | South Waikato District Council Taupo District Council | 2011/41 |
| Walking and cycling | Strong encouragement of walking and cycling as an alternative mode, through progressive implementation of the footpath infrastructure improvements within Taupo and Tokoroa and a number of cycling initiatives. Taupo has prepared a strategy for horse riding. School travel planning (including walking school bus initiatives) will be encouraged across the sub-region. | South Waikato District Council Taupo District Council | 2011/41 |
| Public transport | There is a desire to encourage better utilisation of existing public transport, especially services currently provided between centres within the South Waikato. Planning through the Taupo Growth Strategy will also assist the role that public transport can play in the future as growth cells develop and public transport becomes more viable. | South Waikato District Council Taupo District Council | 2011/41 |
| Rail | Rail as a potentially larger freight alternative into the future, can assist in managing demand for road space within the region. | South Waikato District Council Taupo District Council | 2011/41 |

Figure 3: Linkage of Well-beings to Outcomes to Service Levels



Social Contribution

LTP Linkage

The Land Transport Network contributes to Council's Social well-being outcome of "A safe and healthy society where people can achieve their goals".

This contribution aims to provide a Land Transport network for use by residents, public transport, service providers, commercial and industrial traffic. It is designed to also service locations where people gather in larger groups for work, shopping, entertainment or cultural activities.

Rationale

Council provides a Land Transport network as a public service, so that people and goods can move around and through the District in a safe manner that is both affordable to all classes of funders and consistent with the national and regional transportation strategies.

Measures

Refer to 3.1 for measures reported under Level of Service.

Economic Contribution

LTP linkage

The Land Transport Network contributes to Council's Economic well-being outcome of "A diverse, sustainable economy that aims to provide full employment"

Rationale

In addition to urban centres, which accommodate commercial premises of all kinds, where requirements have been or in the future may be negotiated, Council also provides a land transport network to industries such as meat processors, milk producers, timber processors and water bottling businesses. This contribution aims to facilitate employment and the provision of services by privately-owned entities.

Measures

As outlined above.

Environmental Contribution

LTP linkage

The Land Transport Network contributes to Council's Environmental well-being outcome of "The district is working towards a recognised pristine and sustainable environment".

There are a number of unavoidable consequences of the Land Transport Network activity. These are managed to ensure a sustainable service with minimal damage to the environment. A full discussion is provided in Section 6.8.

Rationale

Design and operation of roads and vehicles must be controlled by regulation and active measures so that effect on the natural environment is minimised.

Measures

As outlined above

2.2 Justifying Council Involvement

The provision of Land Transport is vital to the needs and aspirations of all who live in, visit or pass through the District. The Council has established policy and procedures to ensure:

- Retention of the existing network, both in quality and extent (except for paper roads)
- That communities continue to have a real say about their transportation needs
- That the road corridor is recognised as a community asset which should be controlled by Council
- That adequate funding is available for roads to be efficiently maintained at least to existing engineering and safety standards
- Councils involvement and input with the Regional Land Transport programme and State High network within the District

To ensure this and other important infrastructure services are properly managed, a critical mass of professional work needs to be available. This enables Council to attract and retain in the district a core engineering staff with sufficient specialist expertise in a number of engineering disciplines. Losing this core would result in a reduced local response and

compromise our ability to ensure that out-sourced elements of the operations are properly conducted.

Council is in the best position to pursue all options available for working in co-operation with other local authorities to provide effective and efficient carriageway maintenance services.

2.3 Justifying Council Ownership

The Land Transport Network ("Roading") assets are considered to be strategic assets in terms of section 90 (2) of the LGA and are identified as such in Council's Significance Policy.

The Land Transport Management Act provides for certain approved authorities such as regional councils, territorial authorities and approved public organisations to manage the infrastructure. Council is the approved authority for the South Waikato District's public roads (excluding state highways).

Council had a maintenance agreement in place with NZ Forest Products Ltd where it was considered beneficial to allow Contractors "off-highway" loading, and exemption from road user charges. These designated roads are considered "off-highway crossings". The ownership of these assets has some strategic value, and provision exists for the sale of surplus road reserve that is no longer required.

3.0 CURRENT LEVELS OF SERVICE

3.1 Summary of Levels of Service

Following on from the definition of Council's Vision, Well-beings, Outcomes and Strategies in the previous chapter, the relevant Council units responsible for delivering services to the community have defined specific Levels of Service (LOS) that describe what the Customer will receive from a particular activity.

The LOS is associated with a range of Performance Measures that are expressed in both lay and technical terms.

Key Performance Indicators and targets have been developed for the purpose of monitoring and reporting by the service provider, to ensure that the service is being delivered to the defined performance level.

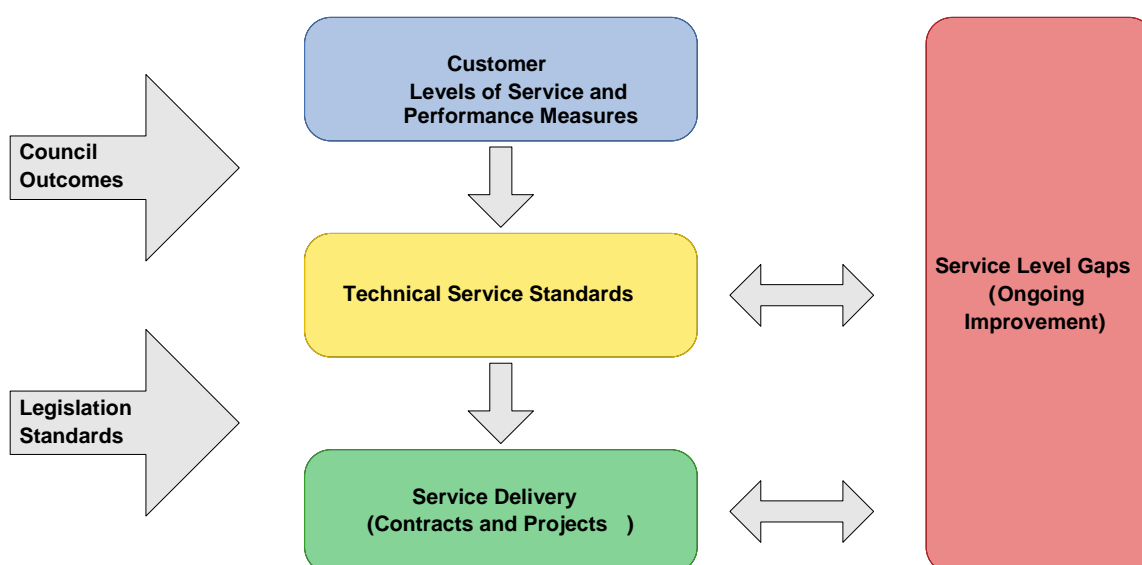
A "Service Level Gap" exists when the reported results of service level monitoring are lower than the service level "target". Customer service level gaps may arise from a difference between perception and expectation, particularly if a service level is expressed in terms of public satisfaction. The results of Council's regular quantitative surveys which include "public satisfaction" can be influenced by factors unrelated to actual measured service, such as 'how well Council communicates its achievements', and the general attitude of respondents to the Council.

To deal objectively with shortfalls requires a clear distinction to be made between perceived and technical levels of service. The service levels adopted in this AMP generally avoid use of "customer satisfaction", reflecting the advice of the Auditor-General in May 2008. The use of "Star Rating" as a Customer Service Level is intended to further reduce the need to refer to satisfaction as a measure of service and to more strongly link high-level measures to technical ones. Because roads are a public place the road user can expect to have reasonable access to roads at all times. Maximising public availability is one aim of asset management.

Technical service standard gaps require actual levels of service to be compared with target levels. From this point, improvements can be developed that may involve altering the parameters of fixed assets or altering process features.

The following diagram illustrates the key aspects of the service level setting process including emphasis of the translation of customer expectations into technical standards.

Figure 4: Key Aspects of the Service Level Setting Process



The process followed is:

- Identify the consumers of the service and other parties with an interest (stakeholders)
- Design and carry out consultation to define the desired service level (preferably including cost of service in this consultation)
- Establish service targets and service achieved over a long period
- Measure service achieved
- Return to stakeholders at regular intervals to check the currency of the standards

The AMP aims to document each of these steps for the Land Transport Network service, identify any issues such as adequacy of consultation, suitability of standards, or service gaps, and describe plans to address or improve them.

3.2 Stakeholders' Wishes & Expectations

Identification of Stakeholders

The following table lists those who have significant specific involvement with the assets (and/or the service facilitated by the assets) and describes their particular main interests. The table is limited to the main issues for key stakeholder groups. 'Public Service providers' include schools, dentists, doctors, hospitals, and other government organisations. 'Asset Managers' are those District Council staff (engineers and others) whose responsibility it is to manage the services made possible by the assets covered in this AMP.

Table 5: Identification of Stakeholders

| External Stakeholders | Main Interests |
|--|--|
| NZ Transport Agency | Joint funding provider |
| Council | Monitor regulator, facilitator advocate, Partner funder, provider, customer |
| Road users | Public health and safety, service reliability, environment, cost |
| Non-resident population | Public health and safety, service reliability, environment |
| Local Businesses/Industries | Public health and safety, service reliability, environment, cost |
| Suppliers | Procurement, technical, payment |
| Police | Customer |
| ACC | Monitor regulator, facilitator advocate, Customer |
| Road Transport Operators/Association | Facilitator advocate, Customer |
| Central Government | Audit NZ, Civil Defence etc.- Public health and safety, service reliability, environment, cost |
| Residents and ratepayers | Public health and safety, service reliability, environment, cost |
| Tangata Whenua | Environment, cultural heritage |
| Utility Service Providers | Liaison, processes and systems in place to facilitate efficient operations for all Utility Service Providers including Telco, Power and energy network operations |
| Community Partners | On-going working with Taupo District Council (road safety/SWATT) to facilitate efficient operations |
| Regional Council | Work with Waikato Regional Council to ensure compliance with legislation |
| Local Authority Shared Services Ltd (LASS) | Provide the local authorities of the Waikato region with a vehicle to develop shared services. Jointly owned by 13 local authorities. Beneficial to the community through enhanced services and/or reduced costs |

Current Levels of Service

| Internal Stakeholders | Main Interests |
|-------------------------|---|
| Elected Officials | Owner of assets, responsible for sustainable service levels under the LGA 2000 |
| Executive | Compliance with regulations, service reliability, quality and economy |
| Asset Managers | As above plus policy, planning and implementation of infrastructure and service management activities (e.g. operations, demand management, maintenance, construction). Safety. Effective corporate support for decision-making, service management, procurement, finance, communications, I.T., staff and other resources |
| Planners | AMP support for Long-term Council-Community Plans. Infrastructure support for current/future district activities (housing, business, recreation) |
| Finance | Proper accounting for assets and for services consumed by asset management activities. Reliable, justified projections of future costs |
| Internal Business Units | On-going work; processes and systems to facilitate efficient operations |
| Customer Services | Systems which minimise and resolve complaints/enquiries about service |
| Information Services | Clarity of technical and budget requirements for systems and support |

The numbers of customer service requests received and miscellaneous enquiries about the Land Transport Network over the past four` years are shown in the table below.

Table 6: Service Requests for Asset Management 2006-08

| Service Requests for Asset Management 1 July 2006 to 30 June 2008 (2 years) | | |
|--|-----------------|------------|
| Department | Subject | Number |
| Roading | Potholes | 37 |
| | General Enquiry | 31 |
| | CBD Footpaths | 48 |
| | Total | 116 |

Table 7: Service Requests for Asset Management 2009-2011

| Service Requests for Asset Management 1 July 2009 to 30 June 2011 (2 years) | | |
|--|-----------------|------------|
| Department | Subject | Number |
| Roading | Potholes | 75 |
| | General Enquiry | 69 |
| | CBD Footpaths | 20 |
| | Total | 164 |

The recent increase in the number of service requests compared to 2006-08 is a good indication that the public are making more frequent use of the service request system to record roading issues. This general increase does not mean that there is a drop in level of service. The three most frequent types of request received over the last two years were street lighting, followed by signs and potholes.

Summary of Consultation Processes 2008 and 2010

Council commissioned Waugh Infrastructure Management Ltd (formerly Waugh Consultants Ltd) in 2008 to organise and carry out an analysis of service levels and overall cost

projections for every asset and service. Each type of asset and associated service level was the subject of an integrated AMP/10 year plan consultation programme with focus groups in the community. This occurred between May and October 2008. The approach taken in that review was intended to be an improvement on the 2005 exercise, which in hindsight gave results that were too generic to provide assurance that there were not going to be significant cost surprises in future for known items.

The aims of the 2008 consultation exercises were to:-

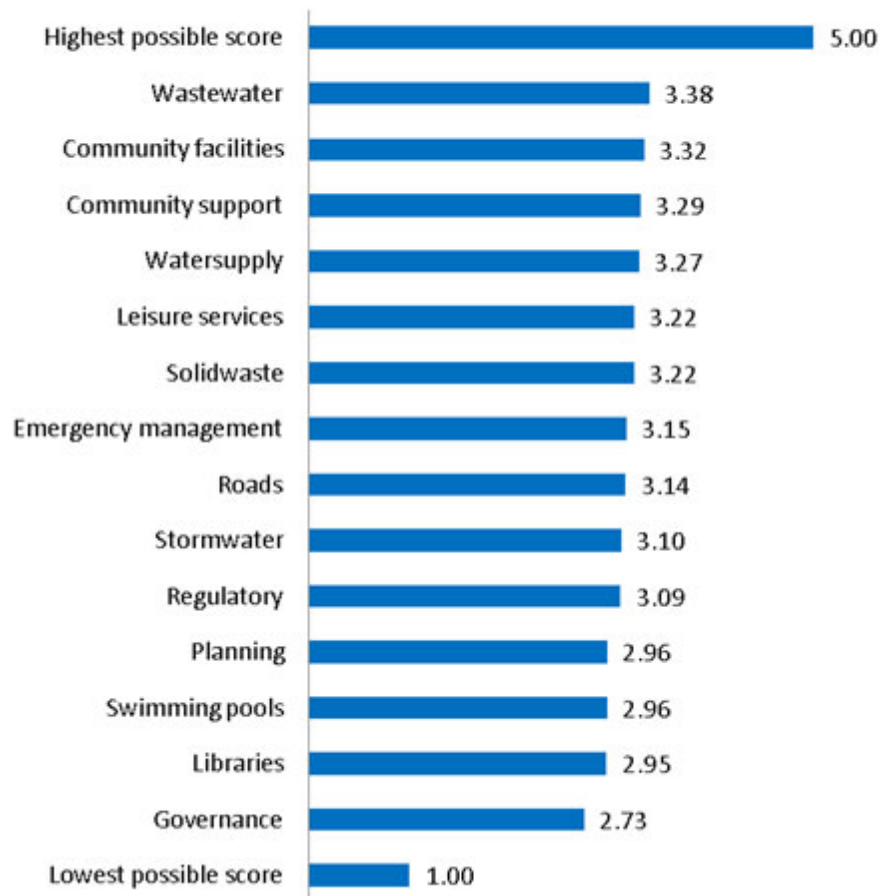
- Ensure that a broad cross-section of the community was consulted at a meaningful level by creating focus group meetings
- Identify those aspects of each service which are important for the respondents
- Canvass the level of acceptance of proposed costs (based on a defined level of service), by asking each respondent to rank their issues, and then say what they were prepared to pay for the service (less, about the same, or more)
- After generating one or more variations in service level relating to the aspects that were identified as important, to seek further feedback on whether the potential change in service and cost was considered appropriate

In 2010, following the consultation for the revised Vision, Well-beings, Council Outcomes and Strategies, described in Chapter 2 of this AMP, Council used the CONNECT panel of residents (which included more than 300 participants) to assess the appropriateness of the current Levels of Service. The results indicated that residents were satisfied with the current LOS for Water Supply.

The panel was presented with a range of 14 activities provided by Council and asked to indicate which should have more money spent on them and which should have less. The range was from 5 (more) to 1 (less). The results for all the activities ranged between 3.38 and 2.73, indicating a high level of satisfaction with the current allocation of funds. As a result, the current LOS for all activities will be retained until a major review of LOS is carried out prior to the 2015-25 LTP process.

The following diagram indicates the results of the 2010 survey.

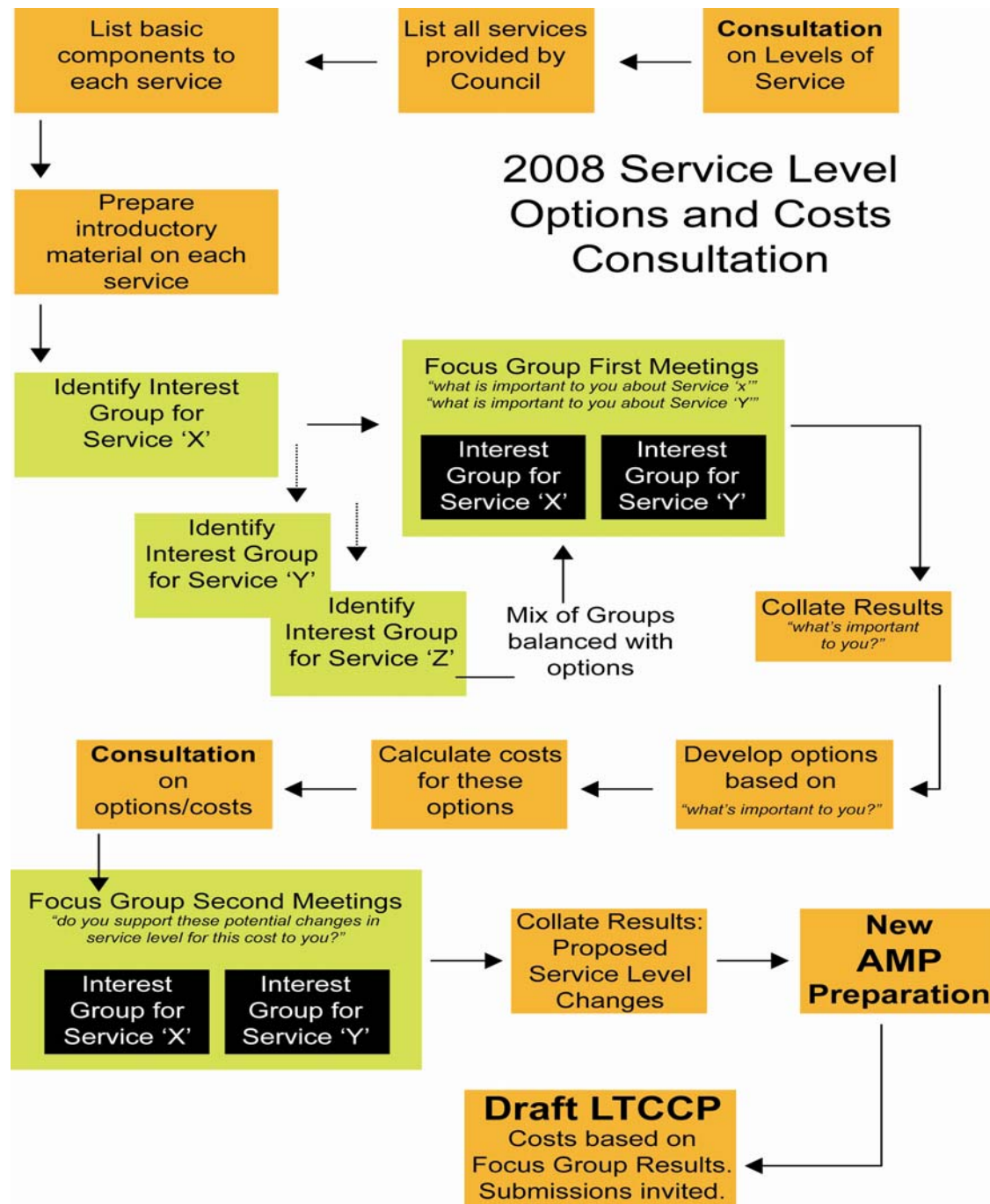
Survey 3 Results: Where should Council spend more time & money?



Of the total response (79 people responded), the averaged result was almost '3' in every case. This was very surprising as '3' indicated that no increase or decrease. The averaged results have therefore indicated that 'Council should carry on doing what it currently does'.

The following description of the process that was used to determine LOS in the 2009-19 AMP's has been retained in this AMP to illustrate how the current LOS were developed.

Figure 5: 2008 Service Level Options and Cost Consultation



Methods and Approaches used in 2008

A relatively high level of responses was obtained by soliciting invitations for council staff to run the focus groups as part of existing regular monthly meetings of community organisations. Where possible, we went to them, rather than expecting them to come to us. The results were therefore considered to be robust and could be used to reliably plan service levels for the following six years.

All focus groups were facilitated by Council staff (rather than consultants) following some in-house training and practice. Invitations were sought to present the material, as much as possible, at regular meetings of local societies and interest groups such as Lions, Senior Citizens, Swimming Pool Users, Youth Council, Forest and Bird Society etc.

Meetings were held wherever possible in the groups' regular venues and additional groups were invited to attend them. Groups were varied and some included local people from community organisations with specific interests, and others with broad interests (such as

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Lions, Senior Citizens etc.). Where specific-interest groups were used, participants were also questioned about services that are unrelated to their interest (such as asking sports groups about the service provided by community halls).

Respondents simply rated each service component as being of low, medium or high importance to them. An issue could be prompted by the list of service components pre-identified for the group; or by some other aspect of the service which was only identified in the group discussion.

The process design is shown in the diagram Appendix B and further describes 'Consultation on levels of service' and 'Consultation on options and costs' steps of the 2009 AMP-LTCCP Development and Review Cycle.

The end result of this information gathering and analysis was the provision of this information to senior management and Councillors, as support for their budgeting and funding proposals and decisions. This gave Councillors more widely-based and sometimes more reliable information based on the opinions of ratepayers than would be available by telephone surveys, various council hearings, or individual opportunities to talk with communities on their own. An important aspect of the process was clearly to identify costs of provision and to make those clear.

The second stage of this process was to report the focus group results in the draft 2009-19 10 year plan that was released for further submissions. This demonstrated the effort that Council had made to find out what ratepayers thought and what people's priorities were; gave confidence that the community's issues were understood; and that the proposals offered after consultation were adequately costed and reasonable. The combination of these factors supported both the maintenance of present levels where indicated and any general adjustments to service level or funding that were proposed in the 2009-19 10 year plan.

It should be noted again that other associated consultation had also been carried out, which had been useful for the AMP's/LOS process; for example, the potential South Waikato Events Centre (adopted by Council in June 2008 as a Council project for the next ten years); the draft Strategic Plan for the Airport (consulted on in 2008), and various Concept Plans and Reserve Management Plans (in draft or finalised). Council had tried wherever possible to incorporate the foreseeable financial impacts of the development and ongoing maintenance of any new initiatives wherever the direction was clear enough to estimate their effects on asset management and associated levels of service activities.

A report on the results of the AMP's/LOS feedback and analysis are included in Appendix B. Around 300 written responses were collected from 19 focus group discussions which included one or more of the various 12 Community Facilities or Property-related services.

Results for the 2008 Focus Group Meetings for Land Transport

Discussed at 3 meetings

29 feedback sheets

- Most important: 'safer roads' at 75% of responses, followed by crossings for high speed roads, and road width for passing trucks
- Next most important: safety education, parking, markings and uneven roads – all rated as highly important by around 50% of respondents
- Those 'prepared to pay more' (67% of responses) had clearly identified the three top concerns
- Despite roading having by far the highest rates charges per property, no responses indicated a desire to pay less
- Six of the seven rural responses were very clear about the importance of roads to them and one expressed concern about lack of footpaths on rural roads
- Additional service aspects identified included restricting heavy trucks in residential areas, enforcement of parking on verges, and a comment about the safety of Tokoroa Memorial Sports Ground entrance

Outcome from 2008 Focus Groups consultation

Council was aware of the safety and width issues. The costs of widening additional roads without subsidy would clearly be very high and would benefit only a few of those who would be paying. Safety aids such as signs, markings and lighting were maintained as often as the national subsidy permits. Road improvements must also be subsidised to be affordable and funding is applied for annually.

In 2008 a Corridor study, periodic Road Safety investigation and Roothing Strategy would be produced. These would support the continuing safety and standard of the District's roads.

The Memorial Sports Ground, school facilities, and potentially the new events centre all sited on the opposite side of SH1 to the general population appeared to be an obvious incentive to improve safety, including for pedestrians and cyclists. Council could look at the cost to provide a pedestrian/cycle underpass of SH1 (e.g. opposite Tokoroa East School). This was obviously expensive but 67% of respondents were prepared to pay more.

Busy vehicle and pedestrian routes near the most-used sports grounds would be worth reviewing – include Strathmore Park.

What do you think? (Second Round Feedback)

Action Costs: What do you think?

Studies to support safety improvements 0.12% or \$1 per year Yes/No

SH1 pedestrian underpass 0.37% or \$3.70 per year Yes/No

Table 8: Second Round of Consultation Feedback Results

| Land Transport | | | |
|--|-----------------|--|--|
| Action | Yes | No | Meeting/Group |
| Studies to support safety improvements | 12 7 (19) | 4 - (4) | Tokoroa Pakeke Lions Federated Farmers – South Waikato |
| SH1 pedestrian underpass | 9 3 (12) | 7* ¹⁴ 4* ¹⁵ (11) | Tokoroa Pakeke Lions Federated Farmers – South Waikato |

*¹⁴ footbridge

*¹⁵ tie underpass to stadium development

2011 Communitrak Survey - Summary of Results

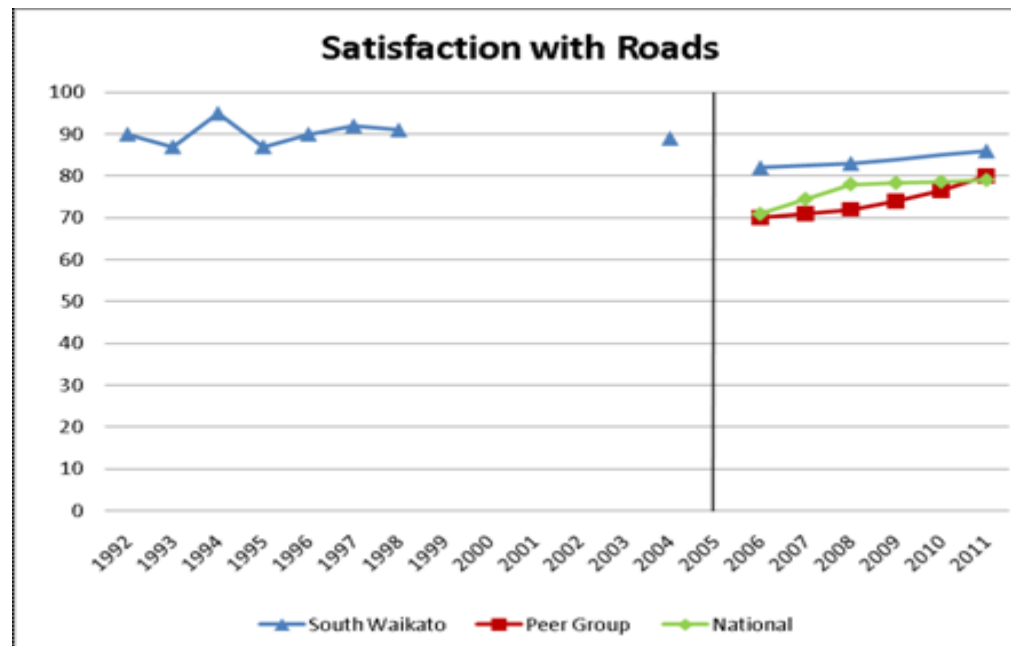
An independent survey of public perceptions, interpretation of Council services and representation was completed by the National Research Bureau (NRB) in 2011 as part of Council's public feedback programme. Similar surveys, known as Communitrak, have been conducted in previous years and they are routinely carried out by a number of councils in New Zealand.

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The 2011 Communitrak survey results and historical trends are summarised below.

Summary of Survey Results in 2011

Figure 6: Results of Road Satisfaction Survey 2011



Satisfaction is above both the peer and national group levels.

- Historically, satisfaction was slightly higher than current rates.
- The monitoring of satisfaction with roads has not been carried out consistently.
- The most frequently provided reason for dissatisfaction is the perceived poor standard & management of repair works.

KEY ISSUES

Council's consistent commitment together with the New Zealand Transport Agency's funding subsidies have ensured a high level of service over a number of years. This ongoing commitment has ensured a safe, efficient and cost effective district network and a responsive service in the event of failure, damage or enquiries from members of the public.

The consistent funding has allowed Council continuity in addressing:

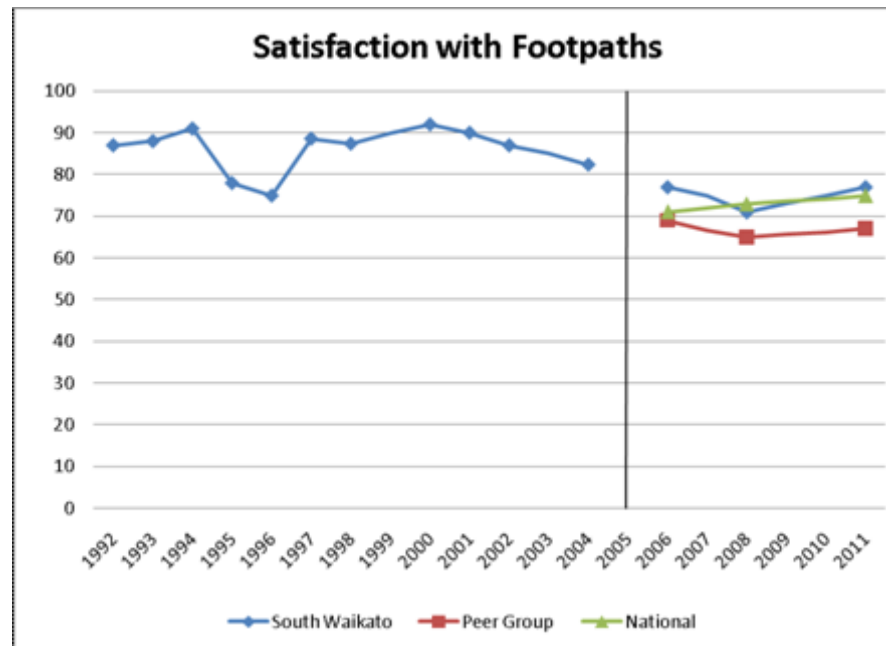
- The reduction of under-width roads in rural areas with a long term seal widening
- programme addressing road safety on dairy and timer routes
- Minor improvement works at high risk intersections
- A continued pavement rehabilitation programme addressing large pavement defects
- Improvement and regularly maintained Street Lighting and Signage.
- An annual reseal programme around 40km/yr.

The "Levels of Service" has also had an impact on the timely response to events by maintenance contractors, and appropriate completion/sign off procedures. The current Contract that is in place has a valuable "performance appraisal" section to focus on customer needs, and areas for improvement over the duration of the works.

The contract agreement includes operating to a Quality Plan to ensure that the work can be properly carried out. Scheduled monthly meetings and reports are used to advise problems, plan future activities and identify future works for longer term planning.

Good partnering between both Council and the Contractor through continuous improvement will ensure that the current level of service is maintained.

Figure 7: Results of the footpath satisfaction Survey 2011



- Satisfaction is currently above both the peer and national group levels.
- Historically, satisfaction was higher than current rates, but current improvement is returning satisfaction to these higher levels.
- The most frequently provided reason for dissatisfaction is that footpaths are perceived to be uneven and not properly repaired.

KEY ISSUES

The footpath renewal and maintenance budget is \$1,330,000 unsubsidised over the next 10 years.

Footpaths tend to be high-maintenance assets since they are easily damaged by vehicles (including heavy verge mowing equipment) being driven over them, by maintenance work on underground services in the street berms and by street tree roots.

Vehicle crossings are part of the footpath asset but are constructed more strongly to sustain these loads and resist accidental damage.

A programme of regular footpath cleaning has ensured the high quality paver surfaces are maintained appropriately and appropriate appearance is preserved. The pavers are washed down and gum and other marks are removed on a regular basis as part of the "litter" activity. Efforts are being made to reduce the slipperiness of clay pavers when icy, by application of chemical treatment to priority lengths of CBD paths each year.

Footpath repairs are carried out where short lengths of damaged asset can be isolated. Typical footpath repairs include cutting out sections of disjointed concrete paths and replacing it, patching of chip seal, smoothing asphaltic concrete surfaces and re-laying loose pavers.

A further issue is the potential for old or very young pedestrians to be injured by tripping on uneven damaged path. These users may represent a significant proportion of footpath traffic, i.e. those who do not drive. Council has initiated a programme to grind down the trip hazard which can be done immediately with reduced repairs to larger area and is also cost effective.

3.3 Externally Mandated Standards

National Strategies and Plans

New Zealand Transport Strategy

The New Zealand Transport Strategy (NZTS) was first published in 2002, and updated in 2008. It provides the Government's over-arching strategic vision for transport in 2040 as follows:

"People and freight in New Zealand have access to an affordable, integrated, safe responsive and sustainable transport system."

It is supported by five principal transport objectives:

- Ensuring environmental sustainability
- Assisting economic development
- Assisting safety and personal security
- Improving access and mobility
- Protecting and promoting public health

To deliver the vision and targets of the Strategy, key components have been identified for government intervention and facilitation by regulation, enforcement, economic incentives, investment, and education as follows:

- Integrated land use and transport planning
- Making best use of existing networks and infrastructure
- Investing in critical infrastructure and the transport sector
- Increasing the availability and use of public transport, cycling, walking and other shared and active modes

This is the first time specific targets have been set for the whole transport sector. The NZTS and the first Government Policy Statement (GPS) on land transport funding are part of a raft of changes to the transport sector set out in the recently commenced Land Transport Management Amendment Act 2008 and are the driving force behind achieving an affordable, integrated, safe, responsive and sustainable transport system.

Government Policy Statement (GPS)

This is a high level government statement on desired outcomes and funding priorities for transportation activities to achieve national and regional targets, for example to increase the use of walking and cycling and public transport.

The GPS (July 2011) states:

The government's overarching goal for transport is: an effective, efficient, safe, secure, accessible and resilient transport system that supports the growth of our country's economy in order to deliver greater prosperity, security and opportunities for all New Zealanders.

The government has three focus areas that are the priorities for this GPS:

- economic growth and productivity
- value for money
- road safety

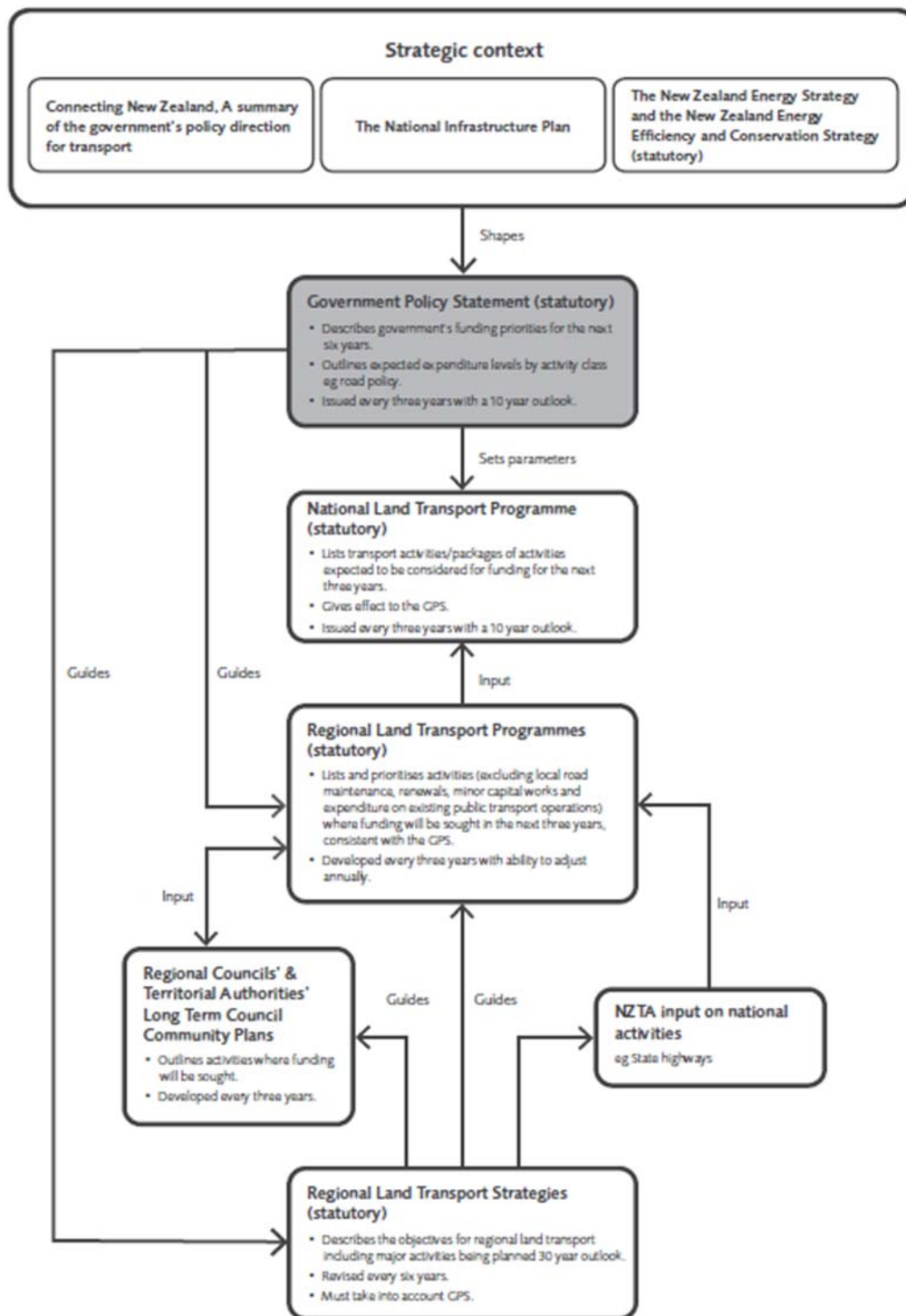


Figure 7: Land Transport Planning and Funding Documents (Source GPS 2011)

The 2011 GPS continues the priority projects commenced in the 2009-12 period including Roads of National Significance (RoNS), and KiwiRail Reinvestment.

National Land Transport Programme

The National Land Transport Programme (NLTP) contains all the land transport activities, such as public transport services and road construction and maintenance, which are expected to receive funding from the NZ Transport Agency.

The NLTP is compiled from the proposed Regional Land Transport Programmes in accordance with available funding.

National Infrastructure Plan

The National Infrastructure Plan (NIP) details the Government's view of the challenges and priorities for infrastructure. The 2011 NIP describes the view to 2030.

A Vision for New Zealand's Infrastructure in the NIP is:

New Zealand's infrastructure is resilient and coordinated and contributes to economic growth and increased quality of life.

More specifically the vision for the Transport Sector is:

A transport sector that supports economic growth by achieving efficient and safe movement of freight and people.

The National Infrastructure Plan sets out seven specific goals for transport infrastructure, all of which have relevance for the National Land Transport Fund investment in land transport.

These goals are to achieve:

- A long term strategic approach to transport planning which maximises the potential synergies between regional planning and central government strategies
- A flexible and resilient transport system that offers greater accessibility and can respond to changing patterns in demand by maintaining and developing the capacity of the network. Improved operational management practice and the use of demand management tools especially in urban areas experiencing significant growth
- A network of priority roads that will improve journey time and reliability, and ease severe congestion, boosting the growth potential of key economic areas and improving transport efficiency, road safety and access to markets
- A continued reduction in deaths and serious injuries that occur on the network
- A public transport system that is robust and effective and offers a range of user options that will attract a greater percentage of long term users
- A rail system that enables the efficient movement of freight and complements other modes of passenger transport and freight movement
- Sea and air ports that are linked to the overall transport network to support efficient nationwide movement of passengers, domestic goods and exports and imports and are able to respond to technological changes and changing international safety and security standards

The National Infrastructure Plan defines What Will Success Look Like as follows

The transport sector is well served by a range of indicators. However, at a national level, the following indicators are most relevant to the critical issues identified in this Plan:

- Reduced incidents of severe urban congestion
- More efficient freight supply chains
- A reduction in deaths and serious injuries
- Better use of existing transport capacity
- Resilient and secure transport network
- More transport mode choices

(from GPS and NIP)

Safer Journeys

Safer Journeys is a strategy to guide improvements in road safety over the period 2010–2020.

The long-term goal for road safety in New Zealand is set out in its vision:

"A safe road system increasingly free of death and serious injury"

To support the vision, Safer Journeys takes a Safe System approach to road safety. This approach means working across all elements of the road system (roads, speeds, vehicles and road use) and recognises that everybody has responsibility for road safety. We have also identified the issues that are of most concern. These are the priorities for road safety in New Zealand. Safer Journeys describes the actions we will take to address these issues, using a Safe System approach that works across all elements of the road system.

The NZ Energy Strategy and the NZ Energy Efficiency & Conservation Strategy

The NZ Energy Strategy, and the NZ Energy Efficiency and Conservation Strategy are statutory documents and are referenced in the GPS.

Released in 2011, the revised New Zealand Energy Strategy provides the government's direction for energy and the role energy will play in New Zealand's economy. It replaces the 2007 New Zealand Energy Strategy. It covers the supply, delivery and use of energy. It offers direction for the energy industry; for energy-related aspects of transport, housing, research and development; and infrastructure. The last section is the New Zealand Energy Efficiency and Conservation Strategy, which provides direction more specifically for energy efficiency, renewable energy and energy conservation.

(from New Zealand Energy Strategy)

The New Zealand Energy Efficiency and Conservation Strategy (NZECS) was written in 2007, and was a key part of the government's response to meeting its energy, climate change, sustainability and economic transformation goals. It has been written as a companion document to, and will give effect to a number of the objectives set out in, the New Zealand Energy Strategy (NZES).

(from EECA.govt.nz)

The New Zealand Energy Strategy 2011–2021 and the New Zealand Energy Efficiency and Conservation Strategy 2011–2016 will add a focus on energy efficiency to these goals. New Zealand's per capita energy use for transport is high compared to many other OECD countries. Improving transport energy efficiency offers major opportunities to improve the productivity of the overall economy.

To do this these strategies will focus on improving vehicle fuel efficiency, and increasing the uptake of low-carbon fuels and technologies. They will highlight the potential to reduce energy use in urban areas through walking and cycling and greater use of public transport. The strategies will place an expectation on local authorities to ensure integrated travel options through their transport and planning roles. Local authorities will also be expected to improve the efficiency of local transport networks and layouts so that people and freight can move about with greater ease and energy efficiency.

(from GPS)

Connecting New Zealand

To be updated when it becomes available (referenced in the Government Policy Statement)

Other References

The following documents influence management of the Transportation activity

- NZTA's Our Strategic Direction 2010-2013 – reinforce the priorities around supporting economic development
- The NZ Transport Agency Rules, Policies and Guidelines (including published manuals) – provide guidance to programming planning and funding
- HRRR Guide

Key Legislation and Regulation– Implications for Asset Management

Legislation is established by Central Government and must be complied with at Local Government Level. Significant legislation and regulations affecting the Transportation activities are provided in the table below. Council must comply with any relevant legislation

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enacted by Parliament. Commentary related to some of the key legislation is provided below.

Table 9: Legislation and Regulation Affecting the Transportation Activity

Different legislation has differing levels of impact on the groups of activities; this is indicated under Impact Range (Broad ***, Moderate **, Limited *)

| Legislation & Regulation | Asset Group Impacted | Impact Range |
|--|----------------------|--------------|
| Animals Law Reform Act 1989 | Transport | * |
| Building Act 2004 (and amendments) | All | * |
| Central North Island Forests Land Collective Settlement Act 2008 | All | * |
| Civil Defence Emergency Management Act 2002 | All | *** |
| Climate Change (Emissions Trading and Renewable Preference) Act 2008 | All | * |
| Climate Change Response Act 2002 (and amendments) | All | ** |
| Electricity Act 1992 | Transport | * |
| Energy Efficiency and Conservation Act 2000 | All | * |
| Environmental Protection Authority Act 2011 | All | * |
| Epidemic Preparedness Amendment Act 2010 | All | * |
| Gas Act 1992 | Transport | * |
| Health and Safety in Employment Act 1992 (and amendments) | All | *** |
| Historic Places Act 1993 (and amendments) | All | * |
| Infrastructure (Amendments Relating to Utilities Access) Act 2010 | All | • ** |
| • Land Act 1948 (and amendments) | • Transport | • * |
| • Land Transport Act 1998 (and amendments) | • Transport | • ** |
| • Land Transport Management Act 2003 (and amendments) | • Transport | • *** |
| • Local Government Act 2002 (and amendments) | • All | • *** |
| • Local Government Act 1974 (and amendments) | • All | • ** |
| • Local Government (Financial Reporting) Regulations 2011 | • All | • * |
| • Local Government Rating Act 2002 (and amendments) | • All | • ** |
| • Local Government Rating Act 1979 | • All | • * |
| • Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2011 | • All | • * |

| Legislation & Regulation | Asset Group Impacted | Impact Range |
|---|----------------------------|--------------|
| • Public Transport Management Act 2008 | • Transport | • * |
| • Public Works Act 1981 (and amendments) | • All | • * |
| • Railways Act 2005 | • Transport • Utilities | • * |
| • Railway and Corridor Management and Safety Act 1992 | • Transport • Utilities | • * |
| • Reserves Act 1977 (and amendments) | • Community • All | • ** • * |
| • Resource Management Act 1991 (and amendments) | • All | • *** |
| • Summary Offences Act 1991 | • Transport | • * |
| • Telecommunications Act 1987 | • Transport | • * |
| • Te Turi Whenua Maori (Maori Land) Act 1993 | • Transport | • * |
| • Transit New Zealand Act 1989 | • Transport | • * |
| • Utilities Access Act 2010 | • All | • *** |
| • Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 | • All | • * |

Major Legislation Details

The legislation that has or will have the most effect on the Transportation Activity is expanded in the following section.

Civil Defence Emergency Management Act 2002

The expectations under the CDEM Act 2002 is that Council's services will function at the fullest possible extent during and after an emergency, even though this may be at a reduced level. In addition, Council has established planning and operational relationships with regional CDEM groups to deliver emergency management within our boundaries.

Transportation is regarded as a critical service and is given special consideration within Council emergency management procedures. Every effort will be given to rearrange services immediately after an event to at least provide limited access.

Health and Safety in Employment Act 1992

The Health and Safety in Employment Act 1992 requires that every employer shall take all practicable steps to ensure the safety of employees while at work by providing a safe working environment; safe work facilities; ensuring all plant used by employees is safe to use; ensuring that employees are not exposed to hazards at work; and develop procedures for dealing with emergencies that may arise at work.

Council must ensure the safety of the public and all workers (including contractors) when undertaking the Transportation Activity.

Land Transport Management Act 2003

The Land Transport Management Act contains particular requirements for content, development of and consultation on the District's Land Transport Programme prior to its adoption by the Council.

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The original Act was amended in 2008 by the Land Transport Management Amendment Act, which introduced the requirement for a Regional Transport Committee (RTC) to develop a three year Regional Land Transport Programme (RLTP). The Waikato Regional Council is responsible for preparing the Waikato programme.

The programme is required to detail at least the first three financial year's activities, relating to road maintenance, renewals, improvements and public transport services, identified by approved organisations (road controlling authorities) in the region. The regional programme is then submitted to the NZTA for incorporation into the National Land Transport Programme; 10-year forecasts are also required.

Under the 2003 version of the Act road controlling authorities were only required to develop detailed individual annual Land Transport Programmes for the submission to NZTA.

The new requirements are covered in Section 12 of the Act as follows:

Overview of regional land transport programmes

- (1) A regional land transport programme allows approved organisations and the Agency to recommend funding for land transport activities or combinations of activities from the national land transport fund that will contribute to—*
 - (a) A region's outcomes that are identified in the relevant regional land transport strategy; and*
 - (b) Any outcomes, objectives and impacts identified by the Crown in any national land transport strategy or the relevant GPS.*
- (2) Regional land transport programmes, which are prepared by regional transport committees (or, in the case of the Auckland region, ARTA), include -*
 - (a) Proposed activities and combinations of activities for 3 financial years; and*
 - (b) An indication of significant activities for the following 3 financial years; and*
 - (c) A 10-year financial forecast.*
- (3) This section is intended by way of explanation only, and if this section is inconsistent with another provision of this Act or any other Act, then the other provision prevails.*

Under the Act, the RTC is responsible for assessing and prioritising proposed transportation activities across the region in relation to both national and regional outcomes and funding priorities. These include, in relation to South Waikato District:

- Government Policy Statement (GPS)
- Regional Transport Strategies

Local Government Act 2002

In addition to the general requirements of the Local Government Act there are some specific clauses that apply to Transportation services:

- Part 6 – Planning, Decision-Making, and Accountability
- The consultation and community outcomes sections of this part are particularly relevant
- Part 7 – Specific Obligations and Restrictions On Local Authorities and Other Persons
- Schedule 10 – Council Plans and Reports
- The requirement to consider all options and to assess the benefits and costs of each option (see Appendix 'F')

Resource Management Act 1991

The RMA 1991 provides an environmentally conscious framework for Local and Regional Authorities to administer powers with regard to development and the management of natural resources. The RMA 1991 focuses on the effects of activities rather than on the activities themselves. SWDC's District Plan provides the rules that apply to subdivision,

land use consent and development in conjunction (where necessary) with Environment Waikato's regional plans.

Utilities Access Act 2010

The Utilities Access Act 2010 provides for a coordinated approach to management of the road corridor. The Act requires the Corridor Managers to undertake a planning and access management role, and Utility operators to comply with an approved code of practice. It is expected that the requirements detailed in the act will be carried out as described in the Code of Practice developed by the New Zealand Utilities Access Group, should it be approved by the relevant Minister of the Crown.

Relevant Regulations Affecting this Activity

National Planning Documents and Standards

- Government's Sustainable Development Action Plan.
- New Zealand Standard SNZHB 4360:2000 'Risk Management for Local Government'.
- The National Land Transport Strategy.
- National Energy Efficiency and Conservation Strategy.
- The NZ Transport Agency (NZTA) Maintenance Guidelines for Local Roads
- The (proposed) National Environmental Standard relating to land transport noise from major roads.
- NZS 4404: 2004 Land Development and Subdivision Engineering
- SNZ HB 2002:2003 Code of Practice for Working in the Road (NZUAG Roadshare).
- National Land Transport Programme
- National Infrastructure Plan 2011

Relevant Regulations

- The Building Regulations 1992.
- The Heavy Motor Vehicle Regulations 1974.
- Land Transport Rule: Setting of Speed Limits 2003 (Rule 54001)
- Land Transport Rule: Traffic Control Devices 2004 (Rule 54002)

3.4 Standards, Codes of Practice and Guidelines

National environmental standards, design standards (AS/NZS ISO), Codes of Practice and Guidelines provide technical direction. National Standards must be complied under the direction of relevant legislation.

National Standards

NZ Transport Agency and AUSTRoads have well-established policies, and procedures which cover all aspects of land transport management, for example:

- Project evaluation
- Funding application
- Standard specifications and drawings
- Competitive Pricing procedures
- Road condition and quality reporting
- Expenditure reporting
- Quality Assurance

AS/NZS Standards

The "Code for Subdivision and Development" AS/NZS 4404 is the principal document defining design requirements. Wherever possible, relevant AS/NZS standards are used as the basis for determining standards of design and construction. An appreciation of the

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design standard used by council is available by contacting the councils Asset Delivery Department.

Council has adopted and modified as necessary the above code in developing its "Code of Practice for Subdivision and Development" to incorporate Council's particular requirements. This includes specific requirements for Land Transport infrastructure and is used as a "means of compliance" for Subdivision, and Development Consents under the Resource Management Act 1991.

A separate document "Utilities Standards and Standard Materials" has been adopted as a controlled document, to specify the technical requirements for construction of infrastructure assets that are undertaken on behalf of SWDC or are intended to be taken over and maintained by SWDC.

Standards and guidelines relevant to the Transport Activity are provided in Table below:

Table 10: National Standards and Guidelines

| Year Released | Technical Discipline: Asset Management |
|---------------|--|
| 2006 | NAMS International Infrastructure Management Manual |
| 2011 | NAMS International Infrastructure Management Manual (released in August 2011, this version will be recognised and used to guide the next update of this AMP) |
| 2008 | PAS55-1:2008 Asset Management |
| 2007 v2.0 | NAMS Developing Levels of Service and Performance Measures Guidelines |
| 2004 v1.0 | NAMS Optimised Decision Making Guidelines |
| 2006 v2.0 | NAMS Infrastructure Asset Valuation and Depreciation Guidelines |

NAMS International Infrastructure Management Manual 2006

This Plan has references to the 2006 guidelines, with significant improvements made in areas including sustainability and Asset Management Policy. A review of the 2011 Guidelines will be made in 2012/13, noting:

- Council staff are currently applying robust asset management practices – refer Audit Report 2009-2019
- PAS55 – the British Standard for Asset Management is expected to become an International Standard. A review of this documents suitability for South Waikato District purposes will be undertaken
- The New Zealand National Asset Management Steering Group have released their 2011 update. It was too late in the AMP review cycle for review and potentially integration of 2011 matters

Model Bylaws

NZS 9201 (model general bylaws) provides guidelines, with standard definitions for all Territorial Local Authorities. The model bylaws relevant to the Land Transport activity are:

- NZS 9201.1:2007 Model general bylaws – Introduction,
- NZS 9201.2:1999 Model general bylaw – Public places,
- NZS 9201.4 1999 Model general bylaw – Trading in public places,
- NZS 9201.25:2007 Model general bylaws – Traffic
- NZS 9201.28:2007 Model general bylaws – Speed.

3.5 Regional Strategies and Plans

Waikato Regional Plan

The Waikato Regional Plan became operative (in part) on 28th September 2007. The Regional Plan implements the Regional Policy Statement.

Waikato Regional Policy Statement

The first Waikato Regional Policy Statement (October 2000) integrates the management of natural physical resources across the Waikato Region

The November 2010 Proposed Regional Policy Statement (PRPS) incorporates the requirements of the Waikato Tainui Raupatu Claims (Waikato River) Settlement Act 2010. South Waikato District Council provided a joint submission to the PRPS in June 2011.

Likely effects of the PRPS on South Waikato District Council asset management are:

- Waikato River Authority requirements regarding taking water and discharging treated effluent
- Allocation and use of fresh water
- Adapting to climate change
- Integration of transportation and land use
- Built Environment requirements

These effects will be monitored by Council as the PRPS is further developed following submissions / hearings and becomes operative.

3.6 South Waikato District Council Strategies, Plans and Bylaws

Council Strategies

The following Council Strategies have impacts and are considered as part of the Transportation Activity

- Economic Development Strategy
- Procurement Strategy
- District Land Transport Strategy
- Walking and Cycling Strategy 2004
- Financial Strategy

Council Planning Documents

The following Council Planning Documents have impacts and are considered as part of the Transport Activity:

- South Waikato District Long Term Plan 2012-22
- South Waikato District Plan
- Concept Plans for the four urban areas
- South Waikato District Council Code of Practice for Subdivision and Development (see above)
- South Waikato District Council Asset Management Plans

Council Bylaws, Policies and Standards

Section 146 of the Local Government Act 2002 provides for a Territorial Authority to make Bylaws in its district for the purposes of managing, regulating against, or protecting from damage, misuse, or loss, or for preventing the use of; the land, structures, or infrastructure associated with the Transportation Activity.

South Waikato District Bylaws

The Land Transport activity is governed by the following bylaws:

Current Levels of Service

- **Public Places Bylaw 2011** which addresses such matters as stock crossings on public roads, animal controls, carrying on of offensive trades, and hoardings
- **Parking and Traffic Bylaw 2008** which governs all traffic-related activities such as parking restrictions, restricting certain classes of vehicles from certain roads, and associated enforcement provisions
- **Speed Limit Bylaw 2008** to set speed limits on local roads in accordance with the Land Transport Rule: Setting of Speed Limits 2005

The Council has appointed parking wardens for the purpose of policing the provision of this Bylaw; in particular time limited parking. The Police also have a responsibility for enforcing the Bylaw.

Zonings and Easements

Land Transport Network infrastructure is installed in road reserves as of right, but these are shared with other designated utility operators. Council controls the location of infrastructure and also the programming, quality and timeliness of reinstatement.

Both Council and NZTA have the ability to over-ride other zoning requirements to form public roads.

Generally the only parties that Council allows to have easements within the designated road corridor are other utilities in accordance with their enabling legislation.

Council also controls building "yard requirements" on narrow streets where "building line restrictions" may be registered against the title of individual properties.

Road Designations

As a road controlling authority, Council has a statutory right to form and maintain public roads. Where appropriate, land required for road can be "designated" and purchased to achieve the required outcome. This power may be used not only for providing new roads, but also for realignment of existing roads to improve safety. The process is called a "notice of requirement" under Part VIII of Resource Management Act 1991 where Council is a "requiring authority".

3.7 Assets Constraints to Level of Service

This section lists constraints imposed by the existing assets, which may affect current or future levels of service, and explains why each is relevant.

Capacity

Existing road widths, topography and alignment limit the number of vehicles that can be carried on the carriageway in safety. Narrow road widths restrict passing or overtaking, requiring vehicles to pull over on to the shoulder to enable safe passing manoeuvres. This is a particular safety issue for heavy and wider vehicles on narrow rural roads.

Reliability

The following comments relate to availability of the Land Transport network and are not intended to cover major disruptions such as seismic activity.

Roads design includes consideration of stormwater drainage. Where the road forms a barrier to stormwater flow, culverts are constructed of sufficient size to permit a given rainfall event to occur without flooding. It is not economic to provide for all possible storm events. Therefore, at times roads may serve as overland stormwater flow paths or ponding areas, and become impassable by traffic for short periods.

There is potential for roads to be damaged by flooding for the same reason. This is a limitation based on the chosen construction materials, which are susceptible to erosion by fast-flowing water, although common to NZ Transport Agency and all other local authorities.

Response planning for major events is the subject of an Emergency Response Plan prepared under the guidelines of the Risk Management Plan.

Road Roughness

The degree of roughness of a road affects user comfort, fuel economy, and in some cases, maintenance cost. Road roughness is also affected by construction methods, seal joints, utility trenches, subsidence, and materials. While paver-laid asphalt concrete has the potential to offer a very smooth ride, it is not economic to use this construction option on the District's roads due to its inflexibility and relative cost. Roughness is monitored regularly. The service levels are given in Section 0 and the issues discussed in Section 0.

Environmental Performance

Significant issues arising from operation of SWDC's Land Transport Network system assets which are likely to impact on the environment include the concentration of sediment carrying pollutants, spillages of insecurely-loaded goods including chemicals, spillage of fuel in accidents etc. The road drainage system is limited in its capacity to collect and retain these pollutants. This is discussed further in Section 0, Environmental Contribution.

Other Capabilities

While safety performance is a service level that can be measured, there are many vehicle, weather and driver factors that influence this. Land Transport assets, including traffic safety assets, while designed to high standards, are limited in their capacity to prevent serious injury and damage to property when these other factors come into play.

3.8 Council's Service Level Goals

Council's Service Levels

Council has adopted a series of measures which are intended to indicate how well Council's services contribute to the community's well-being. Both Customer Service Levels and Technical Standards are used.

In some cases, Customer Service Levels are expressed in terms that are easily understood, similar to the 'Qualmark' motel rating system. These will help customers to understand the relationship between service level and cost. 2-star = affordable but basic; 5-star = expensive, high standard.

The following table lists the current target levels of service and some proposed new measures which are intended to clarify these or confirm that they are being achieved.

The new measures are designed to give a realistic benchmark while accepting that in some cases, a 100% target is not practical. Due to varying and particular financial, site and system constraints, there will always be an occasional repair activity that cannot be completed within a set time.

Maintenance contract response times are applied to the following events.

- (a) Storm damage
- (b) Flood damage
- (c) Slips and Debris Accident clean ups
- (d) Spillages
- (e) Removal of abandoned vehicles
- (f) Reporting on all incidents

Table 11: Land Transport Service Levels

| LAND TRANSPORT SERVICE LEVELS | | | | | | | | | | |
|---|---|-------------------------|--|--|---|---|-------------------------|-------------------------|--------|--------|
| LTP References | Asset Management and Performance Reporting Measures | | | | | | | | | |
| | Customer Service Levels | | | | | Technical Standards | | | | |
| Community Outcome | What is Measured | Data Source | Targeted Performance | | Notes on Proposed Levels of Service | What is Measured | Data Source | Target/Past Performance | | |
| | | | Baseline 2010/11 | Ten Year Target | | | | 2009-11 | 2006-8 | 2003-5 |
| CO 4 Growing economy-Existing Businesses and industries are retained and supported | * Road quality - At least 70% of Council's roads (by length) will meet the New Zealand Transport Authority's (NZTA) target for roughness and not more than 15% of road length shall exceed the NZTA "maximum target roughness" | Condition Surveys, RAMM | 92% result, with 4.3% exceeding the maximum acceptable standard 2007/08 year | 70% threshold reached and no more than 15% exceedance of NZTA guidelines | 70% is considered to be a sustainable target given the available resources and community needs. Roughness is a standard that rates a smooth surface as zero and an upper limit for most purposes as 400. Urban roads are in general rougher than rural roads due to the number of manholes and works that interrupt the surface. Because of the lower speeds on local roads (non- arterial or connecting) in particular, a smooth road is less critical. Low use rural roads are also likely to feature in the 30% and 15% exceedance of the guideline. This includes those that aren't sealed. Priority for providing a smoother surface is set by safety considerations and usage | Injury Crash Levels relative to National averages (Reports where road factors relevant) | NZTA Group D statistics | Less than Control group | nm | nm |
| CO 4 Growing economy-New Business start-ups are encouraged | | | | | | | | | | |
| CO 5 Diverse economy- Tourism is developed as a key industry and the potential of the Waikato River is realised | | | | | | | | | | |
| CO 7 Engaged | | | | | | | | | | |

| LAND TRANSPORT SERVICE LEVELS | | | | | | | | | | |
|--|---|-------------------|-----------------------------|---|--|---|--------------------------------|----------------------------------|--------|--------|
| LTP References | Asset Management and Performance Reporting Measures | | | | | | | | | |
| | Customer Service Levels | | | | | Technical Standards | | | | |
| Community Outcome | What is Measured | Data Source | Targeted Performance | | Notes on Proposed Levels of Service | What is Measured | Data Source | Target/Past Performance | | |
| | | | Baseline 2010/11 | Ten Year Target | | | | 2009-11 | 2006-8 | 2003-5 |
| community- Quality infrastructure to support communities and businesses | | | | | | Length of sealed roads (30 – 250vpd) more than 1m underwidth is currently 15.8km Future targets are listed | RAMM data | 2009/10 13.8km 2010/11 11.8km | nm | nm |
| CO 2 Safe and healthy community- Transport services are safe and efficient | Responsiveness- 90% of pot holes on Council’s roads are required within one week of notice with the remaining 10% addressed within a month of notice | CSR’s, Contractor | 100% achieved 20010/11 year | A performance level of 90% compliance to be met | 100% compliance within a week may not be viable or sustainable over time, because of the work programme commitments and available resources. Also repairs may be in stages, with an initial filling and then a final sealing. Time has to elapse between the two to allow settling of the material | Council Contractors comply with Transit NZ COPTTM Local Roads (temporary sign safety) standards | Annual Inspections of 10 sites | 90% comply | nm | nm |

Current Levels of Service

| LAND TRANSPORT SERVICE LEVELS | | | | | | | | | | |
|-------------------------------|---|---|----------------------|----------------------------------|---|---|---|-------------------------------|-----------------|--------|
| LTP References | Asset Management and Performance Reporting Measures | | | | | | | | | |
| | Customer Service Levels | | | | | Technical Standards | | | | |
| Community Outcome | What is Measured | Data Source | Targeted Performance | | Notes on Proposed Levels of Service | What is Measured | Data Source | Target/Past Performance | | |
| | | | Baseline 2010/11 | Ten Year Target | | | | 2009-11 | 2006-8 | 2003-5 |
| | | Satisfaction with the roading network- Council receives fewer than fifty complaints about the road network per year, (includes footpaths, signage, street lighting and road markings) | CSR's | Received 9 complaints in 2010/11 | Fewer than 50 complaints received in any one year | This was reduced from 100 complaints as the Council was clearly operating well within this measure, but it still needs to calibrate it over at least an additional year or two to set a realistic level measure | Variation between planned and actual years expenditure is within following limits - Maintenance Capital works | Year end Financial statements | + - 3% + -5% | |

NZ Transport Agency Land Transport Programme Relationship Protocol Performance Measure and Targets

NZ Transport Agency is the main provider of funds for these activities. The Council currently obtains 49% financial assistance from NZ Transport Agency for road maintenance and Council's objective is to maximise the use of these funds to provide roads that meet the expectations of the community and land transport users.

The level of this subsidy is reviewed by the NZTA on a three-yearly basis. Currently our maintenance funding subsidy percentage is 49%. Improvements funding is paid at 59% and community coordination (road safety education) funding is set at 75%. The level of base assistance takes into account the size of Council's roading programme and the net equalised land value (NELV). Council has been informed by NZTA through the review of the funding assistance rate that the base rate has increased by 1%. This will come into effect in the next three year programme starting in 2012/13 and while there is a 1% increase across both maintenance and renewals there is a significant drop to the community coordination subsidy. There is a reduction of 15% and Council will fund the shortfall to continue with the planned programme.

A programme of maintenance and improvements is submitted for approval to NZ Transport Agency on a year block programme. Council's share of funding is provided for in its Annual Plan, LTP and Financial Forecast.

The Council enters into an annual agreement with NZ Transport Agency called a "Land Transport Programme Relationship Protocol" to facilitate:

NZ Transport Agency achieving its principal objective, to "contribute to an affordable, integrated, safe, responsive, and sustainable land transport system."

The local authority achieving its land transport obligations in Part XXI Local Government Act 1974, and Land Transport Management Act 2003.

The obligations of each party are set out in the agreement as follows:

- NZ Transport Agency agrees to provide to the local authority funding as specified in the National Land Transport Programme
- The local authority agrees to supply the outputs and capital projects as specified in the National Land Transport Programme, unless any such output or capital project has been suspended. The parties agree to comply with the terms and conditions of this Agreement
- The functions, responsibilities, manuals and memoranda which are applicable to the Agreement and performance measures applicable to each party are scheduled. The following NZ Transport Agency manuals contain the core policy and procedures to be followed in the observation of the Agreement
- Procurement Manual. This Manual contains the policy and procedures to be followed for the development and management of the National Land Transport Programme including the procedures to be followed for the awarding of all contracts for physical works and professional services performed as part of the National Land Transport Programme
- Project Evaluation Manual. This Manual contains the process to be followed for evaluating whether each new output or capital project and any options are economic and determine the basis for the funding priority
- RAMM Road Condition Rating and Roughness Manual. This Manual contains standards and guidelines pertaining to road condition rating and roughness for road assessment and maintenance management. Parts I and II are standards and therefore mandatory
- Evaluation Procedures for Alternatives to Roothing. This Manual contains the procedures to be followed for evaluating capital projects that have alternative to roading features

Current Levels of Service

- Standards and Guidelines Manual. This Manual contains a list of both the mandatory manuals listed above and guidelines. The standards include Guides to Traffic Engineering Practice; Land Transport Safety Audit Procedures; Land Transport rules and applicable NZ Standards

The Council's performance measures in terms of the Protocol for 2010/11 are detailed in the table below.

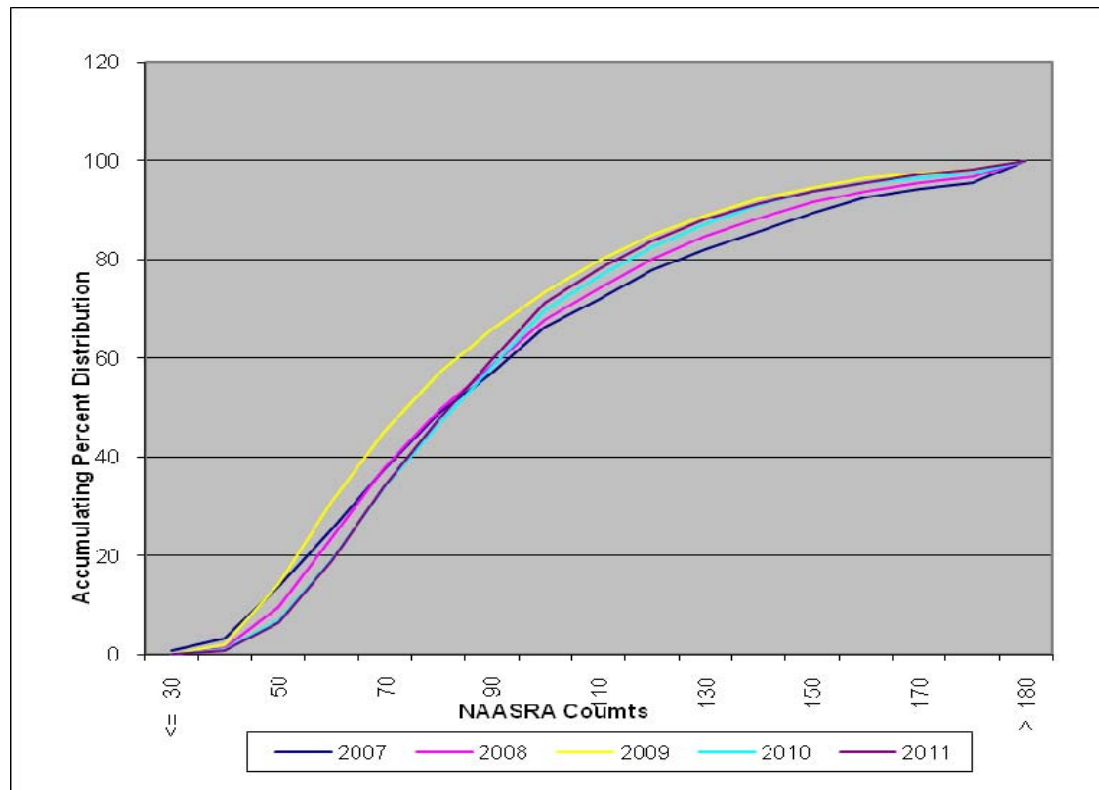
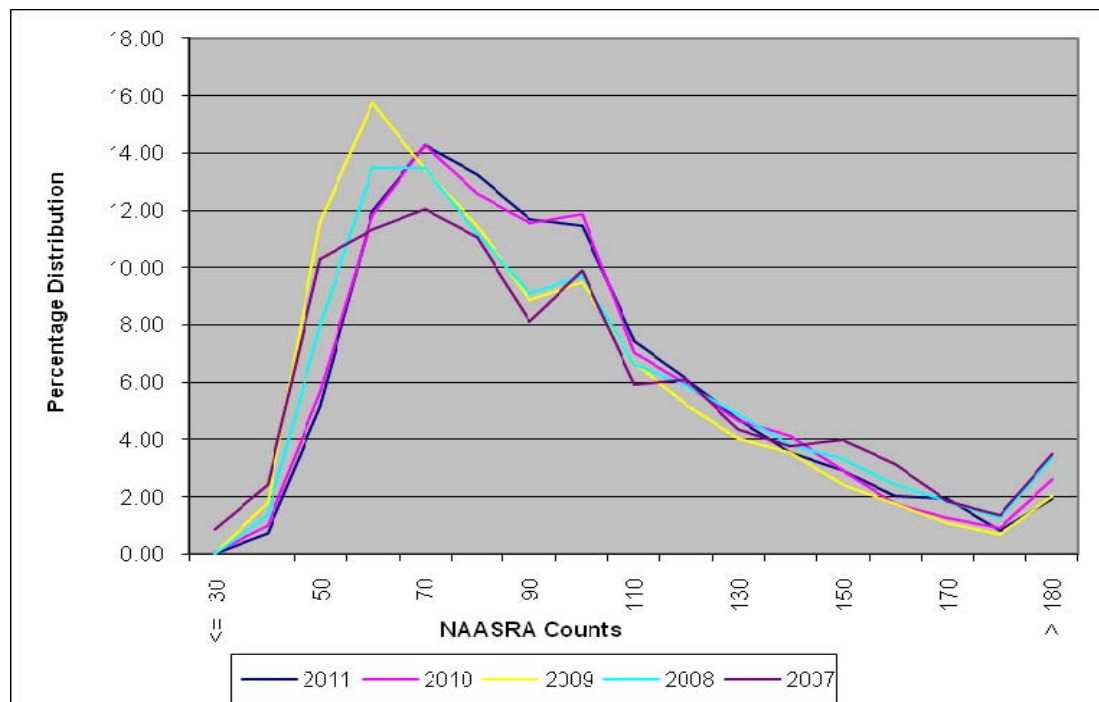
Table 12: Performance Levels

| Performance Measures | TARGET |
|---|------------|
| Accuracy of claims made by the Approved Organisation to the Agency | 100% |
| Percentage of issues raised in audits by the Agency that are resolved within agreed time frames | 100% |
| Percentage compliance with mandatory standards in the Agency's Standards, and Guidelines | 100% |
| Percentage of contracts let that comply with procurement procedures approved by the Agency | 100% |
| Percentage compliance with the reporting requirements set out in the Agency's Procurement Manual | 100% |
| Percentage variation between planned and actual years total expenditure On routine and periodic maintenance of roads. | -3% to +1% |
| Percentage variation between planned and actual years expenditure on new and improved infrastructure. (Where "planned" is the approved allocation resulting from the February review of the NLTP) | ± 5% |

(See NZ Transport Agency Protocol document for definitions)

The average roughness across all roads, urban and rural is a management issue. Roughness had been reducing slowly over the past 20 years, but an upward trend is now appearing. The network average is currently 100.5, which is worse than the national average.

The graphs below show how the roughness distribution has been tracking under the old "seal smoothing" capital improvement programmes. The proportion of roads with lower roughness has reduced, and the proportion with higher roughness has increased. The improvement trend has stopped as the network as a whole matures, and urban streets slowly deteriorate in terms of "roughness". Roughness is a traditional measure of pavement performance, but is not considered a top priority by road users.

Figure 8: NAASRA Roughness vs. Accumulating Percentage Distribution of Network**Figure 9: NAASRA Roughness Percentage**

RAMM rating and roughness reports, aided by visual inspections, indicate that, overall, rural roads are in acceptable condition, and are maintained to an adequate level of service. It is not clear how the deteriorating "roughness" in urban streets can be addressed without attention to trench restoration practices, reducing resurfacing joints (by longer renewal lengths), and concentrating pavement rehabilitation efforts on rough, failing streets. The technical measures adopted will allow for targeted monitoring and improvement strategies over the planning period.

Service Level Gaps

Sealed Road Widths:

Several rural roads still have narrow (3.5 – 4.5m) seal widths which, while they do not allow passing opportunities for heavy vehicles, the likelihood of meeting oncoming vehicles would be rare. These roads are typically short lengths with adequate sight distances. The focus now is to ensure that narrow through roads are sufficiently wide enough to accommodate travel in both directions, and programme widening on heavier trafficked roads. Although the goal is 2 – 3km per annum, largely funded as Minor (safety) Improvements, “Associated Improvements”, or as non-subsidised works when financial assistance cannot be agreed with NZ Transport Agency, Council through the LTP process has made the decision to postpone this activity for the last three years of the LTP as a result of budget constraints and will resume in the fourth year of the LTP. This will mean the projects that have been identified will be deferred until such time the budget constraints are lifted.

Seal Extension:

Council plans to continue reducing the small length of unsealed roads until there are few serving any homes. While there is not a specific service level requirement for all district roads to be sealed, the benefits of seal extension are significant to individual rate payers. The current goal is 400 - 450m every two year period, as funding allows.

Service Response Times: Response times were not measured or reported prior to 2008. Reporting has improved during the planning period now that there is a link between the Council NCS “service request” system, and the office of the principal road maintenance Contractors. The link is necessary to establish “real time” responses, and signing off requests when actions are completed.

Footpath Requiring Rehabilitation: The “condition rating” of footpaths indicates a significant improvement between the surveys in 2003, and 2008. Council continue to maintain and renew footpaths that have been identified in the survey. A three year renewal programme is in place to address the capital improvement programme. The next footpath “condition rating” will be undertaken in 2012. Council has also undertaken alternative treatment addressing trip hazardous by grinding down raised joints on concrete footpaths thus getting value for money rather than have them replaced. This treatment is pro-active resulting in a large quantum of working being completed within a short period of time and cost effective.

Road Roughness Standard – The annual surveys show average roughness of 100.5 NAASRA counts on the total network. The target measures which are promoted for the planning period will provide a goal for the higher standards in the NZ Transport Agency maintenance guidelines.

3.9 Balancing Conflicting Needs

Through the functions of the District Council, conflicting demands are balanced with each other.

To safeguard the infrastructure and guarantee Council’s ability to build and maintain it, use of land is controlled by district plan designations and easements.

The relationship between the cost of construction and the quality and availability of the infrastructure is controlled by bylaws and standards. These include the potential use of roads as flood flow paths in extreme rainfall events.

The use of the Land Transport network by motorists is controlled by traffic and motor vehicle regulations which balance speed, safety, noise and pollution with the access needs of local residents. All of these controls have the effect of limiting or sharing access to, and responsibility for the Land Transport Network infrastructure. They therefore affect all members of the community for the benefit of the public in general.

3.10 Balancing Competing Needs

Road renewal and new work expenditure estimates are prioritised using detailed benefit-cost analysis. The following are examples of how the competing needs of users are balanced by this approach. All aspects are considered in the assessment of each proposed project.

Volume Capacity

Speed and delay issues for heavy commercial traffic and lighter, faster passenger vehicles are balanced by providing overtaking lanes, shoulder maintenance or local pavement widening.

Strength Capacity

The pavement strength required for heavy commercial traffic is a critical design factor. In providing it, authorities are subsidised by national funding taken from sources that include road user license charges and fuel tax. These collect more revenue from commercial users than from private car owners.

Safety and Cost

Proposed improvements which deliver safer road conditions are assessed for funding on a benefit-cost basis which is derived from the deficiency database. The cost of improvements is balanced against the projected reduction in the cost of [injury](#) accidents. It is not possible to value all aspects of road accidents, and while there will always be arguments about the intangible costs, at least a mechanism exists to make comparisons for tangible issues.

Operator Cost

Roughness measurements are taken into account in determining benefit of reconstruction and smoothing treatments. The algorithm links pavement shape to rolling resistance and traffic counts, so that funding is targeted to uneven, high-volume roads.

Time savings are also taken into account in determining benefit of widening and realignment.

Use of Road Corridor

The Land Transport function of Council controls competing needs of other utilities such as telephone and data, power, water supply and drainage for use of ground in the road reserve.

Council has voluntarily implemented the National Code of Practice for Utilities Access to the Transport Corridors since the initial 'Implementation Version' was released in 2009. This code has been developed with the objects of developing a nationally consistent process, formalising current industry best practice and minimising Third Party Damage problems. It is developed within the context of the Utilities rights of the access to the Road Corridor and the Road Corridor Manager's rights to set reasonable conditions. All requests by Utility operators will be managed through the Road Opening Notice put in place by Council. The cost of these applications is included in the Council's Fees and Charges 2010/11

Refer to www.nzuaq.org.nz for background to this initiative.

3.11 Balance Against Sustainability

Impact of Growth

Demand projections are covered in the following section. In summary, at present and for the foreseeable future, Council should not require many additional roads, intersection capacity improvements, parking, footpaths or associated infrastructure.

Having stated this, it is possible that the demand arising from a new large industrial customer, land conversion, or rapid growth in demand from an existing one, could require a review of the position.

Current Levels of Service

Funding for renewal of old assets is provided by allowing in the cost of the service for the depreciation of these assets. Funding for new assets, where these service new homes or industries is provided for in part by having them built or contributed to by developers and vested in the Council.

The challenge will be obtaining adequate revenue, at a level that the community agrees is financially sustainable in the current economic and population climate, to provide the required capacity or service level improvements in advance of development demand or improved service level needs and timeframes.

Role of Private Assets

The role of private assets within the Land Transport network activity is significant within the District, principally in regard to forest roads that are either owned or predominantly used by Matua Plantations (Hancock Forest Management), and Carter Holt Harvey Properties Ltd. The Council has no direct responsibility for the private roads and Maori roadways in the District, but monitors their use where it can significantly affect adjoining local roads.

The Council maintains a liaison with the major forestry company, Hancock Forest Management (NZ) Ltd., on their programmes for clear felling and logging truck operations that impact on local roads. The company's preference for using their own internal roading network is to the benefit of ratepayers and road users in the District, but commercial pressures may change that position at any time. Forestry and quarry access roads require a higher level of maintenance generally but increased milk tanker size and increased milk flow has also required increased maintenance on farm access roads generally.

The forest roads fall into two broad categories:

- Private roads owned and maintained by Hancock Forest Management. These are generally accessed by permit through gates at the end of public roads.
- Public roads over which Hancock FM and their Contractors have assumed the right to operate non-regulation axle loads. The predecessors to Hancock (CHH Forests Ltd., and NZ Forest Products Ltd.) had an agreement with Matamata County Council to maintain 45.7 km of the rural road length and have the right to use off-highway loaded vehicles on those sections. The roads were considered "off highway crossings" and granted in terms of old road transport regulations. The maintenance of these roads is not eligible for NZ Transport Agency financial assistance

The sealed and unsealed roads maintained by Hancock FM amount to almost 7% of the length of the District's Land Transport assets. The Regulations covering "off highway" use of public roads has moved from the "Heavy Motor vehicle regulations 1974" to the "Land Transport Rule Vehicle Dimensions and Mass 2002" – ref section 5 of the Rule, and www.landtransport.govt.nz/factsheets/13.html for further information.

The standard of sections of private road that have been developed by Forestry Companies and others along "unformed public roads" raises a question of Council responsibility for safety and maintenance liabilities. Council would favour the sale of some of these roads to the occupier/s of adjoining land, or allowing them to be vested as "formed" public roads e.g. sections of Puriri, Mossop, Redwoods, and Maraetai (Jack Henry) Roads. To date there has been approximately 32 km of road vested to Council during the last two years. This include road formed during Forestry to Dairy conversions. A database of unformed roads has been developed in the GIS records.

Other classes of private assets related to the Land Transport activity are as follows:

Stock underpasses, which require a permit from Council and is subsidised by to the value of \$5000, 00. The presence of an underpass is recorded



as an encumbrance on the title of the adjacent land. Although maintenance (and renewal) of the stock underpass is the responsibility of the land owner Council will initiate an inspection of the stock underpasses as part of the bi-annual bridge inspection. Refer Council "Stock Crossing" policy (to be reviewed).

Encroachment fences (private fences built on road reserve with Council's permission to extend grazing areas). These are subject to conditions both on the material of the fence, and on maintaining the enclosed land to prescribed standards. Refer council "Roadside Fencing" policy.

There are a few instances of **pipelines** running under the road, typically for industrial and farming use. These are subject to easement requirements under Sec 338, Local Government Act 1974.

Trees growing on private land that encroach on road reserve are usually treated in accordance with normal property rights.

Vehicle crossings are required to be formed to each allotment having road frontage in accordance with Sec 18.4.2.3 SWDC Operative District Plan. See also the requirements in Sec 321, Local Government act 1974. The construction and on-going maintenance remain the responsibility of the land owner(s) gaining access over the formed crossing point. Rural entrance culverts constructed to Council standards (Figure 17 or Figure 18 Drawing 1882) are vested on completion and become part of the roading asset. A rural/urban vehicle crossing standard and guidelines implemented by Council sets out the guidance to all vehicle crossings in the District.

Gates across public roads can be permitted under Sec 344, Local Government Act 1974. In general terms they cannot be locked, and the public have a right "to pass and repass" under Common Law. The gates on Leslie (and Cecil) roads are particular examples.

Fences : The provisions of the Fencing Act 1978 do **not** apply to boundary fencing on "roads", national parks, railway land; "marginal", and "esplanade" strips. See also Sec 289 Local Government Act 1974. Special care should be taken to ascertain liability on "walkways" which can be "Pedestrian Access ways", part of the adjacent street, or an access strip to school, reserve, or other parcel of land.

4.0 PLANNING FOR FUTURE NEEDS

4.1 NZ Transport Strategy: Principles

Sustainability

To ensure that transport is underpinned by the principles of sustainability and integration, transport policy will need to focus on improving the transport system in ways that enhance economic, social and environmental well-being, and that promote resilience and flexibility. It will also need to take account of the needs of future generations, and be guided by medium- and long-term costs and benefits.

Integration

Transport policy will help create an efficient and integrated mix of transport modes. To facilitate integration, co-operation and collaboration between stakeholders will need to be encouraged. Transport policy will also need to ensure the efficient use of existing and new public investment.

Safety

To ensure that transport is underpinned by the principles of safety and responsiveness, policy will need to ensure high standards of health, safety and personal security for all people, including users, workers, and operators. It will also need to ensure there is a robust health and safety framework, complemented by an emphasis on individual and business responsibility.

Responsiveness

The diverse needs of urban and rural communities need to be recognised. Those who use transport, and those who are affected by it, will need to be encouraged to participate in transport policy development. Transport policy will need to foster the government's goals for partnership between the Crown and Māori; between central government and local government; and between government and citizens and communities, including business.

4.2 Government policy Statement:

The purpose of the GPS "is to detail the Government's desired outcomes and funding priorities for the land transport sector" – which includes coastal shipping. The newly announced Policy (July 2011) is effective from 1 July 2012, and guides the National Land Transport Programme (NLTP) over a three year period.

The GPS three priorities 2012/13 – 2021/22 are:

- "Economic growth and productivity"- This GPS continues and reinforce the focus on increasing economic growth and productivity as the primary objective for land transport expenditure. The expectation is that land transport funding will be directed into high- quality projects and activities that will support improved productivity and economic growth.
- "Value for money"- To gain the most from our land transport investment, GPS 2012 requires a sharpened and broadened focus on value for money. In doing so it raises expectations beyond those set by GPS 2009 which tend to focus on value for money at the level of prioritising projects and activities for funding. In contrast GPS 2012 will also require demonstrable value for money across all aspects of the development, delivery and management of the National Land Transport Programme.
- "Improving road safety"- The Safer Journeys strategy sets out a changed approach to lowering the level of death and serious injury on our roads. This approach, the Safe System, require effort to be focused across all elements of the road system(roads, speed, vehicles and road use) and recognises that everybody has a responsibility for road safety.

4.3 Summary of Current Service

Road Safety – Engineering, Education, Enforcement

Engineering

The engineering aspects of road safety are concerned with the safe design construction and maintenance of roads to provide an appropriate level of protection for the road user. This aspect is fully covered this AMP and the proposed Road Safety Action Plan.

Education

The Council has an annual Road Safety Programme that is largely funded through the NZ Transport Agency. Under this programme the Council employs a part-time Road Safety Coordinator to prepare and implement an approved set of educational projects that target high risk areas in the South Waikato. Most of the serious crashes in the District occur on the State Highways and projects are developed in partnership with the NZ Transport Agency, NZ Police (BOP District), Waikato Regional Council, Accident Compensation Corporation, and Taupo District Council. The NZ Transport Agency maintains and makes available statistics on vehicle crashes and research information.

Table 13: Community Programme Forecast

2011/2012 Programme

| Activity | NZTA Funding | Council Funding | Project Cost |
|----------------------|---------------|-----------------|---------------|
| Intersection | 8,250 | 2,750 | 11,000 |
| Speed | 7,500 | 2,500 | 10,000 |
| Fatigue | 7,650 | 2,550 | 10,200 |
| Heavy Motor Vehicles | 11,625 | 3,875 | 15,500 |
| Alcohol | 6,000 | 2,000 | 8,000 |
| Early intervention | 6,000 | 2,000 | 8,000 |
| Child Restraints | 3,600 | 1,200 | 4,800 |
| Amisfield School | 3,750 | 1,250 | 5,000 |
| Total | 54,375 | 18,125 | 72,500 |

Table 14: Summary Forecast 2011-2016

| | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 |
|--------------|---------------|---------------|---------------|---------------|---------------|
| NZTA | 4,375 | 44,486 | 46,265 | 48,116 | 67,066 |
| Council | 18,125 | 30,914 | 32,151 | 33,437 | 22,355 |
| Total | 72,500 | 75,400 | 78,416 | 81,553 | 84,815 |

Similar programmes will be developed with the community and road safety partners for the foreseeable future with a similar commitment of physical and financial resources.

Enforcement

The only regular aspect of enforcement relating to roading that Council conducts is enforcement of the parking bylaw (Parking and Traffic Bylaw 2008) in designated urban areas. One part-time (currently 7 hours per week) warden monitors parking in time restricted zones and issues parking infringement notices as appropriate.

The Police deliver the bulk of road safety enforcement with dedicated and targeted highway patrol vehicles. The Council, in conjunction with Taupo District Council, consults with the partners on the Police hours to be delivered each year through the Road Safety Programme for each of the Strategic, Traffic Management, Education and Community outputs.

Crash Statistics

In its publications "District Road Safety Report 2005-2009" and "Road Safety Issues" for the South Waikato District which is reported on a five year block, NZ Transport Agency has identified the key road safety issues for the district as:

High concern being

- SpeedRoad factors
- Fatigue

Medium concern being

- Drink-driving
- Poor Observation
- Intersections
- Restraints and helmets

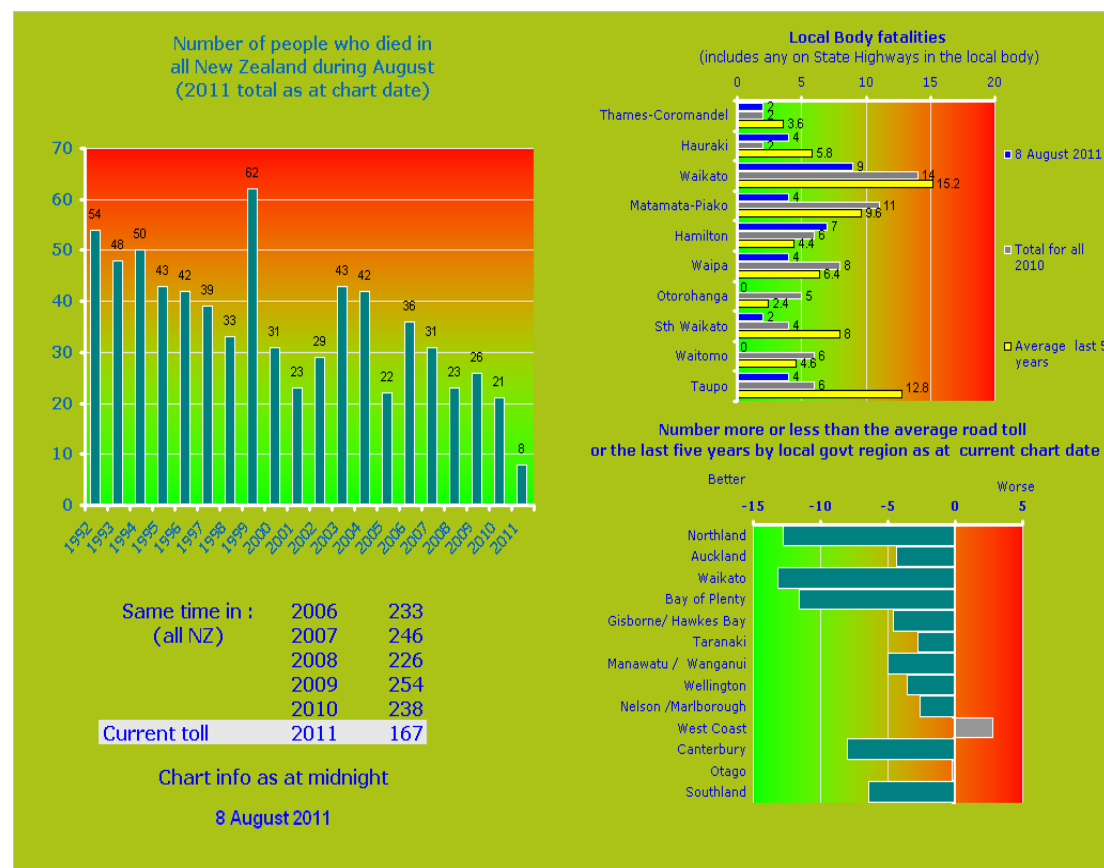
NZTA will no longer produce this report and Council will investigate other ways of extracting information in order to provide the applicable information. The number of crashes on South Waikato urban local roads is reported by the NZ Transport Agency Road Safety Report 2000 – 2009.

The figure below shows the number of crashes in the district per 10,000 people as compared to numbers for All NZ and Group D (similar LA's). These figures include State Highways within the South Waikato District.

Figure 10: Crashes per 10,000 People South Waikato District



Figure 11: Waikato Region Road Deaths (8 August 2011)



Safer Journeys

For the past decade road safety in New Zealand has been directed by the Road Safety 2010 strategy. This strategy was introduced in 2003 and aimed to reduce deaths and casualties from road crashes.

In March 2010 the Government released a new strategy, "Safer Journeys", to build on the gains made under the Road Safety to 2010. Under the new strategy, road safety will be looked at from a system wide approach rather than focusing so strongly on the road user.

The emphasis will be on improving all the parts of the road transport system that impact on safety; the road, the vehicle, travel speeds and the road user. Under the 2020 strategy a number of priority areas have been chosen as the areas of focus.

These areas were assigned a priority, based on research that shows five major areas of concern, six areas of lesser concern, and two areas where continued focus is needed, or concern is emerging.

Figure 12: Safer Journeys' areas of concern and the Safe System

| Table 3 – Safer Journeys' areas of concern and the Safe System | | | | |
|---|---|--------------------|----------------------|----------------------|
| AREAS OF CONCERN WE WILL ADDRESS | WHERE WE WILL TAKE ACTION ACROSS THE SAFE SYSTEM | | | |
| | SAFE ROADS AND ROAD-SIDES | SAFE SPEEDS | SAFE VEHICLES | SAFE ROAD USE |
| Areas of high concern | | | | |
| Reducing alcohol/drug impaired driving | | | ✓ | ✓ |
| Increasing the safety of young drivers | ✓ | ✓ | ✓ | ✓ |
| Safe roads and roadsides | ✓ | | | |
| Safe speeds | ✓ | ✓ | ✓ | |
| Increasing the safety of motorcycling | ✓ | ✓ | ✓ | ✓ |
| Areas of medium concern | | | | |
| Improving the safety of the light vehicle fleet | | | ✓ | ✓ |
| Safe walking and cycling | ✓ | ✓ | ✓ | ✓ |
| Improving the safety of heavy vehicles | ✓ | ✓ | ✓ | ✓ |
| Reducing the impact of fatigue | ✓ | ✓ | ✓ | ✓ |
| Addressing distraction | ✓ | | ✓ | ✓ |
| Reducing the impact of high risk drivers | | ✓ | ✓ | ✓ |
| Areas of continued and emerging focus | | | | |
| Increasing the level of restraint use | | | ✓ | ✓ |
| Increasing the safety of older New Zealanders | ✓ | ✓ | ✓ | ✓ |

For some priorities (eg motorcycling), complementary action will be taken across all four areas of the Safe System. For others (eg reducing the impact of drink driving or safe roads), more effort would be focussed on one or two of the four Safe System areas.

Although Council continues to focus on the 3'E's (Engineering, Education & Enforcement) there will be a shift in the near future to align Councils Road Safety programme with the objective and concerns identified in the Safer Journey Strategy 2020. The Road Safety programme will be linked together with the Roding programme to try and address areas of concern through Safe Roads and Roadsides, Safe Speeds, Safe Vehicles and Safe Road Use.

Alternative Modes of Transport

Public Transport

Other than school bus services, the only local publicly accessible transport service operating in the district is the Mangakino/Tokoroa bus service, taxis, hospital/airport links,

and inter regional bus lines. The local taxi company operates a Total Mobility Service in Tokoroa for transport disadvantaged; particularly for wheelchair-bound people.

The service is funded through Environment Waikato's Passenger Transport Programme, which receives 40% funding assistance from Waikato Regional Council and Council meets the balance 60%. This funding pays for half of the fare and the passenger pays the other half. A taxi company is contracted to provide a hoist that lifts the wheelchair and occupant into the van. Currently, as a special assistance, NZ Transport Agency offers 60% subsidy for new disabled hoists being installed in new vans.

Demand is increasing due to the district's aging population and higher expectations of freedom of movement. The service is expected to continue indefinitely with an increased budget available for the next three years.

Table 15: Total Mobility Expenditure Forecast

| Expenditure Forecast | 2009/10 | 2010/11 | 2011/12 |
|-----------------------------|----------------|----------------|----------------|
| Total Mobility | \$26,300 | \$26,925 | \$27,525 |

Walking and Cycling:

Council adopted a "Walking and Cycling Strategy" in 2004 9 (to be reviewed), and confirmed 23rd February, 2006. The vision is "To provide a variety of safe convenient, and attractive walkways and cycle ways in urban and rural areas that (helps create a healthy environment and) makes the South Waikato a desirable place to live and visit". The "Walking and Cycling Strategy" will be revisit in the near future to include the "Waikato River Trail" and the outcome of the Regional Walking and Cycling Strategy 2009-2015.

Rail

A potentially effective alternative to road transport in the district is the railway.

The Kinleith Branch railway is a highly productive spur line conveying timber and agricultural products from Kinleith to other places particularly Port of Tauranga. During 2003 some 1,080,000 tonnes of raw logs was sent from Kinleith to the port. A further 250,000 tonnes of pulp together with some chemicals, e.g. chlorine, were transported by rail. Back loading of chemicals and other timber industry freight results in a total timber industry tonnage of approx 1,420,000 tonnes per annum by rail.

In addition 21,000 tonnes of cheese from the Lichfield Dairy Factory leaves by rail and this, together with other assorted dairy materials and fertilizer, totals 100,000 tonnes per annum, i.e. a grand total of some 1,520,000 tonnes of freight per annum by rail. This equates to 44,800 B-Train road transport equivalents or 190 truck and trailer units per working day throughout the year.

Had this been transported by heavy vehicles the effect on roads, particularly state highways, in the district would be significant. Full utilisation of the railway corridor needs to be encouraged, not only to protect the highways from greater wear and tear, but also to maintain a healthy competition between the competing modes of transport.

There are railway sidings in Tirau, Putaruru and Tokoroa that currently have little use but the potential for development remains. Both Council and Regional Council have been meeting to review the potential usage of these sidings especially the Tokoroa siding as a result of the industrial sub-division that has occurred along the siding. Similarly the Rotorua branch railway no longer has regular rail traffic but the potential for tourism and other uses in the future has been recognised. These may affect road use in the medium to long term. The principal sidings in regular use are situated at Kinleith, and Lichfield.

Air

While Council operates an airfield near Tokoroa it has very limited use for commercial conveyance of goods or people. It is occasionally used for top-dressing. Based on its

primary function as a facility for various community organisations, policies and processes are discussed in the Community Facilities and Property Asset Management Plan.

Roading Standards

The roading standards that have been adopted are widely accepted national standards and are supported by NZ Transport Agency as acceptable for financial assistance towards works that conform to those standards.

Urban geometric standards are set out in Councils Code of Practice for Subdivision and Development. This Code sets out standards for all aspects of subdivision and Part Three gives guidelines for the design of streets. Table 1 from the Code gives the hierarchy of streets, categorised initially as Primary and Secondary Streets, and further subdivided to the arterial/collector/local concept with further division for industrial/residential development. The recommended carriageway widths are based on the number of dwelling units served (du) for residential streets, and traffic volume for collectors and arterials. The standard shows a recommended pavement structure which can be adapted to the local ground conditions which prevail in the District. The Code of Practice for Subdivision and Development (September 2009) has been reviewed and is operative.

There are many streets in our urban areas which are wider than the accepted standard. NZ Transport Agency accepts the existing situation but will question "over width" construction of new streets and may not accept full maintenance costs for subsidy purposes. The standards do not preclude innovative design in urban streets, the basic criteria for acceptability being that the maintenance of the trafficable surface is no more costly than a conventional sealed carriageway.

Geometric standards for rural roads are set out in the AUSTRoads publication "Guide to Geometric Design of Rural Roads". This document provides general guidelines for design speed, curvature and sight distance, road reserve width, geometric standards, super elevation of curves, pavement design, surface treatment, traffic services etc.

Roads are grouped according to the volumes of traffic using them, and the volume of heavy traffic on our collector and local roads often dictate their design standards. Designs are based on Annual Average Daily Traffic so that short-term high usage does not dictate the adopted standard. For instance, the no exit end of a local forestry access road would not be given a design seal width of 6.0 m on the basis of the traffic generated by clear felling of the forestry area behind it once in every 25 - 30 years. The pavement structure would however be constructed to withstand very heavy loading over the short period without premature failure. Council has adopted a set of Standard Cross-sections in Drawing No SWDC 517 (refer Appendix B).

Construction standards also depend on road gradient. In the South Waikato the gradients are generally level to rolling with very few roads in what could be termed mountainous topography.

The standards used for roading structural design purposes include:

AUSTRoads Standards:

- Rural road design; "Guide to Geometric Design of Rural Roads" AP-1/89
- Pavement design; "A Guide to Structural Design of Road Pavements" and the New Zealand supplement to the Guide (May 2000)

NZ Transport Agency (previously LTNZ or Transit NZ) Manuals:

- "Manual of Traffic Signs and Markings" MOTSAM 2007/08
- "Bituminous Sealing Manual" 1993
- "Bridge Manual" SP/M/022 2003
- ARRB; "Sealed Local Roads Manual"

Reference manuals used as required include:

- NZ Transport Agency (previously LTNZ) publications;
- "Road Safety Surveys – RSS Series"

- "Road and Traffic Guidelines – RTS Series"

AUSTRoads Standards:

- "Guide to Traffic Engineering Practice, Parts 1 to 14"
- Land development desk top user manuals
- "Quickpave" SWDC user manual
- Appropriate parts of NZS 4404
- Appropriate parts of SWDC Operative District Plan and associated Code of Practice.
- The standard for street lighting is AS/NZS 1158.1 Part 2: Pedestrian area lighting as revised in DR 98380

Culvert Design Standards

The standards for culvert design was set out in a report by A Shaw dated 13 September 2002 and were adopted as Council policy from 1st January, 2003.

In designing the stormwater system, the primary and secondary flow path shall be considered to ensure that a flood protection system is designed which provides a minimum standard of protection according to the following criteria:

- (i) 1 Year Return Period Flood - for design of culverts under local roads
- (ii) 2 Year Return Period Flood - for design of culverts and drains abutting collector and no exit local roads
- (iii) 5 Year Return Period Flood - The minimum standard for any principal piped and open channel stormwater system in urban residential areas and rural arterial roads that affects vehicle access
- (iv) 10 Year Return Period Flood - For design of stormwater systems to protect important recreational fields, and roads without alternative access
- (v) 50 Year Return Period Flood - For design of stormwater systems to protect residential property, commercial and industrial buildings
- (vi) 100 Year Return Period Flood - For design of stormwater systems to protect major communal facilities related to supply of electricity, telephone, water and sewage disposal



The rainfall intensities to be used for calculating urban runoff shall be taken from the following Table.

Table 16: Duration/Intensity of Rainfall

| Duration of Storm (minutes) | Intensity (mm/hr) | | | | |
|-----------------------------|-------------------|------|-------|-------|--------|
| | 2 yr | 5 yr | 10 yr | 50 yr | 100 yr |
| 10 | 72 | 96 | 114 | 156 | 174 |
| 20 | 51 | 69 | 84 | 114 | 126 |
| 30 | 42 | 58 | 70 | 96 | 106 |
| 40 | 35 | 47 | 58 | 79 | 89 |
| 50 | 30 | 41 | 50 | 68 | 77 |
| 60 | 27 | 36 | 44 | 60 | 68 |

Stormwater Connection Capacities (Commercial/ Industrial)

Each stormwater connection shall be capable of serving the whole of the building area of the lot, except where this requirement seems unreasonable and can be shown that the proposed connection is adequate for a pre-determined building location and floor plan.

4.4 Ensuring there is Sufficient Service

Current Demand

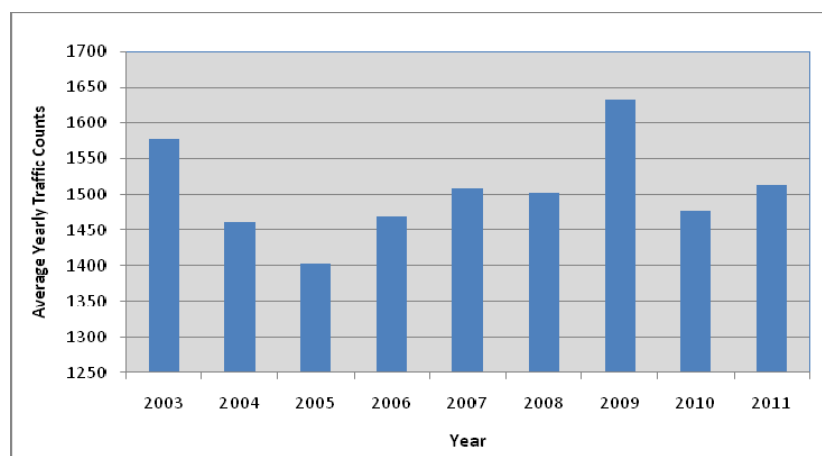
There are few capacity issues relating to volume or strength, road safety, roughness, parking or pedestrian traffic at this time. Demand analysis is based on current projections of population and traffic volumes. The only significant issue is lack of carriageway width on some rural roads, and road safety as public expectations rise.

Traffic Growth

The number of traffic movements on roads is a measure of their use, and trends in traffic volumes are indicators of growth.

In 2000 a system of traffic growth measurement was put in place by selecting six sites (4 rural, 2 urban) for regular annual traffic counting. The results of nine years' counts are shown below. This equates to an increase of traffic on local roads (and streets) of 8.3% over nine year period, or just less than **1% per annum**. The spike in 2009 is directly related to the re-alignment of SH1 North of Tirau resulting in traffic using local roads to bypass this section of works during the 18 months of construction. The percentage of heavy vehicles in the traffic stream is highly variable. Refer Appendix F for the source data.

Figure 13: Local Roads Traffic Growth



Projecting Future Demand

An analysis of the traffic growth on State Highways in the District from NZ Transport Agency's publication "State Highway Traffic Data Booklet 2003 – 2007" indicates a traffic growth of approximately 4 to 5% over this 4 year period. Given these results it would appear that an assumption of 1% p.a. traffic growth on District roads is appropriate.

Traffic growth projection assumptions are:

- Static or declining population
- Static vehicles per head of population
- Vehicle prices including second-hand imports will not reduce in real terms
- Fuel prices will fluctuate depending on:

NZ\$ strength against the \$US oil currencies

demand by the emerging industrial powers

perceived risk in the world economies

output of oil by OPEC nations

- A small increase in local residential traffic, and the roading network arising out of the dairy conversions and vested assets,
- An increase in State Highway traffic, but lower than the previous growth earlier in the decade,
- Heavy vehicle counts are typically 15 to 18% on the local State Highway network, and 4% to 12% on local roads. Any increases due to dairy conversions might be offset by a reduction in sawn timber transport in the short term

Major roading rehabilitation projects are generally designed for life expectancies of 25 years or more. It is important therefore to take into account in the design any effects during the design life of a pavement the demand drivers identified above.

Cycle Traffic

Council has two cycle ways in the district, both in the Tokoroa area. One is from Baird to James Higgins Park and the other is alongside Kinleith.

This is an area of expected growth and demand within the total district for safe and accessible cycling facilities. Council is currently undertaking a study to assess the demand on cycle within the District starting with primary and intermediate school in Tokoroa. The object of the survey is to see what the usage is with an I plan to identify common routes and accommodate any improvements or upgrades with scheduled roading projects.

Resident Population Trends

South Waikato District Council has been carefully monitoring population and demographic trends as part of its planning processes for many years. The district has been subject to a declining population over the past two decades resulting from changing economic and employment patterns.

In the past decade Council has commissioned a number of reports to better understand the dynamics and drivers of the District population and demographic change. Council has also proactively been involved in a range of economic development initiatives with the aim of assisting in facilitating economic growth in the District.

The two key reports were the November 2005 'Population, Labour Force, Economic Output and Employment Projections for the South Waikato' prepared by the University of Waikato and the August 2008 'Census and Demographic Data Analysis' prepared by Waugh Consultants Ltd, which built on and updated the University of Waikato report information.

The latest Statistics New Zealand population and demographic data were used in the preparation of the August 2008 report. The analysis of future projections from Statistics

NZ and University of Waikato, alongside recently available births, deaths and net migration information showed that the population decline had ceased and the population was relatively stable.

Due to the 2011 Census being deferred as a result of the Canterbury earthquakes, Council has reviewed the August 2008 report and has concluded, based on the information available, that the conclusions remain valid.

The District demographic mix is still changing with less children and younger workers, and more elderly people. Council will continue to monitor these trends in demographic change, and the countervailing factors, which seem to indicate the continuation of a relatively stable demographic environment in the next decade or so.

Maintaining the strategic economic initiatives and keeping the net migration loss to about 100 per year (500 per census period) remains the key challenge for the District.

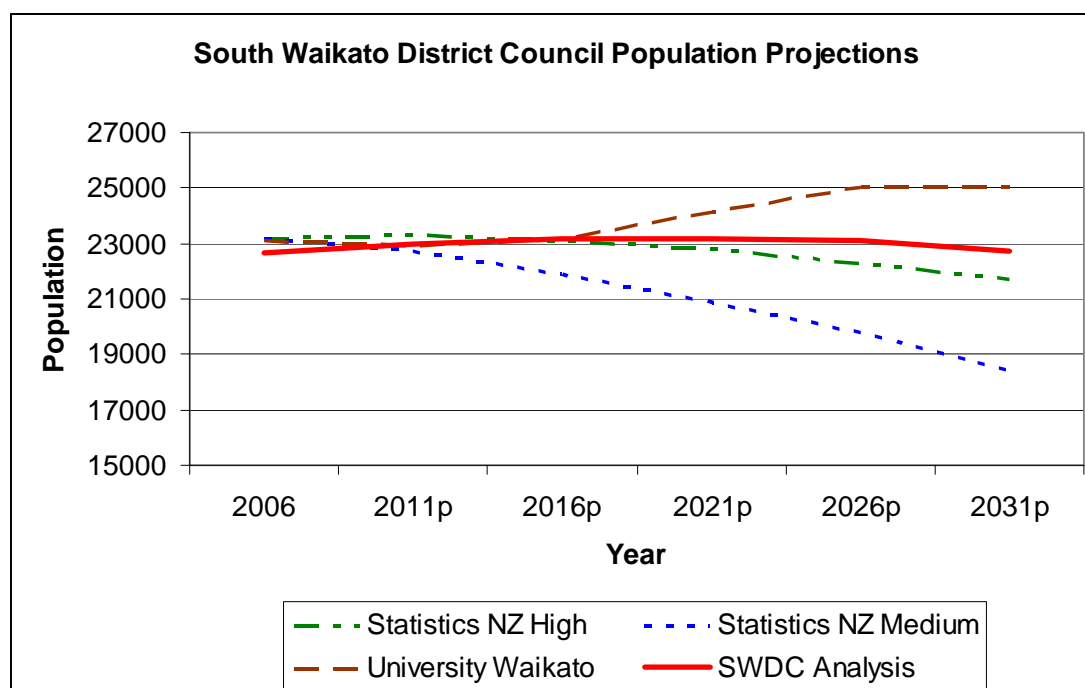
Based on the recommendations of the reports, Council has adopted for use in planning the SWDC Analysis population projection in the table below.

Table 17: South Waikato DC – Projected Resident Population (2006 (base) – 2031)

| Variant | As at 30 June | | | | | 2031 | Change 2006-2031 | |
|---------------|---------------|--------|--------|--------|--------|--------|------------------|-------------------------|
| | 2006 | 2011 | 2016 | 2021 | 2026 | | Total Number | Average annual % change |
| SWDC Analysis | 22,641 | 23,000 | 23,200 | 23,200 | 23,100 | 22,750 | +109 | |

This projection is shown graphically against the Statistics New Zealand and University of Waikato projections in the chart below.

Figure 14: South Waikato District Council Population Projections



Note p = projected population

Council had confidence in the projections, given that:

Planning for Future Needs

- The district's population already appeared to have begun a slight recovery; a net increase of 106 in the previous two years;
- The diverse ethnic makeup that included a high percentage of Maori and Polynesian people who have a higher than average birth rate;
- There were signs of economic recovery in the district based on rural commodities;
- There was likely to be a better roading connection from Auckland through to the north of the district within ten years; for example the Cambridge bypass, and commuting and exporting from the district would become comparatively easier;
- The existing skilled workforce was aging and over the next 20 years many of these workers would retire and be replaced by younger people;
- Housing affordability in parts of the district was still comparatively good and this would encourage new people to live here and work outside the district;
- There would be a general overall improvement in facilities such as broadband connection, which would reduce comparative disadvantage;
- The Council was continuing to contribute to community well-being through youth and education programmes and in a general approach to District Branding and through tourist and events promotion.

Per-Head Demand Trends

Per-head demand trend has been upward, and is likely to be driven by the following factors:

- The number of vehicles per household has increased in the last several years. This is thought to be due to the second-hand imported car market, which makes vehicles more affordable. (It also decreases the average age of the NZ vehicle fleet, which improves vehicle safety, economy and emissions)
- There may be a tendency for more parents to drive children to school due to perceived changes in road safety and safety of children (a key driver in large cities which may be spreading to provincial towns)
- The community appears to be engaged in additional activities and generally becoming more mobile
- The improving desirability of the South Waikato as a place to live

Non-Resident Population Trends

The current vehicle counts do not differentiate between residents and visitors. This is an area for further work, identified in the improvement plan. Measurements of this component will also be useful to monitor goals such as increased tourism in the district. Assumptions can be made using traffic counts on highways in and around urban areas to estimate local versus interregional traffic streams.

Economic Activity Trends

Land Transport network demand drivers are not limited to population and visitors. Commercial and industrial use has the potential to impose high and/or seasonal demands on the system.

Demand drivers include:

- Changes in land use from forestry to dairy
- Increased input and output from dairy, meat and timber processors (as forest currently maturing becomes available for use)
- The effect of future 4-laning of SH1 from Auckland to Cambridge
- The proposed heavy vehicle bypass of Taupo
- State Highway bypasses of Tirau and Putaruru

- Economic development in the District and Region
- Change in use of rail transport
- Possible increases in water use by the bottling industry.

Technology Trends

The following section identifies changes which may affect level of service or provide solutions for maintaining and improving it.

Trends Affecting Demand and Capacity

There is potential for a gradual return to smaller and more economical private transport vehicles due to increased cost of fuel. However, these changes affect new vehicle numbers. Given the relatively low incomes of the district's population, it will be several years before smaller more fuel efficient cars have an impact here. Further, the effect of such changes on traffic volumes is negligible, since it is a weak driver of change in vehicle numbers and movements.

Trends Affecting Construction

Materials used in Land Transport Network infrastructure are not anticipated to change significantly in the plan period. In particular, bitumen is a by-product of crude oil distillation, which means that although the price of crude oil may increase, demand for petrol, diesel and lubricants will ensure that bitumen is available and economical. The quarry resource in the district is equal to the future demand. Therefore there are no significant foreseeable drivers for changes in technology.

Trends Affecting Management

Performance and management of road assets is advanced in New Zealand. Since the traffic volumes are relatively low in the district, it is envisaged that the current day to day management will stay the same. Medium to long term projections will improve with the use of the dTIM's modelling exercises.

Changes in Network Length;

The current growth in dairy farming arising out of forestry conversion is having an effect on the roading network, with increases anticipated as follows:

| | | | | |
|---|-----------------------|-------|--------|---------------------------|
| 2008/09 | Mossop Road extension | 6km | vested | 2010 |
| 2009/10 | Galaxy Road (to vest) | 14km | vested | 2010 |
| 2009/10 | Jack Henry extension | 11km | vested | 2009 |
| 2009/10 | Mossop Road (vested) | 5.6km | vested | 2010 |
| 2009/10 | Mamaku South (vested) | 1.5km | vested | 2010 |
| 2009/10 | Key Road (vested) | 5.4km | vested | 2010 |
| 2009/10 | Poaka Road (vested) | 0.6km | vested | 2010 |
| 2009/10 | Rawhiti Road (vested) | 1.9km | vested | 2010 |
| Total increase in formed roads vested to Council: | | | | 46km over 3 years. |

This is equivalent to an average 15km or 3.5% per annum of the current sealed network (less assumed forestry maintained roads) of 419km. This increase will have an impact on maintenance/ operations, and renewals over the planning period. Although provision for



this anticipated growth was made in the financial forecast one year following each anticipated increase i.e. an allowance has been made for the roads vested to be presented in the first year with no liabilities or backlogs of maintenance or renewal needs. The amended budgets for the first three years in the LTP have now removed these allowances. This is a result of the funding constraints within the first 3 year block of the LTP. Council will resume funding in the fourth year of the LTP.

Mossop Road extension was vested as formed public road to Council in February 2009. It incorporates a section of "Galaxy Road", and the new road construction along "Tokoroa Road" to service the CHH Properties Ltd. "Tokoroa East South" conversion blocks.

An existing sealed private forestry road currently named "Galaxy Road" has been promoted as a road "to vest" by CHH Properties Ltd. north east of Mossop Road to service the "Tokoroa East North" conversion blocks. The view above is "Galaxy Road" just east of "Puriri Road" Intersection.

The section of Jack Henry Road beyond Peach Road comprises an existing sealed road to "Waipa Road", and an unsealed section (Lot 7, DP 354784) along to the unformed Maraetai Road. CHH Properties Ltd. had entered into a bond with Council to upgrade this road prior to 31 December 2010. The upgrade was completed to Council satisfaction and vested to SWDC during 2009.

This development was called "Pat/Barwell" Subdivision, and services the large dairy conversions by Maxwell Farms Ltd. west of Tokoroa. Refer CHH Forests Ltd letter 29 June 2005 for the agreement.

Other links to the public network have been discussed for sections of "Tram Road", Wawa (extension to Tram Road), and Puriri Road. Strategic links to the network could be examined between Puriri and Galaxy, and between Jack Henry and Wiltsdown/ Old Taupo via Waipa/Mortenson. There are significant lengths of "road" within the forest estates which have no apparent strategic value and could be considered for "stopping" (closure) by negotiation.

The rest of the roads vested to Council during 2009/10 were as a result of the forestry to dairy conversion North East of Tokoroa.

Demand Management Plan

SWDC does not have a Land Transport demand management plan at present but will review the need for this plan at a later date. Sections 0 to 8.2.8 have outlined several of the factors that would be investigated in such a plan, to gain an understanding of the components of existing and future demand. The diagram in Section 8.4 illustrates the demand management framework.

4.5 Future Service Level Requirements

Resident Population Demand for Changes

The Council desires to respond to annual resident surveys, providing levels of service for roads in the District that meet the expectations of 90% of road users or better. Levels of

service will be reviewed in the light of feedback received from public consultation. Areas where higher levels of service could be achieved are:

- Improved footpaths and footpath maintenance response
- Optimised quality control in all aspects of road maintenance and construction
- Effective “partnership” with maintenance Contractor and performance based outputs
- Continue sealing of unsealed roads
- Continue to address under width roads

In general, urban street widths are currently adequate for their purpose. Some streets exceed current design standards and could be considered for narrowing when the kerb and channel reaches the end of its design life.

Recent examples of this activity, in Tokoroa, are sections of Manaia, Arthur and Stanley Streets.

Some of the main streets in Tokoroa’s CBD area would benefit from extra width for the traffic they now carry, but there is limited ability to change this.

Deficiencies in rural roads seal widths are being addressed with a continuing improvement programme. There is a lack of seal width on older road sections that have not been rehabilitated since the 1950 - 60’s. This is generally accompanied by a lack of formation width also. Under width roads are a safety issue and the rural road trend for larger heavy vehicles, such as milk tankers, has required an ongoing programme of seal widening. The following table shows the length of roads with sealed widths more than 1m deficient from design widths of 5.5m (30 – 99vpd), and 6m (100 – 249vpd). There are some anomalies in the data due, in part, to changes in traffic volume; but it does indicate an on-going programme of widening on busier rural roads. Although the goal is 2 to 3km per annum of seal widening during the 10 year planning period, before tackling roads outside the 30 to 250vpd range Council as a result of the LTP process has opted to remove the seal widening programme for the first three years of the LTP and resume in the fourth year due to financial constraints.

Table 18: Rural Road Seal Width Deficiencies

| Traffic Volume (VPD) | Over 1.0m deficient in width (Km) | | | |
|----------------------|-----------------------------------|--------------|--------------|--------------|
| | Dec 1998 | July 2005 | July 2008 | July 2011 |
| 30-99 | 3.22 | 6.60 | 13.73 | 15.66 |
| 100-249 | 5.74 | 1.30 | 3.07 | 1.36 |
| 250-499 | 1.41 | 0.40 | - | - |
| >500 | - | 4.40 | - | 1.2 |
| Total | 30.37 | 12.70 | 16.80 | 18.22 |

Externally Mandated Changes

Changes in Legislation

The LTMA and its Amendment Act place a much greater emphasis on compliance with the Regional and National Land Transport Strategies. The following statement is an extract from the Environment Waikato Regional Transportation Plan:

“Role of modes in the South Waikato, Taupo and Rotorua sub-region:

Road Transport is expected to remain the most significant mode for some time to come with the key function being the movement of people and freight within the sub-region.

Rail: The potential for increased use of the rail network is limited in the short-term. However, there is a desire to protect and maintain all existing corridors and make improvements required to increase the role of this mode, particularly for freight (forestry products).

Passenger Transport: Passenger Transport services are unlikely to grow substantially in the short-term. Within the Taupo area, as the growth strategy is implemented and growth cells develop, the provision of passenger transport services will become more viable. Within other parts of the sub-region, the focus will be on improving accessibility for smaller rural centres, and providing for the ageing population.

Walking and Cycling: There is a growing role for cycling and walking in towns and rural areas in the sub-region (including long-distance recreational cycling).” Sub-Regional Actions identified in the Regional Walking and Cycling Strategy 2009-15.

Sub-Regional Actions identified in the RLTS 2006 and proposed 2011/41 RLTS which involve Council are shown below:

Table 19: Sub-Regional Actions RLTS 2006

| No. | Actions | Support Agencies | Timing |
|-------|---|---|---------------------|
| A15.1 | Transit to undertake a transport corridor study and structure plan for Tirau to provide for development of the town in an integrated way | South Waikato District Council | By 2008 |
| A15.2 | Transit to identify and develop a three-year implementation plan for a suite of safety improvements to be undertaken within the sub-region to address deficiencies at strategic locations including: <ul style="list-style-type: none"> – SH1/SH5 intersection at Tirau – SH1 between Taupo and Waiouru – SH5 between Taupo and Rotorua – SH5/SH28 intersection | South Waikato District Council Taupo District Council Rotorua District Council | Ongoing |
| A15.3 | Environment Waikato to continue to investigate, support and where feasible implement, passenger transport initiatives which provide access to essential services for rural communities and employment opportunities within the sub-region (in conjunction with the review of the Regional Passenger Transport Plan) | Taupo District Council South Waikato District Council Waikato District Health Board Lakes District Health Board Land Transport NZ | 2006/07 and ongoing |
| A15.5 | Transit to undertake and progress the implementation of recommendations of a Passing Lane Study for State Highway 1 and State Highway 5 | South Waikato District Council Taupo District Council Rotorua District Council | 2009 |
| A15.8 | South Waikato District Council to develop and implement cycling and walking strategies | Environment Waikato | Ongoing |
| A15.9 | Road controlling authorities protect existing and future rail corridors to ensure that the future expansion or increased use of the existing rail corridor is not compromised | ONTRACK Toll NZ Territorial Authorities | Ongoing |

Table 20: Demand management strategy for the South Waikato/Taupo sub-region in the 2011/41 Proposed RLTS

| MODE/ACTIVITY | DEMAND MANAGEMENT APPROACH | SUPPORT AGENCIES | TIMING |
|---------------------|--|--|---------|
| Land use planning | Implementation of the Taupo Growth Strategy is incorporated within the Waikato Regional Policy Statement and will integrate land use and transportation planning. Ensuring that any land use growth occurs in appropriate locations in the South Waikato district. | South Waikato District Council Taupo District Council | 2011/41 |
| Walking and cycling | Strong encouragement of walking and cycling as an alternative mode, through progressive implementation of the footpath infrastructure improvements within Taupo and Tokoroa and a number of cycling initiatives. Taupo has prepared a strategy for horse riding. School travel planning (including walking school bus initiatives) will be encouraged across the sub-region. | South Waikato District Council Taupo District Council | 2011/41 |
| Public transport | There is a desire to encourage better utilisation of existing public transport, especially services currently provided between centres within the South Waikato. Planning through the Taupo Growth Strategy will also assist the role that public transport can play in the future as growth cells develop and public transport becomes more viable. | South Waikato District Council Taupo District Council | 2011/41 |
| Rail | Rail as a potentially larger freight alternative into the future, can assist in managing demand for road space within the region. | South Waikato District Council Taupo District Council | 2011/41 |

Changes in Funding Categories 2012-2015

Work categories detailed in the NZ Transport Agency "Procurement Manual" are described in the National Land Transport Programme (LTP) and mirrored in the Regional LTP. The categories including financial assistance rates review will provide better alignment with capital, renewal and operating expenses accounting definitions used by local authorities.

- **"Maintenance Operation"** (100) costs are limited to specific operations required to preserve but not replace whole sections of asset. Seal Widening is no longer categorised as a "maintenance" activity and has to be funded as "improvements" associated with "rehabilitation" works (50%), as "associated improvements" (50%), or as non-subsidised works. The backlog of rural roads that are more than 1 metre under-width' will have to be prioritised to allow for steady progress in this safety related activity
- **"Renewal of Local Roads"** (200) investment covers replacement of existing assets to an agreed level of service as they wear out. The new categories of resurfacing, drainage/ traffic services renewals, associated improvements, and pavement rehabilitation are "capital" works in the Council ledgers, and an improvement on previous work categories. Individual activities include provision for professional services – generally by "Southtech" business unit

- **"Improvement of Local Roads"** (300) are capital works that increase capacity/ service levels, road studies, seal extension, replacement bridges, new roads, and "minor (safety) improvements. Financial assistance rates vary from 60 to 75%, and each project (or combination) is subject to detailed assessment procedures. Each activity includes provision for professional services
- **"Community Focused Activities"** (430) are activities for "development and implementation of community programmes relating to safe and sustainable use of the land transport system"

It covers part of the Safety Co Coordinator's salary, approved Community Programmes (refer section 8.1), and Advertising.

Financial assistance rate is normally 75% but will reduce to 60% - after deduction of "third party" contributions. The increase in both maintenance and renewal funding assistance rate will offset the decrease in Community Focused Activities rate.

- **"Procurement Procedures"** are detailed in Sec 25 of the Land Transport Management Act to allow "payments from a land transport disbursement account". Council is required to have a "procurement policy" approved by Land Transport "to obtain the best value for money spent by the NZTA, and approved organisations (Council) with regard to the purpose of the LTMA". A revised policy is under consideration by Council

Changes Driven by National Standards

The graph below shows how the district Surface Condition Rating Index compares with National results. The current (2011) index for Council is **1.5** which indicates a gradual improvement in the maintenance of surfacing over the past five years.

4.6 District Plan Considerations

Introduction

Councils are required, under the Resource Management Act 1991, to prepare District Plans, in order to manage the natural and man-made resources of the District in a sustainable manner.

SWDC's District Plan became operative on 30 June, 1998.

The District Plan provides a single set of resource management provisions that apply to all rural and urban areas within the district's territorial boundaries. The District Plan provisions may affect new buildings, subdivisions or change the use of land.

The District Plan has recently been reviewed and the new plan is expected to be notified in June 2012. Until then, the provisions of the Operative District Plan will apply, as described below.

This AMP was developed incorporating the District Plan Objectives, outlined below in Objectives of District Plan.

Table 21: Objectives of District Plan

| Council Services | Objectives |
|------------------|--|
| Water | Recognition of the cultural, traditional and spiritual significance of water to the Tangata Whenua |
| | The maintenance and enhancement of water quality and aquatic habitats in the District by avoiding, remedying or mitigating the adverse effects of activities |
| | Recognition of the multi-purpose function of some of the District's water bodies |
| | Public access provided in an appropriate manner to water bodies of significant natural, community, recreational, cultural, or amenity value |

| Council Services | Objectives |
|------------------------------------|--|
| | Manage and resolve potential conflicts between uses and users of water bodies particularly in relation to the use of the surface waters of lakes and rivers |
| | The adverse effects of development on aquatic resources are avoided, remedied or mitigated |
| Transport | Transport systems that avoid, remedy or mitigate any adverse effects on the environment |
| | The protection of transport systems from hazards, such as congestion and conflicts occurring when different types and speeds of traffic are integrated and other adverse effects, which compromise their safety and efficiency |
| Public Works and Network Utilities | The provision of appropriate infrastructure in a way that does not have significant adverse effects on the environment |
| | Sustainable management of physical resources (the built environment) |
| | To recognise the importance of network utilities to the social, economic and cultural well-being of the people of the district |
| Landscape and Amenity Values | The maintenance and enhancement of amenity values, and the protection of special landscapes |
| | The protection and enhancement of the natural character of rural areas of the District |
| | Residential areas that are peaceful and attractive places in which to live |
| | The enhancement of amenity values in the District's commercial areas |
| | The avoidance, remedy, or mitigation of adverse visual effects of industrial and commercial activities |
| Solid Waste Management | Minimise the creation of wastes so as to reduce potential problems associated with the management of waste |
| | Encourage recycling of wastes to avoid the need to dispose of large quantities of waste |
| | Wastes managed in a way that avoids, remedies or mitigates adverse effects on the environment |
| Heritage and Ecological Protection | The protection of cultural, historic, and natural sites, areas, places and structures within the District, including significant ecosystems and vegetation |
| | The management of indigenous vegetation and natural habitats in a sustainable manner in order to protect them from any adverse effects of development |

Zones

Zoning is the principal vehicle used in the District Plan for the sustainable management of natural and physical resources and the control of adverse effects on the environment.

The South Waikato District has been divided into the following zones for resource management purposes:

- Rural Zone
- Residential Zone
- Commercial Core Zone
- Commercial Fringe Zone
- General Industrial Zone
- Heavy Industrial Zone
- Reserve Zone
- Airport Protection Zone
- Hydro-electric Power Generation Zone

- Dairy Industrial Zone

Tokoroa, Putaruru and Tirau all have clear industrial and commercial zones set out in the District Plan. SWDC has planned services around these zones and is aware of the issues associated with the boundary edges and continues to monitor them.

The District currently has very little new commercial development and sub-divisions happening within the district. This is not expected to increase in the future. The main development is dairy conversions of forestry land. South Waikato District Council has identified this issue and is detailed in the Land Transport Asset Management Plan 2012-22.

Designations

Designations allow requiring authorities to plan for network utilities and large public works by setting aside an area of land outside the provisions of the District Plan. In this way, they provide an alternative to resource consents or plan changes. The procedure for designating land is set out in Part VIII of the Resource Management Act 1991 (RMA).

The following table outline the designations South Waikato District Council have stated in their District Plan: For a full detailed list of designations for each Council Service refer to Appendix H.

Table 22: SWDC Designation Categories

| Water | Wastewater | Stormwater | Land Transport | CF&P | Landfills | No Council Assets |
|---------------------------------|---|--------------------------|----------------|--------------------|----------------------------|---|
| Water Supply Reservoir | Wastewater Treatment Plant | Stormwater Detention Dam | Road | Dam | Refuse Disposal Site | Courthouse |
| Water Supply Treatment Station | Wastewater Treatment Plant Drainage Field | | State Highway | Cemetery | Hazardous Transfer Station | Primary School |
| Water Supply Station | Sewage Treatment | | | Office and Library | | Secondary School |
| Water Supply Headworks | Sewage Pump Station | | | | | Intermediate School |
| Water Supply Booster Pump House | | | | | | Telecommunications and Radio communications |
| | | | | | | Outdoor Switchyard Electricity Substation |
| | | | | | | Railway |
| | | | | | | Substation |
| | | | | | | Ripple Injection Load Control Plant |
| | | | | | | Fire Station |

4.7 Overview of Sustainability

The LGA 2002 requires Local Authorities to take a sustainable development approach while conducting its business. In doing this the Council is required to take into account the following:

- The social, economic, and cultural well-being of people and communities
- The need to maintain and enhance the quality of the environment
- The reasonably foreseeable needs of future generations

Sustainability is a core Council value. It is a process of ensuring the wise use and management of all resources within a framework in which environmental, social, cultural and economic well-being are integrated and balanced. It means meeting the needs of today without adversely impacting on the needs of future generations.

Council is committed to continuing its work on delivering sustainable services and had previously proposed an Improvement Plan to develop a Sustainability Policy that would encompass recent legislative, national and regional sustainability initiatives. The proposal was not implemented because the asset management plans already incorporated a commitment to Sustainable practice through addressing the four well beings (Environmental, Economic, Social and Cultural).

Sustainability and Lifecycle

Council presently does not directly measure the sustainability of the activities assets and networks; however, the Council Outcomes have sustainable measures that relate to the various activities to demonstrate their effectiveness.

Community infrastructure is maintained on the understanding that the assets are provided in perpetuity. The LGA 2002 prevents Councils selling significant community infrastructure assets without considerable consultation. Asset management planning incorporates a sustainable approach to the management of each asset activity. The activities are regularly monitored on performance and expectations through Resource Consents, external audits, Level of Service reviews, customer satisfaction surveys, legislative compliance and Council adoption of Asset Management Plans

Sustainable Development

Council's approach to sustainable management for the assets it manages is shown in the Table below:

Table 23: Sustainable Development

| Activity | Examples |
|------------------------|--|
| Wastewater | Reduction in effluent quantities |
| Water Supply | Provide incentives to install tanks and grey water reuse systems in existing houses |
| Roading | Increase efficiency of, and reduction of light throw from street lighting |
| Solid Wastes | Compliance with the 'New Zealand Waste Strategy 2002', the 'Waste Minimisation Act 2008' and the 'Climate Change Amendment Regulations 2010' (ETS) Reducing emissions from landfills Increased recycling Reduction in total waste |
| Community Facilities | Ensure any new or upgraded facilities are energy efficient |
| All Council Activities | <ul style="list-style-type: none"> • More efficient use of energy and operation of Council's facilities • Optimisation in the initiation of major capital development and renewal projects (time, staging, investment, partnerships and subsidies). • Adopt energy management approaches using the Energy Efficiency and Conservation Authority (EECA) guidelines. Subsidies could assist in reducing |

| Activity | Examples |
|----------|---|
| | <p>total energy consumption; over time. Plant and equipment replacement will lead to adoption of more efficient methods.</p> <ul style="list-style-type: none"> • Work towards energy supply from sustainable sources where practical. Ideally such sources that are both renewable and of lower net environmental impact, or sources that are non-renewable, but involve low levels of carbon being produced in a life cycle. (Note that the lifecycle approach also considers the carbon debt of equipment manufacturer). • Use Concept Plans and urban design methods to enhance the town centres to provide more user friendly and attractive environments, which encourage walking and cycling, as well as options to reduce the use of motor vehicles. • Support the adoption of low-carbon technology where appropriate (see also comments above on the energy supply). • Reduce emissions over all activities based on a Best Practicable Option approach; that is, adopt more sustainable methods when they become cost effective. • Reduce the overall potential for hazard and risk to acceptable levels through good practices, design and planning. <p>Encourage engagement & participation by the community as far as practicable, depending on the available options open to the Council, in terms of issues, needs, costs, benefits and effects.</p> |

4.8 Climate Change

There has been considerable work undertaken at a national level on the possible effects of climate change and sea level rise. The New Zealand Government has published projections of climate change to 2080. The general projected trend in the published projections for the District is of winters being wetter and the other seasons being drier. More frequent heavy rainfall events have been predicted. By the 2090s the published projections show that in the Waikato region the typical temperature¹ rise is expected to be up to +2.3 degrees Celsius and the region wetter by 20%².

The projected key climate influences on the Councils Activities are detailed in the following table.

Table 24: Key Climate Influences on Councils Activities

| Activity | Influences | Effects |
|---------------------|--|--|
| Water Services | – Changing weather patterns - Longer dry spells and higher temperatures will lead to more hot days during summer | – Change in water usage patterns – higher water demands in summer |
| Wastewater Services | – Higher intensity rainfall events | – More water inflow and infiltration into the wastewater system, with potential subsequent increases the risk of wet weather overflow events |
| Stormwater | – Higher intensity rainfall events | – Increase stormwater inflow to the wastewater system |

¹ Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand May 2008

² Climate's Long-term Impacts on New Zealand Infrastructure Phase 1 Report Hamilton City Case study 2005

| Activity | Influences | Effects |
|-------------------------------|--|--|
| | | <ul style="list-style-type: none"> – Increased infrastructure to endure the increase in rainfall intensity – Increased risk of flooding |
| Solid Wastes | <ul style="list-style-type: none"> – Increased environment constraints | <ul style="list-style-type: none"> – Increased capital and maintenance costs – Potential costs of offsetting emissions |
| Land Transport | <ul style="list-style-type: none"> – More intense rainfall | <ul style="list-style-type: none"> – Change in the design requirements for bridges and culverts – Increased maintenance costs |
| Community Facilities | <ul style="list-style-type: none"> – General warming | <ul style="list-style-type: none"> – New plant (including weeds) that may have an detrimental effect on parks and reserves (and road reserves) – Pest insects are directly favoured by a warmer climate and we can expect greater numbers of those already present, and numerous new invasions in the future |
| Emergency response/Rural Fire | <ul style="list-style-type: none"> – Seasonal swings in moisture availability or excess | <ul style="list-style-type: none"> – Increased proneness to fire and other weather related matters has potential to increase costs to community |

Over time additional analysis is required to ascertain long term effects (if any) of climate change effects on Councils assets and service provision. To do this more information will be required from Central Government. It is expected that the results of analysis will affect Council's policies relating to asset management and the AMPs. It is considered that improved design and design loading of new and replacement facilities will be an important part of Council's response.

In addition to planning a response to climate change effects, Council's Sustainability initiatives are intended to minimise the actions that are likely to contribute to further warming.

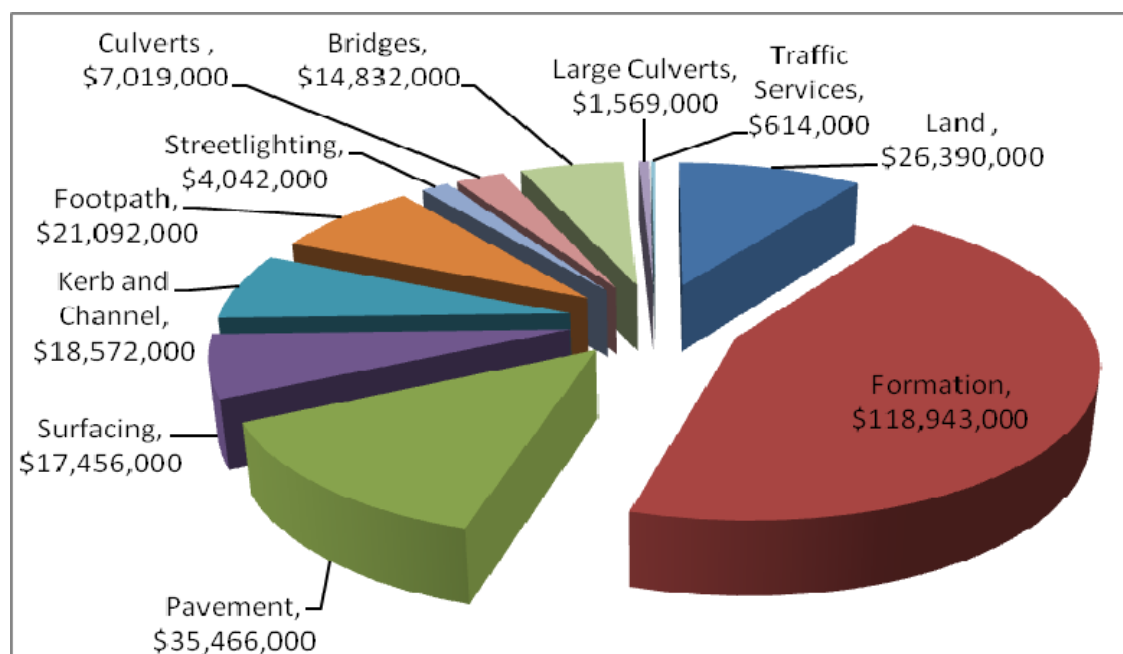
5.0 LIFECYCLE MANAGEMENT PLANS

5.1 Summary of Assets

The following section summarises the South Waikato District's Land Transport Network assets, discussing the strategies and tactical plans for each asset group. The primary information management source for these figures is the RAMM system. The chart below summarises replacement value of the assets under management, detailed in the report "2010/11 Transport Asset valuation" by Opus International Consultants, "Street Light Valuation 2011" by Odyssey Energy Ltd., and Bridge and Culvert Inspections – 2010/11 by Opus International Consultants Ltd.

The pie chart below describes the nature and value (2011) of the Land Transport Asset components. Total surface area is about 3.27 million square metres. Most of the asset types are described technically by a set of NZ Transport Agency "work categories" referred to in Chapter 3.

Figure 15: Replacement Value



Road Classifications

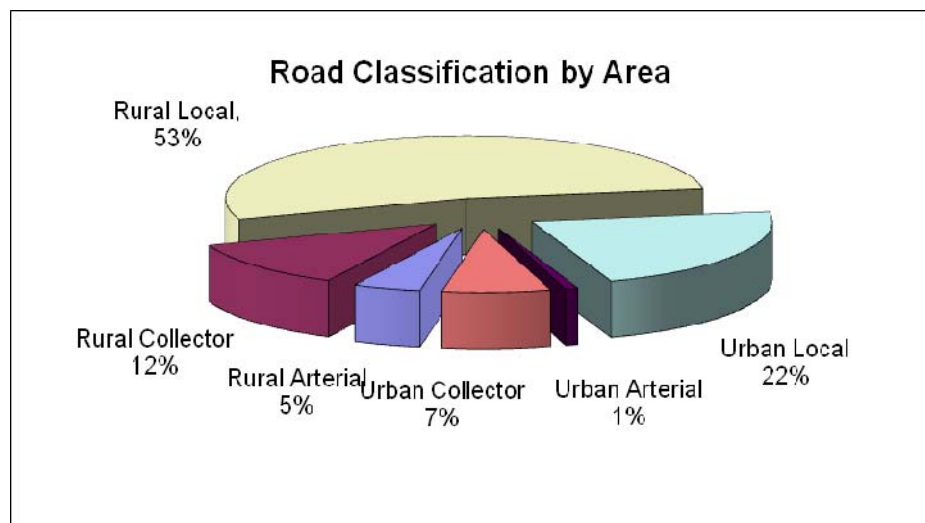
Roads are classified by their function in terms of the roading network. A three level hierarchy of arterials, collectors and locals is used.

Arterials are roads which are used by a considerable proportion of through traffic, i.e. traffic whose origin or destination is generally not on that road, and would usually carry 1000 + vehicles per day. Collectors, as the name implies, gather traffic from local roads adjoining the collector and feed into arterials or provide the main routes to the town centres in the District. This hierarchy of roads applies both to urban and rural areas and is the basis of transportation planning. The systematic improvement of our roading network must be based on this hierarchy for consistency. Changes in land use throughout the district have initiated a review of the road network hierarchy, ensuring that it aligns with current transport activities, and will cater for future land use activities

The District Road hierarchy is shown in Appendix A

Roads can also be classified as urban or rural. Urban roads, which represent 22% of the total by length, are defined as being within 70kph legal speed limits

Figure 16: Road Classification by Area



For asset management purposes the roading hierarchy has been classified in terms of NZ Transport Agency's Optimal Maintenance Allocation (OMA) Classifications. The basis of this classification and the lengths of road in each class are shown in Appendix A. The OMA model provides target expenditure levels for Council road maintenance activities and is used to negotiate appropriate levels of expenditure in the RLTP.

The network has been further subdivided into treatment lengths which are defined in the RAMM system. Each treatment length is identified because it has common asset characteristics in terms of construction, seal age, dimensions, condition and performance over its full length, and these characteristics are sufficiently different from adjacent treatment length to require it to be separately identified.

Each treatment length is subdivided into a common set of components. The components are:

- Land - the road reserve upon which the road is located
- Formation or Earthworks – the re-contouring of the natural ground to provide the road's foundation
- Pavement – the constructed layer/s of aggregate that provide the strength and load carrying capability of the road
- Surfacing – the sealed surface layer that provides the traffic wearing course, traction and waterproofing for the pavement

Land under Roads

Land under roads, are Land Transport assets. On local roads this land is vested in the ownership of the Territorial Local Authority and for State Highways it is controlled by NZ Transport Agency. The term "road" includes service lanes and most pedestrian accessways, which are a feature in Tokoroa's street network.

The Council may close road and sell the underlying land, or acquire additional land for road, and may assign rights of occupation of parts of the road reserve for underground utilities etc. subject to appropriate legal processes and in accordance with statutes, primarily the Local Government Act.

The following table sets out the lengths and areas of land that underlie South Waikato roads:

Table 25: Lengths and Areas of Land that Underline South Waikato Roads

| Type | Rural | Urban |
|---------------|----------------|--------------|
| Width (metre) | Area (ha) | Area (ha) |
| Roads ≤20m | 822.1 | 219.6 |
| Roads >20m | 63.1 | 6.6 |
| Unformed Road | 293.8 | 0.8 |
| Total | 1,179.0 | 227.0 |

Most roads in the district have a 20m wide road reserve but there are several with 30m and 40m wide reserves. Some urban streets, principally cul de sacs, are often less than 20m.

Earthworks Asset Group

Purpose

Earthworks (also called 'formation' or 'sub-grade'), represent the re-contouring of the natural ground to provide the road's foundation. The "formation" asset includes shaping such as cut or fill embankments, widening, road shoulders, water tables and formed side drains, fencing, entrances, and utility services.

Any alterations to utility services, fencing, vehicle crossings (excluding culverts) arising out of roading works are considered part of the road "formation", and costs are not capitalised.

Materials

The earthworks are typically constructed of local soil and may be clay, sand or other in-situ material. Where a road has been completely re-built, previous "pavement" layers will be considered part of the road formation. The road 'formation' is the total width of the shaped platform on which the drains, berms, and carriageway are constructed. It varies in width according to the design standard for each road, and is typically about twice the seal width.

Retaining Structures

Occasionally special structures are constructed to retain the road formation or embankments above it, e.g. tunnels, retaining walls, fords etc. Such structures, if they will deteriorate with time, require provision for maintenance and replacement. There are few structures of this nature on Council roads.

Pavement Asset Group

Purpose

The pavement is the constructed layer of base course material or stabilised material that lies over the road formation. This provides the strength to spread high vehicle wheel loads before they are transmitted into the weaker soil formation. The thickness of this layer varies according to the underlying strength of the formation and the loads it will be subjected to over its lifetime.

The pavement is constructed in various ways depending on what sort of surfacing, if any, is to be applied to it. The width of pavement is standardised for various levels of traffic use.

In urban areas the pavement is usually defined by the width of carriageway between kerb lines. In rural areas the pavement is contoured off the road shoulder, to provide support to the primary sealed carriageway, and a secondary pull off area.

Materials

Locally-quarried rock (greywacke) is crushed to produce aggregate that will be compacted into interlocking layers during construction. Where drainage under the road is necessary, a free-draining layer may be provided over the formation.

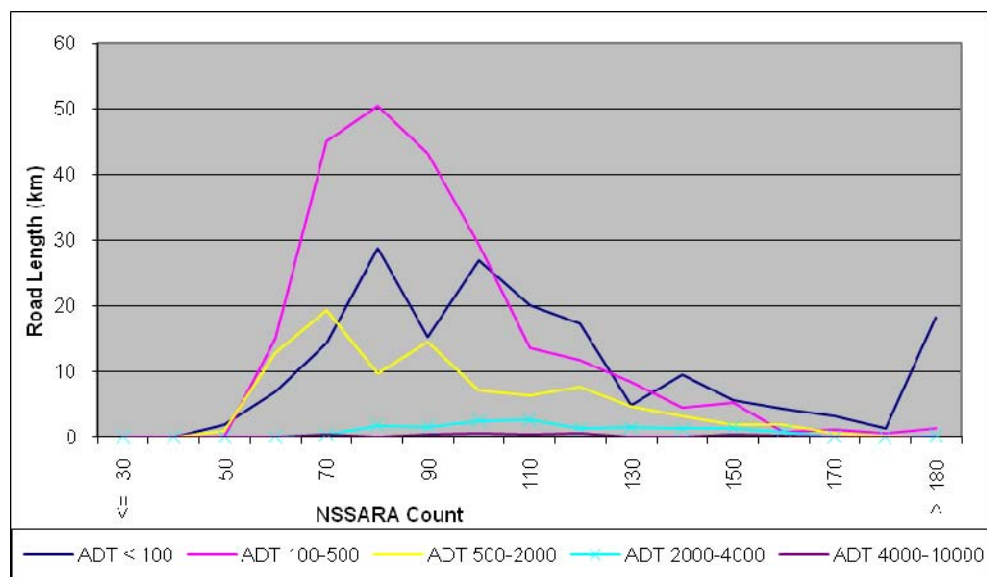
In keeping with the load spreading function mentioned above, the quality of the pavement layers increases closer to the road surface.

Condition

The majority of urban streets have low rates of wear and tear due to low speed and predominantly light vehicles. There is a reasonable length of minor urban streets which are showing roughness values greater than 150, but because of low traffic speeds and numbers this does not necessarily indicate pavement “failure”, and may not be considered uncomfortable by users. These streets are expected to continue to perform satisfactorily for many years with the only maintenance being a reseal when the existing seal becomes worn or brittle.

This chart of AADT vs. Roughness shows that the majority of high roughness pavements are on low traffic roads- mainly in the urban communities. An average of approximately (1200m) annual programme of rehabilitation of both pavement and adjoining kerb lines will slowly reduce the backlog of “roughness”, and substandard kerbing over time.

Figure 17: AADT vs. Roughness



Surfacing Asset Group

Purpose

The term ‘surfacing’ is applicable to sealed and unsealed roads. Surfacing provides a smooth-riding, durable, skid-resistant wearing layer on which traffic will travel. On sealed roads, it protects the underlying pavement from moisture and provides an anti-skid surface for motor vehicles.

Materials

The surfacing of a sealed road is regarded as a capital component of the road because it is designed for a particular life expectancy, always in excess of one year, before it requires resealing. There are several types of surfacing that can be applied including chip seals of various chip sizes, structural asphaltic concrete which also forms part of the pavement, and bituminous slurry seals. The former comprise by far the majority of surfaces on South Waikato roads; asphaltic concrete (or ‘hot mix’) is used selectively in special situations (roundabouts, CBD parking areas) where chip seal does not perform well due to the

scrubbing action of turning traffic. Council is also investigating the use of structural asphaltic concrete on major intersection with a high number of heavy vehicles.

Bitumen used in chip-sealing operations in the District is almost exclusively 130/150 penetration grade in recent years, and is applied under contract by reputable sealing Contractors to NZ Transport Agency specifications.

Sealing chip is supplied by the Contractor as part of the contract from an approved quarry. There is one quarry in the district and several others in adjoining districts that are able to supply approved sealing chip and base course metal.

The total useful life of a surface asset has been set using parameters available in RAMM and common practice life values. The "pavement use" category and material type were the 2 parameters used.

Note that a question has been raised during peer review regarding the useful lives of seals in local roads and also as a result of a large number of seals expiring earlier than their useful life. These values have been found to be incorrect in this district due to flexible subgrades causing early cracking and failure. An exercise will be undertaken in 2012 to revisit the useful life by driving the District and assessing the actual condition of the seals and amending the table.

The following table shows every combination in the RAMM database with the corresponding total useful life in years. The default values have been revised to reflect SWDC lifecycles

Table 26: Surfacing Total Useful Life (years)

| SURFACING | USE 1 | USE 2 | USE 3 | USE 4 | USE 5 |
|---|-----------------|----------------|-----------------|------------------|-------------------|
| AADT | < 100 | 100-500 | 500-2000 | 2000-4000 | 4000-10000 |
| Asphaltic concrete (and "Stone Mastic Asphalt") | 12 | 11 | 10 | 9 | 8 |
| Bicouche / Sandwich | 14 | 12 | 10 | 9 | 8 |
| First coat seal | 4 | 3 | 2 | 1 | 1 |
| Second coat seal | 16 | 14 | 12 | 11 | 10 |
| Locking coat seal | 8 | 7 | 6 | 5 | 4 |
| Reseal – Rural | 16 | 14 | 12 | 11 | 10 |
| Reseal – Urban | 22 | 20 | 17 | 14 | 12 |
| Slurry seal | 8 | 7 | 6 | 5 | 4 |
| Texturising seal | 6 | 5 | 4 | 3 | 2 |
| Two coat seal as 1st | 10 | 8 | 6 | 5 | 4 |
| Two coat seal as 2nd | 18 | 16 | 14 | 13 | 12 |
| Two coat as reseal | 18 | 16 | 14 | 13 | 12 |
| Void fill seal - Rural | 6 | 5 | 4 | 3 | 2 |
| Void fill seal - Urban | 18 | 15 | 11 | 7 | 6 |

Kerb and Channel Asset Group

Purpose

Concrete kerb and channel of various shapes is provided along the edge of most urban streets to collect stormwater runoff, protect the edge of the pavement and provide an edge for collecting litter and ease of mechanical street sweeping. It is also used to a limited extent in rural areas for pavement protection and minimising batter setback. Kerb and channel is generally installed at the time of pavement construction, and renewed with

pavement rehabilitation projects. Kerb crossings are provided in the kerb line to provide vehicular property access, and access to and from the footpath for prams and electric carts.

Materials

Kerb and channel may be composed of continuous slip-formed channel and kerb in a single monolithic section, or of cast-in-situ concrete channel section set against precast kerb blocks, which are laid in a bed of site concrete and pointed on site. Various precast profiles are available for standard kerb, pram and vehicle crossings, catchpit backing sections etc

Condition

Historic surveys indicate a deteriorating condition so Council needs to accelerate the kerb and channel programme under the Drainage Renewal activity. In recent years this has not been done in isolation, but combined with adjacent pavement rehabilitation projects which present a tidy finish to the street on completion.

Drainage Asset Group

The drainage assets consist of culverts, sometimes fitted with inlet and outlet structures; subsoil drains, water tables and catchpits or catch basins.

Catchpits are installed to collect and lead stormwater into the piped reticulation system. These are regarded as stormwater assets in Council's asset register but are maintained under the street cleaning programme. Water tables, although functioning as road pavement drainage assets, are part of the formation and require cleaning and re-shaping frequently. They are therefore not regarded as a capital drainage asset. Data on inlets, outlets and subsoil drains has not been captured to date. Their value is unlikely to be material and maintenance is usually part of culvert or water table cleaning.

There are 2,880 culverts in the District of various diameters, with a total length of 35,323 metres (See table below). The position of culverts is recorded in the RAMM system and the construction date of a culvert is taken as the year that the road was first constructed or first-coat sealed. Where the age or construction date is unknown, the construction date has been assumed as 1 January 1981.

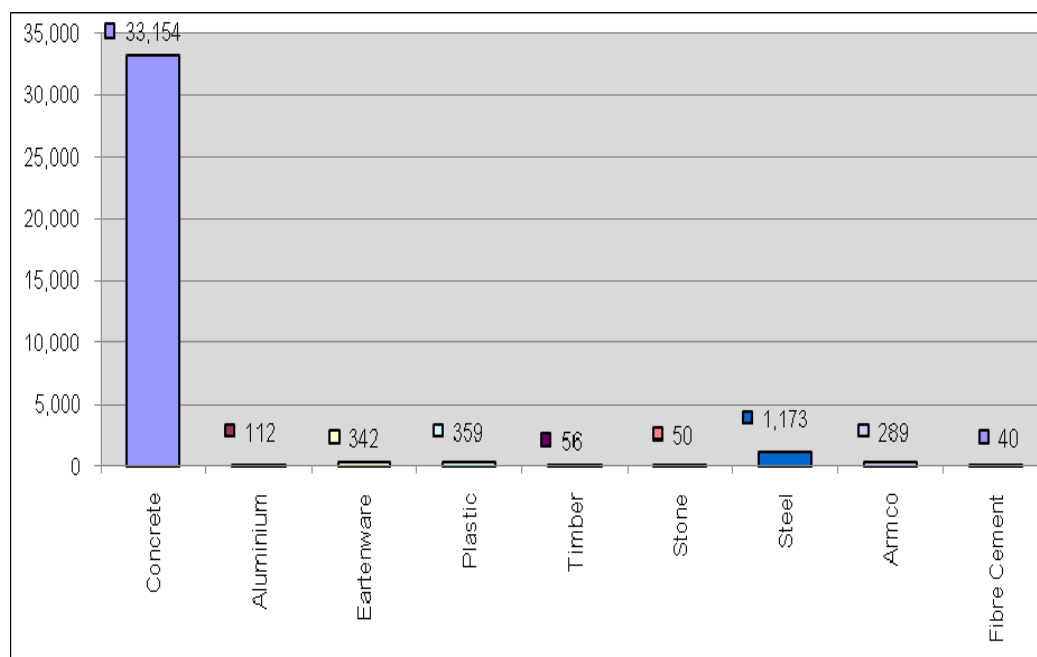
Purpose

Rural culverts are primarily used to carry water under the road where the road cuts across a natural watercourse. They are also used as a vehicle bridge across entranceways to properties and to discharge stormwater runoff from the road surface into waterways to protect the road formation from damage and prevent flooding across the road.

Materials

Culverts are largely constructed of reinforced concrete pipes but several alternative materials are found. Concrete pipes up to 600 mm diameter are generally rubber-ring jointed while flush-jointed concrete or corrugated aluminium pipes are used for larger diameters. The detection of premature deterioration (rusting) in corrugated galvanised steel culverts has resulted in a recent change to the aluminium equivalent. The ends of larger culverts are protected with inlet and outlet structures, often using weak-concrete filled sandbags.

Table 27: Culvert Length (metres) by Material



Structures Asset Group

A schedule of the 34 bridge structures is provided below.

Table 28: Bridge Structures

| Road | Obstacle | RAMM RP | Length (metres) | Construction Date |
|-----------|---------------|---------|-----------------|-------------------|
| Arapuni | Huihuitaha S | 10,852 | 18.97 | 1966 |
| Arapuni | Mangakaretu S | 2,674 | 5.43 | 1963 |
| Arapuni | Pokaiwhenua S | 3,800 | 12.6 | 1964 |
| Arapuni | Waikato R | 14,170 | 51.83 | 1920 |
| Arapuni | Waipa S | 6,970 | 20.5 | 1965 |
| Baird | Matarawa S | 1,016 | 17.19 | 1963 |
| Domain | Oraka S | 1,570 | 18.97 | 1965 |
| Horahora | Pokaiwhenua S | 4,280 | 54.9 | 1944 |
| Jones | Kinleith Rail | 40 | 16.46 | 1950 |
| Kakahu | Kakahu S | 2,226 | 22.17 | 1958 |
| Lake | Oraka S | 488 | 25.3 | 1955 |
| Langlands | Oraka S | 1,155 | 27.43 | 1945 |
| Ngatira | Oraka S | 5,098 | 12.65 | 1963 |
| Okoroire | Oraka S | 492 | 19.81 | 1962 |
| Okoroire | Waihou S | 5,558 | 41.66 | 1961 |
| Old Taupo | Otaneroa S | 2,455 | 6.4 | 1967 |
| Old Taupo | Parahikatea S | 19,980 | 4.57 | 1960 |
| Old Taupo | Waipa S | 2,080 | 9.14 | 1973 |

| Road | Obstacle | RAMM RP | Length (metres) | Construction Date |
|-----------------------|---------------|---------|-----------------|-------------------|
| Paraonui | Mangamingi S | 6,758 | 12.19 | 1957 |
| Paraonui | Whakauru S | 5,370 | 7.62 | 1963 |
| Princes | Kinleith Rail | 25 | 20.12 | 1961 |
| Scott | Kinleith Rail | 525 | 18.29 | 2005 |
| Pearsons | Waipa S | 2,765 | 15.7 | 1961 |
| Sloss | Whakauru S | 89 | 7.72 | 1965 |
| Taumangi | Oraka S | 805 | 20.5 | 1961 |
| Taumangi | Kinleith Rail | 1,542 | 18.59 | 1969 |
| Totmans | Mangawhero S | 1,933 | 6.1 | 1955 |
| Totmans | Waipahihi S | 4,634 | 4.57 | 1955 |
| Te Rere | Ngutuweru S | 778 | 7.72 | 1964 |
| Waiomou | Waiomou S | 952 | 25.3 | 1958 |
| Waotu | Mangaorua S | 11,355 | 11.05 | 1966 |
| Waotu | Pokaiwhenua S | 2,025 | 21.34 | 1955 |
| Wiltsdown | Pokaiwhenua S | 2,020 | 9.14 | 1938 |
| Wiltsdown | Waioraka S | 5,287 | 9.45 | 1960 |
| Total as at June 2011 | | | 601m | |

A schedule of the 11 major culverts over 3.4m² waterway area that are deemed to be structures is provided below.

Table 29: Major Culverts

| Road | Obstacle | RAMM RP | Length (metres) | Construction Date |
|-------------------------|----------------|---------|-----------------|-------------------|
| Darby | Huihuitaha S | 1,547 | 12 | 1979 |
| Horahora | Piarere S | 300 | 45.05 | 1946 |
| Horahora | Waipa S | 9,330 | 16 | 1946 |
| Lake Arapuni | Huihuitaha S | 2,110 | 10 | 1979 |
| Manfield | Whakauru S | 20 | 27.72 | 1979 |
| Old Taupo | Waioraka S | 19,290 | 19.4 | 1945 |
| Parapara | Oraka S - Trib | 5,110 | 50 | 1930 |
| Princess Beatrix | Matarawa S | 75 | 27.72 | 1978 |
| Waotu | Waipa S | 9,166 | 6.6 | 1979 |
| Wawa | Kinleith S | 40 | 10.5 | 1947 |
| Wiltsdown | Mangaorua S | 16,500 | 12.2 | 1979 |
| Total as at 1 July 2011 | | | 237m | |

In addition there are currently (2011) **35** stock underpasses under Council roads. More are being installed each year as the trend to larger farm units leads farmers to own land

on both sides of the road. The ownership and maintenance of an underpass remains with the property owner and is not considered a Land Transport asset. Council may offer to subsidise the cost of an underpass in accordance with the NZ Transport Agency policy, and requires the owner to enter into an easement agreement to install the underpass under the road and maintain it. Council will initiate an inspection of these underpasses as part of the bi-annual bridge inspection.

Purpose

Bridges and major culverts are usually required to provide a path for water (or occasionally, other infrastructure such as railway or road) under the Council's road.

Materials

Bridges are usually reinforced concrete structures. Where longer spans are required, pre-stressed or post-stressed cables are included, usually within the concrete structure.

Many of the larger culverts are of more recent construction and include concrete, wood-stave and proprietary 'Armco' steel, and aluminium materials. These modern alternatives, with the ability to span greater distances than previously, are able to be used as substitutes for small concrete bridges when it is time to replace them.

**Condition**

Many of the previously timber bridges in the District were replaced with reinforced concrete bridges between 1955 and 1973 by the former Matamata County Council. These bridges were of standard Ministry of Works and Development design and detailing of that time. As a consequence of the conservative design loadings, the capacity of these bridges to carry present day vehicle loads is generally very good. All bridges in the district have been rated for overweight and over-dimension loads. The last timber bridge to be renewed was the Scott Road railway overbridge in 2005.

There are several single-lane bridges in the network, but the current volume of traffic on them does not demand that they be upgraded to two-lane bridges. The exception is a single lane bridge on Horahora Road which has traffic volumes up to 700 vehicles a day. The upgrade of the Pokaiwhenua Bridge on Horahora is scheduled to be undertaken in year 2018/19 of the LTP. The upgrade will see a one-lane bridge being replaced with a two-lane bridge as a result of the increased traffic volumes.

Street Lighting Asset Group

There are approximately 2,201 street lights in the district, of which some 325 are attached to power poles not owned by Council. In these situations only the lantern and bracket are Council assets. The ownership of streetlighting assets was resolved in 2000 when Council purchased from United Networks Ltd the poles and fittings that it did not already own, under a transfer and purchase agreement. Council also maintains lights on State Highways by agreement with NZ Transport Agency, at their cost.

Purpose

Streetlights are provided in urban areas to assist pedestrian movement and safety; as a deterrent to crime; and to a lesser extent to enhance the amenity of a neighbourhood

without obtrusive effects. They also provide assistance to road traffic. This last function is the main purpose of rural carriageway lighting, which is principally located at high trafficked intersections.

Streetlight assets have been individually recorded in the SLIMS database. It has been noted that the database contains a number of amenity lights that are not part of the Land Transport assets. These are separately identified for funding reasons.

Council's streetlight maintenance Contractor is Northpower. Power is supplied under a joint venture contract by Meridian.

Materials

Poles owned by the Council are generally 7m timber, fibreglass, pre-stressed concrete, or galvanised steel octagonal section. Brackets (outreach arms) are usually of galvanised steel. The light housing models and lamps vary depending on age and may be High pressure sodium vapour (HPS); Mercury Vapour (MV); and metal halide/halogen lamps. Significant Improvements have been made over the past decade to renew obsolete inefficient lamps, and old laminated timber streetlight columns.

A summary of pole and lamp types on local streets is shown, effective 1 July 2011.

Table 30: Pole and Lamp Types

| Title | No. |
|---|-------|
| Concrete poles with brackets | 1,260 |
| Obsolete fibreglass poles with brackets | 1 |
| Obsolete wooden poles with brackets | 8 |
| Council brackets on power poles | 325 |
| Steel columns: Octagonal | 504 |
| Steel columns: Decorative CBD styles | 94 |
| Decorative uplamps | 21 |
| High Pressure Sodium (HPS) lamps(IP55) | 1,656 |
| Mercury Vapour (MV) lamps (IP55) | 270 |
| High Pressure Sodium (HPS) lamps(IP66) | 54 |
| Metal Halide Lamps (IP66) | 112 |
| Decorative CBD | 69 |
| Pedestrian Crossing | 4 |
| Feature Lighting (LED Uplamps) | 15 |

Footpaths, and Cycleways Asset Group

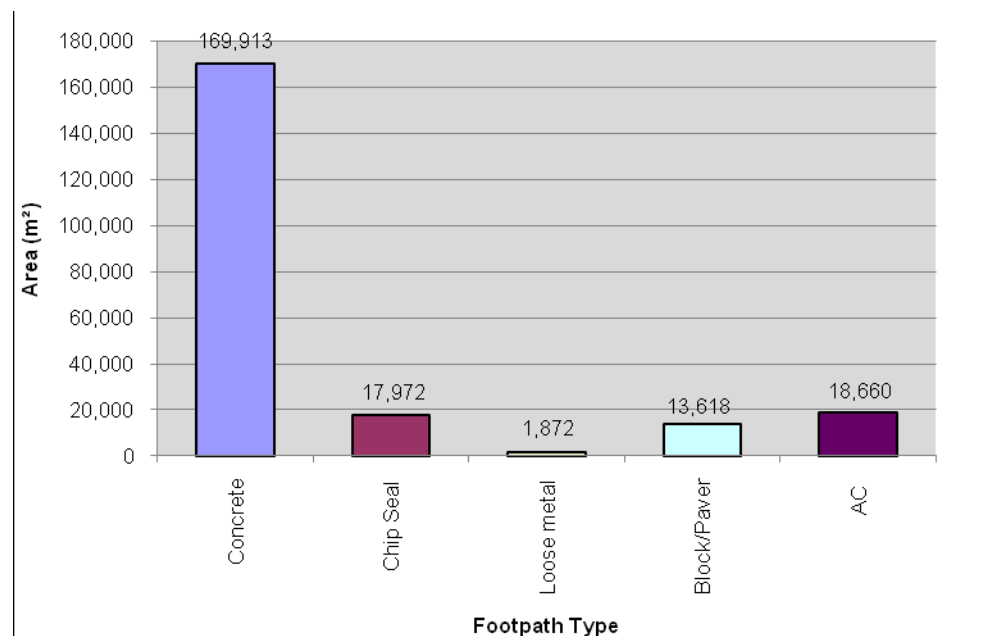
The total length of footpath managed is 165km, with an area of 221500m². Most urban streets have footpaths either one side or both sides of the street. The standard width of concrete pathing for residential streets is 1.1m. The lengths of footpath along pedestrian accessways are also accounted for. Where local streets converge on shopping precincts, schools, churches etc. footpaths on both sides of the street are required, widening to full width footpaths between kerb and boundary outside commercial premises.

This is the case in the CBD areas where various types of full width footpath are utilised. From 1997 - 2002 there was major upgrading of footpaths in the Tokoroa, Putaruru and Tirau CBD areas. High quality clay pavers have been used in Tokoroa, concrete pavers in Putaruru and asphaltic concrete in Tirau. In fringe areas a pattern of pavers and asphaltic concrete has been used. These have replaced either asphaltic concrete or chip seal footpaths and have greatly enhanced the aesthetics of the main shopping centres.

Significant areas of full-width chip seal footpath remain in the commercial fringe areas where pedestrian density is lower but grassed berm areas would be inappropriate.

The table below, sourced from RAMM, identifies length (kilometres) of footpath per community and by material.

Table 31: Footpath Type by Area



Purpose

Footpaths are provided to help separate vehicle and pedestrian traffic in urban areas. This may be seen as a safety measure first, but also a public service. In the business districts, footpaths also provide an expected amenity level for shoppers, retailers and businesses. The Council adopted a Footpath Strategy in 1994 which outlined a long term improvement programme. Since then the Council completed a major Central Business District (CBD) upgrade in each of the main centres that has included the replacement of old footpaths with high standard paving and asphaltic concrete designs. While the paving blocks have been aesthetically pleasing, over recent years they have become a risk due to slipperiness during winter specially area that do not receive any sun light. Council is investigating ways to address this issue with chemical treating.

The footpath inventory is now retained in the RAMM database in tabular form. It covers the types, lengths and areas of each.

Now that the CBD upgrades have been completed there will be a greater emphasis on sealed paths adjacent to CBD areas and concrete footpath replacement in the residential areas throughout the district.

In the CBD, a more aesthetically pleasing block, paver, asphaltic concrete or combinations are provided, bedded on a 75mm thick layer of compacted aggregate and made stable by sand, and mortar in trafficked areas. Sand filling is applied between the blocks.

Lengths include walkways and paths across reserve.

Table 32: Footpath Condition Ratings

| Grading | 2008 Rated (m) | 2003 Rated (m) |
|---------------------------|-----------------|-----------------|
| Grade 1- Excellent | 169,930 | 6,391 |
| Grade 2- Good | 602 | 121,716 |
| Grade 3- Fair | 769 | 32,415 |
| Grade 4- Poor | 555 | 6,148 |
| Grade 5- Very Poor | 234 | 1,940 |
| Total Length Rated | 172,090m | 168,610m |

Council has completed two footpath condition rating surveys over the past 5 years. The table above indicates a significant improvement in footpath "condition" over that period which (hopefully) exceeds the rising expectations of residents for better pathing.

Urgent repairs that are identified as "poor" or "very poor" are attended to in the year of the survey, plus others as priority and budgets allow. Further surveys will be conducted every five years to measure medium term changes in condition.

Traffic Services Asset Group

Traffic services assets include traffic signs, marker posts, road markings, guardrails, sight rails, amenity signs owned by Council, some railway crossing advance warning devices, and other road furniture. Marker posts and amenity signs are not treated as capitalised assets in the Council's asset register at this time. Valuations for these and other capitalised road furniture items will be added as the information becomes available but are not expected to be financially material. Road markings are renewed on Arterial and Collector routes twice yearly; with balance once a year, and therefore are not a capital asset.

Raised Reflective Pavement Markers, (RRPM's) are located on arterial road centre lines only and inspected twice yearly. They are not a capital asset as around 40% are replaced annually either through wear and tear or when sections of road are resealed or reconstructed. Blue RRPM's indicate urban fire hydrants.

Road signs are recorded in the RAMM database. There are currently 3,276 signs of various types. The installation dates are now being recorded and after five to ten years, when the entire stock has been replaced, there should be an improved indication of life expectancy for these assets.

Purpose

The purpose of traffic services assets is to provide advisory and regulatory information and/or physical guidance to road users, improving safety in the road environment. For speed, parking and other regulations to be enforceable, the signs must comply with the prescribed standard. Signs are therefore a key component in the road safety and enforcement partnership with the Police and Crown Agencies.

Materials

All road signs are installed to comply with the Manual of Traffic Signs and Markings. They are generally mounted on white-painted timber and metal posts. The sign substrate panel may be aluminium or tough plastic sheet. Sign legends are usually a special proprietary composite plastic sheet material with encapsulated reflective elements. These have an adhesive backing, and are fixed to the panel using a vacuum-and-heat bonding process in factory conditions to ensure durability. Most signs have retro reflective properties.

Unformed ("Paper") Roads

Unformed roads in the District are generally fenced into one or other of the adjacent properties with no formal lease or rental payable to Council. The need for provision of paper roads to encourage orderly development has now largely disappeared in recent years. Subdivisions will provide any road extension in the future at the developer's expense although existing paper roads could be utilised. There are some 147.3 km of unformed road in the District.

There are some lengths of legal road that are 'unformed' as far as Council is concerned, but are being used for vehicular access to properties that have frontage to them. (e.g. the far end of Jack Henry, and Puriri Roads). In such cases the Council assumes no responsibility for maintenance, but accepts their use as a 'private' road in terms of maintenance and responsibility. As a legal road the public has right of access over any unformed road whether in private use or not. Unformed roads in common use should be signposted at the boundary "end of public road" to clarify responsibilities, and liabilities on Council. Over the last two years Council has proposed to sell off a number of these unformed roads.

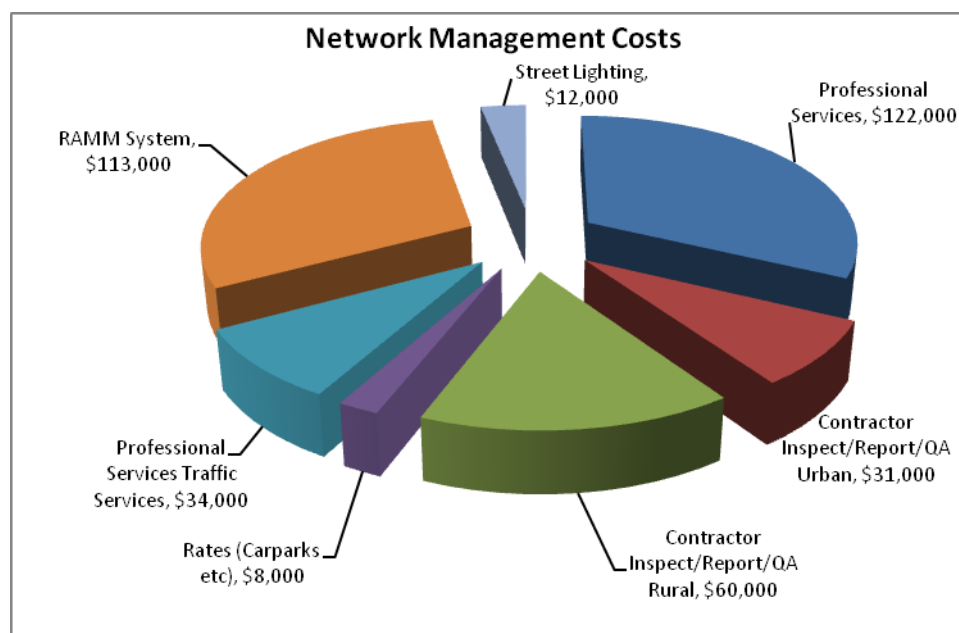
5.2 Maintenance and Operations Plan

It is the intent of Council to operate, maintain, and renew the transport network assets indefinitely so that they continue to provide the desired service, including any nationally or regionally-generated changes in service level where these affect Council's ability to receive subsidies.

Network Operations Activities

Land Transport Network Operations activities are summarised in the chart below. The total annual cost for 2011/12 is \$380,000. The chart excludes the costs of Council's engineering, asset management and support staff, whose effort and expertise is spread over all network infrastructure including Roads, Water Supply, Drainage, Landfills etc.

Figure 18: Roading Operations Costs, \$000



Reporting, Inspections and Surveys

Roads are inspected to ensure they are in acceptable condition; to provide advance warning of potential damage to surfaces, pavement layers and edges; and to measure and monitor road roughness, signs, markings and safety.

Rural roads are inspected by Contractors at specified intervals. This includes surveying road roughness on an annual basis. Since staff are often in the urban areas; the main road is a NZ Transport Agency-administered state highway; local residential streets are speed-restricted and carry low volumes of heavy commercial traffic, and urban residents contribute by notifying problems, there is no specific budget for their regular inspection apart from the maintenance Contractor's reporting.

Traffic Services assets are also inspected by the Contractor at specified intervals. This helps to ensure that damaged and deteriorated signs are replaced.

The data accumulated from these inspections is collated and input to the Road Assessment and Maintenance Management (RAMM) information system.

The maintenance Contractor is required to report on activities and defects detected and repaired, and to operate a Quality Assurance system under the Contract. This provides the most frequent information on asset condition and issues.

Road reserves are not subject to rate revenue, but urban car parks attract this charge which is a minor part of the operations budget.

In-house professional services are provided by the "Southtech Business Unit, and payments made for qualifying land transport activities are authorised by Sec 26(c) of Land transport Management Act 2003. "Local authorities that provided in-house professional services, in accordance with the Transit New Zealand Act 1989 (renamed the Government Roothing Powers Act 1989 from 1 July 2008) **prior** to the enactment of the LTMA (12 November 2003), have approval to provide in-house professional services under the LTMA provisions" (Reference section E3 of NZTA "Planning, Programming, and Funding Manual").

Road Safety Management

Council's road safety strategy is fully integrated with national and regional strategies. The regional goal is to reduce the incidence and severity of crashes in the Waikato Region. This is not the sole responsibility of South Waikato District Council. The components of Council's Safety Management System (SMS), which is a separate document, are shown in the following diagram.

Figure 19: Components of Councils Road Safety Management System



Council's goals rely on contributions to safety via engineering, education and enforcement, including those from NZTA, the Regional Council, and the Police. They are:

- To reduce the incidence and severity of crashes in the South Waikato area
- To achieve the targets set for road crash reduction and road user behaviour
- To foster good road safety attitudes, skills, and behaviour among all road users – drivers, passengers, motorcyclists, cyclists and pedestrians
- To promote and develop a safer roading environment
- To work with key road safety partners and management systems

Crash investigations serve to identify the major problems requiring improvement in the district, and the SMS is geared to correct these issues.

Safety management policies impacting on Council's assets and operations are tabulated below. In terms of asset management, the engineering column is most relevant.

Table 33: Council's Assets and Operations

| PROBLEM | ACTIONS | | |
|-------------------------------|--|--|---|
| | Engineering | Education | Enforcement |
| Poor Observation | Adequate sight distances; consistent intersection controls; adequate, well maintained signs; a network that contains no surprises for drivers; crash reduction studies, speed limits, remedial works | Encourage drivers to stop being complacent and looking without seeing Raise awareness of driving conditions | Support Police in addressing this issue |
| Speed | Environment encourages driver decision-making based on road conditions Improve roads so drivers can travel safely at the environmental speed Crash reduction studies, speed limits, remedial works | Programmes and media strategies | Support targeted enforcement by Police in areas with speed related crash problems |
| Drink-Driving | Ensure road environment is as "forgiving" as practicable Crash reduction studies, speed limits, remedial works | Programmes and media strategies | Support Police and other agencies in addressing this issue |
| Restraints and Helmets | | Programmes and media strategies | Support targeted enforcement by Police |

Design and operational activity sheets detailing relevant standards, guidelines, policies, procedures and training, together with a review and continuous improvement process, are employed as part of the SMS.

Corridor Management

An important part of Southtechs administration of the network is responding to daily enquiries concerning the road/ street corridor by public and private agencies: contractors wishing to work in the road to install utility services, retailers wishing to occupy footpaths, people wanting to remove trees adjacent to the street, farmers wanting to move cattle across country roads, farmers wanting to renew fences on the roadside of their property boundaries, NZ Police wanting assistance with plans, signs for emergency events, administration of "Temporary Management Plans" for signs and devices on the roads, complaints about stock manure on rural roads etc.

Street Lighting

The Council has engaged the services of Odyssey Energy Ltd (OEL) to provide consultancy advice and contract management for the streetlight assets. OEL maintain the database, assess the network, recommend upgrading and maintenance work, and provide valuation and depreciation assessments.

The annual cost of this service is covered from the network management professional services budget.

Maintenance of street-lighting assets is carried out by Northpower.

Professional Services Business Unit

Professional services, which include maintaining and developing asset inventories, standard specifications and drawings, project design, supervision and management, are generally provided by agreement with Southtech, the Council's consultancy business unit.

Council's professional staff is favoured for works design because of their experience and local knowledge, enabling them to produce cost effective solutions. In order to provide a critical mass of work to attract and retain staff and provide a full work programme, it is necessary to provide land transport professional services in-house. As a small local authority, engineering staff are required to specialise in a number of disciplines. Land transport engineering is an integral part of this work.

When necessary, specialist assistance with Asset Planning, RAMM data capture, database hosting etc is provided by quotation from external consultants. These decisions have been made in accordance with NZ Transport Agency rules.

Maintenance Activities

All Land Transport Network maintenance activities are currently carried out by Downer EDI Works Ltd. ("the maintenance Contractor") under a three-year contract for service. The contract is tendered, awarded and administered in compliance with NZ Transport Agency Competitive Pricing Procedures (Price Quality Method) in order to qualify for national subsidies. The contract document, "Roading Maintenance Contract 2009 - 2012" is available for inspection. Costs are distributed as shown in the chart below and total about \$1,8M per year.

The newly revised "Levels of Service" will have an impact on the timely response to events by maintenance contractors, and appropriate completion/ sign off procedures. The current Contract has a valuable "performance appraisal" section to focus on customer needs, and areas for improvement over the duration of the works.

The general requirements of the maintenance contract are consistent with the annual NZTA "Land Transport Programme Relationship Protocol." They include:-

- General Management - inspections, programming, reporting of defects, traffic management
- Pothole Repair
- Repair of Surface Openings and Minor Surface Levelling
- Repair of Surface Defects on sealed roads
- Repair of Edge (of seal) Breaks
- Digouts and Stabilised Patching of sealed pavements
- Maintenance of Unsealed Shoulders - repair and maintenance grading of low shoulders
- Maintenance of Unsealed Roads
- Vegetation Control on Rural Roads - mowing of verges and other grass areas
- Drainage - cleaning of culvert pipes, inlet and outlet structures, and cesspits
- Maintenance of Roadside Channels and Drains
- Kerb and Channel Repair
- Stormwater Structures - bridges, culverts, manholes, sumps, slot drains, bridge deck drainage, headwalls and flumes
- Emergency Work - responding to emergency events as appropriate
- Quality Plan and Testing of Materials

The contract agreement includes operating to a Quality Plan to ensure that the work can be properly carried out. Scheduled monthly meetings and reports are used to advise problems, plan future activities and identify future works for longer term planning. The quantum of work carried out in each of these activities may vary from year to year consistent with maintaining the levels of service, NZ Transport Agency Annual Protocol requirements, and standards set out in Section 4 herein.

The maintenance Contractor is required to recommend a forward monthly maintenance programme based on his inspections. The asset manager will approve the programme, with or without adjustment, and monitor progress.

Most maintenance outputs are carried out at fixed contract rates and are accommodated within the NZTA-assisted programme. The total amount of urban maintenance activity is a small part of Council's total Land Transport budget and is reasonably consistent from one year to the next. Unusual costs can be accommodated within the budget by the flexibility allowed in NZTA's Policy.

Roads Maintained by Forest Companies.

About 50 km of road owned by Council but used predominantly by Hancock Forest Management for forestry operations, are assumed to be maintained by the forestry companies.

The reported agreement between Matamata County Council and NZ Forest Products for "off highway" crossings under the Traffic Regulations 1976 is now superseded by changes to the legislation, Council, and forest owning Companies.

Council does not monitor the maintenance and condition of these roads.

Figure 20: Maintenance of Local Roads 2011/12

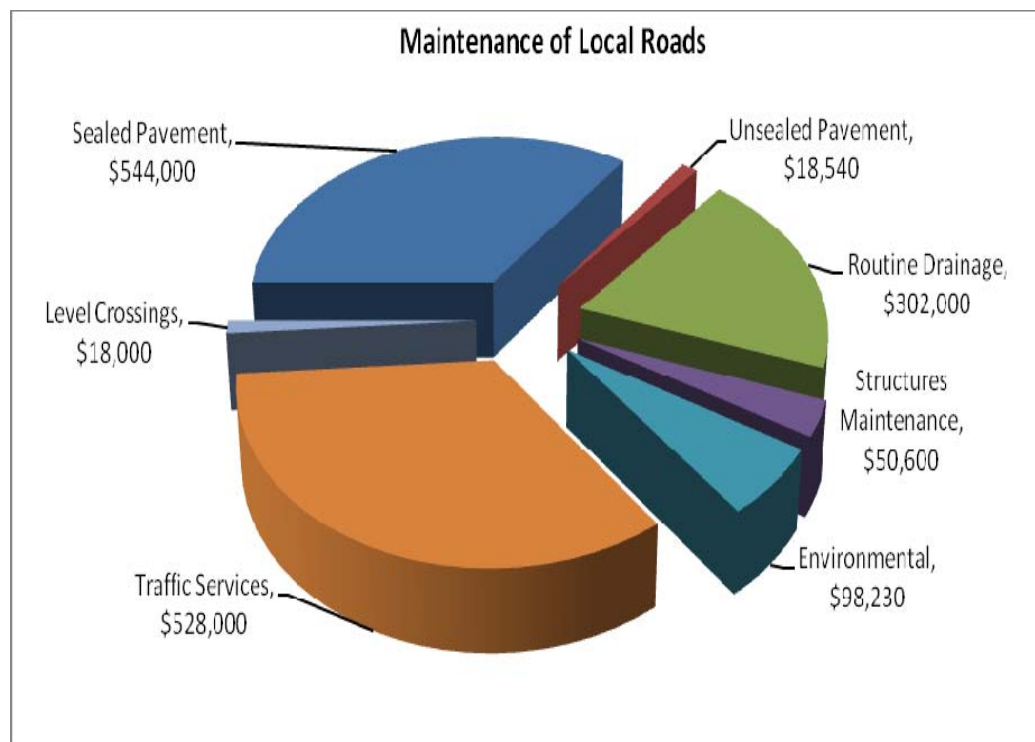
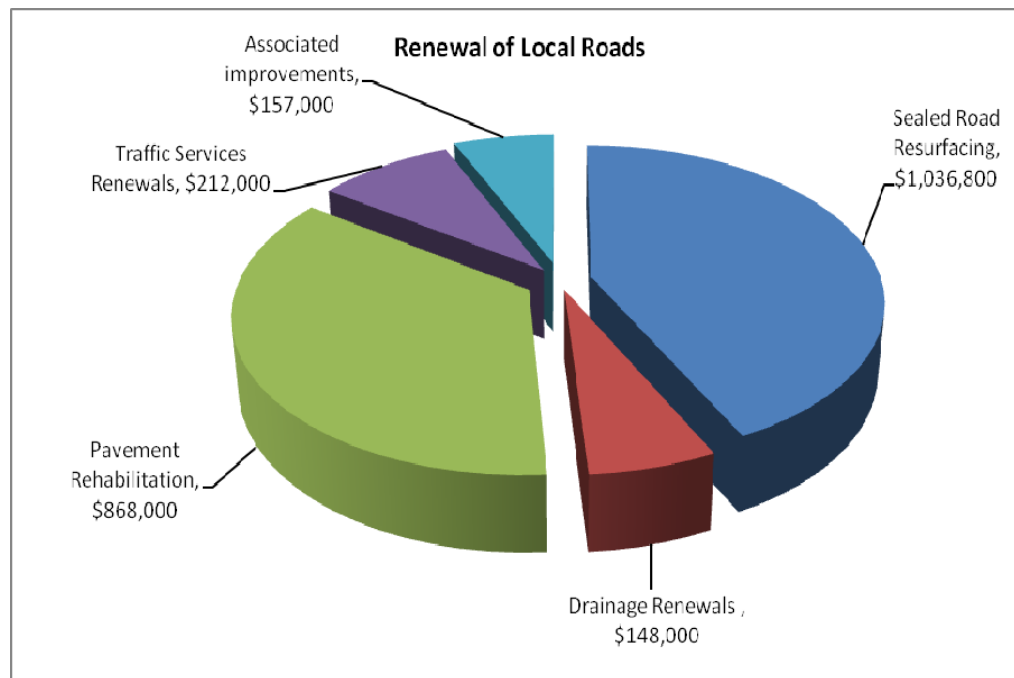


Figure 21: Renewal of Local Roads 2011/12

Earthworks Asset Group

The strategies applied to maintenance of other assets, particularly drainage assets, are intended to preserve the earthworks and pavement. The ingress of water is the primary mode of failure of both sub-grade and pavement layers. The maintenance described below aims to preserve the load bearing capacity of the sub-grade, since no direct maintenance can be carried out on this layer where it is buried below the pavement.

Maintenance of the earthworks, where they are not buried, takes the form of grass mowing, filling of any tension cracks caused by ground movement, and the removal of slumped material where batters and banks may experience minor erosion.

Council does not budget for maintenance of urban street berms along privately owned frontages. The value of rural vegetation control is \$122,000 per annum both subsidised and non-subsidised.

Pavement Asset Group

The above comments also apply to the pavement. Along with water ingress, heavy loads are a major cause of pavement failure. The impact loads created by heavy or high speed traffic after loss of surface shape are many times the normal design load. Occasionally, pavement is damaged due to defects in the sealed surface, creating potholes. Prevention includes rapid maintenance response to waterproof and smooth the defect, and the routine re-grading and compaction of unsealed shoulder areas. This work is covered by maintenance contract schedule items provided for under the budgets for unsealed shoulders, dig-outs, and carriageway defects, totalling about \$966,140 per annum.

Surfacing Asset Group

Where heavy traffic is using minimum-width roads, or for other reasons frequently pulls off the sealed surface on to an unsealed shoulder, additional wear to the edge of the sealed pavement occurs. Maintenance operations periodically replace the lost sealed edge and repair widened sealed areas. This work is covered by a maintenance contract scheduled item provided for under the budgets for edge breaks, seal patching, and markings with a total value of about \$162,000 per annum.

Kerb and Channel Asset Group

Concrete kerbs and channels require occasional repair when damage is caused, for example by heavy vehicles mounting the kerbs. This can occur when long vehicles enter and exit local driveways.

Where no concrete channel and piped system is provided, the surface water runoff is captured by open graded v-shaped drains which lead water away from the road. Cleaning of these assets is financed by an annual budget for channels and drains amounting to some \$35,000.

Drainage Asset Group

Regular inspection, annual cleaning of catchpit grates and sumps, and periodic street sweeping occurs to remove settled silt and debris. This is governed by the following schedule which gives rise to costs of \$166,000 per year, with only 30% qualifying for financial assistance from NZ Transport Agency.

Table 34: Drainage Asset Group Inspection Program

| Location | Inspection Interval |
|--|---------------------|
| Central Business Districts of Tokoroa, Putaruru and Tirau | 3x / week |
| Primary Streets all areas | Monthly |
| Secondary Streets, Service Lanes and suburban shop frontages | Two Monthly |
| Local Roads | Three Monthly |
| Public Carparks | Two monthly |
| Other Streets and Service Lanes | Three monthly |
| Rural kerblines, Arapuni Dam and Adjacent Carpark | Six monthly |

Additional seasonal cleaning is specified to cater for autumn leaf falls.

Street and sump cleaning is contracted by Council on urban state highways by agreement with NZ Transport Agency.

All culverts are inspected and cleaned on a regular basis. Inlets and outlets need regular maintenance to prevent undermining and collapse of the end pipes. Inlet and outlets are cleaned once every two years on rural culverts. Deficiencies are noted and repairs or replacements are carried out as required. Typical faults include displacement of joints and undermining of individual pie sections, rather than asset component deterioration. Big culverts are checked annually. The cost of cyclic culvert maintenance, drains, channels, and removal of high road shoulders is about \$365,000 per annum.

Structures Asset Group

Normal physical maintenance on these very durable assets is minimal. However, they must be in good condition in order to withstand infrequent but potentially destructive storms. Therefore all bridges are fully inspected on a two yearly frequency with waterways and general condition checked six-monthly, under the professional services budgets. A small programme is required each year to attend to superficial deterioration, e.g. painting handrails, waterway clearance costing \$50,000.

Deficiencies identified in the biennial inspections are attended to as necessary. Any major works are identified well in advance by this process.

With the increasing frequency of overweight loads being transported on roads there is a need to monitor the effects on the more frequently used bridges. Bridges such as the Oraka Stream Bridge on Okoroire Road, and bridges on Wiltsdown, Horahora and Arapuni are monitored in particular.

Street Lighting Asset Group

The Contractor inspects all lights on a monthly frequency and attends to lamp replacements, cleaning and other general maintenance as required. All maintenance items are reported monthly to the SLIM's database which generates payment in terms of the contract. The inspection regime works well with over 80% of all faults being attended by the Contractor during the regular monthly inspections.

General public complaints are relayed weekly to the Contractor.

Footpaths Asset Group

The footpath maintenance budget is \$1,270,000 unsubsidised over next 10 years. Footpaths tend to be high-maintenance assets since they are easily damaged by vehicles (including heavy verge mowing equipment) being driven over them, by maintenance work on underground services in the street berms and by street tree roots. Vehicle crossings are part of the footpath asset but are constructed more strongly to sustain these loads and resist accidental damage.

A programme of regular footpath cleaning ensures the high quality paver surfaces are maintained appropriately and appropriate appearance is preserved. The pavers are washed down and gum and other marks are removed on a regular basis as part of the "litter" activity. Efforts are being made to reduce the slipperiness of clay pavers when wet, by chemically treating priority lengths of CBD paths each year.

Footpath repairs are carried out where short lengths of damaged asset can be isolated. Typical footpath repairs include cutting out sections of disjointed concrete path and replacing it, patching of chipseal, smoothing asphaltic concrete surfaces and re-laying loose pavers.

A further issue is the potential for old or very young pedestrians to be injured by tripping on uneven damaged path. These users may represent a significant proportion of footpath traffic, i.e. those who do not drive. Council has initiated removal of these tripping hazards by grinding down raised footpaths. Around \$10,000 is spent annually by a sub-contractor to undertake this work.

In residential areas each property owner is expected to maintain any grassed berm fronting the property. In all other areas the Council accepts the maintenance responsibility.

Traffic Services Asset Group

A total of \$517,000 per year is expended on signs (\$35,000), road markings (\$212,000) and streetlighting (\$270,000).

Road marking repainting is twice yearly on Arterials and some busy Collector routes, with annual remarking on the balance. Remarking in recent years has embraced new technology with "beaded water borne" products which show improved performance.

The condition of signs is monitored by the maintenance Contractor and scheduled for replacement as required. The signs asset is therefore maintained to a high standard, as is appropriate for road safety. There are no established criteria in use for determining condition, such as reflectivity, and this is therefore left to the experienced judgement of the Contractor and asset management staff. Replacements have been installed as identified in a comprehensive condition report (2004) by Harris Consulting.

Railway crossing warning devices within the rail corridor are inspected by other agencies.

Deferred Maintenance Statement

Currently there is no known deferred maintenance in any Land Transport assets and the full service potential of the assets are being maintained.

The policy is to avoid any deferred maintenance and, if it does occur, to document same in the assets database and account for it accordingly.

Land Transport assets, with the exception of bridges, structures and stormwater culverts, have shorter useful lives than many of Council's buried water and drainage assets. Many of them are also more visible and simple to inspect. Having completed at least one lifecycle, the management of these assets is far better understood. The National NZ Transport Agency subsidy structure, complete with investment criteria, standard specifications and many detailed guidelines, is also of considerable assistance in managing the maintenance, renewal and construction of new road infrastructure.

Condition, in particular road roughness, maintenance cost and other factors are monitored and used to monitor our network against comparable road controlling authorities.

Renewal and construction works are competitively tendered in the same way as described for maintenance services in 0.

5.3 Renewals

While a theoretical programme of asset renewal required over this AMP planning period would be based on asset installation dates and standard asset lives, this does not mean that assets are automatically replaced when their life should be over. Condition, reliability, maintenance cost and other factors are monitored and used to determine which assets are actually replaced.

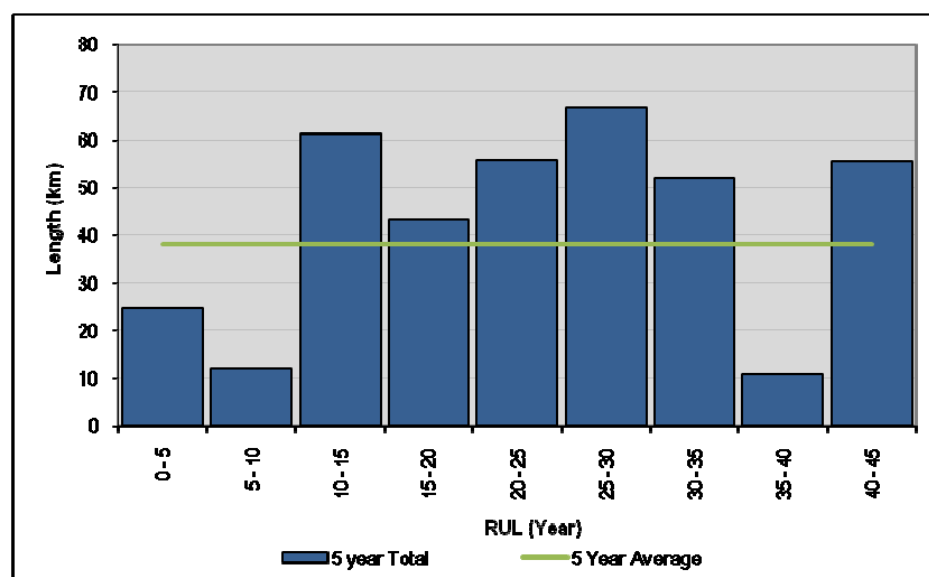
Pavement Asset Group

"Pavement rehabilitation provides for the replacement of, or restoration of strength to, pavements where other forms of maintenance and renewal are no longer economic"

Replacement takes one of two forms, reconstruction or pavement treatment. In either case, existing granular layers may be salvaged and re-laid, sometimes employing lime or cement stabilisation of the existing pavement. New base course layers are added and the finished work is first-coat chip-sealed as part of the budget.

An annual programme of 6 to 8km of rehabilitation has been completed over the past decade. The reduction in the backlog of this work has seen an overall improvement in the rural network, but increased roughness on urban streets. It is important that "rough" urban streets with substandard kerbs are rehabilitated with a regular 800 to 1200m programme each year; otherwise the total network will continue its apparent increase in roughness.

Figure 22: Total Pavement Remaining Life vs. Length in 5 year Blocks



The figures above indicate the tools available in "RAMM" to project asset renewal needs over a long period of time. In these two examples "resurfacing" (sealing) shows an

increasing need over the next 10 year planning period. In the second example "pavements" indicates the need to renew on average of 38km for each 5 year period throughout the 45 years. Asset management activities include re-prioritising the predicted requirements to achieve a smooth investment programme, extending the life of some road sections and bringing forward others which may be deteriorating faster than projected. Refer to the MWH dTIM's report, Summary of Predicted Condition Trends and Budget requirements for Pavement Maintenance.

Extended life is expected from the more recently reconstructed pavements and this has been reflected in the assessment of depreciation of pavements. The programme over the next 3 years follows (in 2011 dollar values) including professional services:

- Year ending 30 June 2013 \$ 837,000
- Year ending 30 June 2014) \$ 860,000
- Year ending 30 June 2015 \$ 860,000

Note the change in emphasis from reconstruction to "least cost maintenance" strategies. This change means that the pavement integrity should not be compromised, but geometric improvements are now severely limited.

Surfacing Asset Group

Council's re-surfacing programme is the key to sustaining the road surfacing asset in good condition and optimising the cost of pavement reconstruction.

In the development of the annual reseal programme both the RAMM Treatment Selection programme are used to establish an initial list of pavements showing signs of deterioration and that will require resurfacing.

Seal coats on all roads are maintained in good trafficable condition and resealed prior to becoming worn and failing. The seal life expectancies are followed fairly closely and confirmed by inspection prior to setting each year's programme. A steady programme, around 40 kilometres per annum of resealing and asphalt surfacing is prudent to maintain this valuable roading component.

Resurfacings forecast to require the following expenditure in the next three years showing a real increase (in 2011 dollars) on account of increased lengths of network from the forest conversions, budgets include Professional Services.

- Year ending 30 June 2013 \$1,049,000
- Year ending 30 June 2014 \$1,060,000
- Year ending 30 June 2015 \$1,060,000

The majority of Council's resurfacing budget is spent on TSF (Thin Surface Flexible), surfacing, usually chip seal. Specific areas are treated with alternate surfacings as are allowed for in special areas:

Asphaltic Concrete: appropriate in identified CBD zones; high loading and stress areas i.e. roundabouts and intersections.

Slurry surfacings: currently used infrequently, but appropriate in cul-de-sacs and parking lanes.

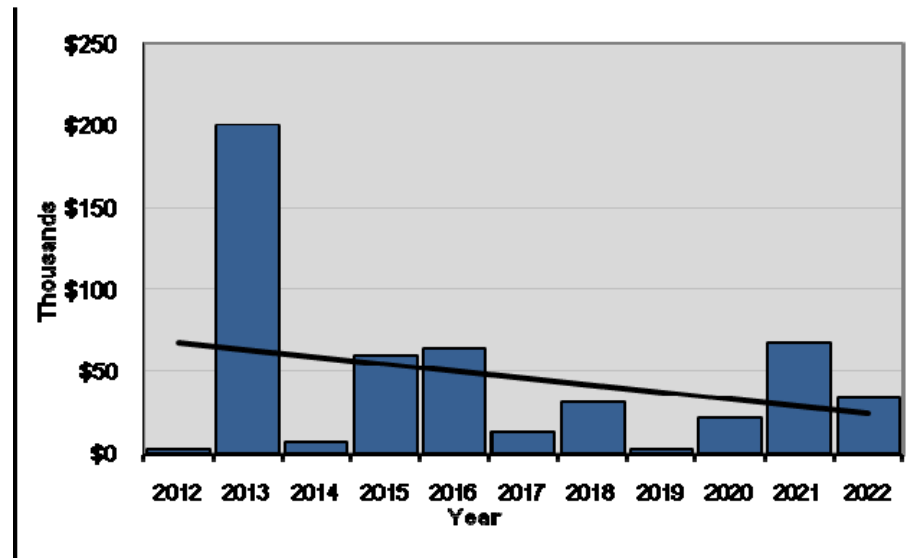
Kerb and Channel Asset Group

Kerb and channel renewals are initiated by either the extent of cracking, dislocation, breakage or concrete deterioration; and by adjacent pavement rehabilitation works. They are funded from the "Drainage Renewals" (\$80,000), and "Non Subsidised" (\$90,000) accounts to gain

1,200m of kerb replacements in 2011/12 (or 800m of urban carriageway).

Drainage Asset Group

Figure 23: Culverts: Age-based Replacement Costs in AMP Period



Only minor renewal of drainage assets is expected in the plan period. Most culverts have considerable remaining life, and therefore renewal requirements are decreasing.

Often culverts that have obvious faults can continue to provide adequate service for many years in that condition without risk to road users. Some fairly recently installed corrugated steel culverts are indicating a poor useful life, and a backlog will need to be considered during the next 10 year planning period.

Culvert renewals are funded from "Drainage Renewals" (\$65,000) for the 2011/12 year, plus a proportion of \$5,200 for Professional Services.

Structures Asset Group

There are currently only one renewal planned for the bridge assets as they are in generally good Order, but there are some very large "woodstave" culverts (that qualify as "bridges") showing signs of deteriorating condition. All bridges and large culverts are inspected closely every two years with a detailed inspection every six years. Pakaiwhenua Bridge on Horahora Road is planned for 2018/19 at an estimated replacement cost of \$1,439,000. The upgrade will see the current bridge being replaced to provide two way traffic movements over the Pakaiwhenua stream as a result of increased traffic volume on Horahora Road.

Street Lighting Asset Group

As recommended in OEL's street lighting asset valuation 2004, renewals were prioritised over a 10 year period. The strategy is as follows:

- Replacement of wooden poles
- Standardising in urban residential areas on more efficient 70 watt high pressure sodium lights
- Standardising on arterial streets with 150 w HPS lights to obtain a luminance of 0.5 cd/m²
- In CBD areas obtain luminance values of between 3 and 25 lux, averaging 7/10 lux
- Replacement, by the end of this decade, of the old laminated timber street light columns in Tokoroa

The strategy is nearing completion with the balance of old timber columns expected to be replaced in 2009/10, and good progress has been made replacing obsolete inefficient lamps with modern HP sodium units when they need to be replaced.

The strategy was updated in June 2008, and priorities set for upgrading streets with seriously substandard lighting. The forward programme for improvements is funded from "traffic services renewals" in the sum of \$100,000 in 2009/10 inclusive professional services.. Specific sites, especially rural intersections could be funded from the "minor (safety) improvements" category.

Footpaths Asset Group

The five yearly "condition rating survey" indicates the asset as a whole is improving. The extent of cracking, dislocation, slipperiness and material deterioration determines priority works. Resident surveys and complaints are also used as a subjective measure to monitor public concern.

The current trigger for repairing dislocated footpaths is a 20mm displacement on the concrete path. This amount of dislocation can occur quickly with tree root intrusion and seasonal fluctuations. The tree roots are either removed or bridged with flexible pavement, i.e. concrete pavers. All repairs are funded from the "Footpath Maintenance" activity currently \$110,000 per annum.

Now that the CBD upgrades have been completed there will be a greater emphasis on footpath replacement in other areas throughout the district. Chip sealed pathing on the fringes of commercial areas are generally paved with "hot mix" asphalt to provide an improved finish.

These improvement works are funded from the capital "footpath upgrade" activity currently \$50,000 per annum. Footpath maintenance and renewal budgets are the largest activities that do not receive financial assistance from NZ Transport Agency- with the exception of "safety footpaths" e.g. Tirau Street, Putaruru opposite the Cemetery.

Traffic Services Asset Group

Approximately 460 signs are replaced annually giving an average life of 7 years/sign. The posts that signs are erected on tend to last an average of 9.3 years. An average life of 7 years is used for depreciation purposes.

Signs, marker posts and guardrails are renewed as condition requires. Regulatory signs receive a higher priority than other warning or information type signs.

Routine maintenance and renewals are funded by two "Traffic Services" activities with \$212,000 allocated for 2011/12.

Traffic Services renewals relate to street signs (regulatory, warning, and information styles) for an annual cost of \$106,000, and streetlighting (renewal of obsolete laminated timber/ concrete columns, lamps, control gear, and cabling to the Network fuses) at an annual cost of \$106,000 (11/12)

5.4 New Works

New works will provide additional assets which increase the level of service, or introduce a new service. Ability to fund improvements to existing levels of service is limited. However, this will be necessary in some cases. Factors which drive new works investment include:

- As mentioned in 2.1 Activity Goals & Objectives, while future regional or district transport strategies may require additional public transport assets to support new service levels, the main projected investments in new works are road assets
- Public Demand, mentioned in 0 (Resident Population Demand for Changes) for extension of chip seal to currently un-sealed sections of roads or for improvement of road edge treatment from un-sealed shoulders and water tables, to kerb, channel, catchpits and culverts
- Potential requirement for roads currently maintained by Forest Owners to become public-use assets as forestry blocks are broken up into dairy farm units. This trend

is likely to increase as farm conversions move further away from the established Land Transport infrastructure

- Improvement in standards driven by changes in traffic type, volume and/or heavy commercial vehicle loading. These may be driven by the above land use changes or by increased production volume in dairy, bottled water or other industries. Improvements may be essential for safety or quality reasons.
- Costs of improvement driven by Safety Management System implementation may also include capital expenditure, either by increasing the cost of constructing road assets, or by investment in additional or improved signs, crash barriers or other systems

Programmes and projected costs are described in the following sections.

Un-Sealed Roads

On un-sealed roads the surfacing is in the form of a wearing course of metal that is regularly graded and renewed to prevent rutting, potholing, corrugation and other deterioration. This activity is a very small part of the road network management so this resurfacing is treated as a maintenance item, and not regarded as a capital asset.

Seal Extension

Seal extensions are a discretionary improvement to the network providing improved amenity values for residents, and a dust free surface more tolerant to weather conditions. None of the current list of potential works has sufficient benefits to receive financial assistance from NZ transport Agency, so they are programmed as “non- subsidised” rates funded projects. There are a limited number of urban streets that are unsealed, which together with rural lengths up to the last residence on the road will be programmed for seal extensions, targeting 400 – 600m in alternate years starting in the fourth year of the LTP.

Underwidth Roads

Underwidth roads are a safety issue and the trend for larger heavy vehicles, such as milk tankers and logging truck and trailers, has required an ongoing programme of seal widening of around 3-4 km annually for the past 5 years, over and above the rehabilitation programme. A continuation of this activity at the lower end of the 3 to 4km target is recommended but as a result of the LTP process this activity was suspended for the first three years of the LTP and will resume in 2015/16.

The seal widening activity will focus on completing widening on low volume through roads, used by heavy vehicles on a daily basis, but will primarily focus on improving widths on high volume roads.

Other underwidth low volume roads will be improved by ensuring that there will be adequate approach sight distances.

Culvert Capacity and Bridge Waterway Upgrades

Major culverts or bridges which do not provide for the increased flood protection implied by the 2002 revised level of service for stormwater, or change in land use will need to be replaced with larger structures, or channels may have to be lined, either as distinct projects, or during condition-driven replacement. The upgrade component of these works can be treated as a new works capital cost in financial terms.

Growth or Contraction of Demand

Land use conversions from forest to pastoral farming have created a demand for extensions to the public Land Transport network. Any increase in the network arising out of the conversions have (and will be) upgraded as necessary by the private developer to Council standards, and “vested” as public road assets. Industrial and residential subdivisions are also contributing to an increase in the network. These assets are built to Council standards and “vested” also with Council as public road assets.

Kerb and Channel Asset Group

Additional kerb and channel might be requested to improve residential amenity, or as a least cost maintenance option. In the latter case, kerb and channel is relatively low in maintenance requirements while roads with un-constrained edges sustain damage from edge break and require regular maintenance of feather-edges, un-sealed shoulders, feather-edge and water tables. Subsidy for these works may be obtained, subject to NZ Transport Agency approval.

Drainage Asset Group

Culverts which do not provide for the increased flood protection implied by the 2002 revised level of service for stormwater or change in land use will need to be replaced with larger pipes either as distinct projects, or during condition-driven replacement. The upgrade component of these works can be treated as a capital improvement cost in financial terms.

Structures Asset Group

There are currently no plans to increase the capacity of bridges e.g. extra lane widths during the planning period.

Street Lighting Asset Group

The shift in priority from renewal of old timber lighting columns in Tokoroa, to general lighting improvements is funded from the "Traffic Services Renewals" activity. Any increase in service levels can be considered capital improvements. Amenity lighting is funded from non-subsidised accounts.

Footpaths Asset Group

Priority is maintenance of existing assets, with renewal works on improved/upgraded paving – generally adjacent to CBD areas. A limited number of pedestrian accessways have basic metalled surfaces. Future capital works are related to mobility crossings and limited extensions.

Minor (Safety) Improvements

There will be a continuing demand to make safety improvements in urban and rural areas and the approximate \$250,000 per annum provision in the land transport programme. The change in the funding assistance from NZTA for the coming three year block will see the current rate of 8% reduced to 5% of the maintenance and renewal budget. Although this is not adequate the associate improvement budget is intended to assist with any shortfall. With the decision made by Council to remove the associate improvement activity a number of the minor improvement project will be deferred as a result of financial constraints and will resume once the budgets have be restored. These projects are identified by crash analysis the deficiency database or pro-active inspections and collated into a forward programme of safety improvements. Their purpose is to reduce the current accident frequency or severity, and they may result in adding or improving existing Land Transport assets as a result.

Various components are commonly required, and these often consist of traffic safety assets such as signs and sight boards, guardrail, road marking, pedestrian refuges or islands.

They may also include street lighting, other site improvements, seal widening, isolated road geometry improvements which can be associated with renewal works, and construction of additional roads, bridges or culverts. The latter are have been discussed, where known, in the preceding sections.

5.5 Disposal Plan

While unformed road reserve within forestry areas could be developed and become public roads in the future, other sections of unformed road reserve may be closed and sold to the adjoining property owner – on request.

- Removed bituminous materials are recycled on site during construction works
- Old poles are sold for reuse (scrap)
- Some street light components may be held as spares for obsolete items
- Culvert pipes are recycled by Contractors
- Concrete paths are crushed and recycled

5.6 Summary of Key Works

Some of the significant new capital works planned within the new LTP:

- Arapuni Deviation RP 4.3 - 5km. This realignment of an s bend near Pearson Road has been promoted for several years, but necessary acquisition of land and funding has been protracted. Design drawings are finished, resource consents from Environment Waikato granted (for earthworks, and a culvert), and some land purchases have been completed. A “notice of requirement” process under the RMA to secure the alignment as future road is underway, and further options for land purchase/ exchange are being considered
- Hetherington Road intersection with Okoroire Road needs to be relocated to improve safety, and allow for future expansion of the adjacent Tirau cemetery reserve. Land negotiations have delayed this intersection safety improvement work; and a “notice of requirement” is necessary to secure both the road realignment, and cemetery public works for the next decade
- Waotu Road intersection with Old Taupo Road. The primary route is now Old Taupo Road, with poor sight lines on Waotu Road, and lower approach speeds, the intersection controls will be relocated to Waotu Road.
- Old Taupo Road. Out of context corner at 35km/hr. Discussions are currently underway with property owner

6.0 QUANTIFYING AND MANAGING RISK

6.1 Risk Management Strategy

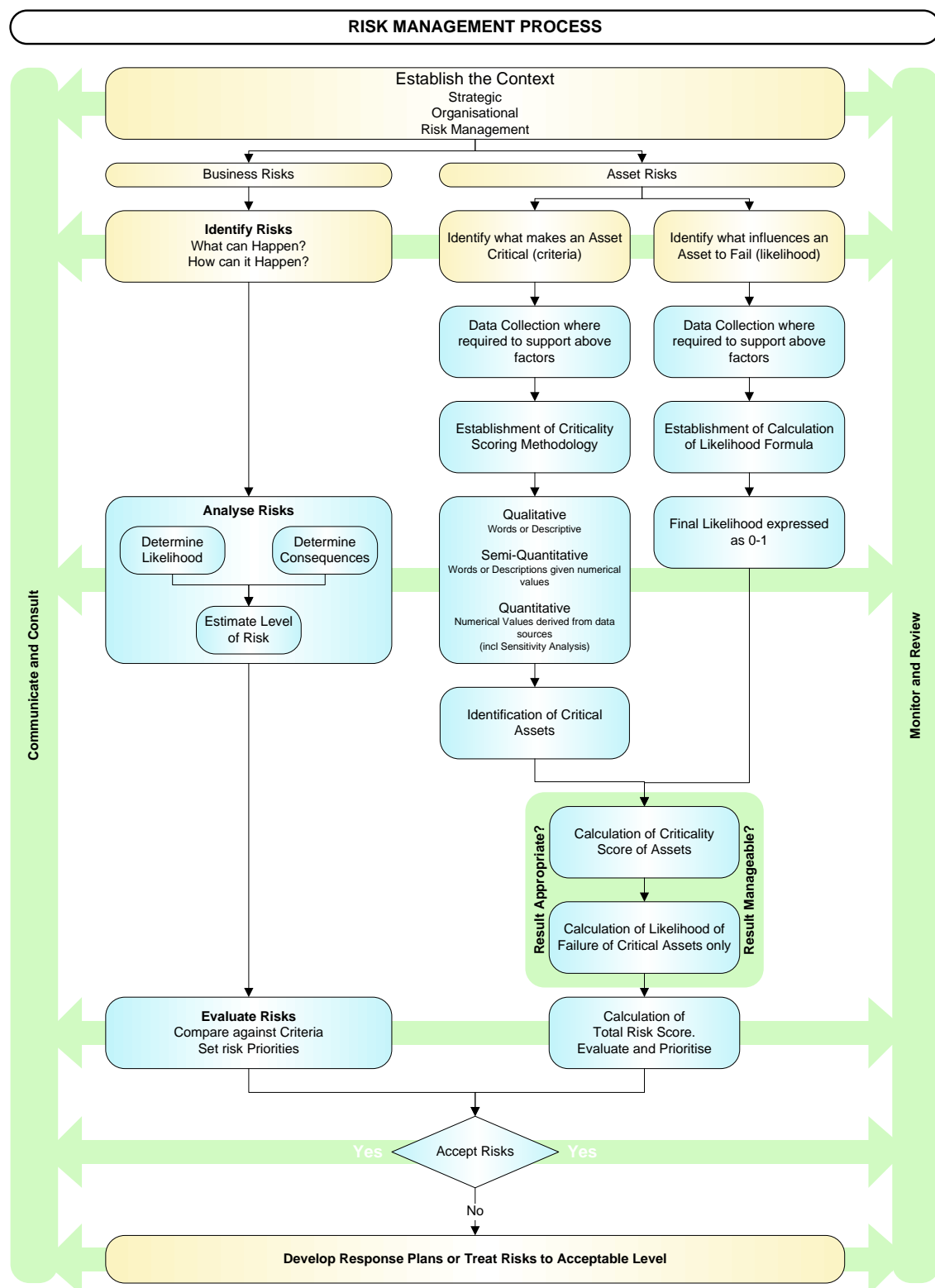
This section looks at the risk management processes set up by SWDC for assessing and managing risk. Risk is used as a strategic decision-making tool assisting with developing and prioritising strategies and work programmes.

South Waikato District Council currently manages their risks as Business Risk, Asset Risk, Emergency Management and Public Health Risks separately by the following risk documents:

- Corporate Risk Management Policy
- Asset Criticality and Risk Process Report
- Waikato Civil Defence Emergency Management Group Plan 2011-2015

The following flow chart summarises and shows the Risk Management Process in terms of business risk and asset risks.

Figure 24: Risk Management Process



The corporate policy categorises risks in terms of the LTP's four well-beings, vision statements and strategic themes.

Similarly, the Asset Criticality and Risk Process report identifies asset criteria and categorises these criteria in terms of the four well-beings and scored using a weighted attribute method. The Waikato Civil Defence and Emergency Management (CDEM) Group Plan provides a regionally based approach to risk management, using the 4 R's (Reduction,

Readiness, Response and Recovery) and contains references to the Waikato Engineering Lifelines Group, which includes all major utility providers.

In addition to the risks addressed by the above mentioned risk documents, Asset Management is identified as an activity with primary, major or shared responsibility for addressing the following risks:

- Inadequate infrastructure (not able to meet specified service levels)
- Poor emergency management
- Poor governance (stewardship of resources)
- Inadequate financial planning and management
- Poor demand analysis
- Inadequate technology interface
- Poor asset management
- Poor quality (systems)
- Poor project management
- Inappropriate environmental practices
- Poor risk management and compliance
- Poor information management

For the purposes of this AMP, the above risks are grouped and classified, and the principal risks are further described, in the following classes.

Identifying Classes of Risks

Table 35: SWDC Risk Classes

| Risk | Discussion | Management of Risk |
|---------------------------|---|---|
| Physical Risks | <p>Physical risks to the infrastructure are generally:</p> <ul style="list-style-type: none"> – Risks from inevitable natural processes whether gradual or acting over a short period – Risks created by the actions of other parties working in the vicinity of the assets <p>South Waikato District Council has adopted construction and maintenance standards which are formulated to encourage appropriate planning prior to working on infrastructure; selection of durable materials; good workmanship, and appropriate processes</p> <p>These will not always be sufficient to prevent physical damage by external forces or natural events. For example, failure to check before excavating near a water main can result in damage and loss of supply. Earthquakes and erosion due to flood or breaks in large diameter pipes create potentially high losses. Smaller faults may still create problems such as loss of supply to critical consumers (home dialysis patients, emergency services, major industry, etc)</p> | Critical Assets |
| Business/Commercial Risks | <p>Business or Commercial risks are those which result in decreased cash flow and/or inability to afford or implement (e.g. not enough resources) the works that are required. They include loss of large consumers (requiring the fixed cost burden to be absorbed by the remaining customers), poor timing of work causing less than optimal life-cycle cost, and failure to take advantage of any available subsidies</p> | Corporate Risk Plan |
| Health & Safety Risks | <p>These are risks posed to people and property, consequential to the physical actions or omissions of Council staff or contractors, or failure of equipment. For Water Supply, they include failure to supply fire fighting water to hydrants, since, where they are installed, the Fire Service has an expectation that sufficient flow will be provided</p> <p>South Waikato District Council believes that it has sufficiently comprehensive health & safety policies in place including the requirement for Business Units and external contractors to have such policies to minimise health & safety risks associated with operating heavy machinery and handling waste materials</p> | <p>Corporate Risk Plan</p> <p>Contractor Health and Safety Quality Plan</p> |
| Environmental Risks | <p>Risks to the environment, that is consequential to the operation of assets and/or physical actions or omissions of Council staff or contractors</p> | Consenting and Performance Monitoring/Reporting |

| | | |
|------------------|---|--|
| Regulatory Risks | <p>Risks of prosecution due to failure to comply with Resource Consents, and Regional/ District Plans</p> <p>Council believes that its regulatory risk exposure if any is minimal due to the design, construction and operation of these classes of assets in accordance with recognised standards. Environment Waikato are advised each year of Councils roading programme, and Consents are normally obtained for large earthwork projects, and culvert renewals in perennial streams</p> | <p>Consenting and Performance Monitoring/ Reporting</p> <p>Environment Waikato</p> |
|------------------|---|--|

6.2 Corporate Risk Management

Assessing Risk

The following Table summarises asset related risks and the control measures that are in place to mitigate risks. The following Table outlines risks to delivering Levels of Service and management thereof.

Full details of the Risk Register can be found in the South Waikato Risk Register June 2008.xls. Low risks have been left out of this chart for simplicity.

The SWDC Risk Register shown in the Table below summarises asset related risks and the control measures in place to mitigate these risks. The Level of Service associated with each risk and management tactics are included in the Table.

Quantifying and Managing Risk

Table 36: SWDC Risk Register

| Risk | Risk Level | Control Measures- Existing | Level of Service Associated with Risk | Where Risk is Managed |
|---|-------------|---|---------------------------------------|---------------------------|
| Asset Risks- Land Transport | | | | |
| Seismic event | Significant | Earthquake design standards for structures; redundancy in road network except for cul-de sac which are not strategic roads | No LOS | Emergency Management Plan |
| Road closed and /or property damage by flood, slips or accident | Significant | Design standards, 24/7 call-out and contracted response and emergency response plans | No LOS | Business Continuity Plan |
| Complete loss of subsidy | Significant | Experienced staff prepare programme and claims, overlap in expertise of existing staff, process documented for new staff | Network Reliability | Corporate Risk Policy |
| Loss of record or IT services | Significant | Electronic backups, archiving and fire protection of buildings/storage areas, digital captures of paper documents | No LOS | Corporate Risk Policy |
| Road/footpath flooded due to leaf fall | Moderate | Routine additional maintenance provided in channel cleaning and cesspit grate clearance during autumn | Network Reliability | Contract Management |
| Partial loss of subsidy | Moderate | Experienced staff prepare programme and claims, overlap in expertise of existing staff, process documented for new staff | Network Reliability | Corporate Risk Policy |
| Vandalism | Moderate | Inspection regime by contractors and service requests by public | Network Reliability | Contract Management |
| Failure to comply with resource consents | Moderate | Specific provisions in contracts, contract procedures manual and staff training | No LOS | Contract Management |
| All of the above in any major event | High | Emergency Management Plan, Emergency Response Plan with alternate emergency transport, extra physical resources, bailey bridges etc | No LOS | Emergency Management Plan |
| Corporate | | | | |
| Loss of staff knowledge due to staff resignations | High | Share knowledge, keep staff moral up, encourage growth, reduce work stresses | No LOS | Corporate Risk Policy |
| Water damage-roof leak, flooding | High | Regular repair and maintenance, AMP | No LOS | Contract Management |
| Environmental Services | | | | |
| Lack of skills and knowledge | High | Provide relevant training to ensure succession | No LOS | Corporate Risk Policy |
| Lack of resources (staff and/or emergency services) | High | Calling on neighbouring Emergency manager and back up services (Taupo) for assistance | No LOS | Corporate Risk Policy |
| Inability to carryout out duties due to equipment failures | High | Annual maintenance by contractors, back up equipment, appropriate budget | No LOS | Contract Management |

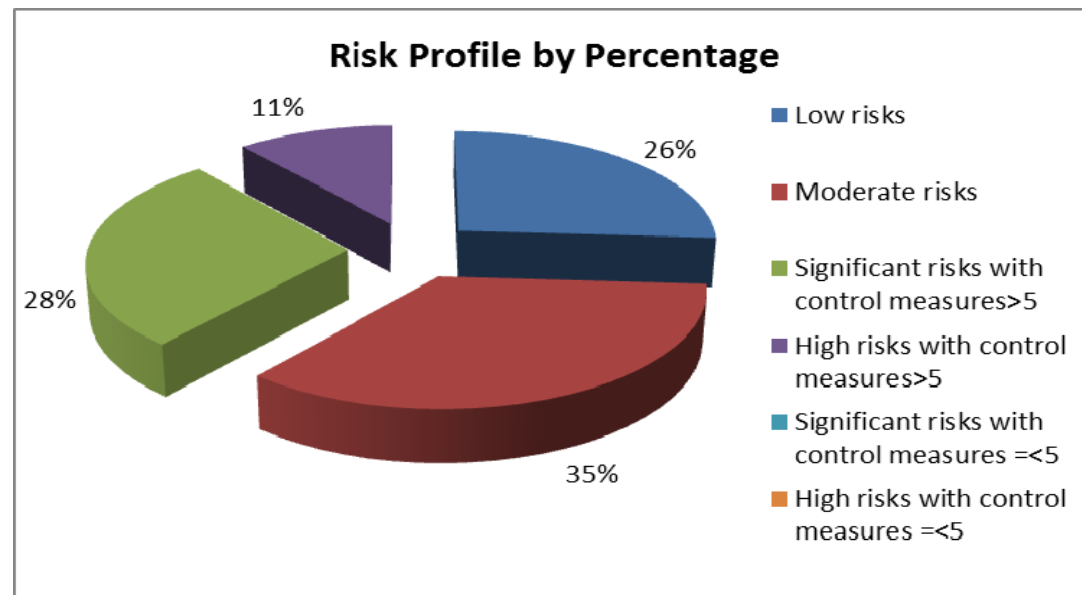
| | Risk Level | Control Measures- Existing | Level of Service Associated with Risk | Where Risk is Managed |
|---|------------|---|---------------------------------------|---------------------------|
| Lack of emergency operation centre | High | Contingency plans with police and fire services, power to operate from any premises under EMA 2002 | No LOS | Emergency Management Plan |
| Infrastructure failure | High | Power to obtain provisions under the EMA 2002 | Network Reliability Water Quality | PHRMP |
| Emergency Management | | | | |
| Lack of trained HQ staff in an emergency situation | Moderate | Provide regular and appropriate training for adequate staff, calling on local, regional and national bodies for support | No LOS | Emergency Management Plan |
| Lack of health care services | Moderate | Civil defence plans provide for welfare centres under SOP1.1, keeping civil defence plans up to date | No LOS | Emergency Management Plan |
| Ill managed fire season (failure to comply with fire/weather index) | Moderate | Appropriately trained staff, utilizing fire/weather control index appropriately | No LOS | Emergency Management Plan |

Risk Profile

The following graph shows how the risks are split and what proportion of the risks have control measures in place.

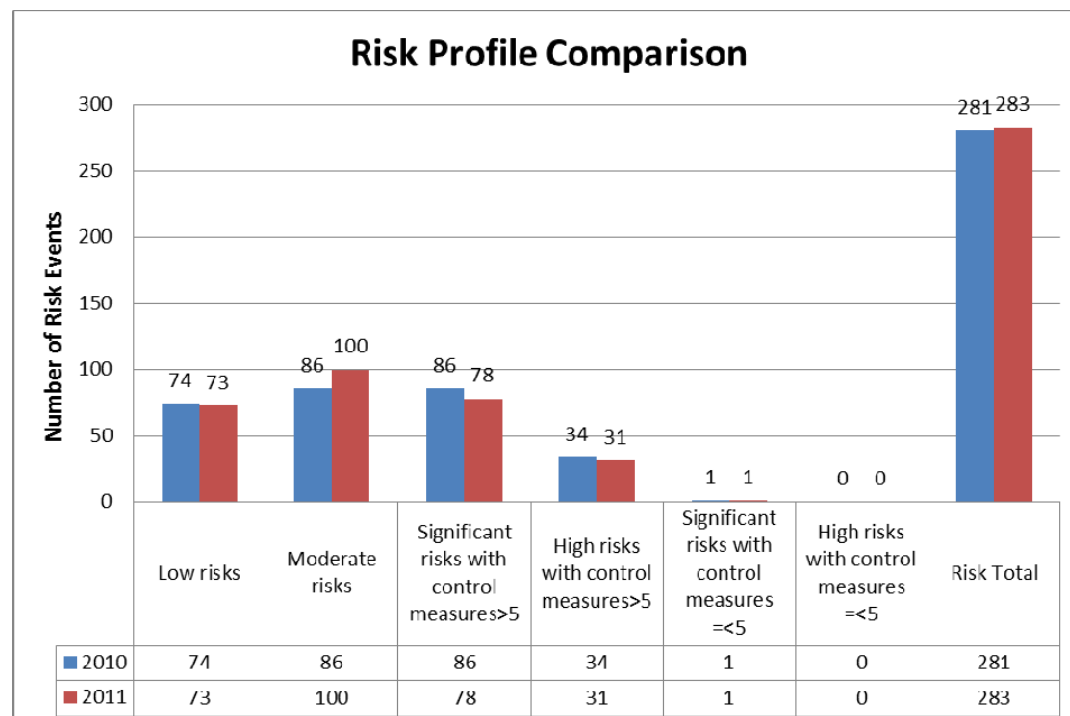
Figure 25: Risk Profile 202010-11

(Ref DocSet 178259).



The following Risk Profile Comparison Chart provides a comparison between the 2010 and 2011 assessment of risks. The chart highlights the ongoing management of risks within the SWDC corporate framework, and shows the reduction and/or mitigation of risk that has occurred.

Figure 26: Risk Profile Comparison



6.3 Network Specific Risk Management

Asset Criticality (consequence of failure)

Asset Risks are traditionally managed in a less formal, practical way, e.g. two pumps installed at a pump station in-case one fails. The 'Asset Criticality and Risk Process Report', Waugh Infrastructure Management, September 2007, aims to assess Asset Risks in a formal approach by prioritising the risks into a matrix.

A desktop analysis of Asset Risk assessed the severity of criticality (consequence of failure) by measuring the failure against the four well-beings. Due to the effects of the four well-beings having an impact on the final outcome, a weighting has been applied to the four well-beings to give a result and aligned with Council objectives.

Table 37: Calculation of Criticality

| Well-beings | Weighted Well-being |
|---------------|---------------------|
| Social | 45% |
| Economic | 25% |
| Cultural | 10% |
| Environmental | 20% |

A list of critical assets has been identified for further analysis as shown below.

Table 38: Criticality Matrix- Roads

| Weighting | Criticality Scoring | | | | |
|--|------------------------------------|--|--|--|---------------------|
| Criteria | Total Score = Weighting x Level | Highest Individual Weighted Point Score | Criticality Assessed from Total Score | Criticality Assessed from Highest Point | Overall Criticality |
| Known High Risk roads | 275 | 125 | High | High | High |
| Roading asset supports other Utilities- trunk delivery (gas, communications, power, water etc) | 305 | 100 | High | High | High |
| Access lost and no alternative route available within 1 hours travel | 265 | 50 | High | Medium | High |
| Roading asset supports other Utilities- network delivery (gas, communications, power, water etc) | 240 | 75 | Medium | Medium | Medium |
| Regulatory Signs | 215 | 75 | Medium | Medium | Medium |
| Stock truck Effluent disposal | 215 | 50 | Medium | Medium | Medium |
| Pedestrian Access ways (safety and amenity values) | 210 | 75 | Medium | Medium | Medium |
| Arterial or SH alternative Route | 195 | 50 | Medium | Medium | Medium |
| Road Closure due to flooding and slips | | | | | |
| Bridge damage | | | | | |
| High Performance Motor Vehicle (HPMV) routes | | | | | |

The percentages of critical assets identified fall within industry accepted standard ranges for this type of analysis, and this was used as a check for the validity of the methodology.

The probability of failure is important for allowing calculation of an overall risk score. This has been identified as an improvement item that should be addressed on high and medium critical assets to complete the risk assessment.

Asset Probability of Failure

The next stage of the application network specific risk management programme is the assessment of the probability of failure. This is important for allowing calculation of an overall risk score.

Rather than a complete theoretical desk top exercise, South Waikato District Council has implemented a critical asset inspection programme that measures asset condition, performance and assesses probability of failure.

This programme has commenced but is in its early stages at the writing of this plan. The results of the assessment of failure probability and completed asset risk assessment will be included in the next update of this plan.

6.4 Insurance

South Waikato District Council has public liability insurance in place to the value of \$10M for each and every claim. A copy of this is located in Council's corporate support section.

Council is also a member of the Local Authority Protection Programme Disaster Fund (LAPP) scheme, refer to Section 0.

LAPP

Local Authority Protection Programme Disaster Fund (LAPP) is a cash accumulation mutual pool with Civic Assurance as the Fund's Administration Manager.

The Fund was established in 1993 by Local Authorities to assist in meeting its members' obligation under Central Government's Disaster Recovery Plan. The legislation brought out in 1991 covers local authority owned infrastructural assets which are considered generally uninsurable within the private insurance market. These include:

- Water reticulation, treatment and storage
- Wastewater reticulation and treatment
- Stormwater drainage
- Dams and canals
- Flood protection schemes including stop banks

Roads and bridges are not covered by the Fund as local authorities have access to NZTA subsidies.

The Fund is designed as catastrophe protection only, covering serious disruptive loss or damage caused by sudden events or situations which may or may not involve the declaration of a Civil Defence Emergency. Perils include but are not necessarily limited to earthquake, storms, floods, cyclones, tornados, volcanic eruption, tsunami and other disasters of a catastrophic nature such as a major gas explosion.

In order for Council's to be eligible for a contribution by Central Government of up to 60% of the restoration costs of infrastructural damage from a catastrophe, local authorities have to demonstrate it can meet the remaining 40% through:

- Proper maintenance
- The provision of reserve funds
- Effective insurance

The Trustees require as a condition of fund membership that all member authorities undergo a full risk management assessment programme. As a result, high risk exposures are identified and remedial action taken to help reduce the potential drain on the fund and to minimise the impact on communities.

Civic Assurance

Civic Assurance is New Zealand's specialist provider of insurance, mutual funding and risk financing for local government and public sector organisations. Owned by New Zealand local authorities, Civic Assurance is the one-stop shop for cost-effective protection of community-owned assets and is New Zealand's largest insurer of rate-payer owned assets.

Risk Pool

Risk Pool is a mutual fund created by New Zealand Local Authorities to provide long term, affordable legal and professional liability protection. The Fund was founded on the premise that historically the insurance industry has demonstrated inconsistency with the scope of cover, pricing, claims handling and capacity. Risk Pool commenced in 1997 and currently has 78 local authority members. Membership of Risk Pool is open to all local authorities. Contributions are levied according to each member's actual risk profile, claims experience and management of risk. The Fund is protected by reinsurance to protect its retained liability on a "per claim" and/or annual aggregate basis.

6.5 Civil Defence, Lifelines and Emergency Response Plans

Civil Defence Emergency Management

The Civil Defence Emergency Management (CDEM) Act 2002 requires Local Authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Risk Reduction, Readiness, Response and Recovery. It also encourages cooperation and joint action within regional groups.

South Waikato District Council recognises its obligations under the CDEM Act and participates in a Waikato Region-wide Civil Defence Emergency Management Group (EMG). The Waikato EMG is responsible for all matters involving staff training, general Civil Defence public awareness and maintaining contact lists for schools, pre-schools, rest-homes and the like. Each Local Authority maintains its own contacts for local resources.

The District is generally sheltered from most natural disasters, although there is an ever-present risk of flooding.

Wind is another hazard for the District with several isolated cyclones and associated heavy rain possible.

In the event of Mount Ruapehu eruptions volcanic ash-fall is a significant hazard.

The following documents are available for guidance in Civil Defence and Emergency Management:

- SWDC Emergency Response Plan Emergency Operating Procedures Structure & Activation SOP 1 19 April 2005
- Civil Defence Emergency Management Plan Southern Emergency Operations Area of South Waikato and Taupo Districts May 2005. This is being reviewed because South Waikato and Taupo Districts have recently become separate EOA's, although there is a memorandum of understanding between the two local authorities.
- Waikato Civil Defence Emergency Management Group Plan 2011-2015

Waikato Lifelines & Vulnerability Assessment

Lifelines are the essential 'utility' services which support the life of a community. These services include Wastewater, Water, Stormwater, Power, Gas, Telecommunications and Transportation networks.

SWDC is a member of the Waikato Engineering Lifelines Group (WELG), which is comprised of representatives from the Waikato region's territorial authorities and major energy, telecommunications, and transportation sector organisations.

The WELG aims to:

- Encourage and support the work of all participants in identifying and mitigating the effects of hazards on lifeline assets and business operations
- Facilitate communication between all participants in order to increase awareness and understanding of each organisations' interdependencies
- Create and maintain awareness of the role and importance of lifelines within the Waikato region
- Promote ongoing research and technology transfer aimed at protecting and preserving lifelines of the Waikato region
- Develop best approaches to mitigation, preparedness and recovery measures for lifelines

Utility Vulnerability Assessment and Prioritisation Project

In August 2006 the Waikato Engineering Lifelines Group carried out a Utility Vulnerability Assessment and Prioritisation Project for South Waikato District Council.

The goal of the assessment is to identify measures and coordinate efforts to reduce the vulnerability of the Waikato's lifelines to selected hazard events. The hazard scenarios that were selected and tested for the following event areas:

- Thames Valley Emergency Operations Area
- Waikato Valley Emergency Operations Area
- Southern Emergency Operations Area

The scenarios carried out in each event area were:

- Major Island Activity (Declared)
- River/Stream Flooding and Ponding
- Local Tsunami
- Electricity/Services/Infrastructure Failure (Undeclared)
- Storm Surge and Tidal Effect (Declared)
- Earthquake (declared)
- Volcanic Eruption 1/10,000 year event
- River/Lake Control Structure Failure (declared)

The outcomes of these scenarios have been collated into a report with the hazards identified.

Emergency Management Plans

The South Waikato District Council Water Supply Back-up Plan has been prepared to provide a guide for emergency response in situations as identified in the risk management assessment, where for one reason or another, water cannot be supplied by conventional means to Council's reticulated users in the District.

The Risk Management Process diagram shown in Section 6.1 refers to risks that SWDC have accepted, including Emergency and Civil Defence risks, but these are yet to be treated.

The objective of this Plan is to ensure that conventional means of quality water supply is maintained or resumed as soon as practical. The Emergency Services Plan for the District has specific contact details that are kept up to date.

The plan outlines what should be carried out in the event of:

- Pipe Breakages
- Telemetry System Failure
- Pump failure
- Power failure
- Reservoir failure

The Ministry of Civil Defence and Emergency Management have developed guidelines for Lifeline Utilities called, Working Together: Lifeline Utilities & Emergency Management. This states that every lifeline utility, the Ministry of Civil Defence & Emergency Management and all CDEM Groups are expected to develop cooperative processes to ensure the following expectations are met.

Your Utility Should

- *Plan for and be able to implement procedures to ensure continuity of business and response to customers:*
 - *Understand the full range of hazards that could impact on your operation. Consider external risks, including dependence on utilities from other sectors and outsourcing arrangements*
 - *Validate risk assessment by interaction with external agencies and exercising plans – not through assumption*
 - *Forecast a hierarchy of external demand in consideration of CDEM-critical activity. Agree disconnection and restoration priorities with CDEM Groups (do not await imposition of force-majeure post-CDEM Groups invoking emergency powers)*
- *Establish planning and operational relationships with CDEM Groups*
- *Join, participate in, and benefit from regionally focused utility activities such as Lifelines Groups*

Your Sector Should

- *Ensure utilities plan across the sector to optimise service during emergencies.*
 - *Establish mutual aid mechanisms to address individual shortages in resources or personnel*
 - *Protect continuity of operations and supply. For some sectors this may involve purchasing options that protect hedge contracts*
 - *Develop sector based contracts that provide access to alternative supply*
 - *Have an ability to reconfigure operations or networks to cater for loss of assets*
 - *Ensure reconfiguring or load shedding mechanisms enable continuance of supply to CDEM critical facilities*
 - *Ensure that conditional supply arrangements take account of the necessity of CDEM prioritisation during emergencies*
- *Provide essential cross-utility sector organisation in order to be seen as capable.*

Quantifying and Managing Risk

- *Reach accord over common approaches to reduction, readiness and response activities thus protecting your marketplace*
- *Share and apply examples of best practice that protect resources*
- *Determine how the sector communicates/distributes information between utilities during an event, to authorities for emergency management and to the public*
- *Seek accord or consensus on sustainable development of resources*

When Established - Your Region's CDEM Group Should

- *Identify utilities required to be involved in development of regional CDEM planning arrangements*
- *Develop an activity programme (minimising demand placed upon utilities) to achieve:*
 - *CDEM Group understanding of existing individual utility continuity planning*
 - *Utility/utility and cross-sector understanding of CDEM arrangements*
 - *Examination of the Group's hazard prioritisation and scenarios including lifelines vulnerability analysis*
 - *Review of respective roles and interdependencies in these scenarios*
 - *Identification of gaps in reduction, readiness, response and recovery*
 - *Agreement on means of addressing any gaps*

South Waikato District Council continues to co-operate within the framework of the Waikato Engineering Lifelines Group to implement the guidelines outlined in Working Together Lifeline Utilities and Emergency Management

SWDC has responded to the Mount Ruapehu eruptions in 1995/96, 2006 and 2007. The most significant hazard SWDC faces from an eruption is from volcanic ash based on South Waikato's geographical location. Emergency Management plans are in place for this scenario.

South Waikato District Council continues to monitor climate change risks for the region. SWDC are committed to monitor and review their policies around climate change to ensure alignment with national legislation.

South Waikato District Council has recognised the need to further develop and implement contingency plans using the following:

- *Risk analysis*
- *Engineering Lifelines and Regional Civil Defence Report*
- *Public Health Risk Management Plans*
- *Capture of experienced engineering staff knowledge into Standard Operating Procedures*

Continual development of contingency planning requires revising and improving these plans through emergency response exercises or scenarios.

Exercises

SWDC has participated in a number of civil defence exercises including:

- *Thames Civil Defence exercise in 2006/07*
- *Volcanic eruption from Auckland's Volcanic Field in 2008*
- *Choking Ash exercise in 2008*

6.6 Business Continuity Plan

As distinct from naturally occurring events impacting directly on the network, Council recognises that naturally occurring and other classes of events (such as a fire at the Watermark Operations Room) may disrupt wider process aspects of water supply operation. Council is yet to implement any detailed plans to address continuity issues. Key activities that must continue are:

- Continued resource consent compliance
- Maintaining service continuity to all consumers through maintenance contract administration
- Receipting and processing of accounts receivable and payable
- Compilation of relevant operating data including monitoring and testing

6.7 Succession Issues

In previous decades the pool of experienced local authority and ex-public service engineers available meant that the negative effects of poor succession planning have not been experienced. However, with a shrinking pool of experienced engineers, and near full employment these effects are now being experienced by more local authorities.

As a consequence, as there is always potential for staff in key positions to move on to further their careers, succession planning is appropriate to mitigate the effects of this.

- Sourcing replacement staff from within the organisation wherever possible
- Comprehensive personal career development plans in place for all relevant staff. This can include identifying weaknesses in training and experience and attempting to address those weaknesses by use of mentoring, relevant projects and continuing professional development programmes etc

In addition, and to mitigate succession and operational risk, the Watermark and Southtech Quality Plans identifies process to make staff movements easier.

6.8 Significant Negative Effects

As mentioned in Section 0, Land Transport has the potential to create significant negative effects on the well-being of the environment, residents and society in general. For example, there is a risk of environmental damage from road construction activities, air and noise pollution from vehicles, and contaminants washed off roads into receiving waters.

These risks are managed through various processes, including Resource Consent conditions and a range of regulatory and technical design measures, as discussed below.

Environmental Effects

The following unavoidable consequences of the Land Transport Network activity are managed as described below to ensure a sustainable service with minimal damage to the environment. The effects include –

- Stormwater runoff from roads concentrates and flows faster than that from vegetated areas, with potential to overflow the capacity of stormwater infrastructure and damage waterways due to velocity
- Stormwater runoff from roads contains small soil particles to which hydrocarbon and heavy metal by-products of engines and tyres bond. This is concentrated by rainfall and presents a threat to receiving waters
- Spillage of contaminants due to insecure loads or vehicle accidents results in a threat to the environment
- Traffic contributes considerable air discharge pollution and also noise

Quantifying and Managing Risk

- The physical road environment is a potential health and safety hazard to those using it due to traffic speed and composition, ambient conditions, their own experience and physical condition
- Maintenance and renewal activities on the road introduce additional temporary hazards and additional pollutants while they are occurring

Management is achieved through Engineering, Enforcement, and Education. These actions are described in the next chapter. Examples of how they can address negative effects are given below:

- Engineering design standards include catchpits with silt settling capacity. Water table drains are shaped to control the flow velocity and shed water on to grassed berms where suspended solids can drop out of the flow. Suspended solids carried into channels, catchpits and water tables are regularly collected in maintenance operations and removed to landfill where contaminants are contained without discharge to receiving waters
- During accident responses the Council and Fire Service work together to contain spilled contaminants as quickly as possible
- In partnership with central government and the regional council, road rules are developed which aim to control traffic noise, emissions, speed, improper use etc. Enforcement is generally provided by the Police
- In partnership with the NZ Transport Agency, Council provides education to help people keep themselves and others safe when using the roads
- Road safety is repeatedly assessed by qualified engineers. Road improvements are constructed, upgraded, signposted and illuminated if appropriate, to comply with design standards relating to safe alignment, driving environment, sight lines, vehicle design etc
- Those working on the road are required to comply with additional temporary standards of signposting and safety so that the unavoidable additional risk that may be created by their presence is managed

Table 39: Negative Effects

| Effect | Status of Effect | | Effect (existing situation) | | Impact on Well-being (existing situation) | | | | Existing Approach or Proposed Action to Address |
|--------------------------------|------------------|-----------|-----------------------------|------------------------|---|----------|---------------|----------|---|
| | Existing | Potential | Negative | Significantly Negative | Social | Economic | Environmental | Cultural | |
| Discharges from Vehicles (Air) | ↑ | ↑ | | ✓ | Mod | Mod | Mod | Mod | <p>Pollution of air from vehicles is a national issue and requires National Standards. Currently health of vehicles is assessed as part of annual warrant of fitness</p> <p>Government has identified through the GPS measures to reduce the number of vehicle movements and more</p> |

| Effect | Status of Effect | | Effect (existing situation) | | Impact on Well-being (existing situation) | | | | Existing Approach or Proposed Action to Address |
|---------------------------------------|------------------|-----------|-----------------------------|------------------------|---|----------|---------------|----------|---|
| | Existing | Potential | Negative | Significantly Negative | Social | Economic | Environmental | Cultural | |
| | | | | | | | | | efficient use of public transport |
| Discharges from Vehicles (Land/Water) | ↑ | ↑ | | ✓ | Mod | Mod | Mod | Mod | Regional Councils are closely monitoring health of waterways and land to identify the accumulative effects from vehicle discharges (rubber, brake linings, oils) There is currently no immediate solution for managing this, excepting increased channel and sump cleansing, and future central government initiatives. Government has identified through the GPS measures to reduce the number of vehicle movements and more efficient use of public transport (in cities) |
| Road Safety (Vehicles) | ↔ | ↓ | ✓ | | High | Mod | Nil | High | Council is considering a road safety strategy to reduce road accidents. It will be linked to a National Strategy which includes, Policing, Policy, Road Design and Public Education |
| Road Safety (Pedestrian) | ↔ | ↓ | ✓ | | High | Low | Nil | High | Road design now incorporates significantly more pedestrian friendly features and is proving effective |
| Road Safety (Cycling) | ↔ | ↓ | ✓ | | High | Low | Nil | High | Council has a basic Cycling and Walkway strategy to encourage community health and safety |
| Noise | ↔ | ↔ | ✓ | | Low | Nil | Low | Low | Road design incorporates surface texturing to reduce vehicle noise levels on urban State Highways, and some |

Quantifying and Managing Risk

| Effect | Status of Effect | | Effect (existing situation) | | Impact on Well-being (existing situation) | | | | Existing Approach or Proposed Action to Address |
|--------|------------------|-----------|-----------------------------|------------------------|---|----------|---------------|----------|---|
| | Existing | Potential | Negative | Significantly Negative | Social | Economic | Environmental | Cultural | |
| | | | | | | | | | CBD streets Information signs are used to manage noise from vehicles such as engine breaking |

↑ Increasing ⇔ Remaining the same ↓ Decreasing

Assessing Risks

The Land Transport Asset managers will, from time to time, identify areas of risk and assess those risks in terms of probability (frequency) and consequence (severity). The assessments enable the managers to:

- Identify failure modes
- Evaluate levels of acceptable risk
- Identify critical assets
- Identify consequences of failure
- Avoid or reduce risks

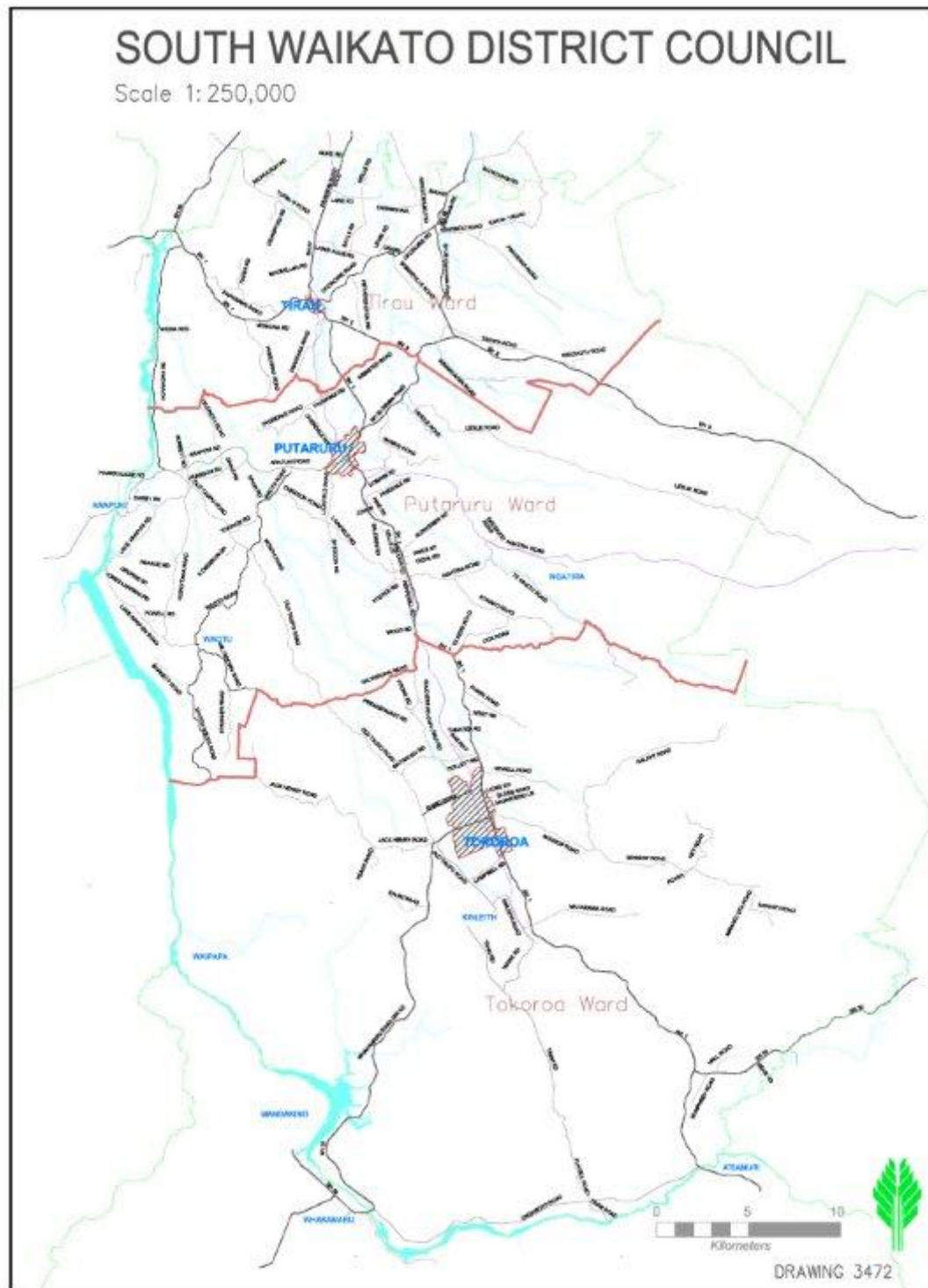
The results of these assessments will be incorporated into the Council's Risk Management Strategy.

Refer to the tables in Appendix D for description of the risk thresholds that were assessed.

The "significant" risks are as follows:

- Earthquake or eruption damage
- Injury to workers or public during our operations
- Unsafe road due to failure of assets
- Injury due to incorrect signage (particularly during road works)

6.9 Network Map

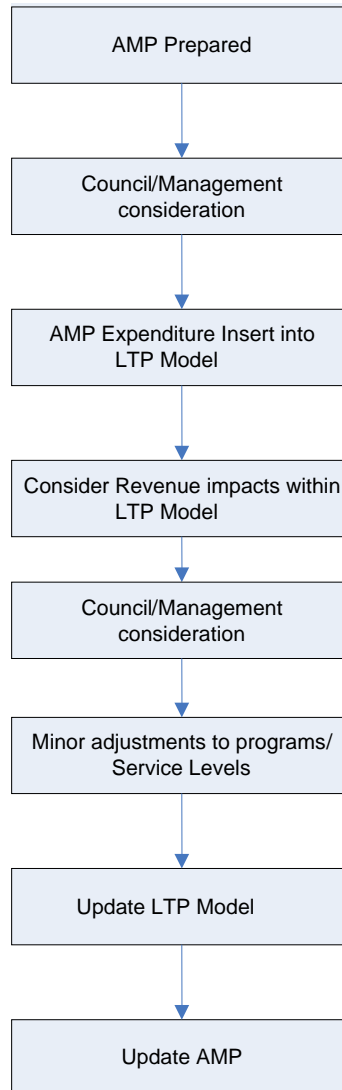


7.0 FINANCIAL FORECASTS

7.1 Summary of Expenditure

The chart below shows the process SWDC use to finalise expenditure.

Figure 27: Process Used to Finalise Expenditure



AMP budgets were prepared by senior and experienced asset managers. Given the team approach used by SWDC in AMP budget preparations the budgets have been reviewed during workshop and internal review processes by up to 5 senior managers. The budget setting and review process has been extensive, rigorous and robust.

The overall budget projections are shown below. The table below summarises financial projections for the planning period. These are expressed in June 2012 values and have not been indexed for inflation.

"The financial information in this AMP has not been adjusted for inflation. Refer to Section 15.1.3 of the Long Term Plan for details of the inflation indices used in the LTP financial forecasts."

Financial Forecasts

Table 40: Land Transport Financial Expenditure (\$)-

(*Non-Inflated* - detailed finances from LTP model)

| Year | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Direct Costs | | | | | | | | | | |
| All Activities | 3,019,991 | 2,941,215 | 2,962,131 | 3,275,121 | 3,298,883 | 3,311,968 | 3,343,968 | 3,342,968 | 3,385,968 | 3,365,468 |
| Total Direct Costs | 3,019,991 | 2,941,215 | 2,962,131 | 3,275,121 | 3,298,883 | 3,311,968 | 3,343,968 | 3,342,968 | 3,385,968 | 3,365,468 |
| Depreciation | 3,013,406 | 3,106,356 | 3,516,199 | 3,531,287 | 3,533,369 | 3,974,487 | 3,957,142 | 4,004,033 | 4,346,822 | 4,324,693 |
| less Non Funded Depreciation | -1,340,416 | -1,385,068 | -1,593,014 | -1,595,042 | -1,610,552 | -1,827,642 | -1,820,408 | -1,841,846 | -2,014,590 | -2,003,568 |
| Loan Interest | 227,353 | 223,120 | 213,226 | 198,984 | 182,388 | 165,345 | 147,556 | 130,165 | 118,610 | 106,760 |
| Loan Principal Repaid | 221,020 | 238,327 | 253,199 | 265,902 | 279,663 | 293,886 | 304,181 | 231,409 | 195,456 | 204,469 |
| Support | 793,740 | 795,923 | 803,129 | 840,003 | 851,725 | 850,407 | 840,176 | 849,451 | 848,002 | 832,525 |
| Development Contributions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital Expenditure from Rates | 0 | 44,000 | 200,000 | 240,000 | 240,000 | 240,000 | 245,000 | 245,000 | 245,000 | 250,000 |
| Reserves Transfers | 1,232,643 | 1,258,673 | 1,273,801 | 1,411,598 | 1,374,337 | 1,365,614 | 2,100,319 | 1,433,591 | 1,499,544 | 1,496,031 |
| Petrol Tax Received/SWIF allocation | -148,000 | -148,000 | -148,000 | -148,000 | -148,000 | -148,000 | -148,000 | -148,000 | -148,000 | -148,000 |
| Subsidy Income | -2,506,252 | -2,529,131 | -2,575,891 | -2,822,432 | -2,789,914 | -2,799,740 | -3,569,740 | -2,836,940 | -2,884,040 | -2,874,390 |
| Other Revenue | -110,000 | -110,000 | -115,000 | -120,000 | -110,000 | -115,000 | -120,000 | -110,000 | -115,000 | -120,000 |
| RATE REQUIREMENTS | 4,403,482 | 4,435,415 | 4,789,779 | 5,077,421 | 5,101,899 | 5,311,324 | 5,280,193 | 5,299,831 | 5,477,772 | 5,433,988 |
| less CBD Loan Servicing | 44,248 | 36,642 | 28,688 | 20,244 | 12,233 | 10,881 | 9,480 | 0 | 0 | 0 |

| Year | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| NET RATE REQUIREMENTS | 4,359,234 | 4,398,773 | 4,761,091 | 5,057,177 | 5,089,666 | 5,300,443 | 5,270,713 | 5,299,831 | 5,477,772 | 5,433,988 |
| Capital Expenditure and New Works by Source of Funds | | | | | | | | | | |
| General Rates | 0 | 44,000 | 200,000 | 240,000 | 240,000 | 240,000 | 245,000 | 245,000 | 245,000 | 250,000 |
| Targeted Rates | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Depreciation Reserves | 1,513,212 | 1,438,000 | 1,534,000 | 1,573,500 | 1,989,326 | 1,548,500 | 2,133,500 | 1,556,000 | 1,656,000 | 1,600,500 |
| LRAR Reserves | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Special Reserves | 0 | 0 | 15,000 | 10,000 | 14,674 | 0 | 0 | 0 | 0 | 0 |
| Loans | 217,345 | 150,000 | 30,000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Subsidy | 1,453,662 | 1,497,000 | 1,527,000 | 1,677,500 | 1,654,000 | 1,659,500 | 2,404,500 | 1,665,000 | 1,695,000 | 1,700,500 |
| Total Capital Expenditure | 3,184,219 | 3,129,000 | 3,306,000 | 3,501,000 | 3,898,000 | 3,448,000 | 4,783,000 | 3,466,000 | 3,596,000 | 3,551,000 |

- Summary details of Capital Expenditure refer to Appendix H
- Details of Operation Expenditure can be found with Finance and Roading Managers

7.2 Funding Policies

- The Council's programme of works will attempt to balance the needs of the community while maximising the level of subsidy available under NZTA rules
- Any Land Transport network extension or upgrading, required as a consequence of subdivision development, will be funded by the subdivider
- Where a development necessitates upgrading of intersections or existing roads, the subdivider may be required to make a contribution to that upgrading
- A formal development contributions policy under LGA 2002 has not yet been determined

Further detailed information is contained in Councils Revenue and Financing Policy.

7.3 Valuation Policies

Basis of Valuation

The table below shows the method by which the assets have been valued and additions and deletions processed.

Table 41: Basis of Valuation

| Road Asset Component | Revaluation Method | Additions & Deletions | Physical Data |
|----------------------|--|-----------------------|---------------|
| Surfacing | RAMM Asset Valuation Module – Treatment Length Table | Excel Spread Sheet | RAMM |
| Pavement | RAMM Asset Valuation Module – Treatment Length Table | Excel Spread Sheet | RAMM |
| Formation | RAMM Asset Valuation Module – Treatment Length Table | Excel Spread Sheet | RAMM |
| Drainage | RAMM Asset Valuation Module - Drainage Table | Excel Spread Sheet | RAMM |
| Kerb & Channel | RAMM Asset Valuation Module - Surface Water Channel Table | Excel Spread Sheet | RAMM |
| Road signs | Excel Spreadsheet | Excel Spread Sheet | RAMM |
| Bridges | Excel Spreadsheet | Excel Spread Sheet | RAMM |
| Footpaths | Excel Spreadsheet | Excel Spreadsheet – | RAMM |
| Road Land | Reid and Reynolds Registered Valuation | | MapInfo - GIS |
| Street Lights | Odyssey Energy RAMM Asset Valuation Module – SLIMS Database | | SLIMS |
| Cycle ways | RAMM Asset Valuation Module | Excel Spread Sheet | RAMM |

Depreciated Replacement Cost is taken as today's cost of replacing the asset with the same or a similar asset and depreciated over the life of the asset.

The optimised replacement cost of these assets has been assessed based on current standards, technology, costs and materials by suitably qualified and experienced professional practitioners and revaluations have been peer reviewed. The last full revaluation was completed at 1 July 2011. The valuations in this document are the latest available (July 2011).

The assessed replacement cost assumes that regulations, social values etc as exist currently will continue and appropriate costs for professional services are included.

Land and formation are not depreciated. The following Land Transport Asset Groups are capitalised and depreciated:

- Pavement
- Surfacing
- Kerb and Channel
- Road Signs
- Culverts and Drainage
- Footpaths and Cycle ways
- Bridges and large Culverts
- Streetlights including poles, brackets and lanterns
- Railings

Expense Items

Maintenance is work done that is of an operational nature that neither increases the value nor extends the remaining life of any asset. The cost of maintenance is expensed in the year it is incurred. Small repairs will be expensed, because they would be abandoned along with the old assets in a future replacement. They therefore do not extend the overall life expectancy of the original asset.

Capitalisation Threshold

Renewal is improvement work done, (including plant, labour, materials and professional services used) on an existing asset that increases its depreciated replacement value and extends its remaining life. The cost of renewal is a capital expenditure that must be recognised by an appropriate adjustment in the Asset Register. The renewed value in the Asset Register cannot exceed the optimised replacement value of the asset.

The following threshold limits have been adopted for Maintenance vs. Capital Improvements and Renewals for roading activities. The additional cost of upgrading an asset during its renewal is separately assessed, and if the threshold value is exceeded, the upgrade cost component is separately accounted for.

Table 42: Capitalisation Threshold

| Activity | Value Threshold | Physical Threshold |
|--|-----------------|----------------------------------|
| Sealing | \$1,000 | Not less than 600 m ² |
| Pavement Rehabilitation, AWPT, Seal Widening | \$5,000 | Not less than 600 m ² |
| Culvert Replacement | \$1,000 | Full length replacement |
| Bridge Renewal/Replacement | \$5,000 | Full length replacement |
| Footpath Replacement | \$1,000 | Not less than 20 m length |
| Street light Replacement | \$1,000 | (Not defined) |

An addition to the Asset Register is required when a new asset is created with a value (including plant, labour, materials and professional services used) that exceeds the above figures. A new asset must be uniquely identified, and the record in the Asset Register requires an assessment of the asset's remaining life expectancy or straight-line depreciation rate.

If the asset replaced is discarded or sold it must be removed from the Asset Register and any residual value must be formally written off.

Financial Forecasts

Additions since last valuation have been processed using the excel spreadsheets referred to above. In the 2002-2003 year these were processed as a lump sum for the whole financial year. From the 2003-2004 financial year onward, additions and deletions were processed on a monthly basis.

The detail for the physical data is loaded into RAMM at the time of construction. At the time of invoicing payments to capital GL accounts, the person authorising the payment also completes the asset management additions and deletions form. This form documents the additions and deletions to the register. The capital expenditure for each capital roading project is matched to the General Ledger accounts and split according to the project into the correct register.

Depreciation

Straight-line depreciation has been adopted for all Land Transport Network assets and optimised depreciated replacement costs (ODRC) have been calculated. The remaining life over which assets are depreciated are shown for each asset in the asset register and have been assessed by taking account of the various factors that have affected the particular asset's base life expectancy.

The costs associated with renewing assets and providing new or improved asset infrastructure are capitalised and depreciated in accordance with the assessed economic life of each asset. This applies also where a developer provides infrastructure to be taken over as public assets by Council.

Further detail of Council's accounting and depreciation standards can be found in the LTP Revenue and Funding Policies.

Land Assets

The areas of land under existing roads and land owned by Council as 'paper roads', have been included. The June 2008 valuation also includes roads maintained by Forestry. State Highway land has not been valued. The next valuation is due June 2012 and will include new roads that have been vested to Council and paper roads sold off by Council.

Table 43: Lengths and Areas of Land for Roads Valuation

| Lengths and Areas (assuming 20m-road reserve width) of Land for Roads Valuation | | | | |
|---|-----------------------|-------------|----------------------|-------------|
| Land Maintained by - | Rural | Paper Rural | Urban | Paper Urban |
| South Waikato District Council | 372.2 km 1038.2 ha | 146.9 km | 109.8 km 220.4 ha | 0.41 km |
| (additional areas, road reserve* additional width over 20m wide) | 63.1 ha | | 6.6 ha | |
| Hancock Forest Management | 39.8 km 79.6 ha | | | |
| Total Area | 1180.9 ha | | 227 ha | |

*Road reserves greater than 20m wide include Old Taupo Road (40m) and Pearson Road (30m).

Urban and Rural Land

Land value rates, effective 1 July 2004, were developed by Reid and Reynolds, Rotorua, ref B3284/14575, and dated 24 February 2005. The last (30 June, 2008) valuation was \$26,389,000. The next valuation is due June 2012

Table 44: Urban and Rural Land Values

| Land | Area | Rate | Valuation |
|-------------------|------------|--------------|---------------------|
| Rural | 1,139.9 ha | \$14,400/ ha | \$16,415,000 |
| Urban | 237.5 ha | \$42,000/ ha | \$9,974,000 |
| Fair Value | | | \$26,389,000 |

Formation Assets**Scope**

The formation item includes all earthworks cut or fill, shaping fill, services, fencing, widening, any strengthening of the subgrade and the existing value of the subgrade. Formation includes all items not included in surfacing, pavement, culverts or kerb and channel.

Forest Company maintained Council Road and new road that have been vested to Council following the 2008 valuation have been included in the June 20011 valuation for Formation.

This asset was valued using the RAMM Asset Valuation Module. The details of the asset are recorded in the RAMM database and the revaluation is a snapshot of the asset at that point in time. The asset was valued using the treatment length table with each individual treatment length valued separately.

Sections of formation with differing strength and response characteristics are to be allocated Structural Numbers (SNP) that will be used in the dTIMS modelling for the prediction of asset deterioration profiles

Useful Life and Condition

The standard total useful life of a formation asset has been set to 999 years, the longest life span in the version of RAMM currently being used.

Replacement Cost

Standard replacement costs were established for formation using average 2010-2011 construction rates and include the professional services cost. This rate was converted into a linear metre rate.

Table 45: Formation Asset Standard Replacement Cost

| Formation Cost | Value/m ² | Historic Value/m ² | Total Value/m ² |
|----------------|----------------------|-------------------------------|----------------------------|
| Urban | \$24.88 | \$4.64 | \$29.52 |
| Rural | \$24.88 | \$9.29 | \$34.17 |
| Unsealed | \$24.88 | \$6.96 | \$31.84 |

Table 46: Formation Values as at 30/06/11

| Formation Value as at 30/06/11 | | | | |
|--------------------------------|---------------|---------------|-------------|------------|
| | ORC (\$) | ODRC (\$) | Monthly Dep | Annual Dep |
| Value at 30 June 2011 | \$118,943,000 | \$118,943,000 | Nil | Nil |

Assumptions

- The construction date for a road formation has been taken as the date of the earliest recorded first-coat seal. If that is unknown it has been taken as 1 January 1960
- No condition data was calculated with all elements being rated "average"
- Formation is assumed not to depreciate with time. Base "life" is 999 years

Financial Forecasts

- When work is done to a formation asset it is assumed to add value and thus the existing asset value is not deleted
- When a pavement asset is overlaid or reconstructed it no longer has value as a pavement asset and is deleted. The old pavement is now assumed to form the subgrade and therefore to be part of the Formation asset. The existing subgrade value after reconstruction is therefore calculated to include the depreciated historic value retained in the subgrade and old pavement layers. This has been estimated at a nominal 150mm depth of gravel equivalent

Pavement Assets

Scope

The pavement is the value of the top layer of the road structure typically the basecourse layer. Note that Forestry maintained Council Roads and new road vested to Council following the 2008 valuation have been included in the valuation for pavement

This asset was valued using the RAMM asset valuation module. The details of the asset are recorded in the RAMM database and the revaluation is a snapshot of the asset at that point in time. The asset was valued using the treatment length table with each individual treatment length valued separately.

Useful Life and Condition

The total useful life of a pavement asset has been set as per the following table.

Table 47: Pavement Total Useful Life

| Pavement Total Useful Life (years) | | | | | |
|------------------------------------|---------------|------------------|-------------------|------------------------|-------------------------|
| Surfacing AADT | Use 1 <100 | Use 2 100-500 | Use 3 500-2000 | Use 4 2000- 4000 | Use 5 4000- 10000 |
| Urban | 120 | 110 | 95 | 70 | 40 |
| Rural | 70 | 70 | 60 | 50 | 40 |

Condition data has been established in RAMM that affects the remaining useful life (RUL) of the surface asset as per the table below. This condition data is for valuation purposes only and more appropriate methods such as treatment selection and dTIMS are used to model actual pavement deterioration for work programming.

Pavement Condition Rating

Table 48: Pavement Condition Rating

| Condition | Rating Item | Parameters | Effect on Remaining Life |
|-----------|----------------|--------------|--------------------------|
| Excellent | NAASRA Average | <= 70 | +10 years |
| Good | NAASRA Average | >70 & <=90 | +5 years |
| Average | NAASRA Average | >90 & <=110 | 0 years |
| Poor | NAASRA Average | >110 & <=130 | -5 years |
| Very Poor | NAASRA Average | > 130 | -20 years |

Replacement Cost

Standard replacement costs were established for base course in 100mm and 70mm thick layers. These are the most common depths of base course applied in road constructions and area wide pavement treatments.

The rates have been established by using the 20010/11 construction rates. Note that no residual value has been set for pavement assets, as the sub-base has been valued in the Formation component, which does not depreciate.

Table 49: Pavement Standard Replacement Costs

| Basecourse Depth | Cost Applied to (Pavement Use Type) | Cost (\$/m ²) | Professional Services (% added) | Cost (\$/m ²) |
|------------------|-------------------------------------|---------------------------|---------------------------------|---------------------------|
| 70mm | Urban Use 1-3; Rural Use 1 & 2 | \$8.71 | 8.5% | \$9.45 |
| 100mm | Urban Use 4 & 5 Rural Use 3-5 | \$10.31 | 8.5% | \$11.19 |

Table 50: Pavement Value and Depreciation as at 30/06/11

| Pavement Value and Depreciation as at 30/06/11 | | | | |
|--|--------------|--------------|-------------|------------|
| | ORC (\$) | ODRC (\$) | Monthly Dep | Annual Dep |
| Value at 30/06/11 | \$35,466,000 | \$23,111,000 | \$39 250 | \$471,000 |

Assumptions

- The Construction date for pavement was set to the latest first coat seal date. If no dates were recorded the date was set to 1 January 1981
- For roads constructed after 1 Jan 1980, a 600mm shoulder width has been used for area calculations
- Because the pavement depth is not well documented in RAMM for many sites, the standard replacement cost has been assumed using the Urban / Rural codes and pavement use categories. These would typically reflect the depth of base course applied in most situations. Actual pavement depth is now been added to RAMM as construction works are being completed
- If no rating information was available the condition was set to average
- Council Roads maintained by Forestry Companies have not been inspected, and their condition has been set to average

Surfacing Assets

Scope

The surface asset is the top surface layer on the road pavement; generally chip seal, asphalt, or metal.

Note that Forestry maintained Council Roads have NOT been included, as are they supposed to maintain the top surface. New roads however that have been vested to Council following the 2008 valuation are included the June 2011 valuation for surfacing.

Useful Life and Condition

The total surface life of a surface asset has been set using the following table based on current common practice and RAMM treatment selection.

Table 51: Surface Total Useful Life (Years)

| Surface Total Useful Life (Years) | | | | | |
|---|---------------|----------------------|-----------------------|------------------------|-------------------------|
| Surfacing AADT | Use 1 <100 | Use 2 100- 500 | Use 3 500- 2000 | Use 4 2000- 4000 | Use 5 4000- 10000 |
| Asphaltic concrete(and Stone Mastic Asphalt) | 12 | 11 | 10 | 9 | 8 |
| Bicouche / Sandwich | 14 | 12 | 10 | 9 | 8 |
| First coat seal | 4 | 3 | 2 | 1 | 1 |
| Second coat seal | 16 | 14 | 12 | 11 | 10 |
| Locking coat seal | 8 | 7 | 6 | 5 | 4 |
| Reseal - Rural | 16 | 14 | 12 | 11 | 10 |
| Reseal - Urban | 22 | 20 | 17 | 14 | 12 |
| Slurry seal | 8 | 7 | 6 | 5 | 4 |
| Texturising seal | 6 | 5 | 4 | 3 | 2 |
| Two coat seal as 1st | 10 | 8 | 6 | 5 | 4 |
| Two coat seal as 2nd | 18 | 16 | 14 | 13 | 12 |
| Two coat as reseal | 18 | 16 | 14 | 13 | 12 |
| Void fill seal - Rural | 6 | 5 | 4 | 3 | 2 |
| Void fill seal - Urban | 18 | 15 | 11 | 3 | 2 |

Surface assets have been rated according to condition and this has had an effect on the RUL of the asset, as follows.

Table 52: Surface Condition Rating – Average and Poor

| Surface Condition Rating | | | |
|--------------------------|-----------------------------------|---|--------------------------------|
| Condition | Rating Item | Parameters (% Area) | Effect on Remaining Life |
| Average Surface | Alligator Flushing Scabbing | <2% <2% <2% | Alter age by 0 years |
| Poor Surface | Alligator Flushing Scabbing | >=2% & <=5% >=2% & <=5% >=2% & <=5% | Set RUL to 5 years |

Table 53: Surface Condition Rating – Bad Surface

| Surface Condition Rating | | | |
|--------------------------|-------------|---------------------|--------------------------|
| Condition | Rating Item | Parameters (% Area) | Effect on Remaining Life |
| Bad Surface | Alligator | >5% | Set RUL to 2 years |
| | Flushing | >5% | |
| | Scabbing | >5% | |

A check of surface condition for the May 2011 rating survey demonstrated that 92% of the network has a condition of average, while the remaining 8% does not meet NZTA's target for smooth travel exposure.

Reseal replacement costs have been applied in accordance with the July 1 2008 revaluation. Bitumen influences reseal prices significantly and have fluctuated widely over the period 2008-2011. The rates upon which the valuation has been based are thought to be a reasonable average. The lengths and widths of pavement are as recorded in RAMM.

Table 54: Surfacing Replacement Cost

| Surfacing Standard Replacement Cost (30/06/11) | | | |
|--|---------------------------|---------------------------------|----------------------------|
| Surface Material | Cost (\$/m ²) | Professional Services (% added) | Value (\$/m ²) |
| Voidfill | \$3.00 | 8.5 | \$3.26 |
| First Coat | \$5.60 | 8.5 | \$6.08 |
| Locking Coat | \$0.60 | 8.5 | \$0.65 |
| Slurry (7.55, 98/99) | \$10.00 | 8.5 | \$10.85 |
| Two coat seal as first surfacing | \$6.37 | 8.5 | \$6.91 |
| Void fill seal (Rural/ Urban) | \$3.00 | 8.5 | \$3.26 |
| Reseal (Rural/ Urban) | \$3.60 | 8.5 | \$3.91 |
| Asphaltic Concrete (AC or SMA) | \$32.50 | 8.5 | \$35.26 |

Table 55: Surfacing Value and Depreciation

| Surfacing Value and Depreciation as at 30/06/2011 | | | | |
|---|--------------|--------------|------------------|-----------------|
| | ORC (\$) | ODRC (\$) | Monthly Dep (\$) | Annual Dep (\$) |
| Value at 30/06/11 | \$17,456,000 | \$11,014,000 | \$104,500 | \$1,254,000 |

Additions and deletions have been processed in the same way as Road Formation above.

Assumptions

- Construction date for surface has been set to the latest significant seal date. If dates are not known then the surface date has been set to 01 January 1999
- If no rating information is available then condition is set to Average
- The highest scoring rating item was used to establish the condition
- Minimum RUL for surface items has been set to 2 years at the time of the revaluation
- The Professional Services component has remained the same at 8.5% as per the 2008 valuation

Financial Forecasts

- No residual value remains in a surface asset. When a road is resealed the existing section is deleted and the new surface added

Kerb and Channel Assets

Scope

This asset is the actual concrete kerb and channel typically located in urban areas and on some localised rural roads.

This asset was valued using the RAMM asset valuation module. The details of the asset are recorded in the RAMM database and the revaluation is a snapshot of the asset at that point in time. The asset was valued using the surface water channel table with only actual kerb and channel being valued.

Useful Life and Condition

The standard useful life for all kerb and channel has been set to 80 years.

Replacement Cost

The rate for Kerb and Channel replacement is \$76.25 plus 8.5% PS, total \$82.73 per lineal metre. This has been derived from contract rates for this work over the 2010/11 period.

Table 56: Kerb and Channel Value and Depreciation as at 30/06/2011

| Kerb and Channel Value and Depreciation as at 30/06/11 | | | | |
|--|--------------|--------------|------------------|-----------------|
| | ORC (\$) | ODRC (\$) | Monthly Dep (\$) | Annual Dep (\$) |
| Value at 30/06/11 | \$18,572,000 | \$10,309,000 | \$19,333 | \$232,000 |

Additions and deletions have been processed in the same way as 3.4.4 Road Formation above.

Assumptions

- Standard surface water channels have not been valued and the item is assumed to be included in the formation item
- If no rating information is available then condition is set to Average
- The depreciation method used was straight line over the Total Useful Life.

Drainage Assets

Scope

Drainage includes all rural culverts recorded in RAMM. Note that urban stormwater is valued in the stormwater asset group as part of below ground services.

Useful Life and Condition

Conditions have been assessed as average in the absence of field inspections and reporting. Council's maintenance Contractor commenced such investigations and reports in the 2009/10 financial year.

Replacement Cost

Replacement costs of culverts have been based on current road maintenance contract rates paid for installation of the sizes of concrete pipes up to 600 mm diameter. Larger culverts have been valued at similar rates to stormwater improvements as held in the GIS database and used for stormwater revaluation. The rates include an appropriate provision for professional services (8.5%) and allow for installation of headwalls on larger culverts.

Table 57: Culvert Standard Replacement Cost (30/06/2011)

| Culvert Standard Replacement Cost (30/06/11) | |
|--|--------------------|
| Pipe Diameter (mm) | Replacement Cost/m |
| 225 | \$127.79 |
| 300 | \$139.39 |
| 375 | \$189.77 |
| 450 | \$206.37 |
| 525 | \$315.72 |
| 600 | \$318.47 |
| 675 | \$320.27 |
| 750 | \$416.39 |
| 825 | \$439.19 |
| 900 | \$517.24 |
| 1,050 | \$639.20 |
| 1,200 | \$811.36 |
| 1,350 | \$914.87 |
| ≥1,400 | \$958.15 |
| 300 Flume | \$139.39 |

Table 58: Drainage Asset Value and Depreciation

| Drainage Assets Value and Depreciation as at 30/06/11 | | | | |
|---|-------------|-------------|------------------|-----------------|
| | RC (\$) | DRC (\$) | Monthly Dep (\$) | Annual Dep (\$) |
| Value at 30/06/08 | \$7,019,000 | \$4,830,000 | \$9,166 | \$110,000 |

Additions and deletions have been processed in the same way as Road Formation above.

Assumptions

- Only rural roading culverts included in valuation
- Construction date for culverts where not recorded has been set to the very "first" first coat seal date. If dates are not known the culvert date was set to 01 January 1981
- No condition data was calculated with all elements being rated "average"
- No residual value set for culverts
- Headwalls allowed for in the culvert rate for culverts over 600mm diameter



Structures Assets

Scope

This group includes all bridges and large culverts (over 3.2m² waterway areas). Bridges were revalued as at 1 July 2011 by Opus International Consultants based on the updated values that were calculated by Mick Jones for Waugh Infrastructure Management Ltd (June 30th 2008).

Useful Life and Condition

Most bridges are of standard Ministry of Works and Development design and detailing and as a consequence of the conservative design loadings their lifespan and capacity is generally very good.

Replacement Cost

The Opus derived replacement rates have been adjusted by the Transfund Cost Adjustment Factor for the period 2004-2008).

The replacement value of large culverts has been estimated from current retail prices with appropriate allowances for installation and professional services costs.

Table 59: Structures Asset Values as at 30 June, 2011

| SUMMARY VALUATIONS: BRIDGES AND CULVERTS 30 JUNE, 2011 | | | | | | | | |
|--|-----------|---------------|------------|---------------|-----------|-----------|-----------|------------------|
| Bridges | | | | | | | | |
| ID | Road | Obstacle | RAMM RP | Inst. Date | RL Yrs | ORC (\$) | ODRC (\$) | Annual Deprn. |
| 1 | Arapuni | Huihuitaha S | 10,852 | 1966 | 58 | 490,503 | 284,492 | 4,905 |
| 2 | Arapuni | Mangakaretu | 2,674 | 1963 | 55 | 159,549 | 87,752 | 1,596 |
| 3 | Arapuni | Pokaiwhenua | 3,800 | 1964 | 56 | 370,223 | 207,325 | 3,702 |
| 4 | Arapuni | Waikato R | 14,170 | 1929? | 21 | 1,137,604 | 238,897 | 11,376 |
| 5 | Arapuni | Waipa S | 6,970 | 1965 | 57 | 530,065 | 302,137 | 5,301 |
| 6 | Baird | Matarawa S | 1,016 | 1963 | 55 | 424,274 | 233,351 | 4,243 |
| 7 | Domain | Oraka S | 1,570 | 1965 | 57 | 490,503 | 279,587 | 4,905 |
| 8 | Horahora | Pokaiwhenua | 4,280 | 1944 | 36 | 1,204,987 | 433,795 | 1,205 |
| 9 | Jones | Kinleith Rail | 40 | 1950 | 42 | 361,276 | 151,736 | 3,613 |
| 10 | Kakahu | Kakahu S | 2,226 | 1958 | 50 | 443,669 | 221,835 | 4,437 |
| 11 | Lake | Oraka S | 488 | 1955 | 47 | 591,410 | 277,963 | 5,914 |
| 12 | Langlands | Oraka S | 1,155 | 1945 | 37 | 677,013 | 250,495 | 6,770 |
| 13 | Ngatira | Oraka S | 5,098 | 1963 | 55 | 315,846 | 173,715 | 3,158 |
| 14 | Okoroire | Oraka S | 492 | 1962 | 54 | 512,224 | 276,601 | 5,122 |
| 15 | Okoroire | Waihou S | 5,558 | 1961 | 53 | 1,077,194 | 570,913 | 10,772 |
| 16 | Old Taupo | Otaneroa S | 2,455 | 1967 | 59 | 188,049 | 110,949 | 1,881 |
| 17 | Old Taupo | Parahikatea | 19,980 | 1960 | 52 | 114,105 | 59,335 | 1,141 |
| 18 | Old Taupo | Waipa S | 2,080 | 1973 | 65 | 268,558 | 174,563 | 2,686 |
| 19 | Paraonui | Mangamingi | 6,758 | 1957 | 49 | 304,361 | 149,137 | 3,044 |
| 20 | Paraonui | Whakauru S | 5,370 | 1963 | 55 | 190,257 | 104,641 | 1,903 |
| 21 | Pearsons | Waipa S | 2,765 | 1961 | 53 | 329,280 | 174,518 | 3,293 |

| SUMMARY VALUATIONS: BRIDGES AND CULVERTS 30 JUNE, 2011 | | | | | | | | |
|--|-----------|---------------|------------|---------------|-----------|-----------|-----------|------------------|
| Bridges | | | | | | | | |
| ID | Road | Obstacle | RAMM RP | Inst. Date | RL Yrs | ORC (\$) | ODRC (\$) | Annual Deprn. |
| 22 | Princes | Kinleith Rail | 25 | 1961 | 53 | 520,239 | 275,727 | 5,202 |
| 23 | Scotts | Kinleith Rail | 525 | 2005 | 95 | 225,000 | 209,250 | 2,250 |
| 24 | Sloss | Whakauru S | 89 | 1965 | 57 | 226,835 | 129,296 | 2,268 |
| 25 | Taumangi | Kinleith Rail | 1,542 | 1969 | 61 | 677,319 | 413,165 | 6,773 |
| 26 | Taumangi | Oraka S | 805 | 1961 | 53 | 530,065 | 280,934 | 5,301 |
| 27 | Te Rere | Ngutuwera S | 778 | 1964 | 56 | 192,753 | 107,942 | 1,928 |
| 28 | Totmans | Mangawhero | 1,933 | 1955 | 47 | 179,235 | 84,240 | 1,792 |
| 29 | Totmans | Waipahihi S | 4,634 | 1955 | 47 | 134,279 | 63,111 | 1,343 |
| 30 | Waiomou | Waiomou S | 952 | 1958 | 50 | 624,442 | 312,221 | 6,244 |
| 31 | Wautu | Mangaorua S | 11,355 | 1966 | 58 | 324,679 | 188,314 | 3,247 |
| 32 | Wautu | Pokaiwhenua | 2,025 | 1955 | 47 | 551,784 | 259,338 | 5,518 |
| 35 | Wiltstown | Pokaiwhenua | 2,020 | 1938 | 30 | 228,208 | 68,462 | 2,282 |
| 36 | Wiltstown | Waioraka S | 5287 | 1960 | 52 | 235,948 | 122,693 | 2,359 |
| | | | | | | 4,831,736 | 7,278,430 | 148,317 |

Table 60: Large Culverts Asset Values as at 30 June 2011

| SUMMARY VALUATIONS: BRIDGES AND CULVERTS 30 JUNE, 2011 | | | | | | | | |
|--|------------|------------|----------|-----------------|-----|-----------|--------------|------------------|
| Large Culverts | | | | | | | | |
| Road | Obstacle | RAMM RP | Material | Install Date | RUL | ORC (\$) | ODRC (\$) | Annual Deprn. |
| Darby | Huihuitaha | 1,547 | Timber | 1979 | 41 | 71,213 | 41,710 | 1,017 |
| Horahora | Piarere | 300 | Concrete | 1946 | 38 | 267,346 | 105,011 | 2,673 |
| Horahora | Waipa | 9,330 | Concrete | 1946 | 38 | 94,951 | 36,081 | 950 |
| Lake Arapuni | Huihuitaha | 2,110 | Timber | 1979 | 41 | 83,951 | 49,171 | 1,199 |
| Manfield | Whakauru | 20 | Steel | 1979 | 41 | 232,711 | 136,302 | 3,324 |
| Old Taupo | Waioraka | 19,290 | Timber | 1945 | 7 | 115,129 | 11,513 | 1,645 |
| Parapara | | 5,110 | Masonry | 1930 | 22 | 296,722 | 65,279 | 2,967 |
| Princess Beatrix | Matarawa | 75 | Steel | 1978 | 40 | 232,711 | 132,978 | 3,324 |
| Wautu | Waipa | 9,166 | Concrete | 1979 | 71 | 39,168 | 27,809 | 392 |
| Wawa | Kinleith | 40 | Concrete | 1947 | 39 | 62,311 | 24,301 | 623 |
| Wiltstown | Mangaorua | 16,500 | Timber | 1979 | 41 | 72,401 | 42,406 | 1,034 |
| | | | | | | 1,568,614 | 672,561 | \$19,148 |

Street Lighting Assets

Scope

A valuation of the streetlight assets was carried out by Odyssey Energy Ltd on 01 June, 2011. The valuation was based on the optimised replacement cost for the asset and includes installation. Where the particular equipment was no longer available, such as fibreglass poles and fluorescent lights, the value of the component that would be installed today was used. Items such as the older SOX and obsolete poles are now past their useful working life, and are assigned a zero value.

Useful Life and Condition

Council has had a condition rating on the street light asset, and this is reflected in the replacement cost.

Replacement Cost

For streetlights, typical replacement costs were derived from the current Contract for Streetlight Maintenance. The Council has recorded costs for recently installed new lights. These are noted in the summary valuation below:

Table 61: Streetlight Summary Valuation 30 June 2011

| STREETLIGHT SUMMARY VALUATION 30 JUNE, 2011 | | | | | | |
|---|-------|------------------|---------------------|-----------------------|------------------------|------------------------|
| Component | Qty | Useful Life (yr) | Average Life(years) | Replacement Cost (\$) | Depreciated Value (\$) | Depreciation Per Annum |
| Brackets | 325 | 40 | 18.47 | 33,345 | 17,953 | 1,549 |
| Conc. Pole | 1,260 | 70 | 33.93 | 1,827,315 | 941,497 | 50,660 |
| Fibre. Pole | 1 | 50 | 50 | 1,450 | Nil | Nil |
| Wood Pole | 8 | 25 | 25 | 11,602 | Nil | Nil |
| Std. Steel | 504 | 60 | 24.46 | 730,926 | 432,976 | 20,566 |
| Dec. Steel | 94 | 60 | 26.54 | 329,000 | 183,465 | 9,833 |
| Subtotal Columns | 2,192 | | | 2,933,638 | 1,575,892 | 82,608 |
| HP Sodium | 1,656 | 25 | 12.55 | 733,492 | 365,347 | 58,915 |
| M. Vapour | 270 | 25 | 25 | 119,591 | Nil | Nil |
| IP66 SON | 54 | 25 | 5 | 23,918 | 19,134 | 1,196 |
| IP66 MH | 112 | 25 | 5 | 49,608 | 39,686 | 2,480 |
| Dec. CBD SON | 40 | 25 | 10.13 | 40,000 | 23,800 | 2,690 |
| Dec. CBD MH | 27 | 25 | 7.41 | 27,000 | 19,000 | 1,535 |
| Pedestrian Crossings | 4 | 25 | 9.38 | 8,000 | 5,000 | 512 |
| Uplights | 21 | 25 | 11.67 | 52,500 | 28,000 | 3,938 |
| Dec.Halogen | 2 | 25 | 15 | 2,000 | 800 | 200 |
| Feature | 15 | 25 | 0 | 52,500 | 52,500 | 2,100 |
| Subtotal Lamps | 2,201 | | | 1,108,610 | 553,267 | 73,567 |
| Totals | | | | \$4,042,248 | \$2,129,159 | \$156,175 |

Footpath Assets

Scope

The footpath asset was valued using RAMM data. The length and width for each footpath type were extracted from RAMM as at June 2011. The asset includes pathing on urban State Highways.

Useful Life and Condition

Useful life and condition are as reported from RAMM.

Replacement Cost

Replacement costs for concrete asphalt paths and clay paver have been derived from 2010/11 Contract rates.

Significant additions and disposals to the footpath asset are processed in RAMM database.

Table 62: Footpath Values and Depreciation

| Footpath Values and Depreciation as at 30 June 2011 | | |
|---|------------------------|--------------------------|
| Replacement Value (\$) | Depreciated Value (\$) | Annual Depreciation (\$) |
| 21,092,000 | 10,993,000 | 317,000 |

Assumptions

- Footpaths are assumed to be replaced like with like
- Valuations do not take into account footpath condition
- Paths where construction dates are not known have been assigned
- default construction dates from 01/01/1990 to 01/01/1995 depending on materials type

Traffic Services Assets

To derive a replacement cost for these assets, the value of sign replacements was taken from the maintenance contract payments for the period ending 30 June 2011. The contract rates cover the average cost of sign and installation, including posts where applicable. Based on these assumptions, the replacement value of the signs asset inventory is as follows:

Table 63: Traffic Service Assets Standard Replacement Costs

| Item | Contract Rate | Professional Services | Replacement Cost | Number of Signs | Replacement Cost |
|---------------------|---------------|-----------------------|------------------|-----------------|------------------|
| Signs with posts | \$168.09 | 8.5% | \$182.38 | 2326 | \$424,216 |
| Signs with no posts | \$127.24 | 8.5% | \$138.06 | 524 | \$72,343 |
| Totals | | | | 2,850 | \$496,559 |

7.4 Current Valuation

The following table summarises the latest valuation of Land Transport Assets to 30 June 2011

Table 64: Summary Valuation of Land Transport Assets as at 30 June 2011

| Component | Replacement Cost (\$,000) | Depreciated Replacement Cost (\$,000) | Annual Depreciation (\$,000) |
|------------------|-------------------------------|--|----------------------------------|
| Land | 26,390 | 26,390 | Nil |
| Formation | 118,943 | 118,943 | Nil |
| Pavement | 35,466 | 23,111 | 471 |
| Surfacing | 17,456 | 11,014 | 1,254 |
| Kerb and Channel | 18,572 | 10,309 | 232 |
| Footpath | 21,092 | 10,993 | 317 |
| Railings | 768 | 467 | 2 |
| Streetlighting | 4,042 | 2,129 | 89 |
| Culverts | 7,019 | 4,830 | 11 |
| Bridges | 14,831 | 7,278 | 148 |
| Large Culverts | 1,568 | 672 | 19 |
| Traffic Services | 497 | 248 | 71 |
| Total | 266,644 | 216,384 | 2,614 |

7.5 Key Assumptions

- Assumptions relevant to each asset group have been listed under the separate headings in this chapter
- Considerable cost may be expended in purchasing land for road reserve and creating the road formation, but, once established, formation (i.e. "shaping") is treated as part of the land. The capital cost of formation is recognised in the Asset Register as a non-depreciating asset. Fencing and entrances in the road reserve are owned after construction by the appropriate residents and utilities, therefore council need not account in its records for their presence or loss in service due to ageing
- Non-Council underground utilities in the road formation, (e.g. power and telegraph cables, gas pipelines) are generally not considered Land Transport assets but are a consideration during maintenance and reconstruction works. The Council now has to value such infrastructure for rating purposes and any rates derived could be used for Land Transport activities
- The unit rates used in this AMP to derive optimised replacement costs are as at June 2011 and were obtained during the full revaluation. These rates have generally been obtained from actual contract rates that were paid for work of a similar nature at the time of the revaluation

Population

Fortunately, a large proportion (over half) of the Land Transport programme is subsidised by NZ Transport Agency, on a basis that is not linked to population.

Any decline in population may seriously erode the rating base of the District, placing a higher burden on the remaining residents for any infrastructure upgrades, and possibly affecting ability to fund renewal works.

Population trends must therefore be reviewed as frequently as reliable data can be obtained.

7.6 Other Assumptions

- All expenditure is stated in dollar values as at 1 July 2011, with allowance made for inflation over the planning period
- All costs and financial projections are GST exclusive
- Operational costs are generally shown to increase in proportion to total demand and anticipated real energy price increases
- Renewal costs are based on the plans outlined in Chapter 5
- New assets requirements have been derived from analysis of service level changes, growth and risk
- The costs of insurance and risk mitigation are included in the forecasts, however the potential costs that could arise through exposure to risk are not
- Climatic and other environmental trends are expected to largely continue as they have in the past
- This Plan assumes no growth in commercial/industrial demand
- Asset values and lives have been taken from the June 30 2011 valuation

Confidence Levels

The degree of reliability of the data used in this plan affects confidence and margin of error in the projected renewal programmes and other financial estimates.

Data confidence for the assets covered by this plan has been expressed below in terms of the NAMS Group approach:

Table 65: Confidence Grades

| Confidence Grade | General Meaning |
|------------------|--|
| A | Highly Reliable Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment |
| B | Reliable Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example the data is old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation |
| C | Uncertain Data based on sound records, procedures investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data is available |
| D | Very Uncertain Data based on unconfirmed verbal reports and/or cursory inspection and analysis |

Table 66: Assessment of Confidence in Key Inputs to Programmes

| Assessment of Confidence in Key Inputs to Programmes | | | | | |
|--|---|---------------------------------------|----------------|---------------|-------------------------|
| | Attribute | D Very Uncertain | C Uncertain | B Reliable | A Highly Reliable |
| 1 | Unit cost for Replacement | | | | |
| | | | | | |
| 2 | Condition/Remaining Life: | | | | |
| 2a | Above-ground Civil, Mechanical & Electrical | | | | |
| | | | | | |
| 2b | Buried Components | | | | |
| | | | | | |
| 3 | Asset Size | | | | |
| | | | | | |
| 4 | Asset Depth | Not relevant – standard mains depths. | | | |
| | | | | | |
| 5 | Material | | | | |
| | | | | | |
| 6 | Date of Installation | | | | |
| | | | | | |
| 7 | Asset Type | | | | |
| | | | | | |
| 8 | Location | | | | |
| | | | | | |
| 9 | Length (pipelines) | | | | |
| | | | | | |
| 10 | Quantity (other assets) | | | | |
| | | | | | |
| 11 | Deterioration Rates: | | | | |
| 11a | Above-ground surfacing, signs and streetlights Civil, Mechanical & Electrical | | | | |
| | | | | | |
| 11b | Buried Components | | | | |
| | | | | | |
| 12 | Asset Performance | | | | |
| | | | | | |
| 13 | Demand Information | | | | |

2, 6, 11b: While condition, remaining life, material, installation date and deterioration rates are not as accurate as desired, faults frequency generally demonstrates that within this ten year plan period, buried components are very unlikely to

require significant renewal. Depreciation rates have been conservatively set, so that in future plan periods there should be adequate funding to sustain a renewal programme based on better data.

Table 67: Assessment of Confidence in Financial Programmes

| Assessment of Confidence in Financial Programmes | | | | | |
|--|---|------------------------|----------------|---------------|-------------------------|
| | Forecast Category | D Very Uncertain | C Uncertain | B Reliable | A Highly Reliable |
| 1 | Revenue | | | | |
| 1a | User Charges | | | | |
| | | | | | |
| 1b | General Rates | | | | |
| | | | | | |
| 2 | Opex | | | | |
| 2a | Direct Cost – maintenance, power, contracts | | | | |
| | | | | | |
| 2b | Support Cost | | | | |
| | | | | | |
| 2c | Principal Repayment | | | | |
| | | | | | |
| 2d | Interest | | | | |
| | | | | | |
| 2e | Depreciation | | | | |
| | | | | | |
| 3 | Capex | | | | |
| 3a | Renewals | | | | |
| | | | | | |
| 3b | New Works | | | | |

Notes:

- 1 Reliability of revenue cannot be greater due to status of population predictions and potential decline in population.
- 2 Accuracy of Depreciation cost is low due to uncertainty of asset life, but has been set conservatively to compensate in the medium term.
- 3 Confidence in renewal costs over the plan period is higher than that in the depreciation figures because of observed reliability performance of buried assets.

Sensitivity Analysis

A sensitivity analysis is being developed for assessing the impact of various assumptions of asset useful lives on the Depreciation account.

8.0 ASSET MANAGEMENT SYSTEMS AND PROCESSES

This Section has been prepared as generic for all Council AMP's and contains information about all assets. The Section has been kept generic to allow ease of future updating and management of the Assets. SWDC manages its assets in an integrated manner. This is reflected in this section.

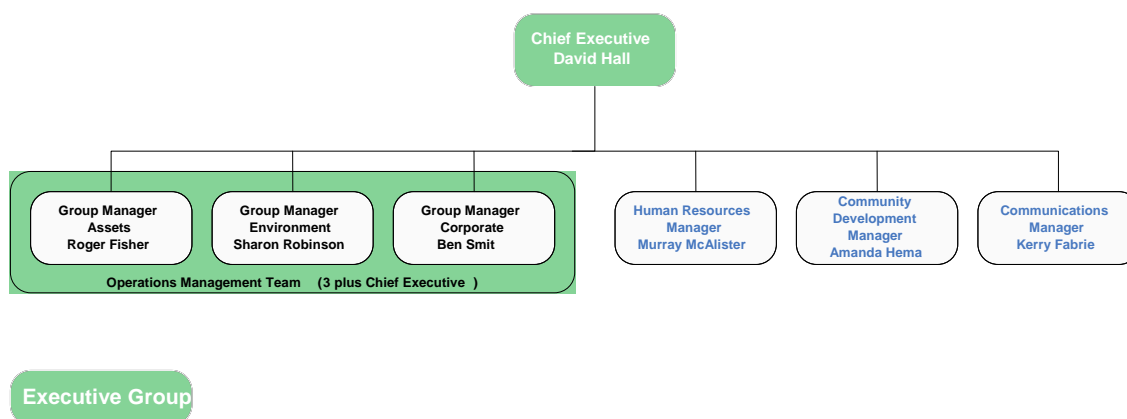
8.1 Responsibilities for Asset Management Outcomes

Responsibility for the asset management function is allocated across two Group Managers as follows:

- The Group Manager, Assets, is responsible for the Land Transport, Landfills, Water Supply, Wastewater and Stormwater networks, Refuse Landfills and Community Facilities and Property. This responsibility includes:
 - o Ensuring constructed, maintained and in compliance with consents
 - o Adequate budgeting and long-term forecasting
 - o Monitoring Levels of Service for services provided by assets
 - o Identifying and managing asset and service related risk
 - o Reporting of Level of Service, Key performance indicators and Risks at Corporate level
 - o The achievement of Asset Management practices which meet corporate Asset Management development standards and reporting of these in the AMPs
- Group Manager Corporate- is responsible for delivering corporate risk management

The following organisational structure outlines responsibility and linkages between Group Managers.

Figure 28: Organisational Structure



8.2 Asset Systems Review

South Waikato District Council completed a formal assessment of their asset management system in 2008. This report, 'South Waikato District Council Systems Review of BizeAsset' was completed by Waugh Infrastructure Management Ltd.

South Waikato DC has subsequently been collecting additional asset data and completing asset management analysis in a number of areas as part of the Asset Management Improvement Programme. As a result, additional data sets are being created and more comprehensive catalogues of assets compiled, particularly relating to Community Facilities assets (parks, leisure and swimming pools). BizeAsset has been proposed as the logical system to which to add the new and updated data sets.

The combination of new data sets, additional information to be held, changing asset management requirements, and recent additional functionality being delivered in BizeAsset made it logical to complete a formal review of the BizeAsset implementation and proposed changes in use.

The table below details system requirements from the Office of Auditor General and the current position of South Waikato District Council's systems.

Table 68: Asset Information System Requirements from Office of Auditor General

| Core AM | Comprehensive AM | SWDC BizeAsset Position |
|---------------------------------|--|--|
| Description of Assets | | Core AM achieved |
| Adequate description of asset | Inventory at individual asset level | Achieved except for some Properties |
| Remaining useful life of assets | Physical attributes include location, material, age | Achieved except for some Properties |
| | Systematic monitoring and analysis of physical condition | Commenced for high criticality assets |
| | Systematic measurement of asset performance | Commenced for high criticality assets |
| Levels of Service | | |
| | Regular monitoring and public reporting of agreed service levels | Some reporting provided to LTP reporting measures. Further analysis could be undertaken |
| | Include analysis of the achievement of technical service level performance measures and targets in AMP | Some reporting provided to LTP reporting measures. Further analysis could be undertaken |
| Managing Growth | | |
| | Analysis of the sensitivity of capital works programmes to demand changes is understood | Base asset data can be used in demand models. Some work has been completed in this area but further analysis would be beneficial |
| Risk Management | | Critical asset analysis has been completed. Not yet entered into BizeAsset (except RAMM - data entered) |
| Identify critical assets | Carry out integrated risk management | Integrated risk management strategies in hand. Recommendations in the report for storage of risk data in BizeAsset |
| | Integrate assets with corporate strategies | In hand. Reporting following data capture and entry |
| | Engineering Lifelines plans | Started at a regional level. No data capture in BizeAsset |
| | Link risk management to renewal and | Requires further analysis following |

| Core AM | Comprehensive AM | SWDC BizeAsset Position |
|---|--|---|
| | maintenance strategies | capture of risk data into BizeAsset |
| Lifecycle Decision Making | | Core criteria met using analysis of BizeAsset asset inventory data |
| Identify asset development programme to meet levels of service | Analyse and predict optimal asset treatments | Further analysis required |
| Evaluation and ranking of significant capital investment programmes | Use appropriate economic evaluation tools | Further analysis required |
| | Use predictive modelling techniques | Further analysis required |
| Financial Forecasts | | Core AM requirements met using BizeAsset data. Depreciation calculation process is robust |
| Predict physical maintenance renewals and new capital over 10 years | Financial forecasts should be consistent, reliable and provable | BizeAsset data used to underpin financial forecasts |
| Calculate depreciation over 10 years | Analyse sensitivity of forecasts to significant changes in assumptions | Further analysis required |
| Planning Assumptions and Confidence Levels | | Default data held, further work required on metadata |
| Degree of confidence in data on asset condition, performance, inventory | List all assumptions regarding AM planning | Further analysis required |
| | Have degrees and confidence on the reliability of data split across critical and non-critical assets | Further analysis of data reliability and metadata is required |

It can be seen from the analysis above that several common themes recur with regard to the Auditor General Asset Management requirements:

- Core AM requirements are generally met by SWDC current BizeAsset implementation
- Some further work will be required on the systematic monitoring of asset condition and performance
- Further work is required on defining data confidence levels to meet Core AM requirements – this will include further systemisation of metadata records
- Addition of critical asset data to BizeAsset will complete the meeting of Core AM requirements
- Meeting Comprehensive AM requirements (where appropriate for SWDC) will generally require further integration and analysis of data held

The report concluded that BizeAsset has been, and will continue to be, for the foreseeable future a good investment for South Waikato DC. The minor changes to BizeAsset as proposed in the report will allow all SWDC current core and comprehensive asset management requirements to be completed for utilities and parks assets.

A review of the current status of compliance with the desired level of asset management was carried out in 2011 and is described further in Section 9 (Monitoring and Improvement).

8.3 Accounting and Asset Management Systems

South Waikato District Council currently utilise four main systems for storing asset related data:

- NCS Financial System for Council's fixed asset register and property related data (the latter are being transferred to BizeAsset)

- GIS for spatial data sets and some parks, community facilities data
- BizeAsset for utilities data (water, wastewater and stormwater)
- RAMM (a hosted service) for road asset data

Billing/Accounting System (NCS) - Property Information (Note: Property still in NCS)

SWDC uses the Napier Computer Systems (NCS) software for its accounting and billing systems. This does not store or compute asset management information, but could be used to determine the number of properties billed for rates for checks against connections to the infrastructure shown in GIS.

All formal asset management financial reporting including valuation is handled by the BizeAsset system except for Properties/Buildings and Land Transport (which uses RAMM). Property/Building information is currently being transferred from NCS to BizeAsset and a trial revaluation is planned for June 2012. Any reconciliation issue will be addressed at that time.

Each of the schemes has its own traditional cost centre in Council's accounts. The income from charges and the costs of maintenance, operation and capital improvements are accrued to the scheme to which they apply.

Geographical Information System (GIS)

The core asset database for Council's infrastructure is the Geographic Information System (GIS). This is managed by the Asset Management Group.

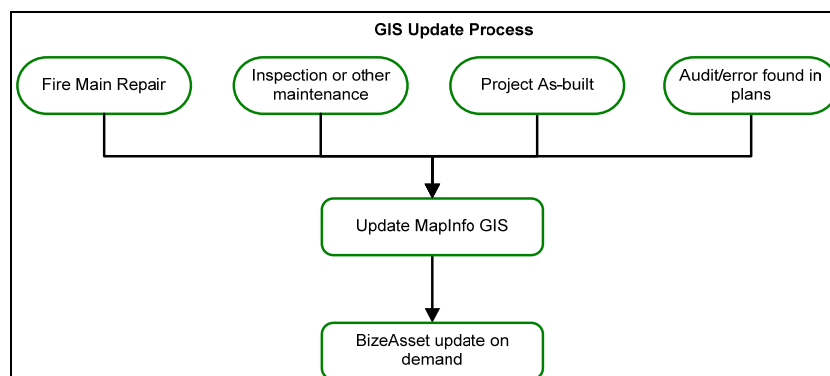
GIS consists of layers of information which hold different information such as:

- Digital Cadastral Database (DCDB)
- Building outlines and aerial photography, which can be superimposed on each other
- Queries for planning and analysis purposes
- Reporting on paper or responding to enquiries
- Roading and property boundaries in the district true to the survey datum
- As-built data for the water, wastewater and stormwater utilities
- Road centrelines and kerb lines
- Property ownership
- Valuation

A quality assurance system is used to ensure the GIS database is maintained in an up to date status at all times, and to ensure that no misinformation is given out to users of the database.

GIS data is updated as shown in the following process chart.

Figure 29: GIS Update Process



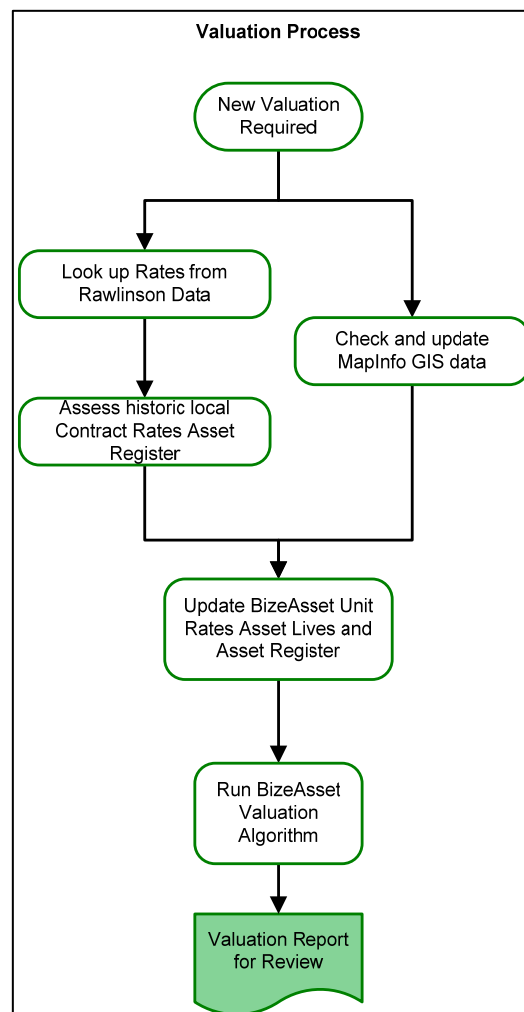
BizeAsset

BizeAsset is used to manage and produce asset inventory reports. It is integrated with the MapInfo data tables to permit input, querying, reporting and financial modelling using the asset register data. Reports available include current replacement or depreciated value and depreciation. Reports can be produced for high level asset groups ("lines, points and plant") but not by asset group at this time. Asset Group data can be filtered from the standard report by output to and manipulation in a spreadsheet.

Council has completed a formal assessment of their asset management system in 2008, which focused on BizeAsset implementation; refer to Section 8.2 for an overview.

The default valuation process used by BizeAsset is capable of recognising asset condition, extending the life of the asset if appropriate, and recalculating revised depreciated value and annual depreciation.

The current valuation process is shown.



Road Assessment and Maintenance Management System (RAMM)

RAMM was implemented by Council in the 1980's and has since been developed as a database containing an inventory of the roading system and a history of the improvements made to it over the years. From the trends shown by the frequency of the various activities recorded it has been possible to predict future needs. Indications such as the period between reseal and rehabilitation work has been used in this AMP to estimate life expectancies and future levels of activities in roading outputs.

Use of the RAMM system is a prerequisite for NZ Transport Agency's funding assistance programme approval. Access to RAMM is restricted to approved staff. The system is "hosted" for Council by CJN Technologies in Auckland under a maintenance contract and data is accessed via the internet, (<http://www.cjntech.co.nz>). NZTA has access to the RAMM database for monitoring purposes, but it remains the intellectual property of Council.

The two main measures used to grade the roading network are the "road rating" and "road roughness". The two provide a standardised measure of the status of discrete sections of pavement and the RAMM treatment selection programme uses this information to give a first order prioritisation and appropriate treatment for deficient sections. The information provides a very useful "first cut" for priority works when the forward Land Transport programme is being prepared. The "road roughness" is a reproducible measure of the riding quality of the road and is measured annually.

Since 1998-99 road rating on rural roads has been over 40 metres in every 200 m (i.e. 20% sample) because the 10% sampling was not giving a representative result. Urban rating provides at least 10% sampling. All roads in the District are rated at two out of every three years.

The condition indicators include seal cracking, potholing, edge break, rutting, shoving, scabbing, flushing, drainage and shoulder condition. In recent years this work has been contracted out. High speed data collection vehicles are available to do 100% rating of a

roading network, but they are not able to record some important indicators, such as cracking, drainage and shoulder conditions, and are cost prohibitive at this time.

An Asset Valuation module in RAMM was used for the first time for the 1 July 2001 revaluation of Land Transport assets.

In 1999-2000 a pavement deterioration model was attached to RAMM, known as dTIMS, to provide improved predictive capability.

Modelling – dTIMS

dTIMS is a NZ customised version of the World Bank's HDM software. In 2010/11 Council opted to engage Opus Consultants to run the pavement deterioration model analysis outcome for Council's seal pavements in order to vary the forwards programme model developed in-house. The results confirmed Council's forward works programme with minor variation and as a result of this Council has decided there is no great benefit compared to the cost the run the model.

The dTIMS software will provide a more advanced tool for guiding the Asset Manager in forecasting road maintenance and improvement needs. It is not expected to be in usable condition until the software is calibrated to provide adequate forecasting for comparatively low volume roads.

Council does not operate a traffic model and given the simple street arrangements, no traffic signals, and low volumes, a traffic model is not required in the foreseeable future.

Other SWDC Asset Datasets

The Table below outlines the current status (Jan 2012) of other SWDC Asset datasets.

Table 69: Other SWDC Asset Datasets

| Data Set | Current System / Location |
|---|--|
| Road Asset | RAMM |
| Road Pavement Analysis | dTIMS |
| Parks and Reserves | BizeAsset |
| Bridge Database | Spreadsheet |
| Street Lighting Information Management System (SLIMS) | SLIMS software was added to the RAMM package |
| Resource Consents | CS-View system is used to record consents and monitoring results |
| Walkways | Spreadsheet, being entered into BizeAsset |
| Pensioner Housing | Ditto |
| Public Toilets | Ditto |
| Swimming Pools | Ditto |
| Libraries | Ditto |
| Plaza | Ditto |
| Community Halls | Ditto |
| Cemeteries | MapInfo, Access dB |
| Airport | Spreadsheet for valuation only |
| Information Centres | Spreadsheet, being entered into BizeAsset |
| Former Putaruru Post Office | None |
| Talking Poles | Maintenance list of assets only |
| Council Offices and Depots | Spreadsheet, being entered into BizeAsset |
| Landfills | Surveys of capacity. Asset data in BizeAsset |
| Other Property Assets | None |

Network Models

Council has not needed sophisticated network models for utility assets to date. Modelling of the water network has previously been completed.

Limited modelling of the wastewater systems was completed to support the recent wastewater treatment upgrades.

Modelling of stormwater catchments has not been completed as experience of flooding over the years has identified system capacity and constraints. Catchment housing density and impermeable surfaces are not changing notably and historic flood observations provide an indication for design purposes.

Future modelling will be considered on a case by case basis as required by specific projects.

Hard-Copy Plans

Construction details of most structures that are part of the utilities asset are held in paper form. Digitising of this information may be considered in the future. This would enable detail information to be retrieved by querying the GIS representation of the asset being viewed.

Pump and Motor Records

These are maintained by Watermark, and a future change to operational procedures will migrate them to AMS. The plans are held in a filing system indexed and maintained by Southtech.

8.4 Key Information Flows and Processes

Key information flows and process linkages include:

- Developing the LTP including the Public Consultation phase (from which the Council Outcomes are derived)
- Translating the Council Outcomes into detailed levels of service that can be embodied in fixed assets, processes and contracts for service
- Identifying future demand and then planning appropriate capacity increases
- Preparation of annual budgets, and associated on-going reporting
- Establishing service level agreements with Southtech and Watermark business units
- Developing contract specifications and standards, and then engaging external contractors through prescribed procurement processes
- On-going management of those contracts and service level agreements
- On-going compliance monitoring and reporting of environmental performance

Figure 30: Performance Management System Hierarchy: Asset Management Reporting Links

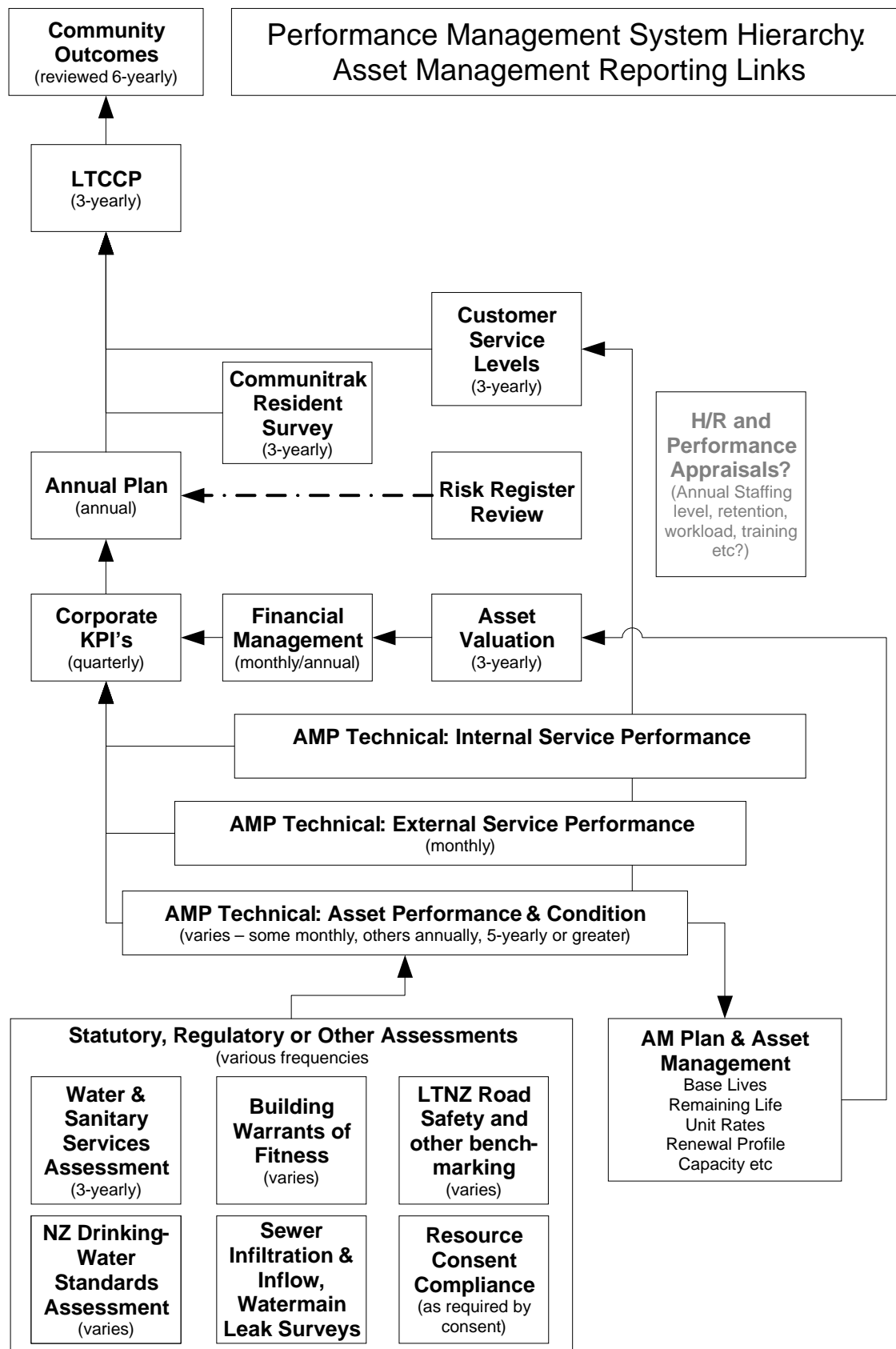


Table 70: Key Asset Processes for Systems

| Process | Utilities | Land Transport | Community Facilities and Property |
|---|---|---|--|
| Procurement Process | <ul style="list-style-type: none"> Professional Services are obtained from Council's Services Business Unit Water and wastewater maintenance activities are carried out by Council's Watermark Business Unit, via annual Services agreements Stormwater maintenance activities are carried out by an external contractor, arranged through competitively tendered contracts. | <ul style="list-style-type: none"> Roading professional services, including investigation, design, documentation and supervision, are generally carried out by Council's in-house Southtech Business Unit Contracts for the operation, maintenance and protection of Council's Land Transport system are awarded through the NZ Transport Agency CPP tendering process. | <ul style="list-style-type: none"> Open Spaces Maintenance Activities are contracted via competitively tendered contracts. |
| Expenditure Decision-making Process | <p>Formal processes have still to be developed. This will require the development of guidelines and indicators which trigger the desired response, and rank projects according to risk, financial capability and optimised life cycle costing. These processes will include:</p> <ul style="list-style-type: none"> Trigger Point For Renewal Trigger Point For Extension Or New Capacity Evaluating/Prioritising Projects Evaluating/Prioritising Renewal Projects Evaluating/Prioritising New Works Projects | <ul style="list-style-type: none"> Benefit-Cost Analysis, in accordance with the procedures set out in the NZTA Economic Evaluation Manual", is applied to Land Transport projects to determine the most cost effective expenditure | |
| Maintenance Policies for Maintaining and Operating Assets | <p>The following processes are used for maintaining and operating water assets:</p> <ul style="list-style-type: none"> Standards as described in the Levels of Service, Maintenance Contract Specification and Service Agreements Operating Standards as defined in the operating procedures (SOPs) Maintenance Standards and policies defined in Watermark procedures are established by reviewing the performance and cost of maintenance work Routine (programmed) maintenance check inspections are carried out for critical assets | <p>The following processes are used for maintaining and operating Land Transport assets:</p> <ul style="list-style-type: none"> Carriageway Maintenance objective is to obtain the full economic life of pavements by applying the most appropriate maintenance methods in a timely manner General Maintenance, It is proposed to improve the recording of details of maintenance costs in order to facilitate the use of the dTIMS deterioration modelling. RAMM database, the deterioration profile, valuation database, physical inspection and eventually the dTIMS model will provide the basis for successive years' maintenance programmes | <ul style="list-style-type: none"> Maintenance Standards for parks and reserves are in the Open Spaces Contract Cleaning standards for toilets and some properties are in the Cleaning Contract Operation of other facilities is based on issues such as asset condition, demand and required levels of service Routine maintenance of most facilities is completed to the relevant standards of environmental compliance, health & safety and prudent engineering practice. Major (non-recurring) maintenance is performed by external contractors on a one-off tender basis, and is overseen by those Council officers with responsibility for the management of the asset concerned |

Asset Management Systems and Processes

| Process | Utilities | Land Transport | Community Facilities and Property |
|--|---|---|---|
| Policies for Renewing Assets | <p>The following processes/practices are used for renewing assets:</p> <ul style="list-style-type: none"> Rehabilitating existing assets where economic Condition assessment Asset criticality Matrix criteria Financial treatment of renewal-projects Most plant renewal is reliability-driven Current criterion for renewal of network pipes is a failure rate greater than or equal to two breaks per year for two consecutive years in any individual residential block | <ul style="list-style-type: none"> Projects are identified using RAMM, which produces a draft list of renewal projects based on their condition A Draft Priority Order is used for listing potential pavement renewal works Trigger Points for Renewal are identified using RAMM to identify the larger areas of low quality pavement through the roughness and rating measurements. These areas are then physically inspected and tested | <p>The key criteria used for evaluating and prioritising projects for renewal are:</p> <ul style="list-style-type: none"> Asset condition / compliance Community wishes as expressed through the various consultation processes Rehabilitating existing assets done on a case by case basis Renewals are triggered by public safety or hygiene, observed deterioration or failure Council has not defined detailed trigger points for extension or new capacity but rather considers them on a case-by-case basis |
| Policies for Constructing/ Vesting of New Assets | <p>Procedures are used for:</p> <ul style="list-style-type: none"> Constructing New Assets, particularly where demand for additional capacity may arise from commercial customers Vesting assets to Council, most likely to occur in the case of subdivision Existing Assets to be bought by Council - not expected to happen | <p>Procedures are used for:</p> <ul style="list-style-type: none"> Assets to be vested in Council, Extensions beyond the existing urban network are initially funded by the developer and then vested in Council Existing assets to be brought by Council occur infrequently Financial treatment of renewal-with-upsize Trigger Points for extension or New Capacity, generally take the form of road widening or safety improvements | <ul style="list-style-type: none"> Evaluating/Prioritising Projects based on asset condition, compliance and community wishes Community facilities and property assets are not generally vested in Council Council has accepted ownership of some private facilities built on its land, as a default position when the owning entity (e.g. club) ceases to operate |
| Policies for Disposal of Assets | <p>Procedures are used for the following:</p> <ul style="list-style-type: none"> Trigger point for decommissioning Issues to be considered for disposal as outlined in the LGA 2002 | <p>Procedures are used for the following:</p> <ul style="list-style-type: none"> Trigger point for decommissioning Policy on disposal of paper roads | <p>Council resolved in 1991 that land and buildings not directly related to the delivery of Council services would be disposed of "at the General Manager's discretion" having regard to various issues. These may include:</p> <ul style="list-style-type: none"> Cost of ownership versus revenue and amenity Section 40 of the Public Works Act 1981 The public consultation requirements in the Local Government Act 2002 in particular in relation to Council's Significance Policy The Reserves Act 1977 Regional Plan limitations or restrictions District Plan limitations or restrictions Market considerations |

| Process | Utilities | Land Transport | Community Facilities and Property |
|----------------------------|--|---|---|
| | | | <ul style="list-style-type: none"> Heritage constraints or historical classifications |
| As-Built Processes | Refinement of GIS database largely relies on feedback of information from Council's maintenance contractors, as-built records of new works and results of monitoring and testing activities. Fieldwork recording sheets and processes to ensure the records are updated in the asset register and GIS, have been put in place. The sheets identify any existing asset that is being renewed or replaced and record the details necessary to fully update the asset register or the GIS system as appropriate | NA | As-built drawings are retained on completion. Legal boundaries and ownership updated in GIS from LINZ data |
| Quality Management Process | <p>Management is guided by the requirements of the following:</p> <ul style="list-style-type: none"> Drinking Water Standards of New Zealand Health (Drinking Water) Amendment Act Generally accepted accounting practice - NZ IAS 16 The International Asset Management Manual Council Asset Management Policy Resource Consent Conditions Council Health and Safety Plan Council Quality Assurance Documents Standard Operating Procedures and Operations Manuals <p>Requirements include:</p> <ul style="list-style-type: none"> Testing and Monitoring, A programme of source, treatment point and distribution system water sampling and testing is operated Treatment Management, The source water is pre-treated in some supply areas including <ul style="list-style-type: none"> Tokoroa: pH correction, chlorination and fluoridation Putaruru: two source locations; chlorination of Glenshea Park source | <p>Quality monitoring programmes include:</p> <ul style="list-style-type: none"> Measuring surface roughness of roads and road condition ratings to ensure every road is measured twice within a three-yearly cycle Updating roughness and condition rating data in the Road Asset Maintenance Management programme in conformity with NZTA requirements Measurement of traffic flows annually at established sites Compliance with performance measures Accident monitoring Contractor performance is reviewed monthly. Contractor competence in environmental values and hazard identification is assessed annually The RAMM consultant's contract is reviewed annually | <ul style="list-style-type: none"> Auditing of Parks Maintenance Contractor and informal checks of other contract work Adoption of AM practices described in the Property AM Manual as appropriate and as resources allow |

Asset Management Systems and Processes

| Process | Utilities | Land Transport | Community Facilities and Property |
|--------------------------------|---|--|--|
| | <p>only:</p> <ul style="list-style-type: none"> • Tirau: chlorination at source - Oraka Spring <ul style="list-style-type: none"> – Storage and Reticulation Management for Water Quality – Council's Stormwater Management Plan (SMP) is a key document and a companion reference to this Asset Management Plan. It identifies the issues, values and opportunities associated with urban stormwater. It covers management of stormwater discharge volume and quality, and discusses options for treatment and control. Planning tools that provide the basis for management, and details of the legal framework are discussed in the SMP | | |
| Performance Management Process | <ul style="list-style-type: none"> – Monitoring and reporting of service levels – Monitoring and reporting of consent compliance – Public Health monitoring QA system via Standard Operating Procedures – Monthly and quarterly Management Reporting | <p>A large proportion of physical work is contracted out. The major outputs are:</p> <ul style="list-style-type: none"> – General Maintenance and Inspection – Effective Traffic Services – Elimination of Flooding – Environmental Protection from Stormwater Runoff – Lighting for Night Safety – Emergency Response – Construction Effects | <ul style="list-style-type: none"> – Monthly and quarterly Management Reporting – Monitoring and reporting of service levels |

9.0 MONITORING AND IMPROVING ASSET MANAGEMENT

9.1 AM Improvement Process

South Waikato District Council has been actively committed to effective asset management since the mid 1990's.

This commitment has included in-house production of asset management plans since 1998, implementation of asset management systems and associated data collection, and the resourcing of a Manager Asset Strategy position.

During the period 2004-2006 Council's AMP's were updated to meet requirements of the Local Government Act 2002 and progress with asset management practice was incorporated into the plans. Resulting from the analysis in the 2006 AMP's an asset management improvement programme was implemented.

The AMP's were reviewed and updated again in 2009.

Improvements have been carried out at a consistent rate through regular 6 weekly meetings held with key personnel including:

- 1 Group Manager Assets, also the Project Sponsor
- 2 Asset Managers
- 3 External Consultants, Waugh Infrastructure Management Limited

This approach provided the opportunity to share valuable experience and knowledge with other team members and allowed buy-in to the asset improvement program. Resulting from this structured approach significant progress has been made.

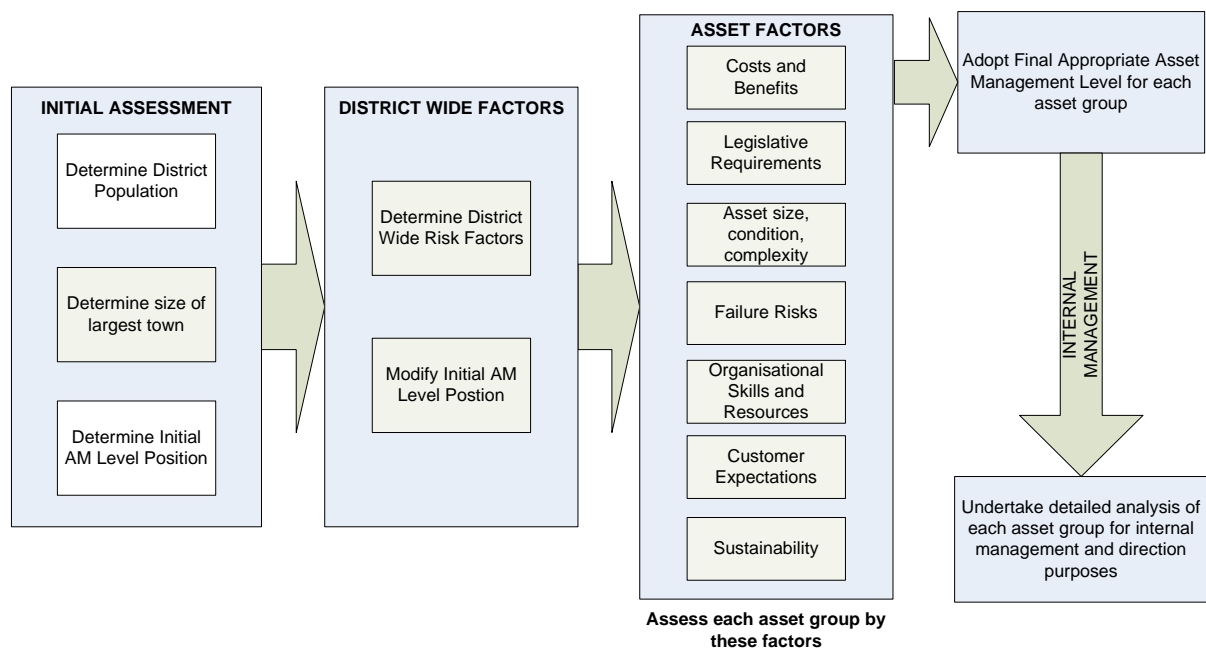
9.2 Assessment of Asset Management Practice

South Waikato District Council completed a formal assessment of appropriate asset management practice in 2008.

This report, "South Waikato District Council - Selecting the Appropriate AM Level" was prepared by Waugh Infrastructure Management. The report used a structured process to determine the appropriate level of asset management, using the guidelines provided in Section 2.24 of the International Infrastructure Management Manual.

The report recommended that the "Core Plus" level of asset management was appropriate for all activities and its subsequent adoption provided an asset management policy for the Assets Group.

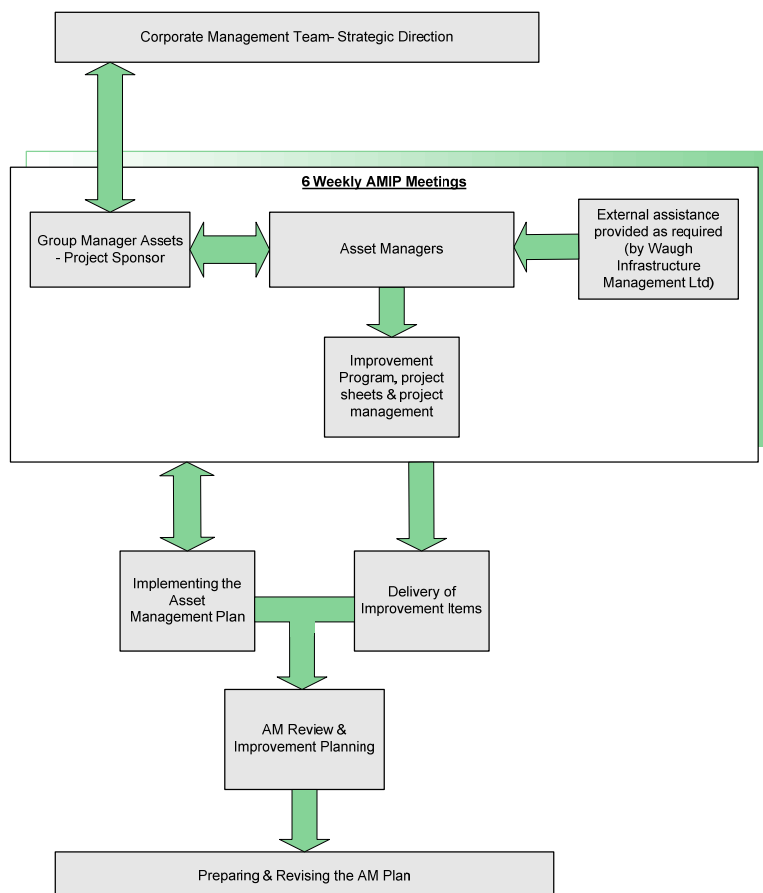
Figure 34: Methodology for determining Appropriate Asset Management Level



Asset management planning, programmes and practice are now embedded into South Waikato District Council Asset Group practice.

The following diagram outlines the integration between Council structures to support the on-going implementation of improvement of Council's asset management practices.

Figure 35: Improvement Program Process



9.3 Improvement Actions

Improvements since the last Asset Management Plan (2009)

Council is committed to ongoing improvement in the quality of its asset management practices until the "Core Plus" levels are achieved. The following is a summary of progress in implementing the improvement projects during 2009-12:

IP01 Ensure Depreciation account is correct.

- Ongoing testing of water pipe samples to determine remaining useful life and plan renewal programme
- Sensitivity Analysis model developed

IP02 Strengthen links between LOS/Demand/Plan

- Alignment between 2012 AMP and LTP confirmed
- Community consultation prior to Draft 2012 LTP indicated no LOS change necessary
- Growth projections for 2012 LTP same as before
- Water quality upgrades implemented per new Drinking Water Standards
- Backflow prevention strategy adopted and implemented
- Water demand management plan developed for Putaruru
- Anticipated higher standards addressed in preparing wastewater discharge consent renewals
- Inflow/Infiltration strategy adopted and implemented
- Waste minimisation plans developed
- "Warm Homes" insulation installed in pensioner houses
- Public toilets reviewed

IP03 Demonstrate Technical/Community Outcomes

- Ongoing monitoring and reporting confirmed achievements
- High levels of satisfaction recorded in 2011 Communitrak survey
- Align the LOS with the revised Council (was Community) Outcomes in the 2012 LTP

IP04 Review Monitoring and Reporting Procedures

- Summary of procedures prepared for review. Generally effectively carried out. May look at more consistent formatting between different activities.
- An electronic Register of all SWDC Plans, Bylaws, Strategies and Plans has been prepared to update current status and renewal dates.

IP05 Complete Asset Risk Assessment

- Earlier report on consequences of failure is being followed up to review probability of failure for 3 Waters assets
- Consideration given to extending to include assessment of failure probability in Land Transport and Community Facilities and Property (CF&P) assets, to enable completion of risk profile

IP06 Condition Inspection of Critical Assets

- Implemented for Services
- CF&P assets' condition recorded when compiling data for new BizeAsset module

IP07 Develop and implement Contingency Plans

- Ongoing support for, and co-ordination with, Civil Defence and Emergency Management
- Participation in vulnerability assessment exercise and other activities of the Waikato Engineering Lifelines Group
- Standby generators available for water and wastewater operations during power outages

IP08 Emergency Response Exercises

- Not implemented, apart from working together with CDEM and Lifelines

IP09 Renewals, maintenance, new work and operations optimisation

- Sensitivity Analysis developed to assist planning and funding for renewals
- BizeAsset is developing a new Scheduled Maintenance module that should be useful
- Needs to be considered further, as discussed in the 2011/12 Compliance Status review

IP10 Introduce integrated AM process

- Has been proposed to BizeAsset vendor for future development
- Has been proposed as a long term goal in the improvements for 2012-22

IP11 Backflow Prevention (BFP) Policy

- Adopted

IP12 Backflow Prevention Implementation

- Initiated and in progress, in accordance with the BFP policy

IP13 Financial Sensitivity Analysis

- Developed for further use in planning renewal funding

IP14 Improve Knowledge of Assets

- Ongoing condition assessment testing of AC water pipes to determine useful life
- Community Facilities and Property asset information being transferred from NCS (accounting system) to BizeAsset (AM system) following development of buildings module
- Ongoing GPS audits of location accuracy of reticulated assets in BizeAsset – assisted by student during summer vacation
- dTIMS introduced in Land Transport
- GIS team reorganised with new GIS Manager – role includes BizeAsset development and maintenance
- Improved knowledge of facilities usage being generated

IP15 Improve demand planning

- No major change predicted in population
- Water demand management plan developed to support Putaruru consent renewal – likely to also affect wastewater volume
- Waste Management and Minimisation plan developed
- Provision of public toilets reviewed
- Land Transport may receive attention
- Optimised use of existing CF&P facilities proposed for 2012-22 period

IP16 Customer charters

- Not developed

IP17 Extend asset system to include all significant groups in one database

- CF&P assets being transferred from NCS to BizeAsset (see IP14)
- Land Transport information will remain in RAMM

IP18 Inflow/Infiltration programme

- Strategy adopted and being implemented

IP19 Review and implement new Standard Operating Procedures and Quality Assurance procedures

- Existing SOP's are kept up to date
- QA procedures need further development

IP20 Asset Management Resource review

- Review of staff resources completed previously

IP21 Sustainability Policy development and implementation

- Proposal not adopted as Sustainability is intrinsic to asset management
- National Emissions Trading policy implemented at the landfill

IP22 dTIMS modelling tool extension

- Implemented for Land Transport (see IP14)

IP23 Transportation strategy updating

- Completed

IP24 Utilities strategy; assessment and plan updating

- Ongoing liaison with various Utilities providers and work programmes

IP25 Grant application procedures

- Not formally implemented, but availability of grants is generally well advertised and known
- Grant assistance sought from MoH for implementing PHRMP's
- Grants related to the landfill waste levy are given automatically by MfE
- Transport planning aims to maximise NZTA subsidies available

IP26 Demographic change in demand analysis

- Population projections are addressed on a corporate wide basis to ensure consistency in planning and alignment with the LTP process.

IP27 Property assets – scope of asset register requirements

- Implemented and being transferred from NCS to BizeAsset
- CF&P operations planning to be addressed
- Metadata improvements to be addressed in BizeAsset to improve confidence levels

IP28 Property assets – develop asset register

- Implemented with IP27

IP29 Property assets – revaluation

- Planned for 30 June 2012

IP30 Asset Plan update

- 2012-22 AMP updated and compliance status review implemented

9.4 Improvement Programme

The status of progress toward compliance with the target level of “Core Plus” was assessed independently by Waugh Infrastructure Management (WIM) in November 2011. Refer to “Water, Wastewater, Stormwater, Landfill, Community Facilities and Transport AMPs – Peer Review, November 2011”, Draft for Comment 30 November 2011 (DocSet 209360).

The review was based on criteria for 12 elements, broadly in accordance with IIMM, and an additional two that were introduced later at staff request. The results were presented in a spreadsheet format titled “SWDC Asset Management Assessment – Improvements Model V1.1” (DocSet 215278).

The following elements were addressed in the review:

- Description of Assets
- Levels of Service
- Managing Growth
- Risk Management
- Lifecycle Decision Making
- Financial Forecasts
- Planning Assumptions and Confidence Levels
- Outline Improvement Programmes
- Council Commitment
- Planning by Qualified Personnel
- Sustainability within the Asset with reference to Council’s sustainability objectives
- AMP Format

Scores were assigned to the above elements (in a range from 0 to 5), to describe the degree of compliance with the target level. The information provided for the review consisted of the Draft AMP’s in the form that existed in late October 2011, ie the Drafts were still a “work in progress”.

The assessment and scores were discussed during two workshops with staff and WIM during December and February, following which a draft set of Improvement Plans was prepared for inclusion in the 2012 AMP’s.

The Improvement programme for 2012-22 was developed with a view to closing the gap between the existing level and the target level of “Core Plus” asset management practice, while also considering the proposed “Intermediate” level (which supersedes the “Core Plus” level) as described in the 2011 IIMM. The programme addresses:

- Partially and uncompleted work carried forward from the 2009-2019 Improvement Programme
- Items identified in the detailed 2011/12 Compliance Status review
- Items identified during the development of the Draft Asset Management Plans

An important Improvement will be the complete overhaul and restructure of the Asset Management Plans for the 2015-2025 period, with the intention of making them more useful and relevant. This is expected to result in

- Succinct plans for each major activity, supported by generic sections that are common to all AMP's and located in a separate volume
- Avoidance of redundant and duplicate data
- Appropriate links to the LTP and other related documents and data sources, using the link capabilities of Council's ECM document management system.

The various improvements suggested in the compliance review were grouped and combined into a condensed set of Improvement Plans under the headings that were used in the review, as set out below.

Budgets

The compliance review provided an indication of suggested budgets for the Improvement Plans, but these were not reviewed after the staff workshops.

Indicative budget proposals for Improvement Plans were required much earlier, as an input to the Draft 2012-22 Long Term Plan around September 2011. As a result, the proposed budgets in the Draft LTP represent the funds likely to be available for use in implementing the IP's.

9.5 Schedule of Improvement Plans

| (DRAFT) SCHEDULE OF IMPROVEMENT PLANS FOR 2012-22 AMP's | | | | |
|---|----------|---|--|--|
| H Mitchell 09.03.12 (DocSet 218578) | | | | |
| Based on Compliance Status Review workshop with Andrew Iremonger 8 Feb 2012 | | | | |
| AREA | IP # | PURPOSE | SCOPE | COMMENT |
| DESCRIPTION OF ASSETS | 1 | Improve the quality of information and confidence therein | Systematic measurement and monitoring of condition and performance | CF&P: Focus on hidden Elec/Mech items behind walls |
| | | | | Collect condition data when monitoring KPI's |
| | | | | Existing paper based system adequate for Waters/CF&P. Roading data already captured electronically by contractor. |
| | | | | Note that Bize likely to be superseded by major upgrade of NCS in a few years' time |
| | | | | Process to identify and track failure modes as they occur |
| | | | | Inspection procedures related to criticality |
| | | | | Make use of the relevant data on flow, pressure, hours run, etc to identify efficiencies, "near misses" and potential problems |
| | | | | Incorporate SCADA info |
| | | | | Consider cost/benefit when deciding how far to go with this project |
| LEVELS OF SERVICE | 2 | Optimise maintenance expenditure by reference to LOS | Link maintenance expenditure to LOS performance | Develop a process for this. Build on the LOS/KPI reporting that goes to Andrew Robinson |
| | | | | Develop Howard's summary of the existing reporting and monitoring procedures (IP04 2009 AMP) |
| | 3 | LOS changes | Consider LOS drivers | Review LOS changes arising from preliminary consultation on Draft LTP |
| | | | | Monitor gaps between proposed and actual LOS |
| | | | Communicate LOS achievement to public | Liaise with Kerry re Communications strategy |
| | | | | |
| MANAGING GROWTH | 4 | Match infrastructure capacity to present and future needs | Summarise demand drivers and assumptions | Review population sufficiently early in LTP process to allow consideration in AMP reviews |
| | | | Develop Demand Management Plans | Build on existing. Water has made a start. Transport being considered (using vehicle counts, etc). Various other data is collected |

Monitoring and Improving Asset Management

| | | | | |
|-----------------------------|----------|--|---|--|
| | | | | (Water/Wastewater flows, facilities usage) |
| | | | Investigate losses from water system | Set targets for acceptable water loss |
| | | | Continue Inflow/Infiltration investigation | In progress. Set targets for acceptable I/I |
| | | | Waste Minimisation Plan | In progress |
| | | | Develop multi-criteria approach to investigations | |
| | | | Note "existing use" data for CF&P facilities | |
| | | | Improve communication links with CF&P user groups to optimise use of facilities | |
| | | | | |
| RISK MANAGEMENT | 5 | Ensure continuity of service and minimise "unforeseen events". Develop an integrated, structured approach to risk management | Review current risk status | Review various sources of information, including "Said's analysis"; business continuity (Miles Crawford's work); criticality reports; Bize and RAMM records |
| | | | | Public Health Risk Management Plans are being implemented |
| | | | Complete the risk analyses for all asset groups | Build on Waugh's 2009 analysis of "consequences" for all groups and recent follow up on "probability" for 3 Waters group, to complete the assets risk analysis (high, medium, low). Consider mitigation for critical assets and options for managing risks |
| | | | Translate risk status into strategies for maintenance and renewal | Bize is developing a scheduled Maintenance tracking component (not available yet) |
| | | | | Review, develop and link Business Continuity Plans, Emergency Management and Pandemic Plan with controls for periodic review. A corporate wide process. |
| | | | Align with Lifelines and CDEM | Refer to Lifelines Vulnerability assessment and CDEM/disaster recovery plans |
| | | | Develop contingency plans for emergencies | Develop scenarios. Alternative power; water storage capacity; public communication; environmental monitoring, reporting and mitigation; training exercises; etc |
| | | | Operation and Maintenance manuals and SOP's | Up to date and used, to maximise efficiency and avoid unforeseen events. Need to review CF&P manuals/SOP's |
| | | | Develop Assets Group proposal to take to LT | |
| LIFECYCLE MANAGEMENT | 6 | Develop systems to promote good decisions based on "whole of life" asset management | Develop reference guidelines for asset creation, upgrades, maintenance, renewals and disposal | Create central database for project identification, assessment, prioritisation and implementation |
| | | | | Procedure and criteria for assessing proposed new infrastructure. |

Monitoring and Improving Asset Management

| | | | | |
|---|-----------|--|--|--|
| | | | | Develop business case, where appropriate |
| | | | | Apply Sensitivity Analysis to renewals planning and depreciation estimates |
| | | | | Any other predictive/"what if" models to support long term planning, eg network analysis? |
| | 7 | Improve efficiency of service delivery and work programmes | | Co-ordinate work programmes between roading and other projects, including new, renewal and maintenance works - to minimise disturbance |
| | | | | Apply Sensitivity Analysis to renewals planning and depreciation estimates |
| | | | | Any other predictive/"what if" models to support long term planning, eg network analysis? |
| | | | GIS support | Develop and use GIS capabilities to support Bize/RAMM to deliver proposals above |
| | | | | Use GIS to map condition, criticality and maintenance history (already possible with Bize?) |
| | | | | |
| FINANCIAL FORECASTS | 8 | Improve financial data needed to support optimised decision making and valuation processes | Develop and maintain a system for recording cost information for reference purposes (construction and maintenance) | Consider implementing this IP a few years down the track |
| | | | | |
| PLANNING ASSUMPTIONS AND CONFIDENCE LEVELS | 9 | Assumptions methodology aligned with LTP | Develop a process for reviewing assumptions and related confidence levels | Triennial review, co-ordinated with LTP Assumptions |
| | | | | Consider the effect (sensitivity) that the Assumptions have on proposals |
| | | | | Describe Confidence, with reasons given |
| OUTLINE IMPROVEMENT PROGRAMMES | 10 | Improvement Plans result in desired level of asset management | Develop a process for defining Improvement Plans | IP's must be based on target level of asset management (ie "core plus") with an agreed timeframe for overall completion. |
| | | | | Prioritise projects that will produce the most useful benefits. Implement long term projects in a logical, structured sequence |
| | | | | |
| COUNCIL COMMITMENT | 11 | Asset Management Policy | Review progress toward target level of "core plus" | Assess triennially |

Monitoring and Improving Asset Management

| | | | | |
|--|-----------|---|--|--|
| SUSTAINABILITY | 12 | Develop a corporate Sustainability Policy | Link Sustainability strategies to Sustainability Policy | Present a case to LT. Policy must drive the Strategy. Implementation is likely to need some criteria for evaluating and comparing options. Criteria should address the four well-beings and be measurable, with weightings, where appropriate. |
| | | | | Refer to examples (eg Rotorua and Manukau DC's) |
| | | | | Policy likely to affect existing policies, eg Purchasing Policy criteria and NZTA requirements |
| | | | | Consider adoption of ISO 14000 (Environmental Management) across whole organisation |
| | | | | Consider "resilience" in planning, operating and maintaining assets |
| | | | | Consider climate change, energy, etc |
| | | | | Consider targets for reporting energy consumption, including by contractors, etc |
| | | | | |
| PLANNING BY QUALIFIED PERSONNEL | 13 | Assets are managed by suitably qualified and experienced personnel | Retain suitable staff or use suitable consultants, where necessary | No IP required at this stage |
| | | | | |
| AMP FORMAT | 14 | The AMP's are structured in a format that is useful to managers and is understood and used regularly by staff | Contains all relevant information in a structured format that aligns with IIMM 2011. | The current position is that Asset Managers refer to a wide variety of documents and processes that could ideally be combined to improve productivity and efficiency by saving time and highlighting what is important. The AMP's are only a <u>part</u> of the asset management process. Current practice also depends on a lot of accumulated personal knowledge, which is not easily passed on when a key person is not available. The asset management systems (Bize/RAMM) are being developed with increased features and capabilities that will assist the asset manager. |
| | | | | As a <u>long term</u> objective, consider linking the AMP's to integrate with all the above processes in an electronic format with links to relevant, current information in asset management systems (Bize/RAMM), planning, operations data, maintenance, LOS monitoring, service requests, correspondence, reporting (could be generated automatically) and references, ie a "living" document that reflects the continuous improvement that flows from the Improvement Plans. Requires further thought and consideration on how it would be managed to keep it up to date and accessible. |
| | | | | The AMP's could be set up to facilitate performance reporting (including financial) to Council and external agencies (eg Waikato RC), as well as Valuations |
| | | | | This is likely to be a long term project that starts with the 2015-2025 AMP's and is developed in stages in to a full electronic document |

9.6 Monitoring & Review Procedures

Monitoring Approach

South Waikato District Council has developed the AMP's based on an integrated asset management planning approach that includes:

- 1 Customer consultation and subsequent development of service levels
- 2 The configuration of networks to meet customer requirements, now and in the future
- 3 Current asset information
- 4 Well-developed strategies to achieve customer requirements

Further development of Council's asset management approach, including supporting processes, systems and data, will be needed to meet the appropriate level of asset management practice as set out in Council's Asset Management Policy. This Policy will be reviewed periodically to take into account legislative and other national practice changes.

Timetable for Audit and Review

The programme for future AM reviews of this plan is shown in the table below.

Table 71: Timetable for Audit and Review

| Activity | Target Date |
|---|-------------------------|
| Asset Management Improvement Program 6 weekly meetings with Asset Managers | 6 Weekly |
| Monthly reporting to Group Manager of Assets | Monthly |
| Improvement Plan reviewed annually by all staff directly involved and focusing on key business issues | 30 June each year |
| Report on Improvement Plan | 30 June each year |
| AMP updates involving members of staff involved in preparing specific aspects of the AMP | 30 June each year |
| Compliance Status review prior to start of LTP process (to identify and budget for new improvements) | 30 August every 3 years |
| Identify new LOS based on preliminary consultation on LTP | Early in LTP process |
| Adoption of AMP by Council (linked to adoption of LTP) | 30 June every 3 years |
| External benchmarking by internal staff | Annually |
| Audit NZ external audit | As required by Audit NZ |
| External Peer review of AMP | 3 Yearly |

Procedures for Performance Reporting

The following Performance Indicators will be monitored to measure the effectiveness of the AMP's.

Table 72: Performance Indicators for AM Plan

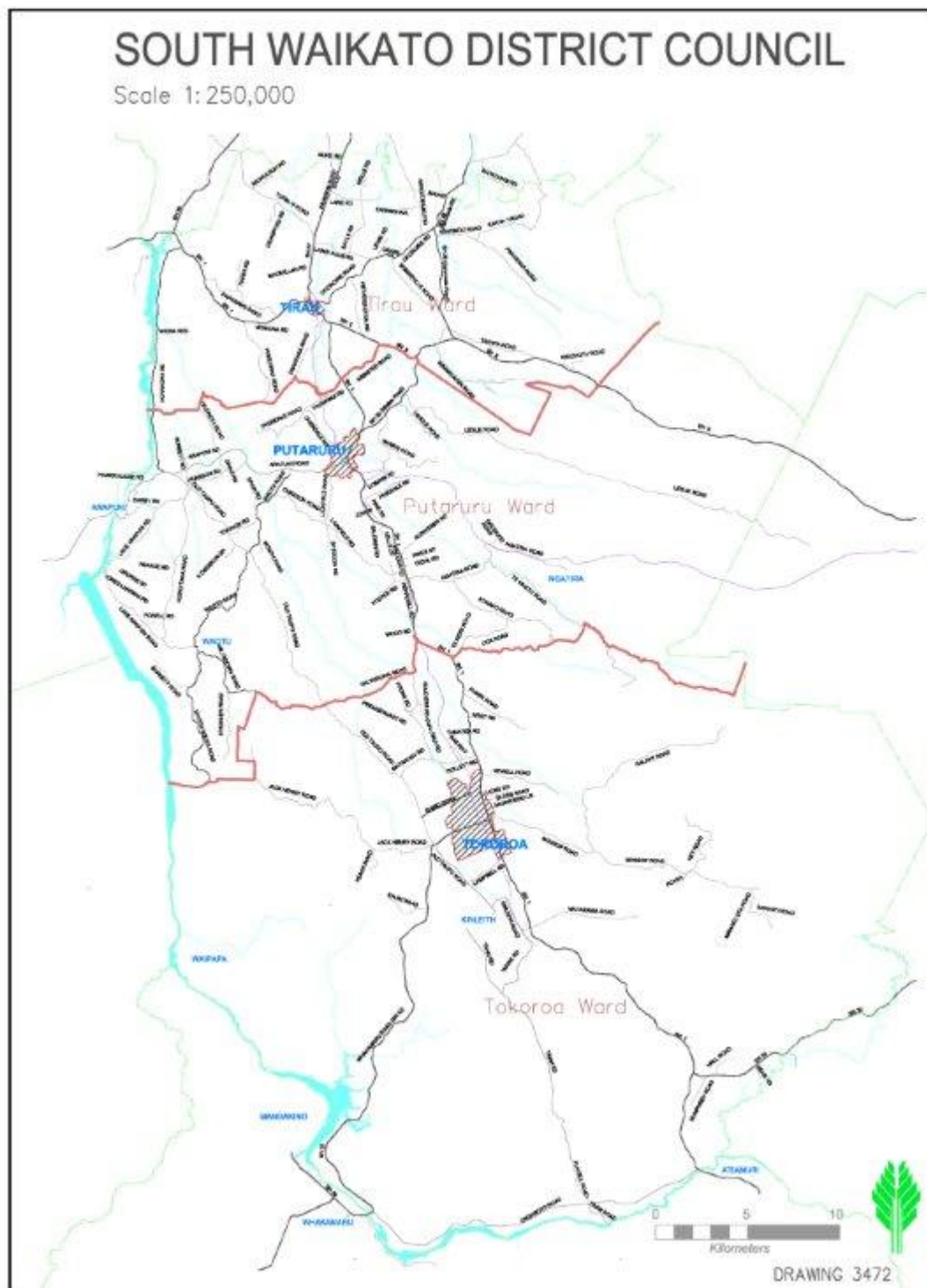
| Performance Indicator | Target | Source of Information |
|--|---|---|
| High level of customer satisfaction with services provided | Achieve KPI targets | Bi-annual Communitrak Surveys and responses to service requests |
| Implementation of Improvement Programmes | 100% of identified improvements undertaken | Annual Plan reports |
| Compliance with legislative requirements | Unqualified Audit NZ opinion relating to AM plan outputs | Audit NZ reports |
| Quality of service delivered | Compliance with Annual Plan targets | Annual Plan reports |
| Quality of risk management | Management of identified risks within corporate risk management planning approach | Internal management reporting on Risk Management Plan |

APPENDICES

APPENDIX A ASSET DESCRIPTION & SYSTEM OVERVIEW

A1 District Map

The South Waikato District lies at the heart of the North Island of New Zealand. State Highway 1 runs through three of our main towns - Tokoroa, Putaruru and Tirau. Forestry and agricultural industries dominate the district, with almost half of the district covered in forest.



Appendix A – Asset Description & System Overview

| ROADING STATISTICS IN THE | | | | | | |
|--|-----------------|--------------|----------------|----------------|-----------------|-------|
| SOUTH WAIKATO DISTRICT COUNCIL (July 2011) | | | | | | |
| <u>RURAL</u> | <u>PUTARURU</u> | <u>TIRAU</u> | <u>TOKOROA</u> | <u>ARAPUNI</u> | <u>TOTAL</u> | |
| <u>Maintained by SWDC</u> | | | | | | |
| Sealed | 197.0 | 90.3 | 94.7 | 0.0 | 382.1 | |
| Unsealed | 7.7 | 2.3 | 0.3 | 0.0 | 10.2 | |
| Sub - Total | 204.7 | 92.6 | 95.0 | 0.0 | 392.3 | 392.3 |
| <u>Maintained by HANCOCK</u> | | | | | | |
| Sealed | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Unsealed | 24.5 | 0.0 | 8.3 | 0.0 | 32.8 | |
| Sub - Total | 24.5 | 0.0 | 8.3 | 0.0 | 32.8 | 32.8 |
| <u>TOTAL RURAL</u> | 229.2 | 92.6 | 104.0 | 0.0 | 425.1 | 425.8 |
| <u>URBAN</u> | | | | | | |
| Sealed | 25.8 | 6.0 | 76.5 | 3.5 | 111.7 | |
| Unsealed | 0.4 | | 0.2 | | 0.6 | 112.3 |
| Urban and Rural Sealed (SWDC maintained) | | | | | 493.8 | |
| Urban and Rural Unsealed (SWDC maintained) | | | | | 10.8 | |
| Urban and Rural Total (SWDC maintained) | | | | | 504.6 | |
| Rural Total (HANCOCK maintained) | | | | | 32.8 | |
| Urban and Rural Total | | | | | 537.4 km | |

APPENDIX B DETAILED LEVELS OF SERVICE

B1 2008 FOCUS GROUP CONSULTATION

Land Transport

Discussed at 3 meetings.

29 feedback sheets.

Most important: 'safer roads' at 75% of responses, followed by crossings for high speed roads, and road width for passing trucks.

Next most important: safety education, parking, markings and uneven roads – all rated as highly important by around 50% of respondents

Those 'prepared to pay more' (67% of responses) had clearly identified the three top concerns. Despite roading having by far the highest rates charges per property, no responses indicated a desire to pay less.

Six of the seven rural responses were very clear about the importance of roads to them and one expressed concern about lack of footpaths on rural roads.

Additional service aspects identified included restricting heavy trucks in residential areas, enforcement of parking on verges, and a comment about the safety of Tokoroa Memorial Sports Ground entrance.

Recommendation:

Council is aware of the safety and width issues. The costs of widening additional roads without subsidy would clearly be very high and would benefit only a few of those who would be paying. Safety aids such as signs, markings and lighting are maintained as often as the national subsidy permits. Road improvements must also be subsidised to be affordable and funding is applied for annually.

In 2008 a Corridor study, periodic Road Safety investigation and Roading Strategy will be produced. These will support the continuing safety and standard of the District's roads.

The Memorial Sports Ground, school facilities, and potentially the new events centre all sited on the opposite side of SH1 to the general population appears to be an obvious incentive to improve safety, including for pedestrians and cyclists. Council can look at the cost to provide a pedestrian/cycle underpass of SH1 (eg. opposite Tokoroa East School). This is obviously expensive but 67% of respondents are prepared to pay more.

Busy vehicle and pedestrian routes near the most-used sports grounds could be worth reviewing – include Strathmore Park.

What do you think?

Action Costs What do you think?

Studies to support safety improvements 0.12% or \$1 per year Yes No

SH1 pedestrian underpass 0.37% or \$3.70 per year Yes No

.....

Table 73: Land Transport Study Results

| Land Transport | | | |
|--------------------------|-----|------|----------------------|
| Action | Yes | No | Meeting/Group |
| Studies to Support | 12 | 4 | Tokoroa Pakeke Lions |
| Safety Improvements | 7 | - | Federated Farmers |
| SH1 pedestrian underpass | 9 | 7*14 | Tokoroa Pakeke Lions |
| | 3 | 4*15 | Federated Farmers |

B2 2011 LTP CONSULTATION - OUTCOMES AND STRATEGIES

Refer to 2012 LTP for further information

Social Well-being with linked Council Outcomes & Strategies

| Vision | Social Well-being | Social Council Outcomes | Social Strategies | Implementing Group of Council |
|--|---|---|--|--|
| Healthy people thriving in a safe, vibrant and sustainable community | Social well-being: A safe and healthy society, where people can achieve their goals | Engaged community: We encourage and support an engaged social community through the provision of our services and facilities | Enabling Strategy: 1. Enhance access to and use of Council's services and facilities | All Groups |
| | | Safe and healthy community: We advocate for, and support where we can, improved safety and health for our people | 2. Encourage and advocate for a safer community | Economic & Community Development Recreation & Facilities Transport |
| | | | 3. Encourage and advocate for improved health services for our community | Economic & Community Development Environment |

Economic Well-being with linked Council Outcomes & Strategies

| Vision | Economic Well-being | Economic Council Outcomes | Economic Strategies | Implementing Group of Council |
|--|--|--|---|--|
| Healthy people thriving in a safe, vibrant and sustainable community | Economic Well-being: A diverse, sustainable economy that aims to provide full employment | Improving image: We focus on improving the image and perception of the South Waikato District | 4. Enhance communication with our community and stakeholders | Gov & Corp Economic & Community Development |
| | | Growing economy: We support and encourage existing businesses and endeavour to attract new businesses to the district | 5. Stimulate economic development by assisting existing & attracting new business | Economic & Community Development |
| | | | Enabling Strategy: 6. Utilise financing arrangements and investments to maximise benefit to our community | Governance & Corporate |
| | | Diverse economy: We encourage the economic base in the district to diversify, especially in relation to tourism | 7. Support tourist development | Economic & Community Development |
| | | | Enabling Strategy: 8. Manage the Council business - do things well | All Groups |
| | | | 9. Encourage education and training to improve employment in our district | Economic & Community Development |

Environmental Well-being with linked Council Outcomes & Strategies

| Vision | Environmental Well-being | Environmental Council Outcomes | Environmental Strategies | Implementing Group of Council |
|--|---|---|---|--|
| Healthy people thriving in a safe, vibrant and sustainable community | Environmental well-being: The district is working towards a recognised pristine and sustainable environment | Sustainable environment: We want the South Waikato District to lead the community in sustainable environmental development | 10. Encourage a sustainable environment | Environment Transport Governance & Corporate |
| | | | 11. Sustainability is embedded in all of Council's operations | All Groups |
| | | Well managed environment: Council's water and waste systems are sustainable and contribute positively to the district environment | Enabling Strategy: 12. Provide sound asset management planning | All Groups with assets |

Cultural Well-being with linked Council Outcomes & Strategies

| Vision | Cultural Well-being | Cultural Council Outcomes | Cultural Strategies | Implementing Group of Council |
|---|--|---|---|---------------------------------------|
| Healthy people thriving in a safe, vibrant and sustainable community | Cultural well-being: A growing and vibrant community where cultural diversity is celebrated | Celebration of culture: We celebrate the artistic and cultural achievements of our people, and the diversity of their cultures | 13. Protect and support our community's art and culture, and support cultural displays and events | Economic & Community Development |
| | | Cultural leadership: We support and encourage cultural leadership and capacity building | 14. Maintain a strong working relationship with Raukawa | Environment Governance & Corporate |
| | | | Enabling Strategy: 15. Develop partnerships that support the achievement of our vision | All Groups |

APPENDIX C 2010/11 LAND TRANSPORT ASSET VALUATIONS

Refer to:

- "South Waikato District Council 2007/08 Transport Asset Valuation July 2011" by Opus International Consultants Ltd Report OP2011-43DR
- "Street Light Valuation 2011" by Odyssey Energy Ltd document Reference 001000-407 Dated 22 May 2008, also Streetlight Summary Valuation Table 11.14 by Mick Jones for Waugh Infrastructure Management Ltd which includes replacement values and depreciation.
- Summary Valuations; Bridges and Culverts compiled by Mick Jones for Waugh Infrastructure Management Ltd updating the comprehensive valuation undertaken by GHD Ltd in February 2005 document ref 51/20558//. The full "summary valuation" is reproduced below and was subject to review by Opus International Consultants.

2010/11 Transport Asset Valuation

This asset valuation was completed using the Road Asset Management and Maintenance (RAMM) Valuation Module. This module is part of the RAMM suite of tools. The RAMM valuation module requires set-up information supplied by the user. This set-up information takes the following forms:

- Condition standards;
- Remaining useful life adjustment based on condition;
- Depreciation method;
- Standard Replacement Cost;
- Residual Values;
- Optimised Replacement Costs;
- Allows for input of assumptions made during the valuation process for each asset component.

The pavement basecourse and surface components have their remaining useful life adjusted based on condition. This directly impacts on the resulting annual depreciation. Fluctuations in the annual reported conditions will result in varying annual depreciation for assets valued this way, and should be revised for future valuations.

This report describes the valuation methodology and results of the valuation process. Key outputs from this project are:

- Asset component schedules for each type of asset;
- Optimised Replacement Cost (ORC);
- Optimised Depreciated Replacement Cost (ODRC);
- Annual Depreciation (D)

Opus has assessed the total Optimised Replacement Cost at **\$241,266,000 (\$193,670,000 in 2008)** and the Optimised Depreciated Replacement cost at **\$190,486,000 (\$165,590,000 in 2008)** excluding land. The Annual Depreciation has been assessed to be **\$2,600,000 (\$2,030,000 in 2008)** excluding land. These values include bridges, large culverts, and street lights.

The main reasons for changes since the last valuation are:

- Changes in unit costs, most evident for SW channel, street lights, pavement surface, and pavement basecourse;
- Changes in quantity of assets, with pavement surface, pavement basecourse, drainage, railings and signs all increasing in quantity, while footpath decreased in quantity;

2010/11 Transport Asset Valuation

This asset valuation was completed using the Road Asset Management and Maintenance (RAMM) Valuation Module. This module is part of the RAMM suite of tools. The RAMM valuation module requires set-up information supplied by the user. This set-up information takes the following forms:

- Condition standards;
- Remaining useful life adjustment based on condition;
- Depreciation method;
- Standard Replacement Cost;
- Residual Values;
- Optimised Replacement Costs;
- Allows for input of assumptions made during the valuation process for each asset component.

The pavement basecourse and surface components have their remaining useful life adjusted based on condition. This directly impacts on the resulting annual depreciation. Fluctuations in the annual reported conditions will result in varying annual depreciation for assets valued this way, and should be revised for future valuations.

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- Changes in quantity of assets, with pavement surface, pavement basecourse, drainage, railings and signs all increasing in quantity, while footpath decreased in quantity;

2010/11 Transport Asset Valuation

- Large increases in drainage assets from vested forestry roads, particularly Mossop Road;
- Changes in category of assets, i.e. unsealed to sealed, pavement surfacing movement out of urban 4 and 5 into urban 3, rural 3, and rural 1.

APPENDIX D RISK ASSESSMENT

D1 Lifelines Vulnerability and Hazard Assessment

Table 74: Probability Levels

| Level | Descriptor | Description |
|-------|----------------|---|
| A | Almost certain | The event is expected to occur (>90%) |
| B | Likely | The event will probably occur (50%-89%) |
| C | Moderate | The event may well occur (20%-49%) |
| D | Unlikely | The event will probably not occur (10%-19%) |
| E | Rare | The event is not expected to occur but we can't be certain (<10%) |

Appendix D - Risk Assessment

Table 75: Consequence or Impact Levels

(the most serious factor governs allocation)

| L E V E L | Descriptor | Description | | | | | | | | |
|-----------------------|---------------|--|---|---|--|---|----------------------------|--|-----------------------------------|---|
| | | Health & Safety | Environmental Contamination | Statutory Obligations | Negative Council / District Image | Loss of Service | Project Delay | District's Capabilities /Community Spirit | Lost Opportunity | Financial Loss SWDC; Wider Community |
| 1 | Insignificant | No injury or potential injury | No contamination | Internal query | Customer complaint | Unable to operate for less than 1 day | Less than 6 months | Negligible detrimental societal impact | <\$5,000 (one off or ongoing) | <\$5,000 SWDC; <\$50,000 Community |
| 2 | Minor | Minor injury | On-site release immediately contained | Special Audit by outside agency or enquiry by Ombudsman | Negative community coverage | Unable to operate for 1 day – 3 days | Between 6 month and a year | Some negative impact on District morale / human capital | <\$10,000 (one off or ongoing) | <\$10,000 SWDC; <\$100,000 Community |
| 3 | Moderate | Some severe injuries or potential injuries (near miss) | On-site release contained with outside assistance | Litigation | Negative community and some regional coverage | Unable to operate for up to a fortnight | Between 1 – 3years | Notable negative impact on District morale / human capital | <\$100,000 (one off or ongoing) | <\$100,000 SWDC; <\$500,000 Community |
| 4 | Major | Significant illness or some deaths (up to 3) | Off-site release with significant detrimental effects | District or Environment Court | Negative regional and some national media coverage | Unable to operate for up to 1 month | Between 3 – 5 years | Lasting negative impact on District morale / human capital | <\$500,000 (one off or ongoing) | <\$500,000 SWDC; <\$1,000,000 Community |
| 5 | Catastrophic | Wide-spread illness or several deaths (>3) | Toxic release off-site with major detrimental effect | High Court or Criminal Action | Sustained negative national media coverage | Unable to operate for >1 month | More than 5 years | Severe negative impact on long-term cultural / socio-economic well-being of District | >\$1,000,000 (one off or ongoing) | >\$1,000,000 SWDC; >\$5,000,000 Community |

Table 76: Combined Qualitative Risk Levels

| Probability | CONSEQUENCESs | | | | |
|--------------------|-------------------|-------|----------|-------|------------------|
| | Insignifica nt | Minor | Moderate | Major | Catastroph ic |
| | 1 | 2 | 3 | 4 | 5 |
| A (Almost Certain) | M | S | S | H | H |
| B (Likely) | M | S | S | H | H |
| C (Moderate) | L | M | S | S | H |
| D (Unlikely) | L | L | M | S | H |
| E (Rare) | L | L | M | S | H |

NB: For 'high' risks, the number of Table 76: columns reaching 'catastrophic' levels is also to be appended for added information; for example, H2 means that two aspects were rendered 'catastrophic' whereas an H0 infers no 'catastrophic' consequences were involved but rather a somewhat higher likelihood of 'moderate' to 'major' consequences.

Table 77: Risk Management Strategies Needed

| Risk Management Strategies Needed | |
|---|--|
| H = High Risk (H0, H1, H2 & H3) | <ul style="list-style-type: none"> – Detailed research and management planning required at senior levels (formulation of Risk Management Project with regular reporting to CEO & Council) – Risk financing if possible |
| S = significant risk | <ul style="list-style-type: none"> – Senior management attention needed (may include formulation of a Risk Management Project with regular reporting to Management Team) – Risk financing if possible |
| M = Moderate Risk | <ul style="list-style-type: none"> – Management responsibility must be specified – Some risk financing may be necessary |
| L = Low Risk | <ul style="list-style-type: none"> – Manage by routine procedures |

Risks have been identified, tabulated with reference to the LTCCP Strategic Framework, and assessed as to their significance in terms of the above parameters.

Table 78: Significant Risks LTCCP Framework

| Level/Ref | Risk Description | Probability | Consequence |
|-------------|--|-------------|-------------|
| | Social Well-being | | |
| RL3-1 | Not maintaining a road safety culture | D | 2 |
| RL3-2 | There is no ParaNZ Transport Agency service in Tokoroa | E | 2 |
| RL3-3 | Ineffective monitoring of traffic flows to ensure correct standards are applied | D | 2 |
| RL3-4 | Speed limits set do not comply with national criteria | D | 2 |
| CF 1 | Customer Focus | | |
| RL4-1 | Contractor performance level in terms of Contract Matrix drops by 20% | D | 2 |
| RL4-2 | Road closure due to landslip for 4 hours | D | 1 |
| RL4-3 | Road closure due to accident for 4 hours | C | 1 |
| RL4-4 | One under-capacity culvert leads to 12 hour road closure in any one year | C | 1 |
| RL4-5 | Inadequate vegetation control on roads leads to unacceptable spread of noxious plants | D | 1 |
| RL4-6 | Contamination of a waterway from road maintenance/construction in any one year | D | 2 |
| RL4-7 | 5 complaints received about road vibration in any one year. | E | 1 |
| LG 2 | Learning and Growth | | |
| RL5-1 | Loss of IT service for one week | D | 2 |
| | Social Well-being | | |
| RM3-1 | Unacceptable road surface leading to inefficient/unsafe operating conditions | B | 2 |
| RM3-2 | Traffic experience surprises on our roads due to road conditions other than construction | C | 2 |
| RM3-3 | Accidents on underwidth roads | C | 2 |
| RM3-4 | 10 pedestrians/year hurt from accidents due to unsafe footpaths | C | 2 |

| Level/Ref | Risk Description | Probability | Consequence |
|-------------|--|-------------|-------------|
| RM3-5 | Wahi tapu, urupa or historic sites are disturbed by earthworks | E | 3 |
| CF 1 | Customer Focus | | |
| RM4-1 | A 10% reduction in NZTA funding assistance | E | 3 |
| RM4-2 | Road closure due to flooding – no exit for 4 hours | B | 1 |
| RM4-3 | Road closure due to flooding – no exit for 7 days | E | 3 |
| RM4-4 | Slips or dropouts closing one lane occur following construction | C | 2 |
| RM4-5 | 5 complaints about road noise at one location in any one year | C | 2 |
| RM4-6 | Property owners/occupiers not consulted over proposed roadworks affecting their property | E | 3 |
| IP 2 | Internal Processes | | |
| RM5-1 | Unsatisfactory contract management | D | 2 |
| CF 1 | Customer Focus | | |
| RS4-1 | Autumn leaf fall causes increased danger/inconvenience to pedestrians and stormwater blockages | A | 2 |
| RS4-2 | Traffic services are inadequate | C | 2 |
| RS4-3 | Road closure due to flooding – no exit for 24 hours | B | 2 |
| RS4-4 | Urban stormwater under-capacity leads to property damage in any one year | B | 3 |
| LG 2 | Learning and Growth | | |
| RS5-1 | Loss of roading records/data due to fire | E | 4 |
| RS5-2 | Loss of historic roading data due to inadequate records management | B | 2 |

APPENDIX E DEMAND INFORMATION

Refer to AMP Improvement Chapter 9.

Table 79: Demand Driver Analysis

| | Sector Creating the Demand | | | | Basis of the Driver | | |
|---|----------------------------|------------|-----------|------------|----------------------------|------------------------|----------------------------------|
| | Domestic | Commercial | Community | Industrial | Resident population growth | Per-head demand growth | Unrelated to resident population |
| Growth in resident population | ✓ | ✓ | ✓ | ✓ | ✓ | | |
| | | | | | | | |
| Increased economic activity | | | ✓ | ✓ | | | ✓ |
| | | | | | | | |
| Asset Condition (leakage – condition based) | | | | | | | ✓ |
| | | | | | | | |
| Non-revenue other than leakage | ✓ | ✓ | ✓ | ✓ | | | |
| | | | | | | | |
| | | | | | | | |

Table 80: Standard Traffic Count Stations 200 to 20089

| ROAD | DATE | TOTALS | CARS | H.C.V. |
|------------------------|------------|--------|-------|--------|
| CAMPBELL STREET | | | | |
| GK5000 | 3/04/2000 | 34792 | 30897 | 3895 |
| | 3/07/2001 | 89065 | 61346 | 6328 |
| GK5000 | 8/04/2002 | 33995 | 32360 | 1635 |
| Metro Plus | 18/03/2003 | 52079 | 47306 | 4773 |
| Metro Plus | 17/03/2004 | 49140 | 47605 | 1535 |
| Metro Plus | 16/05/2005 | 54610 | 54290 | 320 |
| Metro Plus | 29/03/2006 | 55981 | 54596 | 1385 |
| Metro Plus | 26/09/2007 | 60581 | 60118 | 463 |
| Metro Plus | 4/03/2008 | 48656 | 46826 | 1830 |
| Metro Plus | | | | |
| HORAHORA ROAD | | | | |
| GK5000 | 5/04/2000 | 4616 | 3790 | 826 |
| | 12/08/2001 | 5624 | 5190 | 434 |
| GK5000 | 18/04/2002 | 5467 | 4998 | 469 |
| Metro Plus | 7/03/2003 | 4979 | 4590 | 389 |

| ROAD | DATE | TOTALS | CARS | H.C.V. |
|-----------------------|------------|--------|-------|--------|
| Metro Reg | 1/03/2004 | 7668 | 6005 | 1663 |
| Metro Plus | 15/04/2005 | 7621 | 6817 | 804 |
| Metro Plus | 29/03/2006 | 8195 | 7164 | 1031 |
| Metro Plus | 29/03/2007 | 6960 | 6624 | 336 |
| Metro Plus | 4/03/2008 | 7908 | 7156 | 752 |
| Metro Plus | | | | |
| MAY STREET | | | | |
| | 2/02/2000 | 65446 | 58032 | 7414 |
| | 28/06/2001 | 52014 | 49135 | 68 |
| GK5000 | 8/04/2002 | 23519 | 12067 | 11452 |
| Metro Reg | 7/03/2003 | 21409 | 21244 | 165 |
| Metro Plus | 17/03/2004 | 40006 | 39453 | 522 |
| Metro Plus | 15/04/2005 | 39808 | 39740 | 68 |
| Metro Plus | 29/03/2006 | 39340 | 38875 | 465 |
| Metro Plus | 28/06/2007 | 34470 | 34390 | 80 |
| Metro Plus | 4/03/2008 | 34383 | 33158 | 1225 |
| Metro Plus | | | | |
| OKOROIRE ROAD | | | | |
| | 20/04/2000 | 5604 | 5349 | 255 |
| GK5000 | 22/04/2002 | 5993 | 5844 | 149 |
| GK5000 | 6/03/2003 | 5814 | 5504 | 310 |
| Metro Plus | 1/03/2004 | 8056 | 7379 | 677 |
| Metro Reg | 15/04/2005 | 9239 | 8458 | 781 |
| Metro Plus | 29/03/2006 | 9233 | 8294 | 939 |
| Metro Plus | 27/04/2007 | 7804 | 7429 | 312 |
| Metro Plus | 4/03/2008 | 7818 | 6943 | 875 |
| Metro Plus | | | | |
| OLD TAUPO ROAD | | | | |
| | 21/03/2000 | 12984 | 12052 | 932 |
| | 28/06/2001 | 10468 | 10416 | 3743 |
| GK5000 | 9/04/2002 | 6667 | 6310 | 357 |
| Metro Reg | 18/03/2003 | 14222 | 7875 | 6347 |
| Metro Plus | 1/03/2004 | 10681 | 9566 | 1115 |
| Metro Plus | 16/05/2005 | 12405 | 11770 | 635 |
| Metro Plus | 29/03/2006 | 12482 | 10802 | 1680 |
| Metro Plus | 7/05/2007 | 14198 | 13038 | 1160 |
| Metro Plus | 4/03/2008 | 13093 | 11550 | 1543 |
| Metro Plus | | | | |

Appendix E – Legislation

| ROAD | DATE | TOTALS | CARS | H.C.V. |
|-------------------|------------|--------|------|--------|
| WAOTU ROAD | | | | |
| | 20/04/2000 | 5541 | 4256 | 1285 |
| | 12/08/2001 | 6662 | 5572 | 1090 |
| GK5000 | 18/04/2002 | 10870 | 9881 | 989 |
| Metro Plus | 1/03/2004 | 6611 | 6224 | 387 |
| Metro Plus | 15/04/2005 | 6770 | 6308 | 462 |
| Metro Plus | 29/03/2006 | 7006 | 6289 | 717 |
| Metro Plus | 26/09/2007 | 7654 | 7041 | 613 |
| Metro Plus | 4/03/2008 | 7395 | 6777 | 618 |
| Metro Plus | | | | |

APPENDIX F CAPITAL AND RENEWAL PROGRAMMES

Table 81: Capital Renewal and Improvement of Local Roads (Subsidised and Non- Sub)

| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | TOTAL |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------|
| Minor Improvements | 317 | 191 | 280 | 320 | 400 | 330 | 330 | 330 | 350 | 350 | 380 | 3,261 |
| Bridge Replacement | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 1,205 | 0 | 0 | 0 | 1,260 |
| Formation Widening - Rehabilitation | 422 | 435 | 388 | 400 | 480 | 480 | 480 | 490 | 490 | 490 | 500 | 4,633 |
| Asphalt Surfacing/ Resurfacing in CBD areas | 140 | 140 | 140 | 140 | 140 | 120 | 120 | 120 | 110 | 110 | 110 | 1,250 |
| Associated Improvements (with rehab works) | 153 | 0 | 0 | 0 | 165 | 165 | 165 | 170 | 170 | 170 | 175 | 1,180 |
| Drainage Renewals (Culverts and Kerbs) | 148 | 139 | 140 | 140 | 160 | 160 | 160 | 165 | 165 | 165 | 165 | 1,559 |
| Maintenance Chip Seal | 887 | 910 | 920 | 920 | 930 | 930 | 930 | 950 | 960 | 960 | 960 | 9,370 |
| Pavement Rehabilitation | 894 | 837 | 860 | 860 | 890 | 890 | 890 | 900 | 900 | 900 | 920 | 8,847 |
| Traffic services renewals: Signs | | | | | | | | | | | | |
| Traffic services renewals: Streetlighting | 106 | 110 | 100 | 100 | 0 | 55 | 0 | 60 | 0 | 60 | 0 | 485 |
| Christmas/ Feature Lighting | 30 | 80 | 40 | 30 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 220 |

Appendix F - Capital and Renewal Programmes

| | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | TOTAL |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Footpath Renewals | 52 | 52 | 45 | 45 | 40 | 40 | 40 | 35 | 50 | 50 | 50 | 447 |
| Kerb and Channel Renewals | 90 | 90 | 80 | 80 | 70 | 70 | 70 | 70 | 60 | 60 | 60 | 710 |
| Mobility Crossings | 6 | 7 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 61 |
| Reseal Projects | 12 | 10 | 0 | 10 | 0 | 15 | 0 | 20 | 0 | 0 | 20 | 75 |
| Seal Extensions | 0 | 65 | 0 | 70 | 0 | 80 | 0 | 60 | 0 | 70 | 0 | 345 |
| Seal Widening. | 95 | 12 | 20 | 20 | 100 | 80 | 80 | 80 | 80 | 80 | 80 | 632 |
| SH 1 Over/Under Pedestrian Pass Investigation | 0 | 0 | 0 | 35 | 0 | 355 | 0 | 0 | 0 | 0 | 0 | 390 |
| Tapapa stock effluent Improvements | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Total | 3,458 | 3,184 | 3,129 | 3,306 | 3,501 | 3,898 | 3,448 | 4,783 | 3,466 | 3,596 | 3,551 | 35,862 |

APPENDIX G GAP ANALYSIS AND APPROPRIATE PRACTICE

G1 AM Appropriate Practice

| Relevant Assessment Criteria | |
|------------------------------|------------------------------|
| | Core criteria |
| | Additional relevant criteria |
| Compliance Key | |
| ✓ | Fully compliant |
| S | Substantially compliant |
| P | Partially compliant |
| ✗ | Does not comply |

Table 82: Land Transport Network Detailed Asset Management Practice Assessment

| Assessment Criteria (as outlined in IIMM) | | Compliance Status Analysis | | | |
|---|---|----------------------------|---------------------|-----------------|--|
| | | Relevance | Current Performance | Compliance Gaps | Notes |
| Description of Assets | Process of Development | | ✓ | | |
| | Adequate Description of Asset | | ✓ | | |
| | Financial Description of Asset | | ✓ | | |
| | Remaining useful life | | ✓ | | |
| | Aggregate & Disaggregate Information | | ✓ | | |
| Core | Reliable Physical inventory | | ✓ | | |
| | - Physical attributes (location, material, age etc) | | ✓ | | |
| | - Systematic monitoring of condition | | ✓ | | |
| | - Systematic measurement performance | Part | P | Y | -(Dairy) further monitoring of land use change affect |
| | - Utilisation/capacity | Part | P | Y | -Steel culvert replacement -Seal default lines monitoring -dTIMs modelling pavement It has been assessed that there is no current need for a detailed traffic model |
| Advanced | Reliable Physical inventory | | ✓ | | |
| | - Physical attributes (location, material, age etc) | | ✓ | | |
| | - Systematic monitoring of condition | | ✓ | | |
| | - Systematic measurement performance | Part | P | Y | -(Dairy) further monitoring of land use change affect |
| | - Utilisation/capacity | Part | P | Y | -Steel culvert replacement -Seal default lines monitoring -dTIMs modelling pavement It has been assessed that there is no current need for a detailed traffic model |
| Levels of Service | Define LOS or performance | | | | |
| | Linkage to strategic/community outcomes | | | | |
| | Links to other planning documents | | | | |
| | Levels of consultation identified and agreement | | | | |
| | Service life of network stated | | | | |
| Core | For Significant Services | | | | |
| | - Evaluating LOS Options | | | | |
| | - Consult LOS options with community | | | | |
| Advanced | For Significant Services | | | | |
| | - Evaluating LOS Options | | | | |
| | - Consult LOS options with community | | | | |

Appendix G – Gap Analysis and Appropriate Practice

| Assessment Criteria (as outlined in IIMM) | | Compliance Status Analysis | | | |
|---|---|----------------------------|---------------------|-----------------|-------|
| | | Relevance | Current Performance | Compliance Gaps | Notes |
| | - Adoption LOS & Standards after consultation | | | | |
| | - Public communication of service level | | | | |
| | - Monitoring & public reporting | | | | |
| | AMP's reflect agreed LOS & how service is delivered | | | | |

Appendix G – Gap Analysis and Appropriate Practice

| Assessment Criteria (as outlined in IIMM) | | Compliance Status Analysis | | | |
|---|---|----------------------------|---------------------|-----------------|---|
| | | Relevance | Current Performance | Compliance Gaps | Notes |
| Managing Growth Core | Demand Forecasts (10 year) | | ✓ | | |
| | Demand Management drivers | | ✓ | | |
| | Demand Management strategies | | ✓ | | |
| | Sustainability Strategies | | ✗ | Y | Council wide strategy development |
| Advanced | Forecasts include factors that comprise demand | Part | P | Y | - Update Network Strategy 2003 to 2009/10 and link to State Highways -Corridor Management legislative requirements, IP15 |
| | Sensitivity of asset development (Capital Works) to demand changes | | | | Not required |
| | Asset Utilisation/ Demand Modelling | Part | P | Y | Modelling specific areas where demand changes observed |
| Risk Management Core | Identify critical assets | | ✓ | | |
| | Identify significant negative effects | | ✓ | | |
| | Identify associated risks and RM strategies | | ✓ | | |
| Advanced | Recognition & application of principles of integrated risk management to assets | | ✓ | | |
| | Apply standards & industry good practice | | ✓ | | |
| | RM integrated with Lifelines, disasters recovery, Continuity plans | | P | Y | Improvement Item IP 07 |
| | Strategies for critical assets to include mitigation – CORE | | ✓ | | |
| | Integrate with maintenance and replacement strategies | | P | Y | Improvement Item IP 10 |
| Lifecycle Decision Making Core | Lifecycle and Asset Management Practices | | ✓ | | |
| | Service capacity gap analysis | | ✓ | | |
| | Evaluation and ranking based on criteria of options for significant capital invest decisions | | ✓ | | |
| | Maintenance Outcomes, Strategies, Standards and Plan | | ✓ | | |
| Advanced | Identify options for asset maintenance to achieve optimal costs over life of asset | Part | P | Y | Extension of dTIMS tool use to model treatments |
| | - Apply agreed evaluation tools to prioritise work programmes | Part | P | Y | |
| | - Predictive modelling to support long-term financial forecasts for maintenance, renewals & new capital | | | | Not required |
| | Significant negative effects | | ✓ | | |
| Financial Forecasts Core | 10 year Financial plan – Maintenance, Renewals, New Capital (LOS and demand) | | ✓ | | |
| | Validate the Depreciation/Decline in Service Potential | | ✓ | | |

Appendix G – Gap Analysis and Appropriate Practice

| Assessment Criteria (as outlined in IIMM) | | Compliance Status Analysis | | | |
|---|---|----------------------------|---------------------|-----------------|---|
| | | Relevance | Current Performance | Compliance Gaps | Notes |
| Advanced | Translate operational, planned maint, renewal & new work into financial terms over period of strategic plan | | ✓ | | |
| | Provide consistent financial forecasts & Substantiate | | ✓ | | |
| | Sensitivity of forecasts | Part | × | Y | Improvement Item IP 13 Council wide practice |

Appendix G – Gap Analysis and Appropriate Practice

| Assessment Criteria (as outlined in IIMM) | | Compliance Status Analysis | | | |
|--|--|----------------------------|---------------------|-----------------|---|
| | | Relevance | Current Performance | Compliance Gaps | Notes |
| Planning Assumptions and Confidence Levels Core | List all assumptions and possible effects | | ✓ | | |
| | Confidence level on asset condition, performance | | ✓ | | |
| | Accuracy of asset inventory | | ✓ | | |
| | Confidence level demand/growth forecasts | | ✓ | | |
| | Confidence level on financial forecasts | | ✓ | | |
| Advanced | List all assumptions including organisations strategic plan that support AM – linkages with other planning doc | | ✓ | | |
| | Confidence levels (IIMM 4.3.7) | | ✓ | | |
| | - Inventory Data Critical Assets (Grade 1) Non Critical Assets (Grade 2) | | ✓ | | |
| | - Condition Data Critical Assets (Grades 1 or 2) Non Critical Assets (Grades 1, 2 or 3) | | ✓ | | |
| | - Performance Data Critical Assets (Grades 1 or 2) Non Critical Assets (Grades 1, 2 or 3) | Part | P | Y | Will be addressed with performance measures |
| | | | | | |
| Outline Improvement Programmes Core | Identify improvements to AM processes & techniques | | ✓ | | |
| | Identify weak areas & how they will be addressed | | ✓ | | |
| | Timeframes for improvements | | ✓ | | |
| | Identify resources required (human & financial) | | ✓ | | |
| Advanced | Improvement programmes are monitored against KPI's | | ✓ | | |
| | Previous improvements identified and formally reported against KPI's | | ✓ | | |
| Planning by qualified persons | AM Planning should be undertaken by a suitably qualified person | | ✓ | | |
| Core & Advanced | Process should be Peer reviewed | | ✓ | | As part of 2008 AMP update |
| Commitment | Plan adopted by Council including improvement programme | | ✓ | | |
| Core | Plan key tool to support LTCCP | | ✓ | | |
| | AM Plan regularly updated and should reflect progress on improvement plan | | ✓ | | |
| Advanced | AM Plan requirements are being implemented and discrepancies formally reported | | ✓ | | |
| | AM Plans evolving as AM systems provide better information | | ✓ | | |
| | AM Plans updated every 3 years along with organisations strategic planning cycles | | ✓ | | |
| | Council has defined the Appropriate AM Practice it is adopting | | ✓ | | This report |

APPENDIX H DISTRICT PLAN

H1 Zoning

Table 83: Designations from District Plan

| Map No. | Name of Works | Location | Legal Description | Purpose | Underlying Zone |
|---------|---|----------|-------------------|---------|-----------------|
| 52 | Legal formed and unformed existing public roads | | | Road | |

APPENDIX I GLOSSARY OF TERMS

| | | |
|------------------------|---|---|
| AADT | - | Average Annual Daily Traffic |
| AASHO | - | American Association of State Highway Officials |
| AMP | - | Asset Management Plan. A document that details Council's assets and the lifecycle management of those assets |
| Asphaltic Concrete | - | A form of surfacing being a mix of bitumen and graded aggregate, normally laid hot by a paving machine |
| Austroroads | - | The Australian Organisation that sets roading standards for use in Australia and New Zealand |
| AWPT | - | Area Wide Pavement Treatment, repairs to a road surface larger than confined maintenance, but too small for rehabilitation |
| BizeAsset | - | A computer software asset management system that assembles databases and provides reports on roading and other infrastructural assets |
| BOP | - | Bay of Plenty |
| CAAP | - | Community Alcohol Action Programme |
| CD | - | Candela - a unit for measuring luminous intensity |
| Condition Rating | - | A standard method adopted nationally for determining the condition of a carriageway |
| COP | - | Code of Practice |
| COPTTM | - | Code of Practice for Temporary Traffic Management |
| Culvert | - | A conduit along or under a road to convey water. Up to 600mm diameter is defined as minor, 600mm diameter to "bridge" size is defined as major |
| dTIM's | - | Deightons Total Infrastructure Management System, a computer programme to record deterioration using RAMM data and other data. It assists in predictive modelling and forward programming required to optimise lifecycle asset management |
| du | - | Dwelling units |
| EW | - | Regional Council for the Waikato region called Environment Waikato |
| GIS | - | Geographic Information System |
| Hazardous Risk Profile | - | A system of recording risk exposure over the roading network for comparison over time |
| HDM | - | Highway Deterioration Model |
| HPS | - | High Pressure Sodium |
| NZTA | - | NZ Transport Agency, a new government department formed by the Land Transport Management Amendment Act and merging the functions of Land Transport NZ and Transit NZ. Includes allocating to regions, the road funding derived from road user charges and fuel excise tax |
| LUX | - | A unit for measuring illumination |

Appendix I – Glossary of Terms

| | | |
|------------------|---|---|
| Mode | - | Means a form of transport, i.e. road, rail, sea or air |
| NAASRA | - | National Association of Australian Road Authorities |
| P.S. or P/S | - | Professional Services; includes the survey, design costing and supervision of projects |
| RAMM | - | Road Asset Maintenance and Management, a nationally accepted road asset database |
| Rehabilitation | - | The reshaping of an older or damaged road or footpath to return it to its original state |
| Reseal | - | The application of bitumen/chip or asphaltic concrete to an already formed surface, generally with at least a first coat seal already in place |
| Roughness | - | A method of measuring the ride of a road surface or driver comfort |
| RUL | - | Remaining Useful Life |
| Seal Smoothing | - | The act of overlaying or levelling depressions in a road to achieve a smooth seal surface |
| SLIMS | - | Street Light Information Management System; a computer database for street lighting assets |
| SMS | - | (Road) Safety Management Systems adopted by Council 2005 |
| Street Furniture | - | Items on the road reserve provided for the use of (generally) pedestrians including bus stop shelters, bins, seats, gardens, taxi ranks, pedestrian canopies, etc |
| Surfacing | - | The top surface of a road or footpath that supports the user. Includes metal (gravel), seal, concrete, cobbles, etc |
| Traffic Services | - | Items erected on road reserves to assist road users, including signs, markings, guardrails etc |
| Urban Road | - | Any road with 70 kph or less speed restriction in an urban area |
| Useful Life | - | The length of time that an asset can be safely used |

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