WAIMAKARIRI
DISTRICT COUNCIL

Activity Management Plan 2021

Transportation
Asset Management Practices

Prepared by
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Document Acceptance

Action	Name	Position	Signed	Date
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Reviewed by	Joanne McBride	Roading and Transport Manager		17 February 2021
Approved by	Gerard Cleary	Manager Utilities and Roading		17 February 2021
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1   Overview

This section outlines the decision-making tools Waimakariri District Council currently uses to determine long term maintenance, renewal and creation expenditure for roading assets.

Effective asset management requires relevant and robust systems, data, and processes as detailed below. Advanced asset management is achieved by using the right mix of the three input components to create knowledge and intelligence. The AMP then applies these to decision-making processes and develops management tactics to ensure that the assets deliver the services as intended.

This plan is prepared as part of a longstanding 3 years' view cycle linked to the LTP cycle

Figure 1: Key Asset Management Inputs and Outputs

Management Process

The key elements needed to support good asset management practices are:

- **Processes:** The necessary processes, analysis and evaluation techniques needed for life cycle asset management.
- **Information systems:** The information support systems used to store and manipulate the data.
- **Data:** Data available for manipulation by information systems to produce the outputs required for effective decision-making.

Processes

The key information flows into this Activity Management Plan are:

- Staff knowledge of the network
- Comments from contractors and consultants
- Periodic inspections and audits
- RAMM
- Inventory
- Condition Rating
- Treatment selection
- New Zealand Transport Agency Crash Analysis System
- The Council financial and other records
- Customer Satisfaction Surveys
- Results of specific consultation
- Submissions to the Long Term Plan and Annual Plans
- Resolutions and suggestions from the Council and its committees
- Comments from the public and ad-hoc bodies
- Roading Safety Management System
- Regional Land Transport Plan
- Kaiapoi Traffic Study
- Rangiora Transport Study
- Rangiora Link Roads Scheme Assessments
- Rangiora Heavy Traffic Routes Study and Scheme Assessments
- Waimakariri District Plan
- Waimakariri District Council Code of Engineering Practice

The key information flows out of this Activity Management Plan are:

- Council's Long Term Plan including Financial Forecasts
- Council's 30 Year Infrastructure Strategy
- Land Transport Programme
- Contract standards and specifications
- Performance standards and guidelines
- Inspection and audit regimes

Potential renewal or replacement projects are considered on an asset by asset basis, but cognisance is taken of the network needs including increasing network development and growth, and other means of managing assets, such as travel demand management.

Works programmes are developed by considering potential candidate's ranking and relative need. These are determined based on the assets':

- Condition
- Required maintenance
- Rate of deterioration
- Safety record and implications
- Lifecycle costs
- Hierarchy

The following are also taken into account:

- Risk
- The optimum time for asset renewal
- The difference between the actual and intended Level of Service
- Proximity of other programmed works
- Availability of financial assistance
- Legal obligation
- Council's policies.
- Community needs

The available budget is then allocated against the projects in descending order. The programmes are then reviewed for cross-effects to other projects and programmed maintenance that may or may not be recommended for funding under other budget sections.

2 Information Systems

2.1 Road Assessment and Maintenance Management system (RAMM)

The RAMM system is the core database system used in the management of the roading and transport assets at the Council. RAMM is used nationally to manage state highway and local authority roading networks, thus allowing direct benchmarking of road condition and performance. The use of RAMM or an equivalent asset management system is a prerequisite of the New Zealand Transport Agency for obtaining Government funding for roading work.

Access to RAMM is restricted to approved staff. The system is hosted for the Council by RAMM Software Ltd (RSL) in Auckland under a contractual agreement; data is accessed via the internet.

RAMM has the following functionalities:

- Asset register; inventory of roading assets, including bridges.
- Asset valuation.
- Traffic Count data

- Condition database; recording of condition survey information.
- Treatment selection process; determining the optimum or best treatment for a particular section of road based on current performance and condition information.
- Priority formulation; ranking of treatment options based on cost benefit calculations.
- Input for dTIMS prediction modelling.
- Provide a range of standard reports
- Various mapping tools which allow utilisation of data for planning and reporting

The Council rolled out a new "business management system" in 2014 to improve integration of financial, asset and customer service systems. However, RAMM will remain the key information management system for Roading. There have been a number of improvements to the RAMM suite of products including its own GIS, and the ability to add User Defined Tables, allowing a wider range of data to be captured in forms suited for individual needs.

2.2 RAMM HTML

RAMM Contractor/ Pocket RAMM were introduced to manage the maintenance, operations and renewal works, and for compiling claims. The introduction of RAMM Contractor significantly improved the quality and timeliness of data available for asset maintenance decisions and management, in particular financial records. CAR Manager is utilised to manage the Corridor Access Requests and Work Approval Permits. A key improvement being worked on is extending the use of RAMM to link to the Customer Service system through the new business system, "Technology One". The first improvement has been to allow seamless integration of the Service Request system, between Council and the contractor. Still to be developed is the middleware which will allow RAMM Contractor to interface with the new business system.

RAMM HTML is a move to provide an improved map based system rather than a spreadsheet based one. Old RAMM, which required Citrix, is being phased out. RAMM Contractor itself has been integrated into RAMM HTML, with tables allowing dispatches, financials, and other maintenance contract activities to be able to be mapped along with asset information to provide an integrated view of the District.

2.3 Pavement Deterioration Model (dTIMS)

DTIMS is a pavement modelling system used to predict pavement deterioration and thus develop forward expenditure profiles for various user-defined scenarios.

The national Roading Information Management System (RIMS) group has developed policies, specifications and development plans to provide advanced asset management capability including lifecycle costing, pavement performance models and risk assessment. The tool they have chosen for this is the dTIMS predictive modelling package.

The previous DTIMs report has been reviewed for this AMP.

2.4 Geographical Information System (GIS)

Council's own GIS system contains layers of information also useful for roading purposes. It includes property information, locations of other Council assets such as three waters pipes, and flood layers, amongst others. There is an ability to load RAMM data onto the Council system through uploading shape files which will allow information on roading programmes to be accessible to other asset owners.

2.5 Accounting/ Financial Systems

The Council Accounting and Financial systems utilise the HPE/ 'Technology One' suite of business software. Long term financial decisions are based on the development of 10-year financial plans. These 10-year plans are updated every three years on a cycle linked to the development of this AMP. As a result the 10-year forecasts developed in this Plan correspond to the latest financial projects presented to the Council.

2.6 Customer Service Requests

Customer Service Requests have also been incorporated into Technology One "One Line of Business".

2.7 Total Record and Management System (TRIM)

The Council is using TRIM as the official records and electronic document management system. This was implemented in 2006. This enables the Council to comply with regulations and corporate policies.

2.8 Asset Management Data

A summary of the asset data management practices is tabulated below:

Table 8.1: Asset Data Management Practices

Data	Data collection process	Comments
Asset Inventory data	As required	Pocket RAMM is being used to update asset data, as well as spread sheets to upload bulk data
Maintenance Data	Daily	RAMM Contractor is used to collect maintenance data for all planned and unplanned road network maintenance works
Maintenance Cost	Daily	RAMM Contractor is used to capture all known faults with treatment cost estimates, filter and programme selected faults for treatment, and to record actual treatment cost.
Condition survey data	Dependent on the asset type - refer to lifecycle section for detail	These include RAMM Condition Surveys, High Speed Data, Assets condition rating (e.g. Footpath and Kerb and Channel condition rating).
Traffic Volume Count	Annual and regular traffic count, frequency of counts informs the road hierarchy and is detailed in the contract.	The Council engages external contractor to carry out the traffic counting
Crash Data (CAS)	Updated daily by NZTA, and is accessible through the NZTA database.	This data held by NZTA, it includes all crashes on New Zealand public roads that have been reported to the police. Currency of data is dependent on when police supply crash reports to NZTA.

3 Implementation Tactics

3.1 Procurement

Council has in place a Procurement Strategy which was endorsed by Waka Kotahi in 2019. The strategy is consistent with the Waimakariri District Council Procurement Policy and with Section 17 of the Local Government Act.

Road network maintenance and portions of the renewal management is carried out under a single road maintenance contract covering the whole district. The contract model is a collaborative model with Council staff and the contractor working as 'one team' focussing on best for network outcomes. The contractor is responsible for network inspections, programming and carrying out the work. Some minor improvement works are also included in the maintenance contract for greater efficiency, otherwise open tendered. There is a

comprehensive performance management process in place for the contract. The contract was let, following open tender, in November 2020 for a 3+1+1 period to the incumbent contractor.

Kerb & channel renewals are open tendered in line with the procurement strategy as are any larger projects or specialist works.

Street light maintenance and renewals is carried out under a similar, but separate, contract. This contract was let in November 2019 as a 3+1+1 contract.

Projects are procured through a range of options from lowest price conforming tender processes to short listing and selected tender processes, depending on the type and complexity of the project. Very small one-off projects such as safety improvements at an intersection, may be carried out directly through the maintenance contract where this is shown as the best price option.

3.2 ProMap

Council is in the process of rolling out a system of recording all its processes for carrying out its work. Bringing these in will have the following advantages

- Providing continuity in processes in how work is carried out
- 'Reducing the likelihood of errors due to not being sure of how to replicate standard work
- Ensuring regulations are met in a timely fashion
- Ensuring that institutional knowledge is not lost and provides a framework for new staff to carry out their positions appropriately

An adjunct to this will be bringing in electronic checks and balances to ensure the processes are actually followed.

3.3 Organisational and People

Roading is one of four divisions reporting to the Utilities and Roading Manager who reports directly to the Chief Executive (refer to organisation chart Section 2 Introduction Figure 4). The roading team consists of:

Table 1: Roading Staff

Position	Current Employee
Transport and Roading Manager	Joanne McBride
Roading Operations Team Leader	Carl Grabowski
Asset Planning Engineer (Roading)	Yvonne Warnaar
Roading Engineer	Tim Donaldson
Road Maintenance Engineer	Ian Kennedy
Roading Compliance Officer	Shaun Maxwell
Senior Transport Engineer	Shane Binder
Journey Planner/Road Safety Co-ordinator	Kathy Graham
Vehicle Crossing Auditor	Brian Sutherland

Road network management is largely delivered by the roading team with support from the Council's Project Delivery Unit (PDU). Specialist professional services such as bridge inspections and structural advice, road safety audits and advice, transport planning and traffic assessments, traffic counting, road condition rating and surveys are delivered by external consultants.

All roading staff have a Personal Development Plan (PDP), which identifies personal development needs and goals. The PDP`s are set annually and reviews and updated regularly.

3.4 Asset Management Status Review

In 2009 WDC engaged Waugh Infrastructure Management Ltd to independently assess the appropriate AM level. The following table details the AMP assessment and the current compliance status. An investigation will be made in the 21-24 AMP as to whether there is likely to be significant change to this assessment

Table 2: Status Assessment

Relevant Assessment Criteria	
C	Core criteria
+	Additional relevant criteria
Compliance Key	
✓	Fully compliant
S	Substantially compliant
P	Partially compliant
✗	Does not comply

Table 3: Land Transport 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	C	✓		Dedicated resources in place
Core	Adequate Description of Asset	C	✓		RAMM fully utilised
	Financial Description of Asset	C	✓		Annual revaluation and financial spread sheet in place
	Remaining useful life	C	✓		Regularly reviewed using actual useful life and experienced staff input
	Aggregate & Disaggregate Information	C	✓		
Advanced	Reliable Physical inventory	+	S		
	- Physical attributes (location, material, age etc.)	+	S	Signs and street lighting to be improved	Improvement plan in place
	- Systematic monitoring of condition	+	S	Traffic services, unsealed roads, FWD, drainage(culverts and sumps)	Sealed Road Roughness & condition rating, K&C and footpath condition rating, street lighting assessed by contractor, and Bridges assessed during regular inspections. All have systematic monitoring of condition in place
	- Systematic measurement performance	+	P	To be implemented for other assets	Measuring response time, unsealed road vpd, STE. Safety inspection in place. Audits of network performance being carried out by Maintenance Engineer/Auditor
	- Utilisation/capacity	+	P	To be implemented for other assets	Service requests provide a method of feedback, Safety inspection, regular traffic counting in place
Levels of Service	Define LOS or performance	C	✓		
Core	Linkage to strategic/community outcomes	C	✓		
	Links to other planning documents	C	✓		
	Levels of consultation identified and agreement	C	✓		
	Service life of network stated	C	✓		
Advanced	For Significant Services	+			
	- Evaluating LOS Options	+	✓		Extensive consultation undertaken in 2005
	- Consult LOS options with community	+	✓		
	- Adoption LOS & Standards after consultation	+	✓		
	- Public communication of service level	+	✓		Through LTP
	- Monitoring & public reporting	+	S	Review current monitoring and reporting to identify gap	Monitor through quarterly reporting to council and through Annual Report
	AMP's reflect agreed LOS & how service is delivered	+	✓		
Managing Growth	Demand Forecasts (10 year)	C	✓		
Core	Demand Management drivers	C	✓		
	Demand Management strategies	C	✓		
	Sustainability Strategies	C	S	Integrated strategy across the whole Council is not in place	Using recycling item for rehabilitation and LED for street lights
Advanced	Forecasts include factors that comprise demand	+	✓		
	Sensitivity of asset development (Capital Works) to demand changes	+	S	Process to be documented	
	Asset Utilisation/ Demand Modelling	+	S	dTIMS to be implemented	Rangiora traffic model in place

Assessment Criteria (as outlined in IIMM)		Compliance Status Analysis			
		Relevance	Current Performance	Compliance Gaps	Notes
Risk Management	Identify critical assets	C	✓		
Core	Identify significant negative effects	C	✓		
	Identify associated risks and RM strategies	C	✓		
Advanced	Recognition & application of principles of integrated risk management to assets	+	✓		
	Apply standards & industry good practice	+	✓		
	RM integrated with Lifelines, disasters recovery, Continuity plans,.	+	✓		Partial – to be expanded on
	Strategies for critical assets to include mitigation – CORE	C	✓		
	Integrate with maintenance and replacement strategies	+	P	Check current risk management process	
Lifecycle Decision Making	Lifecycle and Asset Management Practices	C	✓		
	Service capacity gap analysis	C			
Core	Evaluation and ranking based on criteria of options for significant capital invest decisions for	C			
	Maintenance Outcomes, Strategies, Standards and Plan	C	✓		
Advanced	Identify options for asset maintenance to achieve optimal costs over life of asset				
	- Apply agreed evaluation tools to prioritise work programmes	+	S	Implement dTIMS and other evaluation tools for other assets	Using TSA in RAMM now to prioritise pavement resealing, rehabilitation and maintenance programmes. Uses current condition and age as inputs.
	- Predictive modelling to support long-term financial forecasts for maintenance, renewals & new capital	+	P	Implement dTIMS	
	Significant negative effects				
Financial Forecasts	10 year Financial plan – Maintenance, Renewals, New Capital (LOS and demand).	C	✓		
Core	Validate the Depreciation/Decline in Service Potential	C	✓		Road data spread sheet in place for managing ten year financial forecasts
Advanced	Translate operational, planned maint, renewal & new work into financial terms over period of strategic plan	+	✓		
	Provide consistent financial forecasts & Substantiate	+	✓		
	Sensitivity of forecasts	+	✓		

Assessment Criteria (as outlined in IIMM)		Compliance Status Analysis			
		Relevance	Current Performance	Compliance Gaps	Notes
Planning Assumptions and Confidence Levels	List all assumptions and possible effects	C	✓		
Core	Confidence level on asset condition, performance	C	✓		
	Accuracy of asset inventory	C	✓		
	Confidence level demand/growth forecasts	C	✓		
	Confidence level on financial forecasts	C	✓		
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)				
Outline Improvement Programmes	Identify improvements to AM processes & techniques	C	✓		
Core	Identify weak areas & how they will be addressed	C	✓		
	Timeframes for improvements	C	S	Still to be implemented	
	Identify resources required (human & financial)	C	S	To be identified	
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	C	✓		Dedicated resource in-house
Core & Advanced	Process should be Peer reviewed		✓		
Commitment	Plan adopted by Council including improvement programme	C	✓		
Core	Plan key tool to support LTP	C	✓		
	AM Plan regularly updated and should reflect progress on improvement plan	C	✓		
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	+	✓		

3.5 Key Improvement initiatives

Key improvement initiatives relating to the asset management practices include the following:

Table 4 Improvement initiatives

Reference	Description	Priority
8-1	Include simple analysis covering suitability of the systems used	Low
8.2	Review procurement methodology prior to re-letting of maintenance contract	