Road Asset Management (RAM)

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Asset Management Plans

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Agenda

- Asset management manual
- Asset management plan

The Asset Management Manual

Setting the Scene

- Some food for thought?
  - If you like the food, ask for a copy of the recipe
  - Hard to recreate a recipe just by taking a slice of the cake home

- The AM equivalent
  - People take a copy of someone else's AMP, but then have no idea how to recreate it
  - AM is rushed as a critical deadline (often around funding) approaches, only to find the inputs are not available
  - An organisation with good AM suddenly falters (or fails) when the "champion" moves on.

- The answer is an Asset Management Manual

What is an AM Manual (or Framework)?

- The recipe for successful AM in an organisation
- Like food, every location has its own local flavour
  - Local legislation
  - Local funding cycles
  - Local weather that impacts on data collection and physical works
- Having an AMM is not the same as having a good AMP or good assets
- An AMM is the glue that holds all the AM components together
  - Makes the whole greater than the sum of the parts
  - Once you have your processes documented, it is much easier to see the problem areas and improve them.

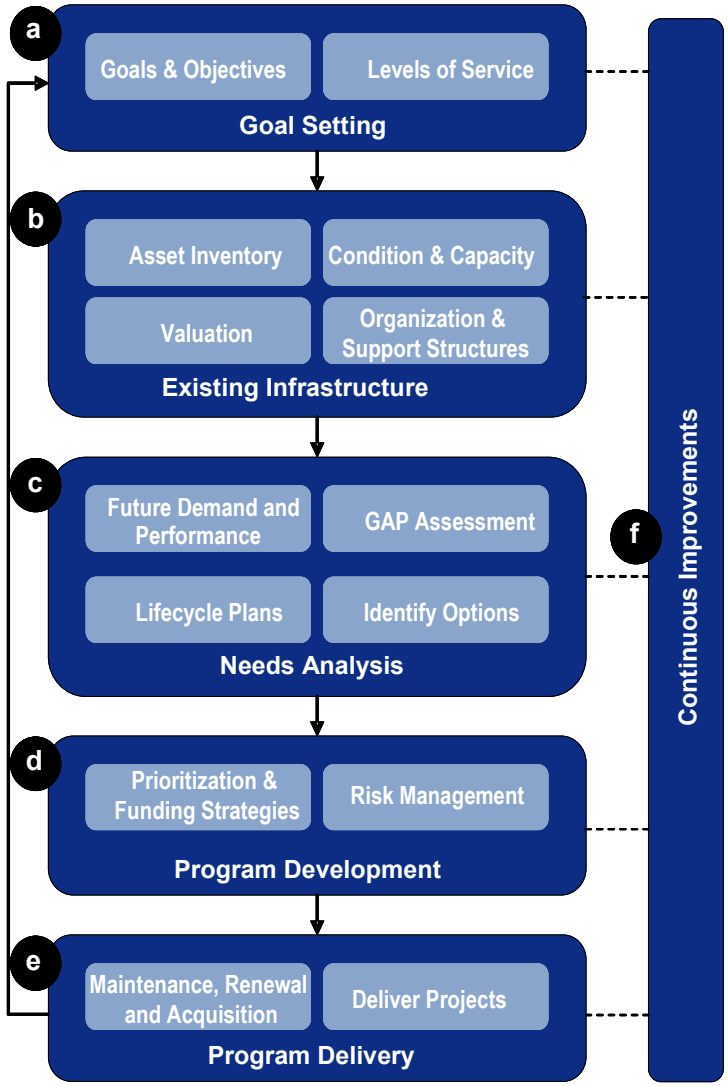
Benefits of Having an AMM

- Managed workflow
- Consistency of delivery of AM functions
- Reduces reliance on key individuals
- Assists in developing a common language across asset borders.

Components

- Covers all facets of AM planning
  - Details the processes that will be used to make sure the AMP and the Assets will be a success
- Specifies the “who” “what” and “when” not just the “how”
  - This sets an AMM apart from an AM textbook
  - Creates ownership

Typical AM Process



What do we want it to do?

What do we have?
What condition is it in?
What is it worth?

What do we need to do to it?

When do we need to it?
How much will it cost?

How will we deliver it?

Who Needs One

- Anyone with an asset
  - Not all AMM's are created equal

- History would suggest those with:
  - Diverse assets to manage
  - Timing and human resourcing issues
  - Significant infrastructure failures or challenges
  - Key individuals that are about to (or have) moved on
  - Those wanting to computerise their AM activities

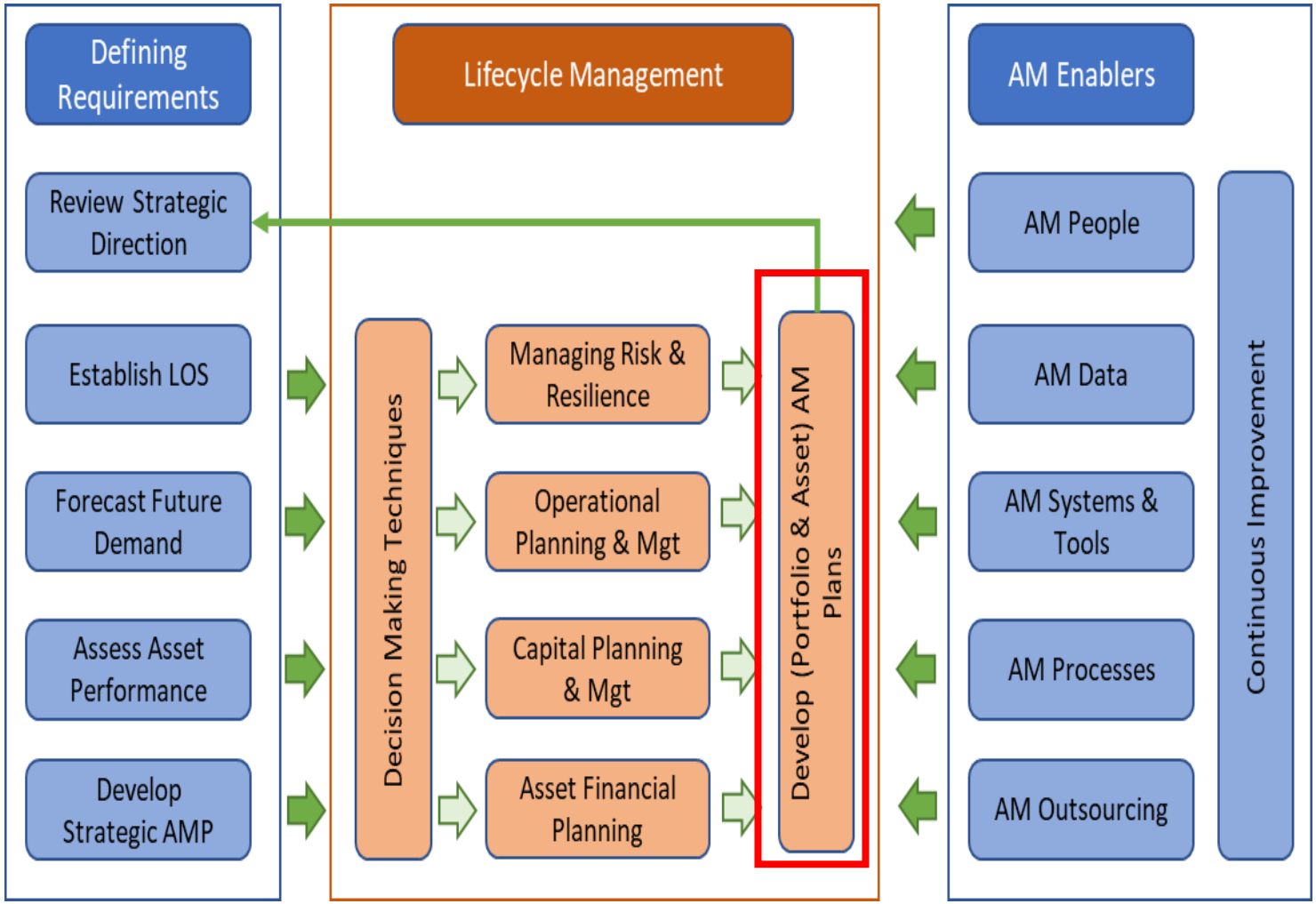
…benefit the most from having one in place

What Does the AMM Look Like?

- Personalises AM to the organisation
  - Identifies specific roles that tasks are owned by
  - Identifies who else is involved
  - Defines what success looks like, not just failure
  - Levels the playing field of decision making
  - Ensures all decision makers have the information they need, at the time they need it, in the format they require, at the level of detail they should have

- An AMM cannot be substituted by a software solution
  - An AMIS should automate the processes within your AMM

Asset Management Plan


Defining Requirements
Review Strategic Direction
Establish LOS
Forecast Future Demand
Assess Asset Performance
Develop Strategic AMP
Lifecycle Management
Decision Making Techniques
Managing Risk & Resilience
Operational Planning & Mgt
Capital Planning & Mgt
Asset Financial Planning
Develop (Portfolio & Asset) AM Plans
AM Enablers
AM People
AM Data
AM Systems & Tools
AM Processes
AM Outsourcing
Continuous Improvement

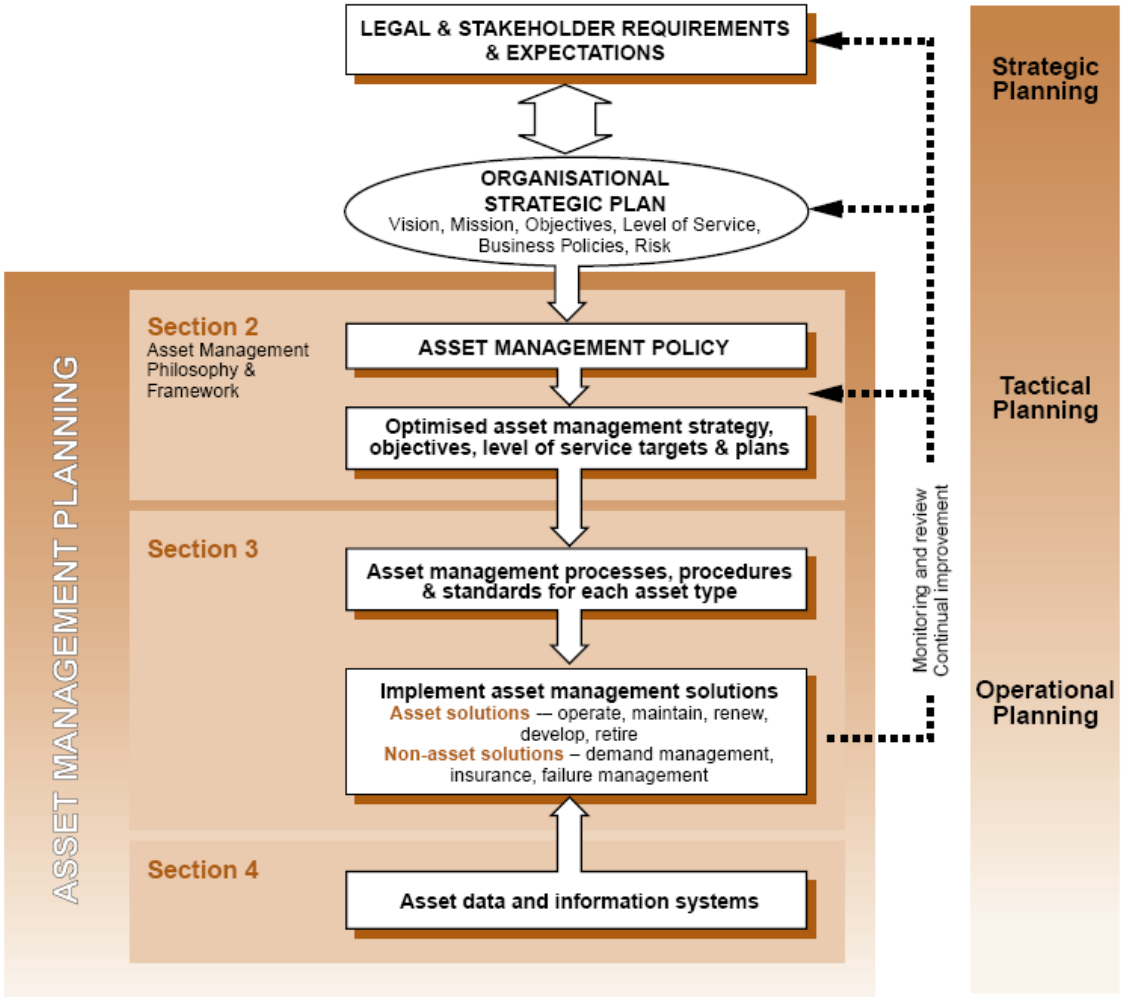
Asset Management Plans

- Pull the whole picture together
- Gives organization a clearer picture of future
- Is your tool for demonstrating that you are delivering the right level of service in a cost-effective way for present and future customers.
- Enables organization and customers to focus on future service problems and cost drivers
- Highlights weaknesses

AM Plans typically cover

- Levels of service and performance measures – past/current/future, including drivers (customer wants, legislative, strategic)
- Future growth, demand and how you will manage that demand
- An overview of the assets, value, condition, performance
- Lifecycle strategies for delivering on levels of service and meeting future growth – Strategies and projections for O&M/condition and performance monitoring, Renewal, New Works, Disposal
- Financial summary, including policies, significant assumptions
- Analysis of AM Practices (strengths/weaknesses)
- Improvement Plan

AMP is a Function of the Entire Organisation



The Story the AMP Tells

- If written in right order, AMPs should take the author (and the reader) through the process of thinking about:
  - What services are being provided
  - Intended level of service incl. performance targets and measures
  - What assets do we have
  - Changes to demand for / consumption of services
  - Changes to service provision levels and standards
  - Estimate of additional capacity
  - How it will be provided and cost
  - How cost will be funded
  - How assets will be maintained /renewed /replaced

- It should leave the reader confident in the knowledge that the assets are being well managed, risks are understood and any gaps in processes have been identified and improvement plans are in place.

AMP Structure and Content

- There is no single correct methodology
- It is dependent on the organisation and the outcome they are seeking from their asset management plans
- If you use external resources, maintain ownership and close involvement
- While called an Asset Management Plan it is important to consider non-Asset solutions
- Will often be a hierarchy of AMPs
  - A national one that is for public reading
  - Regional ones that are more technical in nature
  - Specific assets – major bridges, tunnels etc
  - It is important these all align.

Basic elements are the same

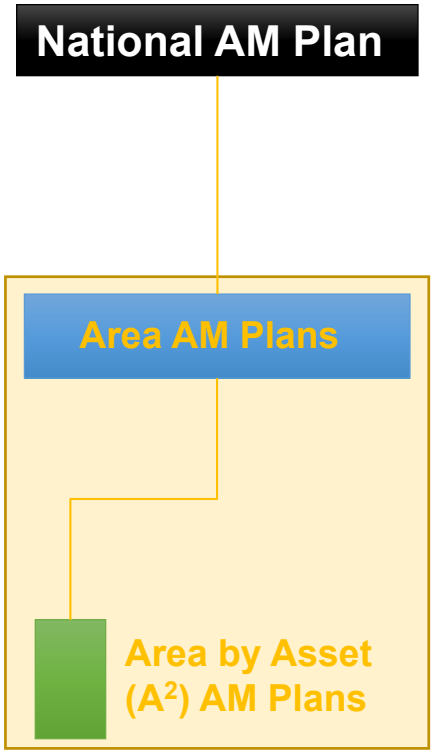
- Service/activity description
- Asset description (condition/performance/value)
- Levels of service (current/future)
- Growth and demand (demand drivers, demand mgt)
- Lifecycle plans – operational/renewal/capital (growth/LOS)
- Financial forecasts – (expenditure/funding)
- Management practices (outsourcing strategies, etc)
- Improvement plan

- Risk management, ongoing improvement, assumptions, confidence levels (what-ifs) should filter through all sections.
- Sustainability is sometimes dealt with as a separate section, or an integral part of the whole document.

Common Problems Where the AMP is not of a Good Standard

- Inability to express outcome of renewals programme for key assets
  - Can only talk in terms of km of works completed etc.
- Information about area assets held in many places and not readily able to provide a cohesive and consistent set of data
- Work programmes identified as lists of discrete projects rather than a programme
- Insufficient contextual information provided to inform internal decision makers about funding impacts
  - Leaves Ministry of Finance to interpret how km of work relates to what the community wants

Common to Have an AMP Heirarchy



- Comprehensive central document
- Summarises the Area plans (feeding upwards)

- Comprehensive Area plan document setting out information relating to all asset types within the Area
- Asset-specific data tables are given in the main body of the plan with summary comments

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- Slim asset-specific document to provide supplementary information to the Area AM plan
  - Could be appended to Area AM plan
  - These are often in place as address a specific problem

Audience for the AMP

- National AMP
  - Road authority directors / Secretaries
  - Ministry of Finance
  - Public
- Area AMP
  - Area/Regional Teams
  - Contractors involved in maintaining the road network
- Area by Asset (A^2) Plans
  - Asset specialist leads

AMP Example - UK

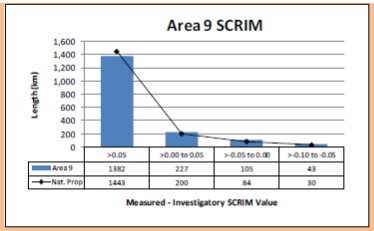
1 Executive summary

Area 9 is located in the West Midlands.

Table 1 presents a summary of the assets that are managed within the Area. This table is based on the information that is currently available within the key Agency information management systems, and is known to have deficiencies in completeness as indicated in the Comment field in the table. There is an ongoing process to update the information management systems, with the values below being representative of the state of the inventory as at 1st April 2010.

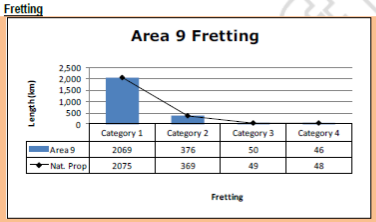
Table 1: Summary of Assets

Asset Category	Item	Unit	Quantity	% of Agency	Comment
Pavements	Flexible	lane-km	3,906.8	11.1%	
	Rigid	lane-km	460.7	9.8%	
	Not specified	lane-km	1.3	41.6%	
	Total	lane-km	4,367.6	10.9%	
	Motorway	lane-km	2,953.0	12.6%	
	Dual C'Way	lane-km	806.0	7.0%	
	Single C'Way	lane-km	608.6	12.4%	
	Total	lane-km	4,367.6	10.9%	
Structures	Bridge and Large Culvert	No.	1104	13%	
	Small Span Structure	No.	137	9%	
	Sign/Signal Gantry	No.	539	16%	
	Lighting Columns	No.	17154	17%	
	Other	No.	575	19%	
	Total	No.	19509	17%	
Geotechnical	Embankments	km	351	10%	
	Cuttings	km	427	11%	
	At-Grade	km	687	13%	
	Bunds	km	45	32%	
	Total	km	1509	12%	
Drainage	Piped network	km	744	7%	
	Other linear	km	564	5%	



Comments:

Fretting



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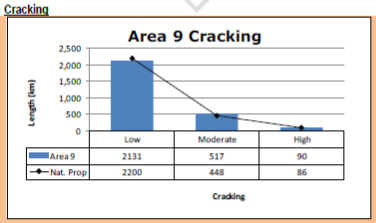
Cracking



Example – New Zealand

- https://www.nzta.govt.nz/roads-and-rail/management-and-maintenance/management-and-delivery-plans/state-highway-asset-management-plan/

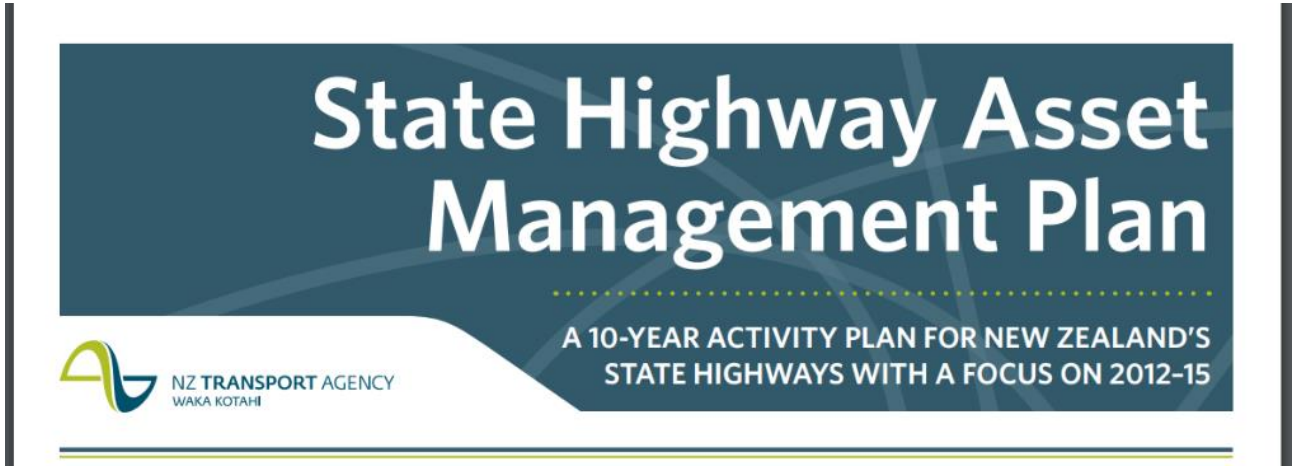
"The State Highway Asset Management Plan (SHAMP) provides a greater focus on the needs of New Zealand from the state highway network, embeds our customer first approach within state highways, and shows how maintenance, operations, and improvements together provide services to customers.

It provides internal guidance on how the state highway network can be best developed and managed to achieve the government's objectives and meet our customers' needs, while balancing the competing demands on available funding over the period.

- *Read the State Highway Asset Management Plan"*

Example – New Zealand

- 10 year plan
- 3 year funding cycle
- The AMP is about thinking longer term than today or tomorrow

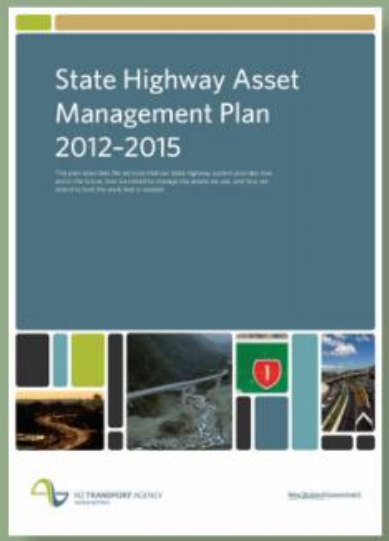


Example

What it provides

The SHAMP provides:

- a greater focus on the state highway needs of New Zealand
- a plan with the customer in mind
- a plan that shows how maintenance, operations and improvements together provide services to customers.



Three key roles

The State Highway Asset Management Plan (SHAMP) plays three key roles for the NZTA:

- it is a route map showing how we plan, invest and deliver for the future
- it links state highway investment to our Customer First focus, setting service targets
- it is a business case for activities (maintenance, renewals, operations and improvements) required to enable the NZTA to deliver its services to customers.

A route map for the future

The SHAMP describes the programme of activities we will be doing to deliver the impacts sought.

It also provides the logic, reasoning and context behind how we propose to maintain, renew, operate and improve the state highway asset over a 10-year period and what we hope to achieve during this timeframe.

Linking state highway investment to Customer First focus, setting service targets

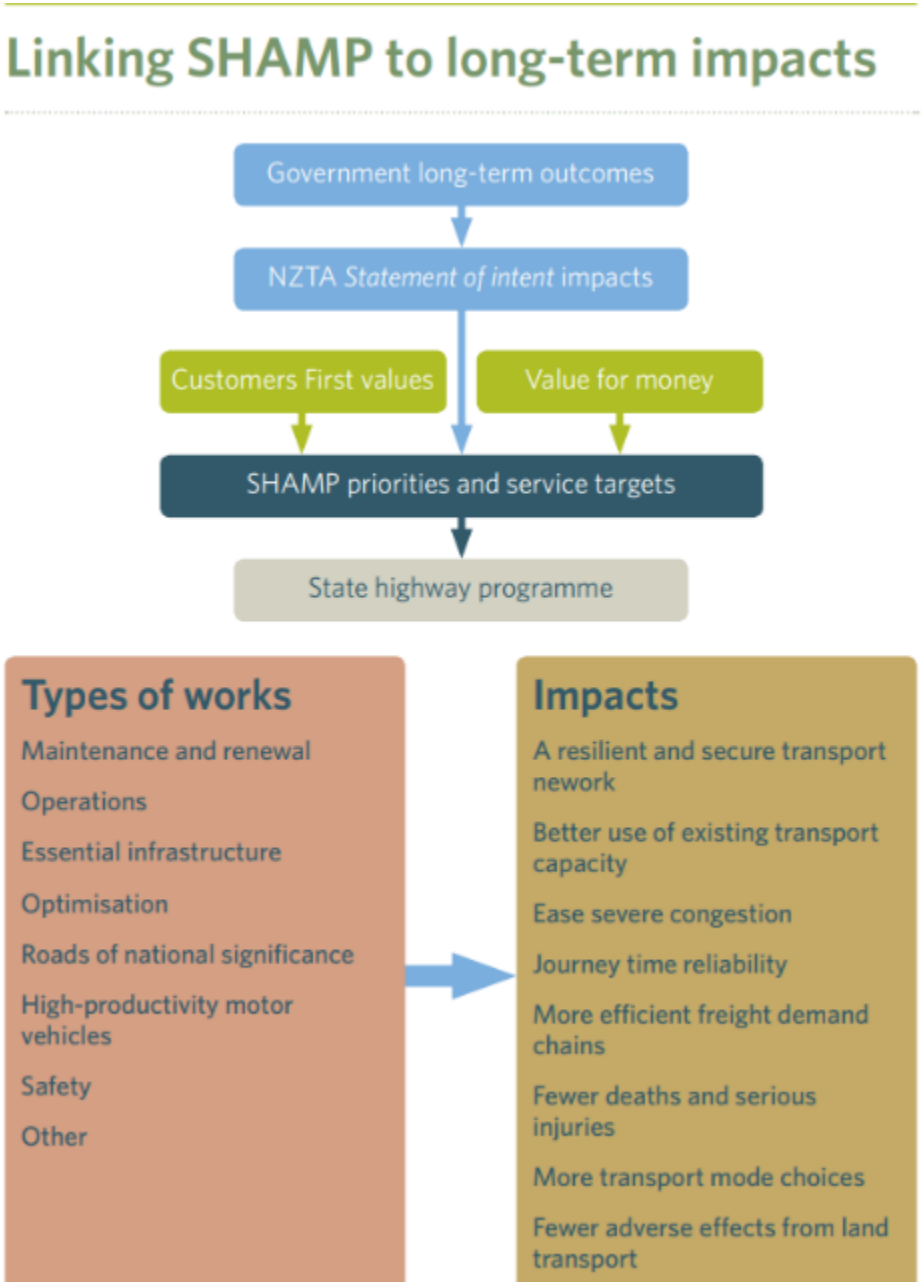
By combining our customer values and impact areas, we translate national needs into specific service targets that cover all aspects of network performance. The Customer First strategy map is one of the key tools for us to do this.

A business case for activities

The SHAMP provides a business case for the activities (maintenance, renewals, operations and improvements) required to deliver the services outlined, based on demonstrating a clear need for works, the effectiveness of our proposed solutions and the efficiency of our execution.

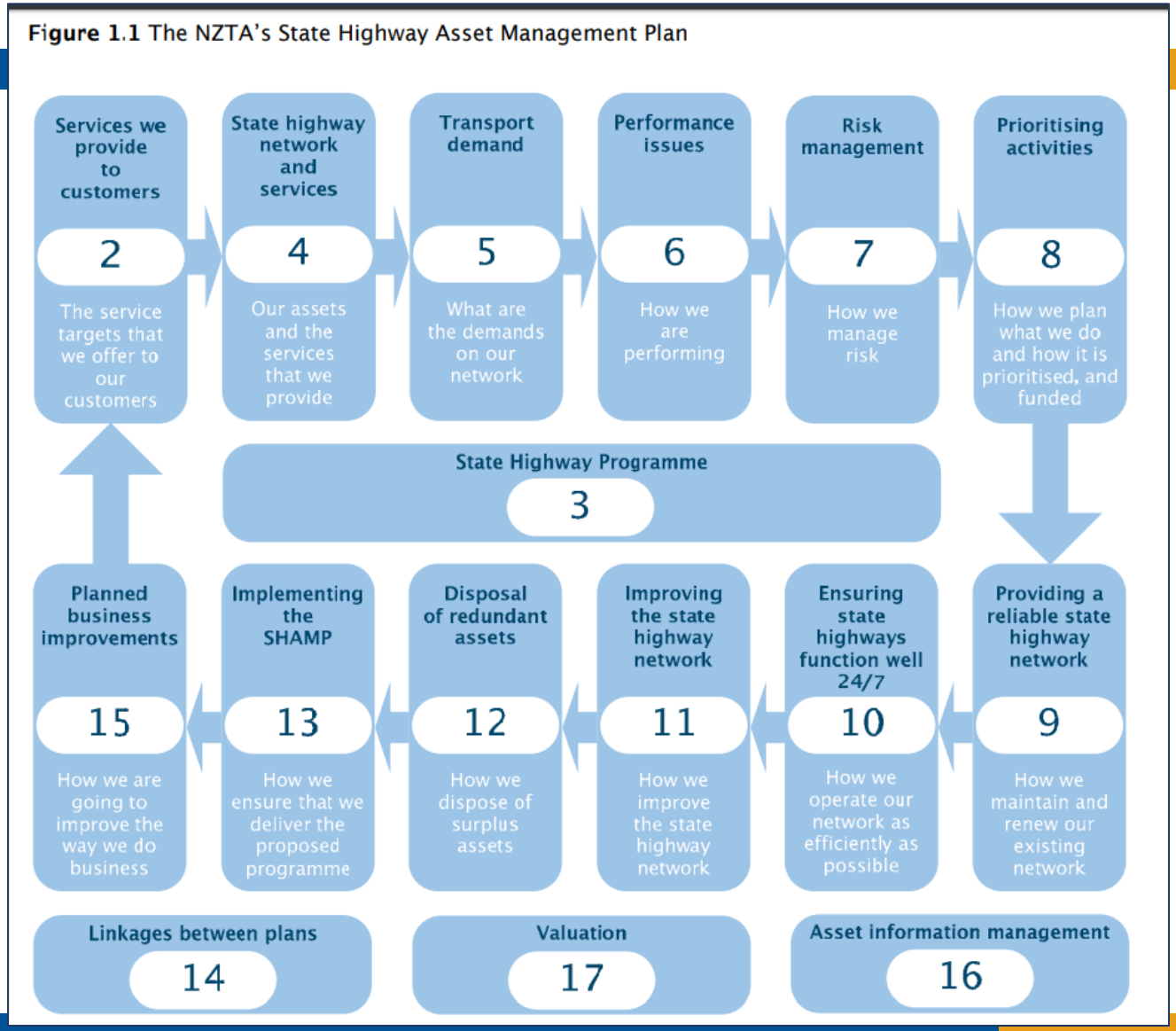
Example

- Is the link between government and the actual programme of physical works



Example – NZTA Document Structure

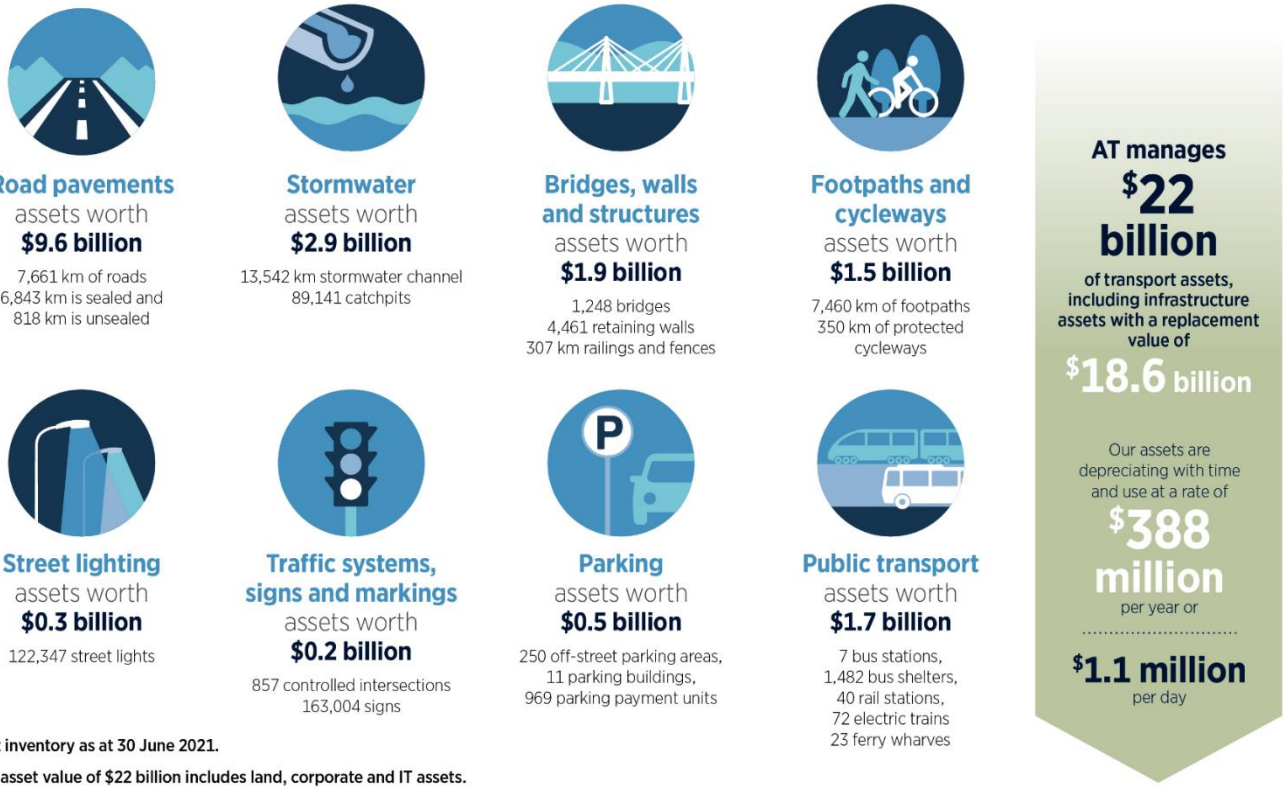
- 106 pages long



Auckland Transport

- www.at.govt.nz

Snapshot of our transport network



Role of the AMP

THE **ASSET MANAGEMENT PLAN** DEMONSTRATES HOW AT SUSTAINABLY MANAGES OUR COMPLEX TRANSPORT NETWORKS IN THE INTERESTS OF THE PUBLIC

It is one of a set of plans that guide how transport in the city is managed.

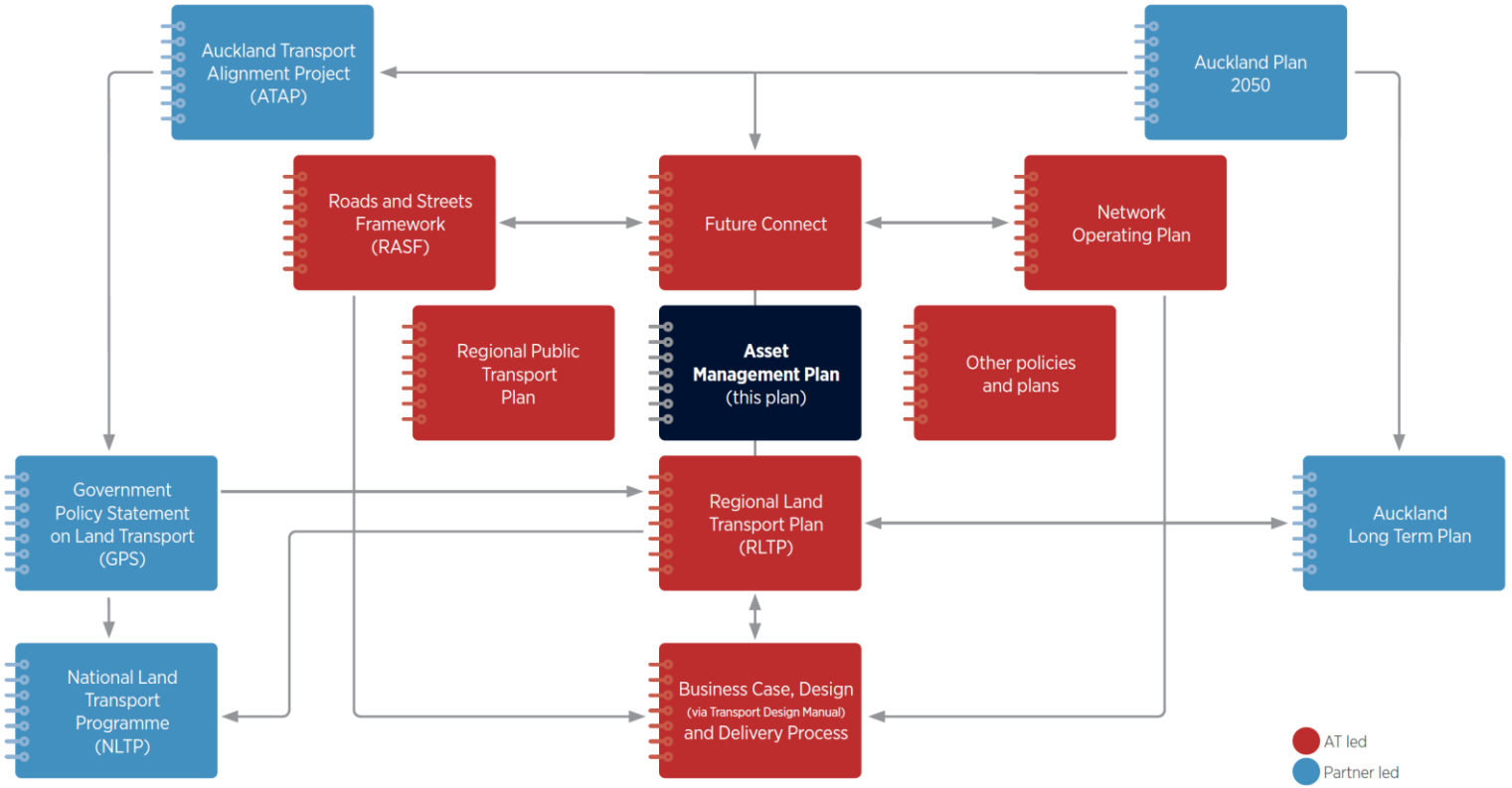


FIGURE 1: KEY TRANSPORT PLANNING DOCUMENTS

Auckland Transport – AMP Contents

- Auckland's transport infrastructure
- Role of the Asset Management Plan
- Enabling Auckland's growth
- Building the business case for asset management
- Asset management problem statements
  - Asset deterioration
  - Road safety
  - Growth and intensification
  - Resilience
- Our Climate Impact Statement
  - Mitigation: How we contribute to reducing emissions
  - Adaptation: How we adapt to the impacts of climate change
- Our plan and targets
- Our investment plan
  - Asset operations and maintenance
  - Asset renewals
- Asset Management Improvements
- Acknowledgements

AMP has a 10 year outlook

Publicly available for download off the internet

Questions

- Do you produce an AMP?
  - If so, who is the target audience?
- Do you have your AM processes documented?
- Do you need any assistance in this area?
  - Producing templates or documenting current business practices?

Questions

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