HAURAKI DISTRICT COUNCIL

REPORT	**TO**	MAYOR AND COUNCILLORS
	FROM	STRATEGIC PLANNING PROJECTS MANAGER
	FILE REF	473066
	PORTFOLIO HOLDER	ALL COUNCILLORS
	DATE	7TH APRIL 2009
	SUBJECT	**ASSET MANAGEMENT PLANS ADOPTION ROADING ASSET MANAGEMENT PLAN**

RECOMMENDATION

THAT the report be received

AND THAT the Roading Asset Management Plan for the 2009-19 period be adopted.

INTRODUCTION

Over the past three years, the Asset Management Planning team has been continuing work on progressing the Asset Management Plans for each of Councils asset categories.

These form the basic building blocks to the Draft Hauraki Community Plan and the operational matters for those assets. Prior to the finalisation of the Hauraki Community Plan 2009-19 at the end of June 2009 these Asset Management Plans must be adopted by Council.

Once adopted these Plans will be placed on the Intranet for access staff and will be the operative Plans for the period 1July 2009 to 30 June 2012.

BACKGROUND

Considerable progress has been made since the previous adoption of the Asset Management Plans in 2007.

Generally across the plans, focus has been on

- ensuring the general and financial assumptions are more robust,

- advancing the stated positive and negative effects,
- reviewing the levels of service,
- preparing financial estimates,
- preparing capital programme,
- undertaking asset revaluations,
- advancing improvement programmes,
- undertaking risk analysis,
- improving data capture and subsequently raising confidence in data, and
- asset condition rating,

Below is a programme of when it is expected the asset management adoption reports will be presented to Council on each Asset Management Plan.

Proposed date for report	Asset/topic
April 15th	Overview of AMP process and Roading presentation
April 29th	Land drainage and stormwater
May 13th	Water presentation
May 27th	Wastewater and Solid waste
June 10th	Libraries and Property Management
June 24th	Parks and Community facilities

ROADING ASSET MANAGEMENT PLAN EXECUTIVE SUMMARY

As above, the first of the reports of the Asset Management Plans to be presented to Council is the Roading Asset Management Plan. The Executive Summary report attached details the key aspects of the Roading Asset Management Plan.

The Plan itself is 367 pages, and as such has not been distributed. A copy will be available at the meeting, or earlier from Gene Thomsen, if Councillors would like to look into the document further.

Mark Buttimore
Strategic Planning Projects Manager

Executive Summary

Section 1 Index

1. EXECUTIVE SUMMARY

Introduction

This Transportation Asset Management Plan (AMP) has been developed to provide the Hauraki District Council (HDC) with a long term outlook for Council's roading asset including a view of current issues and their likely future impact. The AMP also defines the level of service to be provided by the road network to the community and forecasts future costs to assess the affordability of the level of service.

The key elements of infrastructure asset management are:

(a) Taking a lifecycle approach

(b) Developing cost-effective sustainable management strategies for the long term

(c) Providing a defined level of service and monitoring performance

(d) Understanding and meeting the impact of growth through demand management and infrastructure investment

(e) Managing risks associated with asset failures

(f) Sustainable use of physical resources

(g) Continuous improvement in asset management practices

This AMP also sets out to provide justification of funding requirements and compliance with regulatory requirements.

In this review Council is undertaking a process of further improvement of the AMP to move towards Advanced asset management. This review will:

- Address the issues identified for improvement in New Zealand Transport Agency's review undertaken in September 2007[1].
- Incorporate Pavement Performance Modelling into the plan as an Advance Asset Management Tool
- Further develop Risk Management in the Network Maintenance context
- Align this plan with the Community Outcomes identified in Council's Long Term Council Community Plan (LTCCP)
- Document the current Levels of Service that link to the Community Outcomes
- Further develop and integrate Demand management into the plan.
- Development of a new financial model to integrate asset funding requirements for operation and maintenance, renewal, capital accounting for growth and depreciation
- Undertake a general update of the statistics of the plan and revise life cycle management targets in line with current management practice for the network.

[1] Report for Road Controlling Authority Asset Management Plan Reviews – Hauraki District Council Summary, September 2007

Hauraki District Council's Mission

To ensure the successful: …

- Provision of services and facilities
- Advocacy on behalf of the community and
- Use and management of resources……

for all who live in or visit the Hauraki District.

Hauraki District Council's Vision for the Future

The vision for the future is encapsulated by the following statement:

- A range of services and facilities meeting the community's needs and realistic expectations
- A positive climate which encourages balanced and sustained growth throughout the district
- An environment which encourages vibrant communities and an enhanced quality of life
- The wise use and management of all resources for the continued benefit of the district
- A proactive Council that provides leadership is results orientated and communicates effectively with all sectors of the community.

What are Hauraki's Community Outcomes?

The community outcomes are**:**

- Vibrant and sustainable businesses and business economies in our District.
- Integrated provision of quality health and social services throughout our District.
- Maintain and protect the vibrancy of rural communities within our District.
- Cultural values of Tangata Whenua throughout the District be respected and supported through further development of consultation, participation and partnerships.
- Our Hauraki youth are provided with greater opportunities to participate in the decision-making processes pertaining to the development of our communities.
- We encourage increased opportunities to participate in recreational, sporting and cultural activities.
- Hauraki District residents are given the opportunity to participate in education and training programmes.
- Management of our natural and physical environment in a sustainable manner.
- Long term planning to ensure that our future infrastructure requirements meet the growth and development opportunities of our District.

How will Land Transport Activity Support this

Key policies relating to activities are as follows:

- Any organisation applying to NZ Transport Agency for funding under the Act must ensure that their activity meets the criteria prescribed in the Act. This includes ensuring that procurement policies for procurement of subsidised work are consistent with that prescribed by NZ Transport Agency. NZ Transport Agency provides subsidy for qualifying work via the Land Transport Programmes (LTP).
- An activity is defined under the LTMA as a land transport output or capital project, or both that:
  - Assists economic development;
  - Assists safety and personal security;
  - Improves access and mobility;

- Protects and promote public health; and
- Ensures environmental sustainability.

Furthermore, in approving an activity, NZ Transport Agency must take into account any current national land transport strategy, relevant regional land transport strategy, and National Energy Efficiency and Conservation Strategy.

Drivers for Transportation Outcomes

The legislation to be complied with includes; Land Transport Management Act 2003, Local Government Act 2002, Resource Management Act 1991, Government Roading Powers Act 1989, Biosecurity Act 1993, Building Act 1991, Electricity Act 1992, Gas Act 1992, Health and Safety in Employment Act 1992, Land Transport Act 1993, Telecommunications Act 1987, Transport Act 1976, Construction and Contracts Act 2002, Hazardous Substances and New Organisms Act 1996.

In addition a number of other strategic policy documents include:

- NZ Transport Strategy
- National Energy Efficiency and Conservation Strategy
- New Zealand Energy Strategy
- New Zealand Disability Strategy
- National Total Mobility Review
- The Accessible Journey
- Waikato Regional Council LTCCP
- Regional Policy Statement
- Waikato Regional Community Outcomes (EW)
- Environment Waikato Regional Land Transport Strategy (2006-2016)
- Waikato Regional Road Safety Plan
- Environment Waikato Walking and Cycling Strategy.

It is not expected that the Council can contribute to all of the objectives and it is outside the scope of this plan to deal with many of the objectives and targets in the above strategies and policies It is important to note that the Council only needs to take into account the various documents.

Land Transport Management Act 2003

The LTMA creates a framework for decisions about the allocation and prioritisation of funding for land transport.

"The purpose of the Act is to contribute to the aim of achieving an integrated, safe, responsive, and sustainable land transport system"

Key policies relating to activities are as follows:

Any organisation applying to New Zealand Transport Agency for funding under the Act must ensure that their activity meets the criteria prescribed in the Act. This includes ensuring that procurement policies for procurement of subsidised work are consistent with that prescribed by New Zealand Transport Agency who provide subsidy for qualifying work via the Land Transport Programmes (LTP).

- An activity is defined under the LTMA as a land transport output or capital project, or both that:
- Assists economic development;
- Assists safety and personal security;
- Improves access and mobility;
- Protects and promote public health; and
- Ensures environmental sustainability.

Furthermore, in approving an activity, New Zealand Transport Agency must take into account any current national land transport strategy, relevant regional land transport strategy, and National Energy Efficiency and Conservation Strategy.

The LTMA requires Council to exhibit a sense of social and environmental responsibility, consistent with the overall purpose of the Act.

Land Transport Management Act Amendment Act 2008

In June 2008 Transit NZ and New Zealand Transport Agency became a single entity, the New Zealand Transport Agency (NZTA)

The new legislation results in a number of fundamental changes to the way in which programming; reporting and prioritisation are carried out.

New guidelines were published in August 2008 which will change the way in which funding applications are made, introducing new criteria and processes including:

Three Year Programme Requirement to have 3 year programmes.

Regional Approval Three year plans are submitted for approval and regional ranking by the Regional Land Transport Authorities as part of the Regional LTP

Robust Justification The Draft RLTP will go through the full notification process including submissions and hearings; it is likely that some schemes will require very robust economics to be able to withstand this process. It is also possible that high priority schemes will require defending to overcome political or public pressure of advancement of wish lists.

National LTP New Zealand Transport Agency (NZTA) will assemble the NLTP, based on Land Transport Programmes (LTP's) submitted by Regional Authorities.

2008 NZ Land Transport Strategy

In August 2008 Ministry of Transport published the New Zealand Transport Strategy which builds on the 2002 Transport strategy for New Zealand transport to 2040. This document sets out targets, key challenges, key components of the New Zealand Transport Strategy, details short term supporting actions and sets a framework for monitoring and review.

Purpose of Asset Management Planning

Council is responsible for the management of roads and traffic assets with an optimised depreciated replacement cost of approximately $247,446,000 (2008 valuation excluding land) with an annual depreciation of $2,706,000. During 2008/2009 Council has budgeted to spend about $6.2 million on maintaining, operating and renewing these assets. Approximately $3.1 million is budgeted for capital works.

The last valuation of the roading network and associated assets was undertaken in October 2008 and is summarised in Table 1.1.

Table 1.1 - Roading Infrastructure Valuation (2008)

Asset Group	Asset Type	Optimised Replacement Cost	Optimised Depreciated Replacement Cost	Annual Depreciation
Road	Pavement surface	$12,048,000	$6,396,000	$1,101,000
	Pavement structure	$97,134,000	$74,554,000	$489,000
	Pavement formation	$77,652,000	$77,652,000	$0
	Footpaths	$12,516,000	$6,852,000	$287,000
	Surface water channels	$7,243,000	$3,622,000	$97,000
	Drainage	$13,286,000	$7,234,000	$177,000
Structures	Bridges	$20,249,000	$10,376,000	$224,000
	Major culverts	$2,354,000	$600,000	$50,000
	Retaining walls	$546,000	$273,000	$6,000
Traffic facilities	Signs	$508,000	$254,000	$37,000
	Railings	$1,526,000	$830,000	$102,000
	Markings	$180,000	$90,000	$49,000
Street lights	Street lights	$2,204,000	$1,399,000	$88,000
LAND TRANSPORT ASSETS TOTAL		**$247,446,000**	**$190,130,000**	**$2,706,000**

The Hauraki District Council roading asset dimensions, as at April 2008 is shown in Table 1.2 below:

Table 1.2 - Roading Infrastructure Dimensions

Asset Component	Unit	Dimension
Roads	km	593.4 km of roads (81% sealed and 19% unsealed)
Bridges	No	136
Footpaths	km	102.4
Kerb and Channel	km	124.2
Culverts	No	1,900
Stormwater Structures	No	1,700
Signs	No	2,600
Streetlights	No	1,700

Other asset inventories include road markings, traffic islands, service lanes, retaining walls, roadside verges, surface drainage systems and numerous traffic safety facilities.

The Road Asset Management Plan combines management, financial, engineering and technical practices to achieve the objective of providing the required level of service at the lowest long term cost to the community. The plan is intended to demonstrate to customers that Council is managing the assets responsibly and that customers will be regularly consulted in regard to possible price/quality trade-offs resulting from alternative levels of service.

ASSET MANAGEMENT OBJECTIVE

"To meet the community's required level of service for present and future customers by the appropriate creation, operation, maintenance, rehabilitation and replacement of assets."

Demands on the Network

The community outcomes, the desired function of the asset and the likely service demands must be considered in determining the level of service requirements for the asset. In preparing this Asset Management Plan the following key demand drivers have been identified for the network:

- Traffic Volume
- Produce to Market
- Industry
- Social
- Seasonal High Usage
- Tourism
- Pedestrian traffic
- Cycling
- Parking

Demand and Growth

In 2008 the Council carried out analysis for forecasting future demand. Analysis included high and low forecast for use in sensitivity analysis. The Hauraki District Council roading network is currently under some pressure from increasing demands, arising from the following changes:

1. Traffic is increasing on District roads. The dairying industry is growing rapidly and has seen a high dependence on heavy commercial vehicles and machinery. The growth analysis of count station traffic shows a 2.5% growth over the previous 3 years. Analysis of heavy vehicle traffic volumes for the past three years on the local road network suggest that heavy commercial vehicle traffic is growing by a weighted average of 6.7% on count sites.
2. Tourism within New Zealand is generally increasing, with travel by rental cars and camper vans being popular. Hauraki District is effectively the hub of tourist traffic routes between the Auckland Region, the Waikato and Bay of Plenty regions and especially the Coromandel Peninsula. Most of the tourist travel is on state highways.
3. Population growth which is forecast to grow by 4% over the next 10 years.
4. The economic upturn for all farming sectors has led to increases in lime and fertiliser use and farm maintenance.
5. Increase in rating units is forecast to increase by 0.5% for the next 5 years and 1.0% thereafter.

The implications of increasing demand are:

- an increased rate of deterioration of road pavements,
- an increasing focus on road user safety,
- the need for an increased level of expenditure on the assets to maintain the intended level of service, and
- The associated costs have to be met from a small rating income source.

If the heavy vehicle component increases at a faster rate than the overall rate of traffic growth then the requirement for asset maintenance and renewals will grow disproportionately, as a result of the far greater impact of heavy traffic on pavement deterioration. The cost to each ratepayer of providing and maintaining capacity and ride quality would therefore increase.

Many sealed roads in the District have been originally constructed with thin pavements not designed to sustain the intensity of heavy vehicle loading which has developed since their construction and is projected for the future. Failure of these pavements occurs as the number of load cycles they are able to sustain is exceeded.

The timing of the failure is difficult to predict with certainty. Current practice tracks and forecasts maintenance costs to the point where an area wide treatment can be shown to be the least cost maintenance option. Area wide pavement treatment involves building an additional pavement layer over the existing road, in the case of a sealed road then sealing over this additional layer.

Demand Management

The demand management plan in section 5 of this plan respond to the forecast traffic growth and the growth in the network length. However there is an increasing focus on walking and cycling and travel demand management.

Asset based demand management includes management of the network through a hierarchy road system which is defined in the District Plan. This system sets out the widths of the roads against the hierarchy of the road.

Non asset demand management solutions include the walking and cycling provisions to encourage a mode shift. Passenger transport and travel demand management are also assuming an increasing emphasis but have not been specifically provided for in this plan until Council develop clear policy direction in this area..

Asset Description

The District's road hierarchy follows a grouping system based essentially on road use. The hierarchy of roads and the length of road in each grouping are presented in Table 1.3 below.

Table 1.3 - Road Length Breakdown

Ward	Sealed Roads					Unsealed Roads	Total Length
	Arterial (km)	Collectors (km)	Locals (km)	Reserve (km)	Service Lane (km)	Local (km)	Length (km)
Paeroa urban	0.9	7.3	21.6	0.5	0.1	1.3	31.7
Paeroa rural	11.2	13.6	50.2	0.6	0	29	104.6
Paeroa total	12.1	20.9	71.8	1.1	0.1	30.3	136.3
Plains urban	1.6	2.4	12.9	0.5	0.3	0.3	18
Plains rural	36.6	41.2	130.6	0	0	51.1	259.5
Plains total	38.2	43.6	143.5	0.5	0.3	51.4	277.5
Waihi urban	2.8	9.5	45.2	0.1	1	1.3	59.9
Waihi rural	20.6	23	46	0	0	30.1	119.7
Waihi total	23.4	32.5	91.2	0.1	1	31.4	179.6
Total urban	5.3	19.2	79.7	1.1	1.4	2.9	109.6
Total rural	68.4	77.8	226.8	0.6	0	110.2	483.8
Grand Totals	73.7	97	306.5	1.7	1.4	113.1	593.4

Design Standards

New roads are constructed to standards based on the adjusted traffic volume level identified for each road. The level of service provided for the various road groups is scheduled for review as part of the Asset Management Plan Improvement Plan (refer Section 9). It is envisaged that Council may undertake this review in advance of the next LTCCP and prior to preparation of their next maintenance contract. Table 1.4 below shows the current design **minimum** standards set for each road group.

Table 1.4 - Design Standards

Road Hierarchy	Environment	Typical AADT Range	Minimum Carriageway Width (m)	Minimum Shoulder Width (m)	Bridge Width* (m)	Other
Arterials	Urban	4,000-10,000	11.0	1.50	8.5	K&C
	Rural	2,000-4,000	7.5	0.75	8.5	
Collectors	Urban	500-2,000	8.0	0.5	8.5	K&C
	Rural	500-2,000	6.5	0.5	8.2	
Locals	Urban	100-500	6.0	0.5	8.2	
	Rural	<100	5.0	0.5	4.1	

* Widths are measured between barriers.

Analysis of existing seal widths compared to target shows a poor level of compliance as detailed in the Table 1.5 below.

Table 1.5 - Rural Roads and Urban Road Seal Width

Rural Roads

	Road Group	Road Length	Target Seal Width	Compliance
T1	(< 100 vpd)	105.1 km	5.0 m	78.9%
T2	(100 – 500 vpd)	197.8 km	6.0 m	42.2%
T3	(500 – 2000 vpd)	54.6 km	6.5 m	76.5%
T4	(2000 – 4000 vpd)	13.8 km	7.5 m	50.8%
T5	(> 4000 vpd)	0 km	10.0 m	N/A

Urban Roads

	Road Group	Road Length	Target Seal Width	Compliance
T1	(< 100 vpd)	25.8 km	6.0	54.8%
T2	(100 – 500 vpd)	51.7 km	8.0	28.6%
T3	(500 – 2000 vpd)	22.6 km	8.0	71.7%
T4	(2000 - 4000vpd)	3.8 km	11.0	36.9%
T5	(> 4000 vpd)	0.4 km	11.0	36.4%

Further analysis of the level of non-compliance showed that over 5% or 64km of the sealed network is under-width by more than 1.0 metres. Funding levels have not been sufficient to remedy this situation and it is not anticipated that future funding levels will increase significantly. The only widening that can be anticipated is that undertaken in conjunction with road rehabilitation.

Where significant economic and cost implications exist Council may approve departure from the standard if it accepts that the reasons for doing so are valid and the proposed departure remains technically supportable.

Current and Desired Levels of Service

Level of Service Review 2008

In 2008 the HDC carried out a level of service review across all services. The review included seeking responses via questionnaires and included bus trip exposing the service user to the transportation network. For transportation separate questionnaires were used for footpaths and roading. The respondents were also asked questions about increasing or decreasing budget levels by varying the rates applied to the roading activity.

The overall responses for roading and footpath were consistent with overall finding that:

- Hauraki District Council is performing well in the levels of service it provides,
- Hauraki district Council does hold a broad level of respect and performance confidence by its communities.
- But Hauraki District Council does need to perform more efficiently across all services and within current budget levels.

Although satisfaction levels for roading are high and the majority of participants want the current levels of service to remain at their current status there is strong comment on increasing maintenance and improving the quality of maintenance currently provided.

The vast majority of comments related to footpath issues tend to a desired improvement to the Districts footpath and street lighting programme.

A vast majority of respondents are satisfied with the transportation services. The Table 1.6 below summarises the key community level of service targets and links them to community outcomes and performance measures. (Refer Section 3 Table 9 for more details and linkages of the level of service targets).

Table 1.6 - Level of Service

	Community Outcome	Community LOS	Community Performance Measure	Community PM target	Technical Performance Measure	Technical PM target	Current Performance	Target	Gap Met Y/N
	To develop systems to monitor and analyse								
	We want to have a say in our Districts future						88% satisfied	80%	Y
CLOS 1		Provide access to the network of local roads							
		Time for the access to be made to communities in 1 in 10 year event							
				Length of time access unavailable is no more than 24 hours			100%	100%	Y
					Emergency work impacting safety are attended to:				
						30 minutes arterial, 1 hour collector, 2 hours local roads			
	We want to have a say in our Districts future								
CLOS 1		Provide access to the network of local roads					100%	100%	
		Satisfaction about how the roading network is operated from Council's Triennial Survey							
				80% and increasing			88% satisfied	80%	Y
					Change in PII of sealed network equal to:		+/-5%	+/-5%	Y
		Rural sealed roads are maintained smoother than a NAASRA value of 80 (nationally accepted values for smooth roads).							
				The bi-annual survey of Councils rural roading network results in a NAASRA value of 80.			78.7	80	Y
		Urban sealed roads are maintained smoother than a NAASRA value of 110 (nationally accepted values for smooth roads).					114.1	110	N
				Reseal an average of 40 km of sealed roads per year over a three year rolling average			43km	40km	Y
	We value the provision of well-managed infrastructure services								
CLOS 2		Delivery of a roading network that addresses safety and amenity issues.							
		An up to date Road Safety Management System is maintained and implemented							
				To implement the Road Safety Management System by 2008/09			On Target	2008/09	Y
		Reduction in the number of reported crashes per 100 million vehicle kilometres travelled on local roads in the Hauraki District.							
				Rolling five year average <29 for urban local roads and< 18 for rural local roads and decreasing 5 year rolling averages			35 urban, 31.3 rural	<29 urban, <18 rural	N
	We value the provision of well-managed infrastructure services								
CLOS 2		Delivery of a roading network that addresses safety and amenity issues.							
					Sweeping of Kerb & Channel inspection and rectification is equal to:				
						Monthly inspection and rectified within 2 weeks			
					Adjusting surface boxes to tolerances less than:				
						>25mm lower / higher than surrounding seal rectified within 8 weeks			
CLOS 2		Delivery of a roading network that addresses safety and amenity issues							
		Reduce fatalities and hospitalisation from road crashes by 2015							
		Road controlling authorities to aim for the elimination of targeted black routes on strategic corridors.							
		Territorial authorities to encourage supportive urban design to facilitate the safety of transport users							

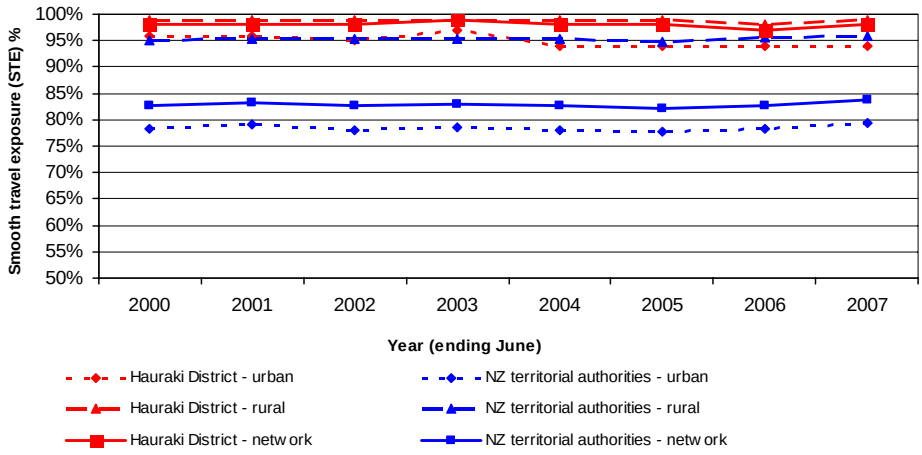
	Community Outcome	Community LOS	Community Performance Measure	Community PM target	Technical Performance Measure	Technical PM target	Current Performance	Target	Gap Met Y/N
	To develop systems to monitor and analyse								
		Territorial authorities are encouraged to sign-up to and implement responsibilities under the New Zealand Urban Design Protocol.							
		Territorial authorities undertake district planning that results in increased levels of personal safety for transport users.							

New Zealand Transport Agency Levels of Service Trends, Comparisons and Benchmarking
Smooth Roads: Urban, Rural and Network

In comparison the smooth travel for HDC urban and rural roads is better than the average New Zealand Territorial authority and this high level has been maintained over the last seven years.

The Smooth Travel Exposure is a function of road roughness and traffic count. The Hauraki network average roughness count (2008) of 89 compares well with New Zealand Transport Agency guideline Road user satisfaction measure for average NAASRA roughness of all sealed roads in groups; targets for which are between 110 and 140.

Figure1.1 below shows the smooth travel for Hauraki District roads in comparison with other local authorities.



Note: The **higher** the Smooth Travel Exposure (STE) %, the smoother the network

Figure 1.1: Smooth Travel Exposure for All Sealed Roads in Hauraki District

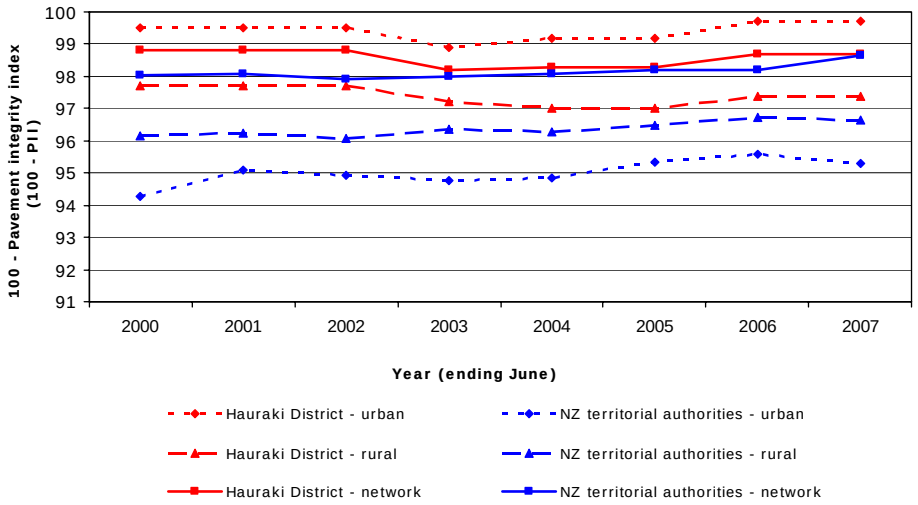
Sealed Surface Condition: Urban, Rural and Network

The Surface Condition Index is a good indicator of the health of the sealed surface. While the surface condition index of the sealed roads has been below the New Zealand Average this has been improving over the last seven years. There is currently a strong resealing programme which should enable further improvement in next few years.

Pavement Condition

The pavement condition (measured by a Pavement Integrity Index) is a good indicator of the health of the road pavement on the sealed road network.

The PII achievement for Hauraki District road network compares well with the New Zealand Transport Agency asset preservation measures for annual change in pavement integrity index (PII) of +/- 5% by road group where it has generally been kept above the New Zealand TA average.



Note: The **higher** the 100 - Pavement Integrity Index (100 - PII), the better the pavement structural condition.

Figure 1.2: Pavement Integrity for all Sealed Roads in Hauraki District

Road Roughness

The NAASRA Road Roughness measure is an indicator of the roughness of the sealed road network.

Hauraki District performance is excellent in comparison with Waikato, North Island and New Zealand statistics. The New Zealand Transport Agency guidelines for Road user satisfaction measures requires that the maximum roughness on roughest sealed roads should be no more than 5% by length of roads by any road group.

Comparison with Cluster Group

An analysis to identify local authorities with similar characteristics to Hauraki has been undertaken looking at both physical characteristics and management outcomes. In section 3 details of the derivation of the cluster group is provided. In general the Hauraki District compares well for the key network characteristics within the cluster group, such as Smooth Travel Exposure, Surface Condition Index and Pavement Integrity Index. The comparison with cluster group is shown in Figure 1.3 below. The Hauraki District Council performance on key measures are favourable when compared to South Waikato, Matamata – Piako, Waikato and Western Bay of Plenty road networks.

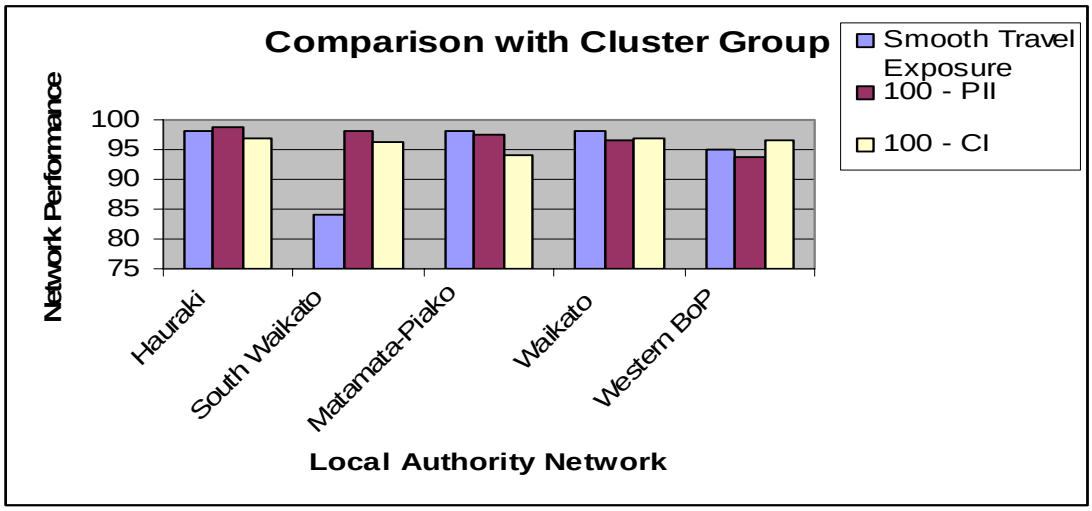


Figure 1.3 - Key Benchmarking Network Characteristics

Benchmarking

The comparison of the network performance with the cluster group, with North Island territorial authorities and the New Zealand local authorities show that the key asset performances are favourable. In section 3 graphs have been produced to show a number of comparisons.

The technical level of service targets therefore are sufficient to ensure that the assets will continue to perform to a standard better than or comparable to peer networks and ratepayer expectations.

Gap Analysis

The current performance and target performance are compared to determine the performance gap. The asset performance gap is fine. The main deficiencies are in the safety performance area where the current fatal crashes numbers exceed the acceptable limits.

The Council can only have a limited influence in correcting this deficiency. It will require a concerted effort from the Community, Police, Regional Authorities, New Zealand Transport Agency and other stakeholders to influence this target. The Council is working with a Road Safety Group comprising of representatives to progress this key issue.

Future Development

The New Zealand Transport Strategy

The New Zealand Transport Strategy was produced in August 2008 and provides short-term targets (6 years) and provides direction for the allocation of land transport funding in order to assist progress towards the NZTS vision. Indicative targets are covered for further 4 years.

The Table 1.7 below summarises the GPS Targets to 2014/15:

Table 1.7 - Summary of GPS Targets to 2014/15

Target Area	Target to 2009/10 – 2014/15
Reducing greenhouse gas emissions	Reduce kilometre travelled by single occupancy vehicles in major urban areas on weekdays, by 10 % per capita by 2015
Freight mode shift	Increase in mode share of transporting freight by coastal shipping and rail by 2015
Travel times and	No overall deterioration in travel times and reliability

reliability on critical routes	on critical routes by 2015
Road safety	Reduce fatalities and hospitalisation from road crashes by 2015
Public transport use	Increase patronage on public transport by 3 % per year through to 2015.
Walking and cycling use	Increase the number of walking and cycling trips by 1% per year through to 2015.

To achieve the GPS targets the targets will need to be converted into regional and local level of service statements. It is expected that the Regional Land Transport Strategy reviews will provide further guidance and direction for the local Councils.

Implementing the Government Policy Statement (GPS) on Land Transport Funding 2009/10 – 2018/19

The key elements are:

- NZTA giving effect to the GPS through NLTP by making NLTP consistent with the GPS and working with local government and MOT
- MOT monitoring and reviewing performance with support from NZTA and other transport authorities

Development and improvement of targets and stakeholder feedback to inform the next review.

Risk

The risk management process is defined[2] as "the systematic application of management policies, procedures and practices to the tasks of identifying, evaluating, treating and monitoring those risks that could prevent a Local Authority from achieving its strategic or operational objectives or Plans or from complying with its legal obligations".

The most significant risks to the preservation and development of the Hauraki District road network are shown in Table 1.8 below.

[2] SNZ HB 4360:2000 Risk Management for Local Government

Table 1.8 - Risk

Forecasting Assumptions - General	Impact on Transportation LOS, Comments and Mitigation
Range of services - Council's current range of services will remain unchanged.	Medium to High risk– NZTS 2008 targets can place high demand eg reduction in accidents, emissions targets, health .
Operating Environment - e.g. natural disasters, health epidemics, significant asset loss, changes.	Increasing possibility of extreme events has significant impact on annual roading costs
Climate Change - Temperature in Hauraki will likely rise 2.5c in the next 100 years.	Studies have been completed.
Interest – Interest on Term Debt is at 8.0%. Interest on Investments is calculated at 7.0%	High interest rates may constrain amount allocated to transportation activity. LOS may need to be reviewed.
New Zealand Transport Agency (NZTA) - Subsidy is at 54%. Used in 10 year plan.	No outcome yet from the FAR review scheduled for August 2008.
Revaluation –	Valuation is being undertaken currently –to update.
Capital Works Costs – On average, costs of major capital works will not vary significantly.	Potentially high resealing cost in some years particularly relating to oil price volatility
Traffic Growth	Traffic Monitoring. traffic count system is in place.
Changing demographics cause different growth to demand.	Analysis of census information
Growth in Dairying	Roading Policy, Road Maintenance Contract clauses, Liaison with Dairy Industry, Monitoring of Stock Crossings,
Exchange Rate Change	Monitoring of National & International trends
Oil Price Rise	Monitoring of trends. The price of resealing has increased by 10% over the 2007/08 year. Budgets need to be increased.
Budget pressures on Capital & Revenue result in reduced works and/or services	LTCCP and Annual Plans
Contractual Risk of Financial Failure	Bonds and insurances in contracts.
Increase in costs of bridge maintenance works reduces effectiveness of the programme	LTCCP and Annual Plans
Increase in costs of bridge strengthening works reduces effectiveness of the programme	LTCCP and Annual Plans
Change in Legislation and new Environmental legislation	Participation in National Forums, Contribution to drafts for comments

Forecasting Assumptions - General	Impact on Transportation LOS, Comments and Mitigation
Drought damage	Monitoring and proactive action by Road Maintenance Contractors. Effects of Drought Jan – April 2008 being worked through.
Adverse weather conditions	Civil Defence Emergency Management Plan for Thames Valley May 2005
Fog	Police initiative for daylight driving with Headlights on in Waikato
Tsunami	Civil Defence Emergency Management Plan for Thames Valley May 2005
Unforeseen ground conditions	
Traffic Crashes	Liaison with Police, Monitoring of Crash Grey Spots, Implementation of a Safety Programme, Crash reporters, accident monitoring/analysis
Reduced Local Funding	LTCCP
Change in LOS	Public consultation on LOS, Monitoring of national & local trends
Vehicle Changes	Community Liaison, Participation in National Forums
Changes in legislation / Government policies	Strategic management
Lack of (political) support	LTCCP and Annual Plans
Loss of political support for Transportation Service	LTCCP and Annual Plans
Change in contractor causing loss of network knowledge	LTCCP and Annual Plans
Environmental Damage	Environmental management Plan
Failure of any structure requiring road closure	Environment Management Plan
Failure to complete annual bridges assessment and inspectiont Programme	
Fatal accident rates	Road Safety Working Group is formed to address issues..
Inadequate design and investigation (in HDC or by others.)	By consultants Professional Indemnity insurances and Contractor insurances.
Sustainability conflicts in carriageway work	
Utility works affecting network	To develop cross network procedures.

All of the above risks have a high likelihood and a high consequence and all relate either directly or indirectly to road maintenance and development funding. Further assessment is detailed in Section 5.

Risk mitigation measures are to be developed as detailed in the Improvement Plan. Development of Risk Mitigation measures is given a “high” or “very high” priority rating because if it is not addressed they affect the resources and funding available for the proper management of roading assets.

Life Cycle Management Plans

Lifecycle Management Plans are provided in Section 6 for following classes of assets:

- Sealed Roads Life Cycle Management Plan
- Unsealed Road Life Cycle Management Plan
- Bridge Life Cycle Management Plan
- Traffic Services Life Cycle Management Plan
- Footpaths Life Cycle Management Plan
- Street Lighting Life Cycle Management Plan
- Car Parks Life Cycle Management Plan
- Drainage Structures including Kerb and Channels Life Cycle Management Plan
- Street furniture, Retaining Walls, Guardrails, Cycleway and Public Transportation Assets Life Cycle Management Plan.

Clearly the road pavement and surfacing forms bulk of the Councils roading assets comprising of about 70% of the replacement value of the transportation depreciable assets. The management of the maintenance and renewal of the pavement and surfacing asset is undertaken using New Zealand Transport Agency RAMM system. Recent advances include forward works planning using best practice systems such as dTIMS pavement deterioration modelling, treatment selection analysis and ten year forward works programme. The forward planning of the maintenance and renewal works is aimed at ensuring that the network continues to perform at current service levels.

Pavement and surfacing renewal by far forms bulk of the renewal work.

Pavement Rehabilitation

Modelling suggests a pavement rehabilitation rate of less than 5 km per year. A coarse analysis using pavement rehabilitation factors is shown in the Table 1.9 below.

Table 1.9 - Road Rehabilitation Lengths

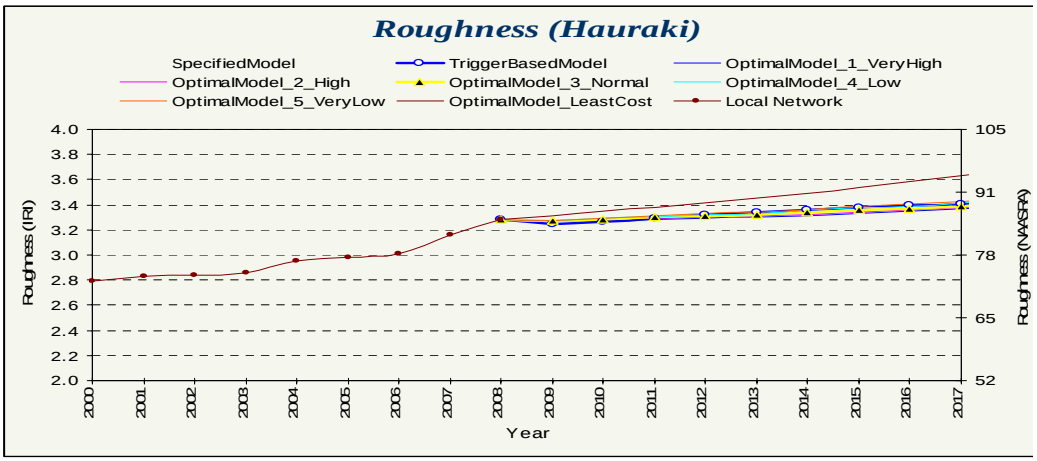
Group	Length	Factor	Inferred AWPT Need
Arterial Roads	73.71	1/30	2.5km
Collector Roads	97.04	1/40	2.4km
Local Roads	305.39	1/60	5.1km
Total	476.14		10.0km

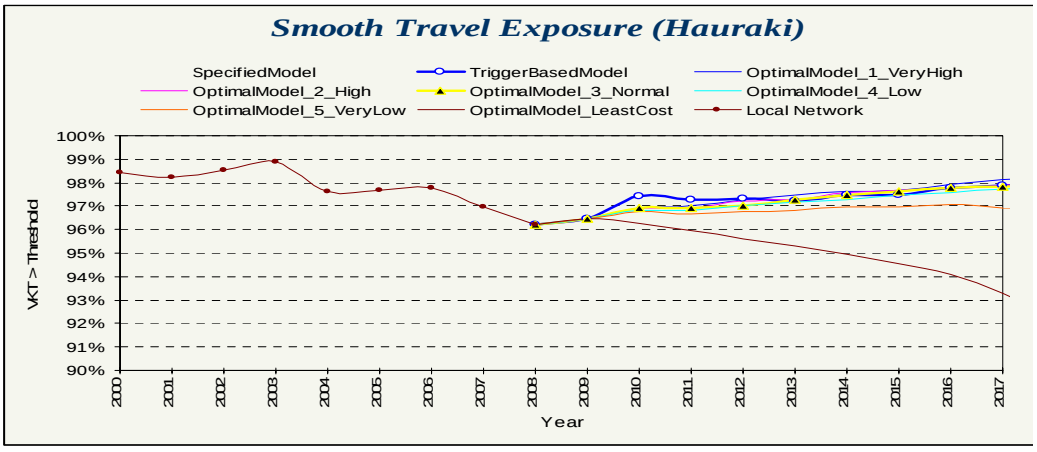
The total of 10km per year is inferred in this coarse analysis. Historical rate of Area Wide Treatment has averaged at 3-4 km per year which is considered low in terms of the renewal rate in the above table. However it has been difficult to economically justify area wide treatment projects using the NZTA proforma which require a net present value or a benefit – cost criteria to be met to be eligible for funding.

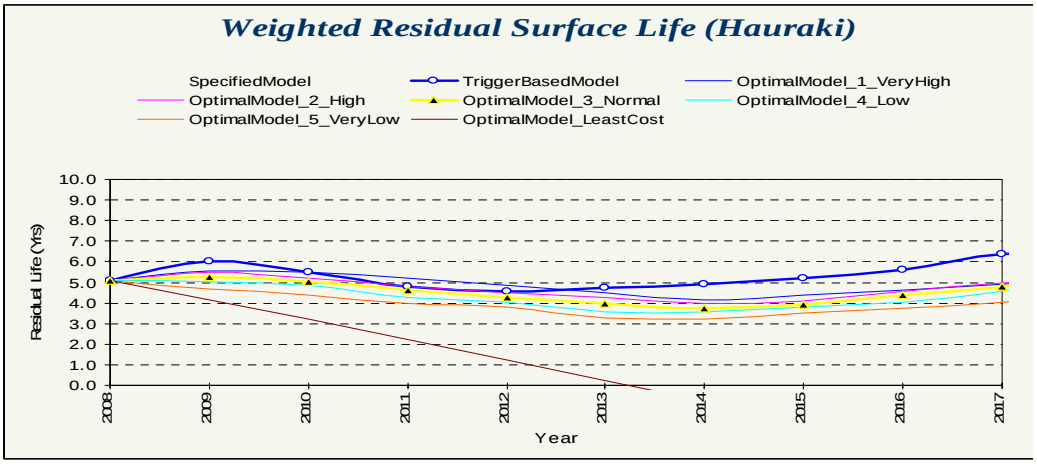
The 2008/09 target for AWPT is $490,000. The Network Consultant has developed a 10 year programme that identifies forthcoming AWPT projects within the network. An indicative programme for the three years 2009/10 – 2011/12 is provided in Section 6.

The Roading Information Management Systems (RIMS) dTIMS Pavement Performance Modelling 2008 has determined that the current level of investment in pavement and surfacing will maintain the pavement to within the performance measures for the next ten years. This does not cater for any growth. The models are predicting the following effects on network condition variables:

- An increase in network average roughness
- A decrease in network roughness greater than threshold
- An increase in Smooth Travel Exposure
- A general worsening trend in surface condition (SII)
- A stable network pavement condition (PCI)
- Slight downward trend in residual surface life
- Slight increase in total vehicle operating cost.
- Figure 1.4 below graphs the progression of roughness, smooth travel exposure, residual surface life and vehicle operating cost for various cost profiles modelled by dTIMS analysis. These show that there is very little if any negative impact under current budget scenario.







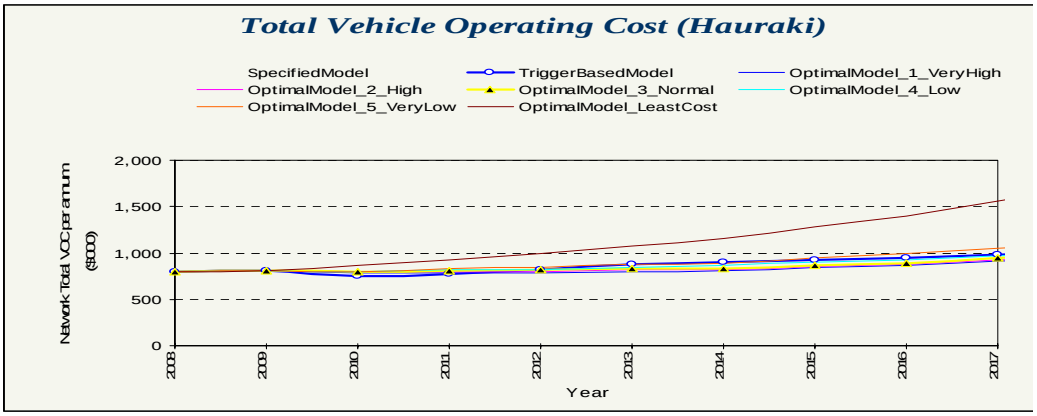


Figure 1.4 - Level of Service

Resurfacing

Most of the sealed roads in the district are chip sealed (chip seal is a layer of sprayed bitumen with a stone chip spread on top as a running surface). A few, mainly urban roads, are surfaced with asphaltic concrete (AC) hot mix. The AC surface tends to be used where noise and chip loss are factors.

Hauraki District has maintained good programmes of resealing in recent years. A total of 44.4 km of resurfacing by chip sealing and 0.9 km by thin asphaltic surfacing is programmed for 2008/09. This is estimated to cost $1,296,000. Recent budget level has been at appropriate level aiding the overdue resurfacing to be maintained at acceptable level of 10-20%. Short term budget levels aim to renew top surface at a rate of approximately 50 km per year which is considered sufficient to maintain this asset component. This quantity gives an average seal renewal cycle of 9 -10 years. Table 1.10 below shows the seal design life for various seal types.

Table 1.10 - Surface Life Achievement by Surface Type

Surface Type	Average Design Life in Years	Achieved Life in Years			
		Plains	Paeroa	Waihi	Average
First Coat	4	4	2	2	3

Reseal (Grade 2)	17	-	-	-	-
Reseal (Grade 2/4)	8	4	2	3	3
Reseal (Grade 3)	11	8	10	9	9
Reseal (Grade 3/5)	8	3	3	3	3
Reseal (Grade 4)	9	9	9	9	9
Reseal (Grade 4/6)	9	2	3	2	3
Reseal (Grade 5)	7	5	-	-	5
Reseal (Grade 2//5)	8	-	-	-	-
Reseal (Grade 6)	9	-	-	-	-
Reseal (Grade 3/6)	5	-	10	10	10

Seal Extension

Seal extension targets both level of service improvements and additional capacity. Council's subsidised and non-subsidised funding allocations necessary for the targeted seal extension as set out in the Hauraki District Council's seal extension strategy are set out in the Lifecycle Management Plan section of this document. As seal extension generally targets a level of service improvement it is one of the first allocations to be curtailed in order to satisfy maintenance, operations and renewal demands.

Conclusions

Based on the outcome of services of level of service targets and forecast depreciation and renewal forecasts the level of operations and renewals are at sufficient level.

Financial Summary

Overview and Assumptions

A new financial model has been developed to forecast financial requirements for the next 20 years. The financial model is underpinned by the following key determinations and assumptions:

- The 2008 Level of Service review which recommended that the current Level of Service target is satisfactory.
- The 2008 dTIMS report which forecasts that the pavement and surfacing assets will remain in acceptable condition under the current investment level.
- The September 2008 BERL inflation forecasts for the next 20 years.
- An estimated network growth rate of 0.5% per annum on appropriate asset types.
- An assumed traffic impact factor growth of 1.5% per annum on the pavement maintenance. (traffic growth of 2.5% and HCV growth of 6.8% on Council's count stations).
-

The financial forecasting does not succinctly allow for RISK identified in the RISK section and the other General and Financial assumptions detailed in the General and Financial Assumptions included in Appendix C. The improvement plan identifies that further development is required for estimating the value of RISK and incorporating them fully in the financial forecasting.

Depreciation

A roading asset valuation was undertaken in September 2008. The depreciation was calculated and is projected. For 20 years. Figure 1.5 below shows the renewals versus depreciation forecasts for the 20 year horizon.

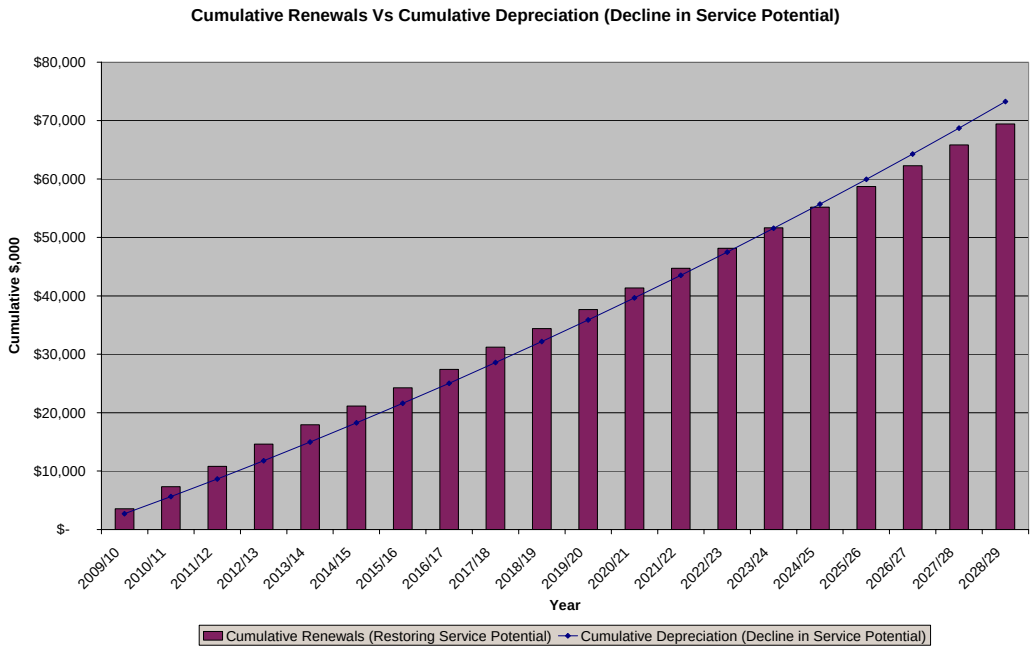


Figure 1.5 – Renewals vs. Depreciation Over 20 Years

Decline in Service Potential

The Figure 1.6 shows the decline in service potential graphed over a 20 year period. It indicates a network with an investment level sufficient to maintain the network in the near future 0-10 years).

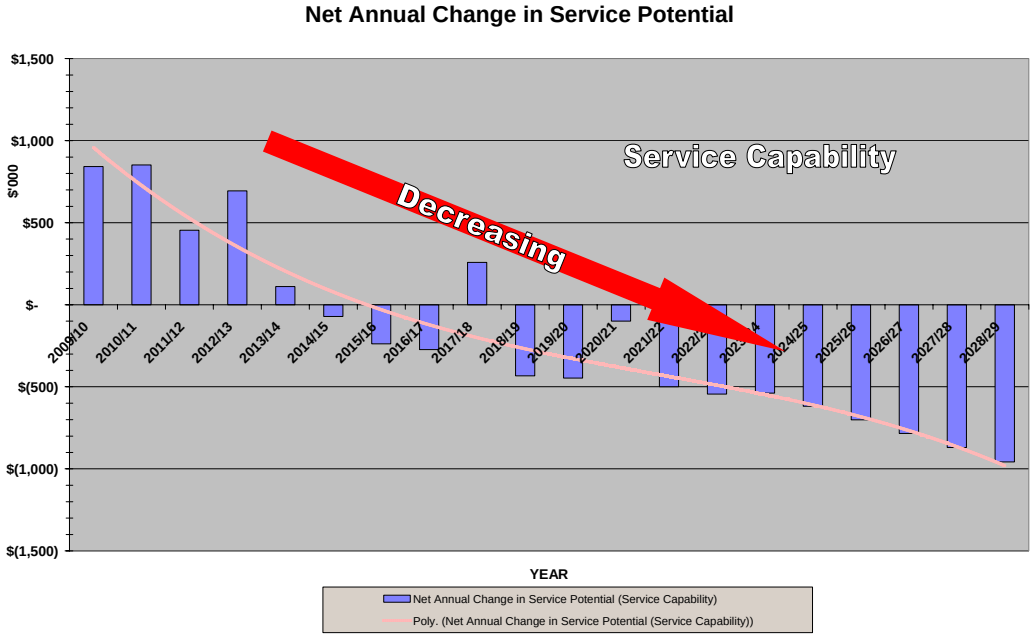


Figure 1.6 – Net Annual Change in Service Potential

Funding Priorities

The first priority is to maintain, operate and preserve the existing network. Approximately 90% of expenditure is spent on this task with the remaining 10% spent on improvements to provide a higher level of service, additional capacity and to address safety issues.

Over the next 10 years the funding required for structural and corridor maintenance for New Zealand Transport Agency subsidised work is projected to level at $4.0 million in the 2009/2010 year through to 2017/18 (not allowing for inflation).

The subsidy available from New Zealand Transport Agency is forecast to remain at the current rate.

All projected expenditure is shown in Table 1.11 below in terms of 2008 dollars and will need to be adjusted each year for inflation. Justification for the subsidised work items are detailed in section 6 and the Land Transport Programme 2009/10 produced in November 2008, a copy of which is held with the Roading Manager.

Funding Sources

Funding for the maintenance and operation of the roading network is to be provided from the roading rate and subsidy received from New Zealand Transport Agency.

Funding for improvements is provided from New Zealand Transport Agency subsidy, financial contributions paid by developers and the roading rate. Table 1.11 shows the 10 year forward works programme.

Table 1.11 - Forward Works Programme Budgets

Subsidised Transportation Works 10 Year Forward Works Programme Summary (Not Inflation Adjusted)						
Activity	WC No.	Work Category & Description	2009/10 ($000)	2010/11 ($000)	2011/12 ($000)	2012/13-2018/19 ($000)
Maintenance and Operation of Roads						
Structural Maintenance	111	Sealed Pavement Maintenance	1,227	1,251	1,277	9,680
	112	Unsealed Pavement Maintenance	177	177	176.6	11,19.3
	113	Routine Drainage Maintenance	161	160.8	161.6	11,46.7
	114	Structures Maintenance	164	158	159	1,113
Corridor Maintenance	121	Environmental Maintenance	526	526.5	527.1	3,698.5
	122	Traffic Services Maintenance	346	347.7	349.5	2,488.8
	123	Operational Traffic Management	5	5	5	35
	124	Cycle Path Maintenance	0	0	0	0
Emergency Reinstate	141	Emergency Reinstatement	1,301	918	766	0
Asset Management	151	Network and Asset Management	411	383	398	2,800

Subsidised Transportation Works 10 Year Forward Works Programme Summary (Not Inflation Adjusted)						
Activity	WC No.	Work Category & Description	2009/10 ($000)	2010/11 ($000)	2011/12 ($000)	2012/13-2018/19 ($000)
ROAD MAINTENANCE & OPERATIONS SUB TOTAL			4,318	3,927	3,819.8	22,081.3
		Renewal of Roads				
Structural Renewals	211	Unsealed Road Metalling	93	91.6	90.2	594.8
	212	Sealed Road Resurfacing	1,332	1,392	1,456	9,549.6
	213	Drainage Renewals	139	139	139	973
	214	Pavement Rehabilitation	502	500	519	3,514
	215	Structures Component Replacements	45	45	45	315
Corridor Renewals	221	Environmental Renewals	0	0	0	0
	222	Traffic Services Renewals	137	137.7	138.4	988.2
Associated Improve.	231	Associated Improvements	171	67	112	358.9
ROAD RENEWALS SUB TOTAL			2,419	2,372.3	2,499.6	16,293.5
MAINTENANCE SUB TOTAL						
		Improvement of Roads				
	322	Bridge Renewals	169	495	43	1,012
	324	Road Reconstruction	0	0	0	0
	325	Seal Extension	247	91	132	835
	341	Minor Improvements	539	505	506	3,070
IMPROVEMENT OF ROADS SUBTOTAL			955	1,091	681	4,917
		Use of the Land Transport System				
	431	Community Coordination	4	4	4	28
	451	Pedestrian Facilities	50	50	50	350
	452	Cycle Facilities	50	50	50	350
USE OF THE LAND TRANSPORT SYSTEM SUB TOTAL			104	104	104	728
TOTAL REQUEST			7,796	7,494.3	7,000.4	44,019.8
BERL COST ESCALATION (%) – based on September 2008 forecast			5	8.5	11.6	Varies
TOTAL REQUEST			8,185.8	8,128.7	7,813.2	1. 54,214.2

Non Subsidised Transportation Works

Non Subsidised Transportation Works				
Activity	**2009/10 ($000)**	**2010/11 ($000)**	**2011/12 ($000)**	**2012/13-2018/19 ($000)**
Seal Extensions	377	354	384	2,855
New Kerb and Channel	210	296	277	1,925
New Footpaths	85	86	86	620
Footpath Maintenance	70	70	70	490
Footpath Renewals	37	37	39	269

Asset Management Systems and Practices

Asset Management Systems

The Road Asset and Maintenance Management system (RAMM) is the main information system used in the management of the roading network. The RAMM system contains an inventory of all Council owned and maintained roads. RAMM contains quantitative and qualitative data for all asset types. This includes carriageway widths, surfacing types and age, pavement composition, traffic volumes and loadings and road condition data.

Information on structures such as drainage features, footpaths, bridges and signs is also stored in the RAMM database.

Pavement Deterioration Modelling, dTIMS

dTIMS utilises RAMM data to predict future funding requirements for given levels of service, or to predict future levels of service for given funding scenarios. It is in the course of development as a useful tool for long term financial planning and expenditure prioritisation.

Practices

Condition surveys are undertaken biennially with annual rating on lengths with traffic volumes greater than 500 vehicles per day. The RAMM treatment selection algorithm utilises the condition data to make recommended treatments for each section of road.

The outputs from the treatment selection programme are utilised at a network level in developing maintenance and renewal strategies and also at an individual project level to identify reseal or rehabilitation sections.

The 10 year forward work programme is prepared and updated in RAMM. This is compared to the dTIMS output.

The funding request process undertaken complies with the New Zealand Transport Agency policy to attract subsidy.

Annual Plan

The annual planning exercise brings together all budgetary and asset management practices to provide the forward and indicative programme of network maintenance and development budgets.

Asset Management Plan Improvement Plan

New Zealand Audit has listed a number of assumptions which they expect Councils to have, these are:

- Useful Lives of Significant Assets
- Sources of funds for future replacement of significant assets
- Projected growth change factors
- Approach to potential climate change impacts
- Approach to potential societal changes
- Future price chance (inflation)
- NZ Transportation Agency subsidy rates
- Revaluation of non-current assets
- Forecast return on investments
- Expected interest rates of borrowing
- Changes in Councils business dictated in as yet unknown/unconfirmed legislation or central government policy change.

All of the above with the exception of Forecast return on investments has been dealt to by the Council. The outputs of the studies are used to develop this Plan. This Plan has attempted to address a number of key areas where improvements will enhance accuracy of forecasting, and confidence.

The improvements are described in Section 9 and follow the New Zealand Transport Agency audit which was carried out in August 2007 and the Maunsell audit. A peer review was carried out on the June 2008 plan and improvement items identified.

Many of the improvement items identified in the June 2008 peer review has been dealt to. In that process other issues have been identified and have been recorded for future improvements.

The asset management plan is a living document which is relevant and integral to daily asset management activity. To ensure the asset management plan remains current and useful, the following processes will be implemented:

- The asset management plan will be formally adopted by Hauraki District Council every 3 years to align with the LTCCP.
- The asset management plan will be reviewed annually to incorporate service level reviews and information collected as part of the asset management plan improvement programme.

The forward programmes in the asset management plan will be updated on an annual basis.

Table 1.12 below lists the highest priority improvement actions. Most of these focus on developing a new set of Level of Service statements which will be the key input into performance measurement, comparisons, developing gap analysis, costing financial requirements and other follow on actions.

Table 1.12 - Proposed Improvements – Priority 1

AMP Section	Improvement Action	Target Action Date
1	Executive Summary	
	Improve Executive Summary to be targeted at a less technical level: • include summarised information on goals, • LOS, • strategic issues/trends, • KPIs, • justification for budget forecasts and • LOS the budgets will deliver.	Aug 2008
3	Levels of Service	
	Review Levels of Service for next LTCCP and maintenance contract documents. It is envisaged that prior to next LTCCP the following key steps will be undertaken: • A review of the customer satisfaction results	June 2009
	• A review of the annual plan submission results	
	• Drafting levels of service scenario – standards, operational	June 2009
	• Councillor workshops	Completed
	• Customer and user consultation	Completed
	• Land Transport New Zealand consultation	As scheduled
	• Environment Waikato consultation	March 2009
	• Formal adoption of revised Levels of Service.	
	Improve LOS to cover a broad spectrum of likely user values.	June 2009
	New technical LoS measures require prioritisation in terms of data collection requirement to enable measures to be used in LoS. Inclusive of strategy to define collection methods and data repository	June 2009
4	Demand Management	
	Develop growth forecasts particularly heavy vehicle kilometres travelled and estimate asset consumption. Incorporate dTIMS evaluation results.	June 2009
	Develop demand forecasts and future upgrades when more growth information becomes available. Canvas industry on expected growth in their sector and where this might impact on network current forecast and	June 2009
	Modelling of change in Technology into financial forecasts e.g Recycle techniques impact on life cycle connection to valuation and renewal profiles	June 2010
5	Risk Management	June 2009
	Align risk management with NZS4360.	
	Include lifelines plans.	June 2009
	Programme treatment projects for high / unacceptable risk exposure	June 2009
	Establish and detail a monitoring programme	June 2009
	Include communication plan for transportation.	June 2009
	Add risk mitigation measures, costing and priority.	June 2009
6	Life Cycle Management Plans	June 2009

AMP Section	Improvement Action	Target Action Date
	Review LOS options using dTIMS and adoption by Council.	
	Improve link between lifecycle strategies and financial forecasting Explain justification for all budgets	June 2009
	Include a section on Traffic management decisions	June 2009
	Basis and Prioritisation of Renewals	June 2009
	Maintenance strategies, decision making process, standards and specifications, modes of delivery and effect of growth.	June 2009
7	Financial Information	
	Develop financial forecasts for 10 years for subsidised and non subsidised work necessary to deliver the agreed level of service	June 2009
	List projects, lengths, costs to support funding for maintenance, renewals and improvements by LOS and additional capacity.	June 2009
	Add table with escalations costs included.	June 2009
	Add useful lives	June 2009
	AMP to provide confidence that local share will be met.	June 2009
	Planning Assumptions and Confident Levels	
8	Asset Systems and Data	
	Bridge Inventory: • Discuss use of Bridge Inventory in RAMM • Discuss spreadsheet and any other bridge inventories used for inspections	June 2009
	Capture asset categories not captured – berms, shoulders, pavement structure, vehicle crossings (see appendices section of this improvement plan).	
	Specify and detail SMS systems applied or to be applied on HDC network.	August 2009
	Planning by Qualified Persons	
	Independent Peer review.	August 2009
	Commitment Formalise reporting against AM improvement plan (quarterly).	June 2009
9	Improvement Programmes Include KPI's for each activity.	June 2009