New Mexico

Asset Management Presentation
October 2010

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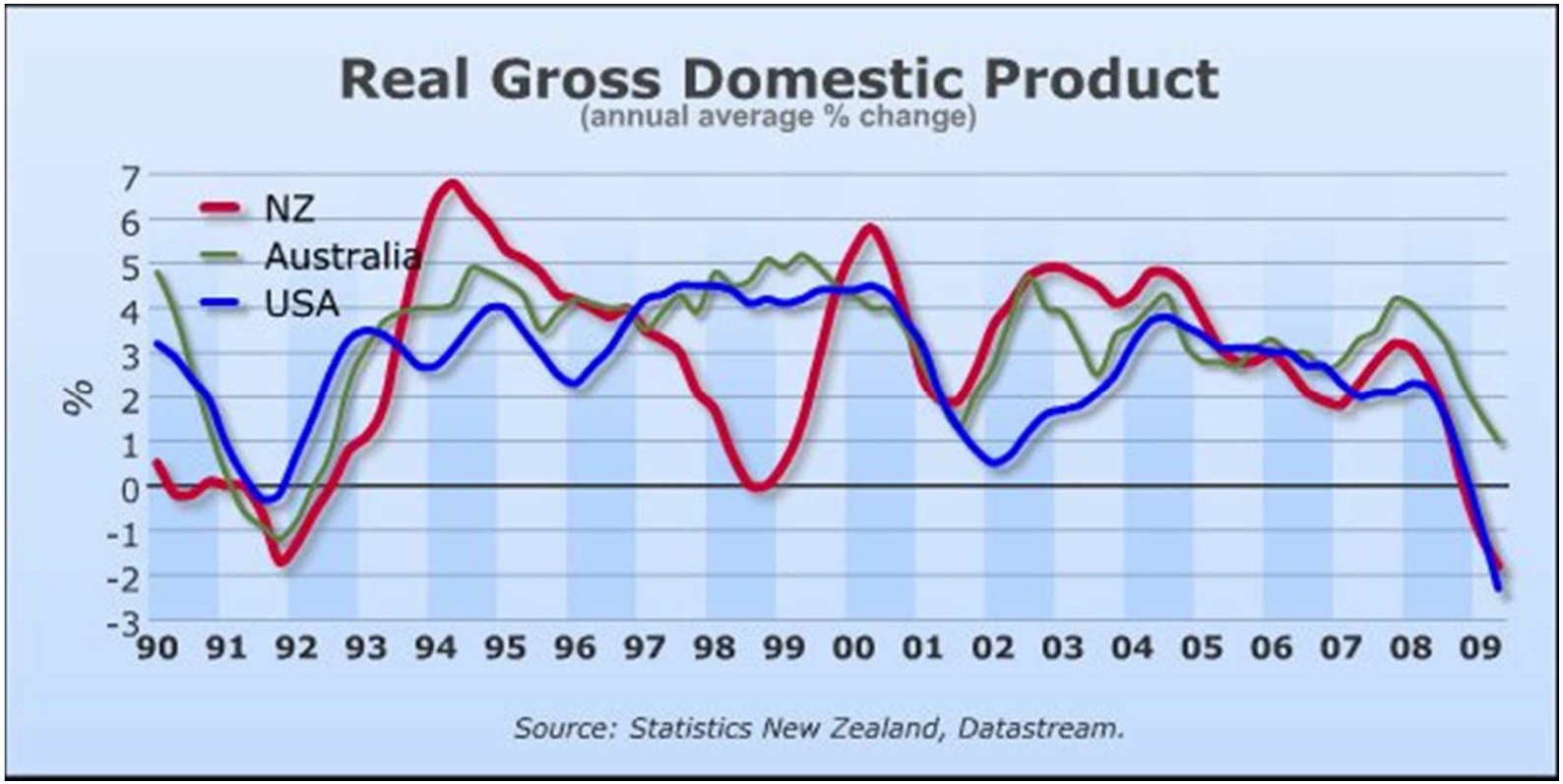
Introduction

GDP Changes



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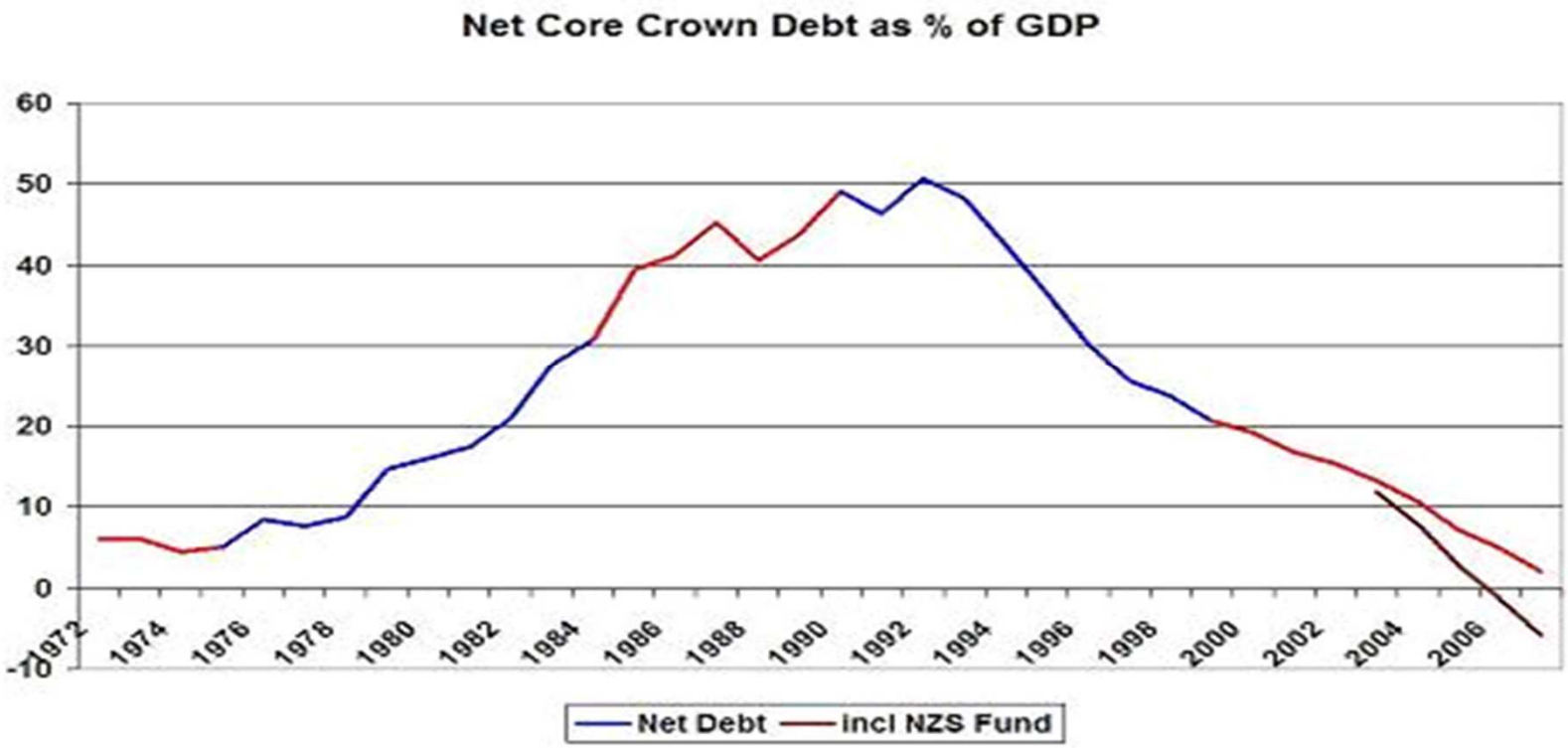
Crown Core Debt 1984 - 1996



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NZ Auditor General – Importance of Infrastructure

- Auditor General concerned with Council balance sheets
- Value of infrastructure loss of service potential (depreciation) not shown
- What were the costs
- 1996 - National law changed 10 year financial plans required supported by AMP's

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Low Levels of Expenditure

3.3.1.1 Low levels of capital expenditure

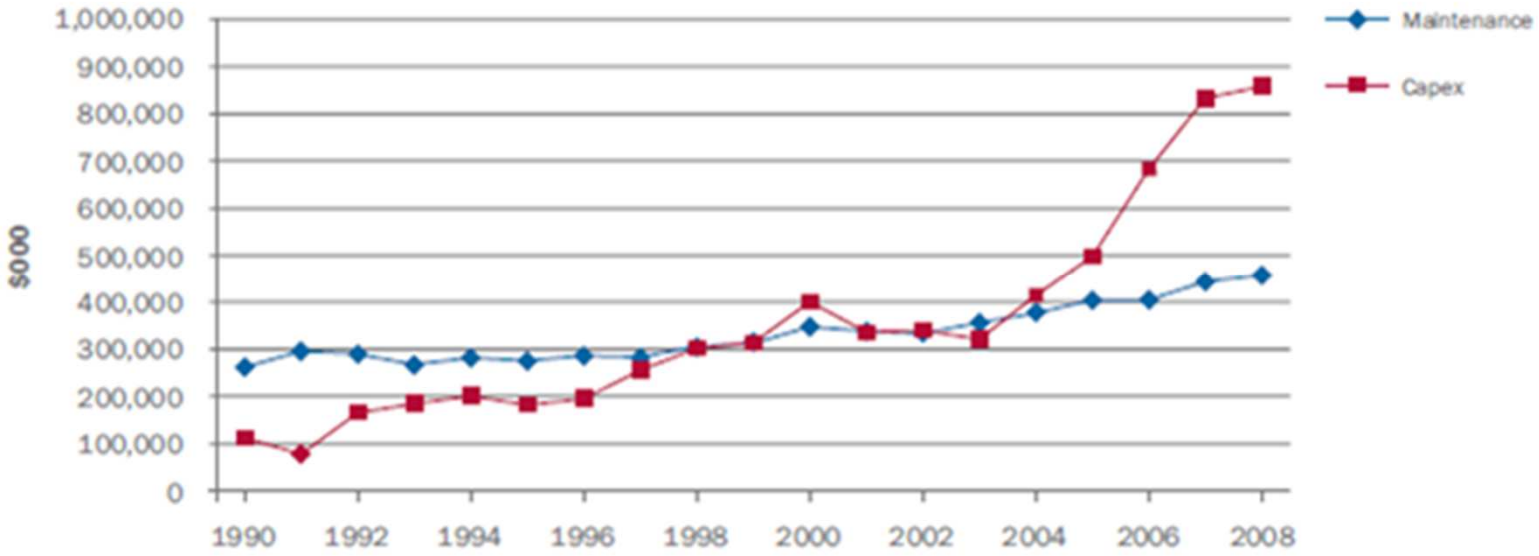

Figure 10 – State highway maintenance and capital expenditure (in 2009 dollars)

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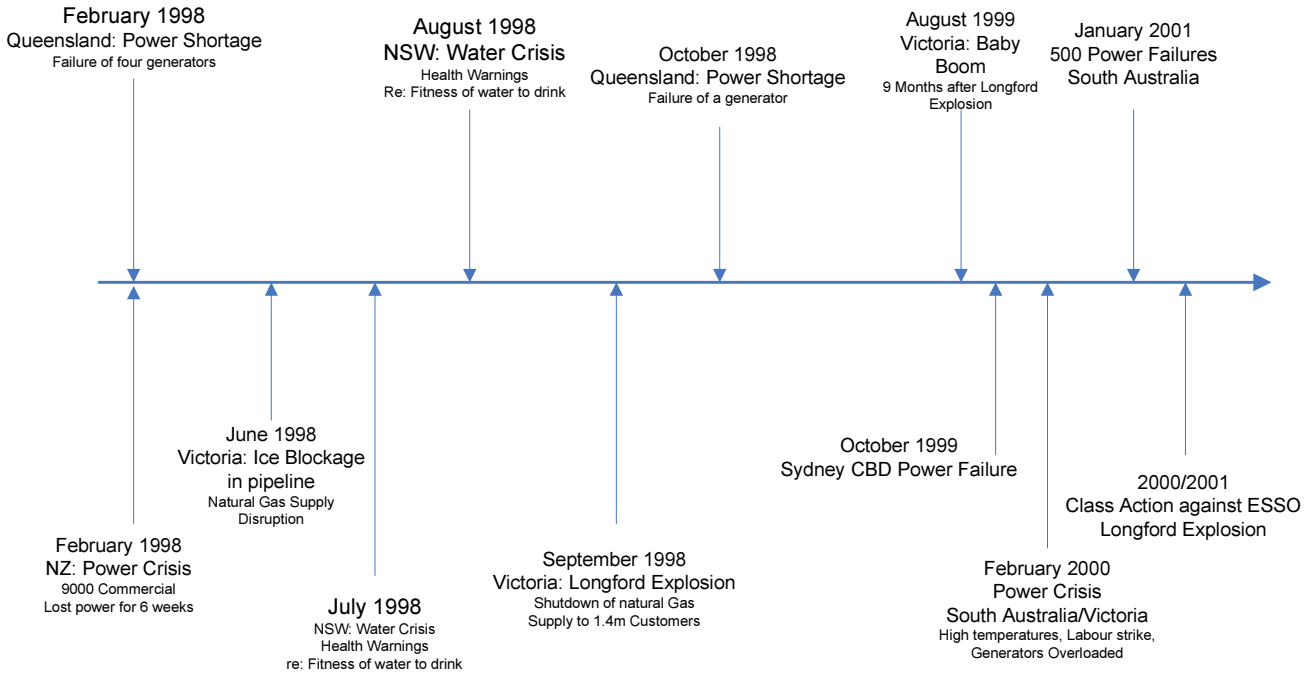
Asset Management Begins

Major Infrastructure Failures in Australia and New Zealand, 1998-2001



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Infrastructure possible trends

- Approx. 20 year window of wealth and willingness to pay to replace and build new infrastructure
- Funding mechanisms – is cash funding the most logical way?
- Basics taken care of – more emphasis on community infrastructure

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Asset Management

- A journey
- Multi-disciplinary
- Long Term benefits
- Co-ordinates effort
- Improves planning across municipality
- Part of a planning framework

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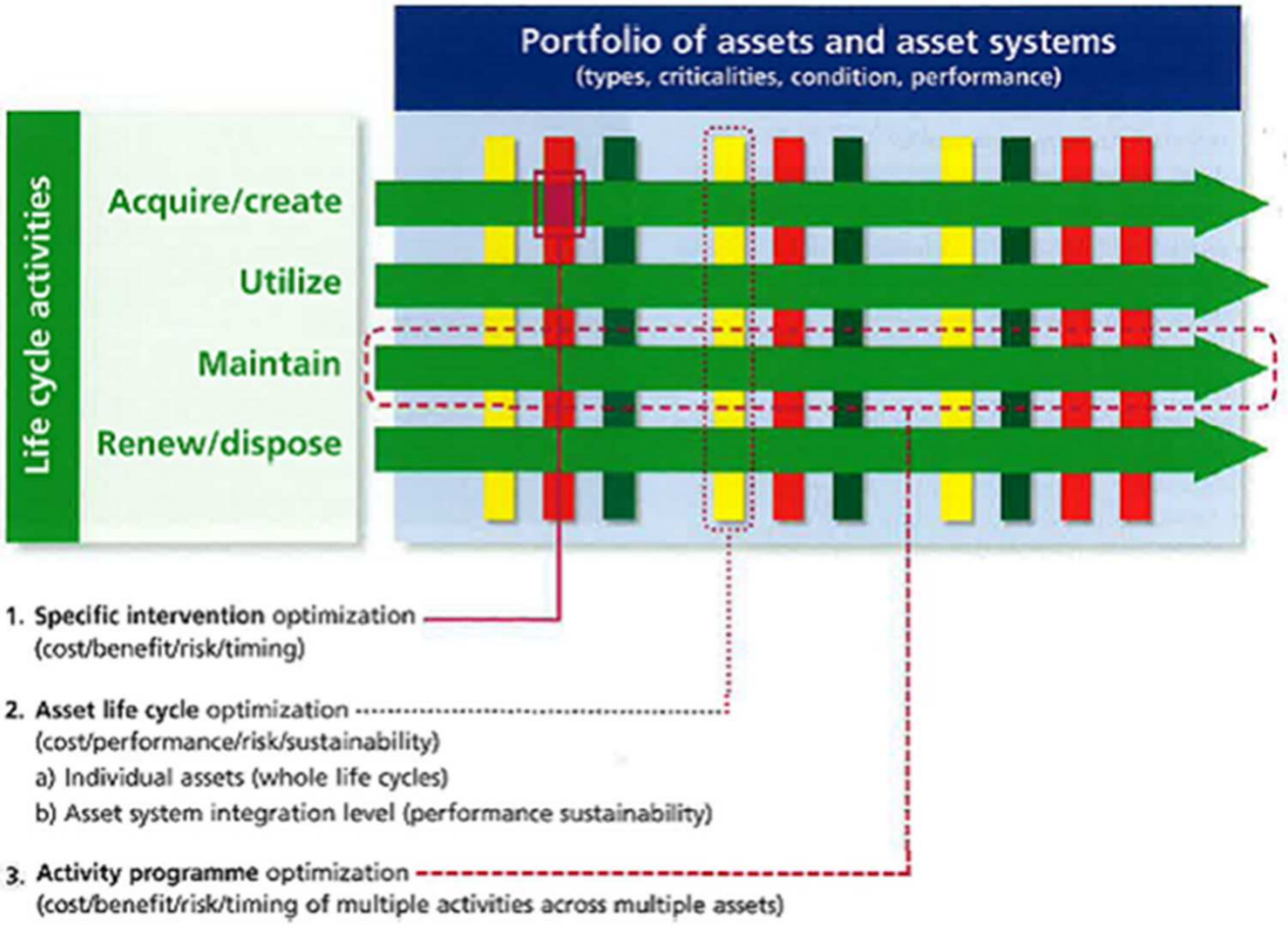
PAS55 AM Activities

Figure 5 – Primary requirements for optimization of asset management activities



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AM – Applied Common Sense

- Most of the building blocks are already there
- Multi-discipline: engineering, accounting, economics, planning
- Integration across organizations
- Breaks down silo's
- NZ – started because we had no money and needed to make the $ go further and smarter

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Organizational AM

AM and Organizations

5 Stages of Grief

- Denial
- Anger
- Bargaining
- Depression
- Acceptance

5 Phases of Project Management

- Initial Enthusiasm
- Inevitable problems
- Search for blame
- Punish the innocent
- Praise and reward non-participants

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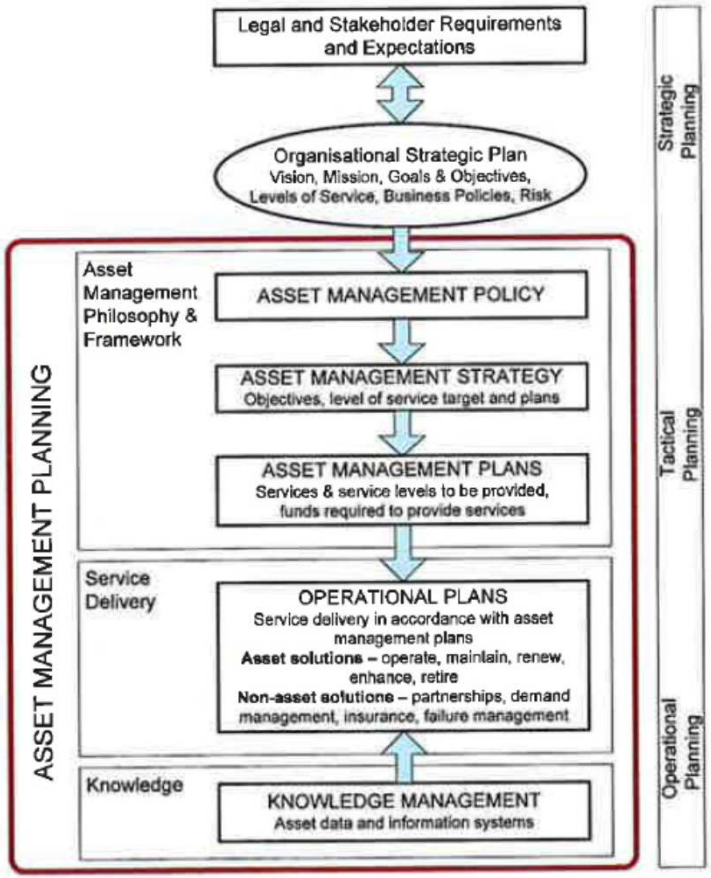
Aust. Financial Guidelines

Fig 4: Asset Management Planning Process



Adapted from IIMM Fig 1.2.1, p 1.6.

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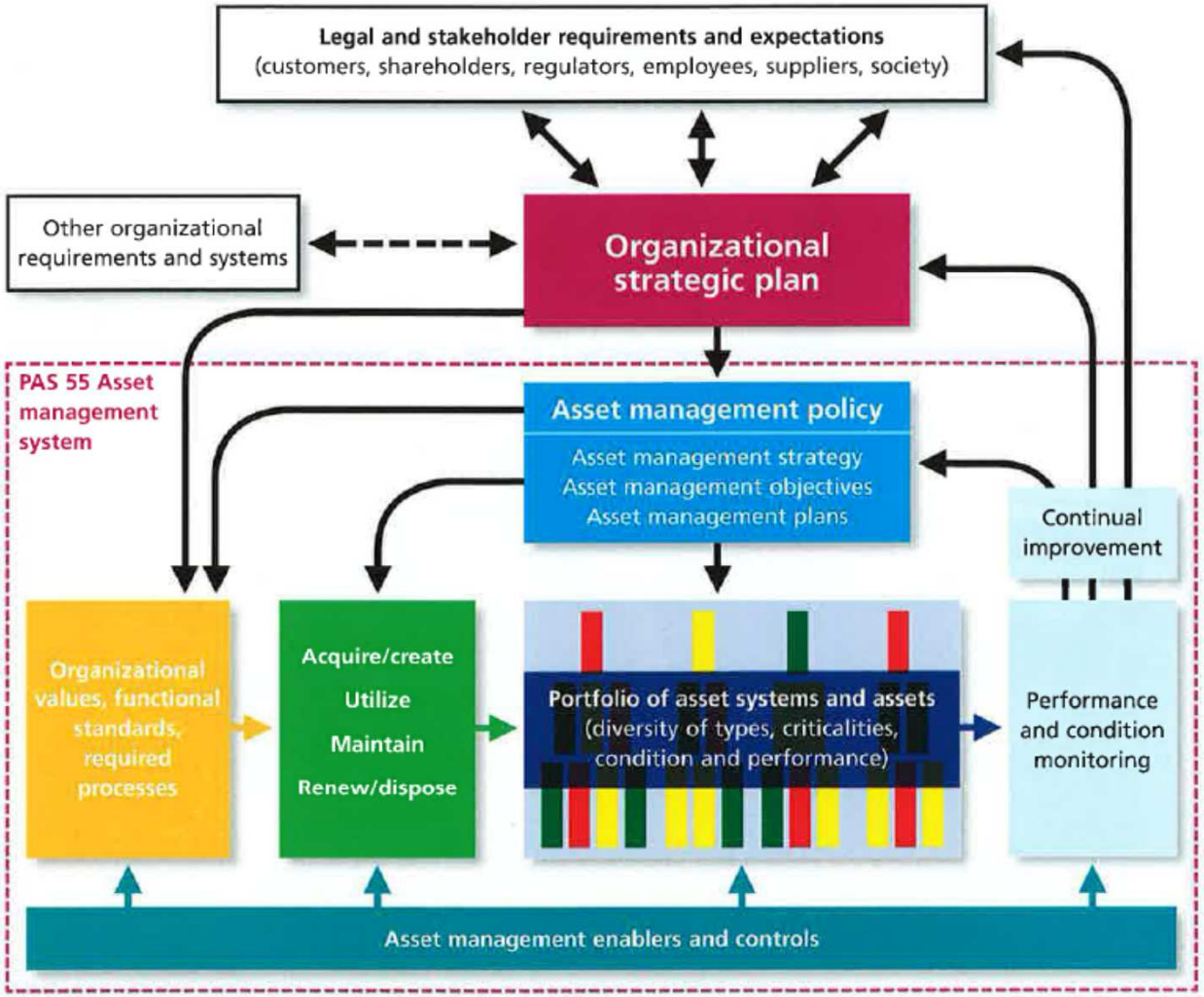
PAS 55: 2008

Figure 4 – Overview of the asset management system, its relationship to the organizational strategic plan and stakeholder expectations



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Organizations and AM Planning

- 20% Embedded, resourced, good progress and results
- 60% Keeping up with requirements but still plenty of work to do
- 20% Compliance only – still in denial after 10 years

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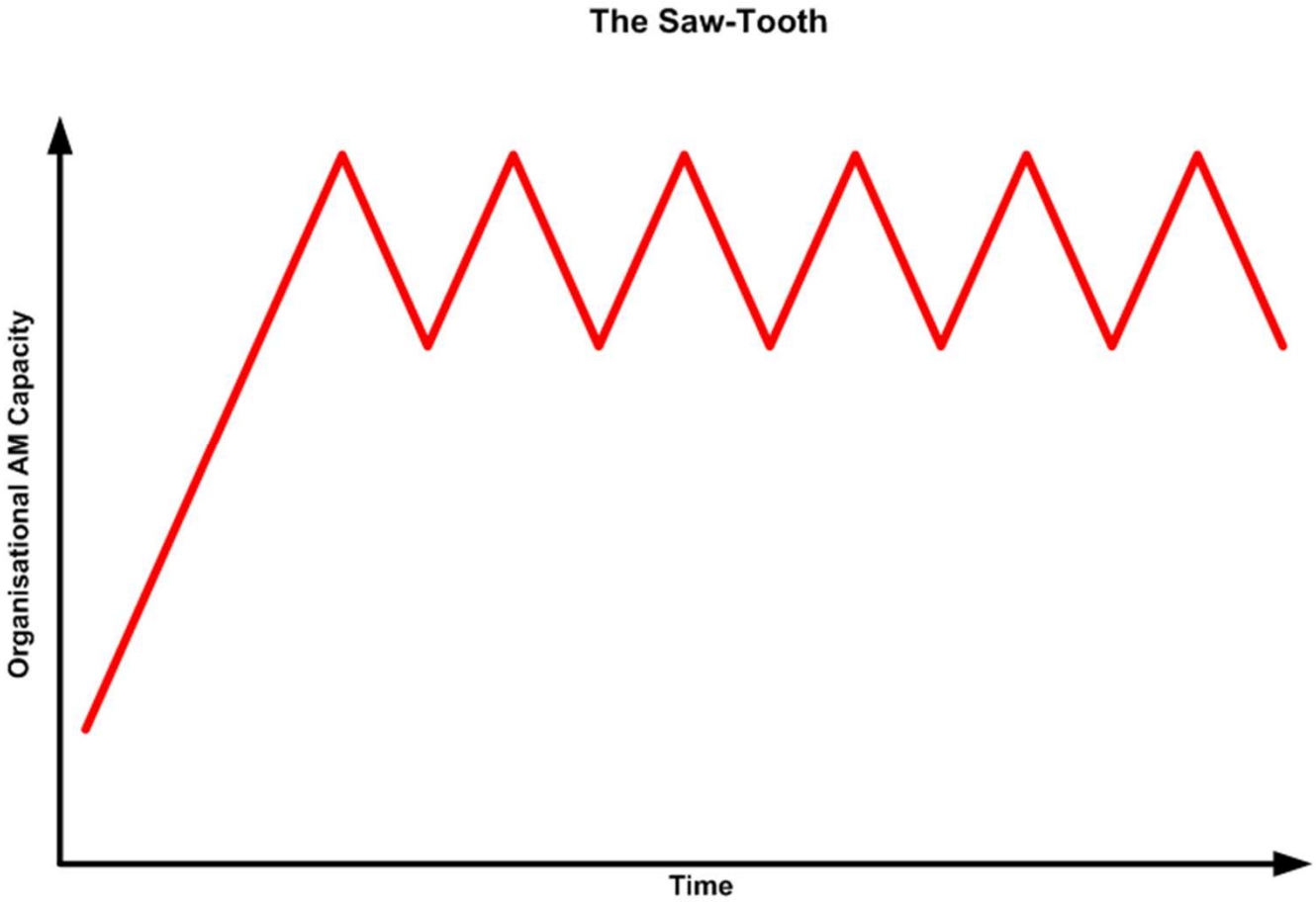
The Saw Tooth Problem



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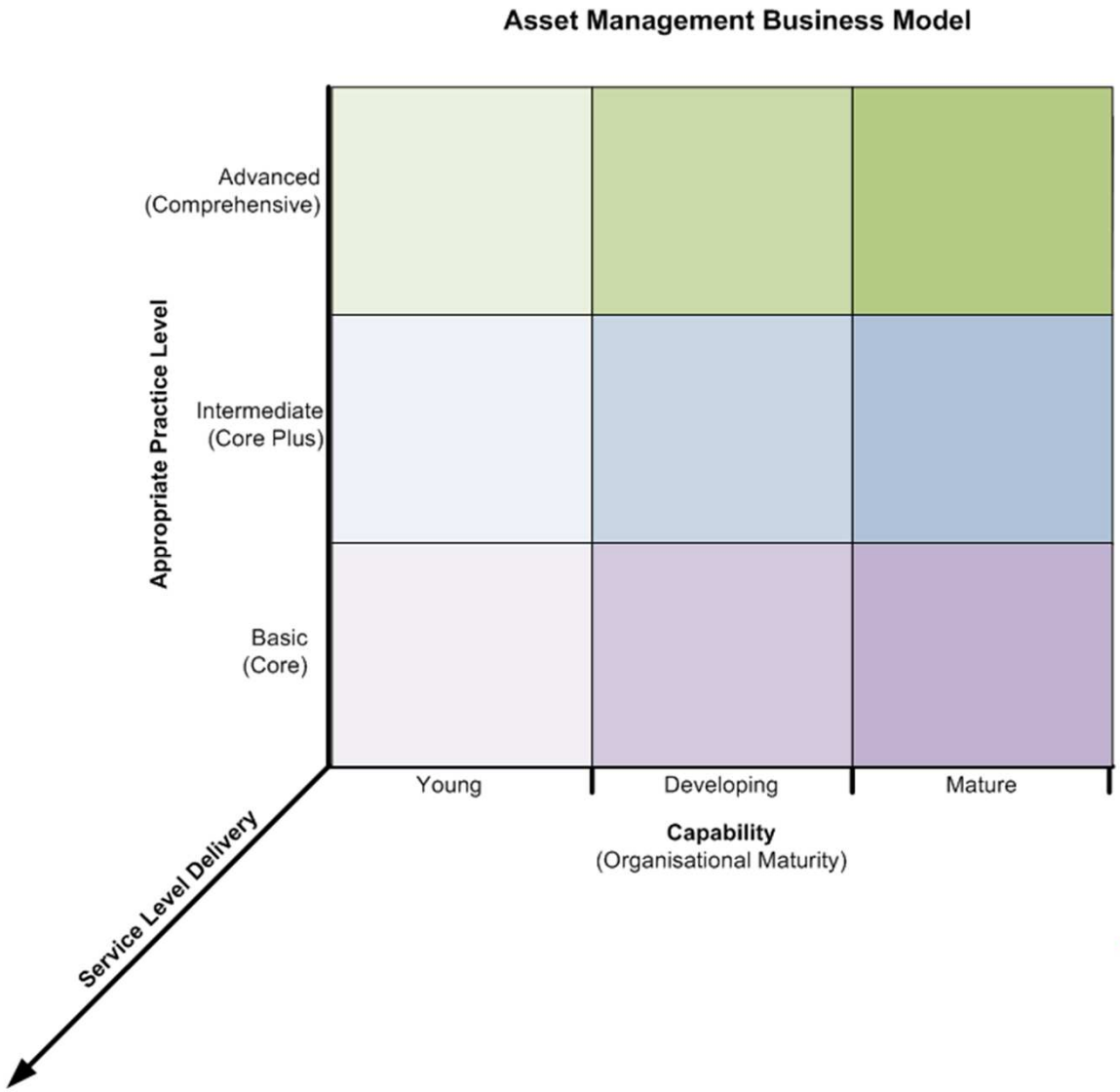
AM Business Model



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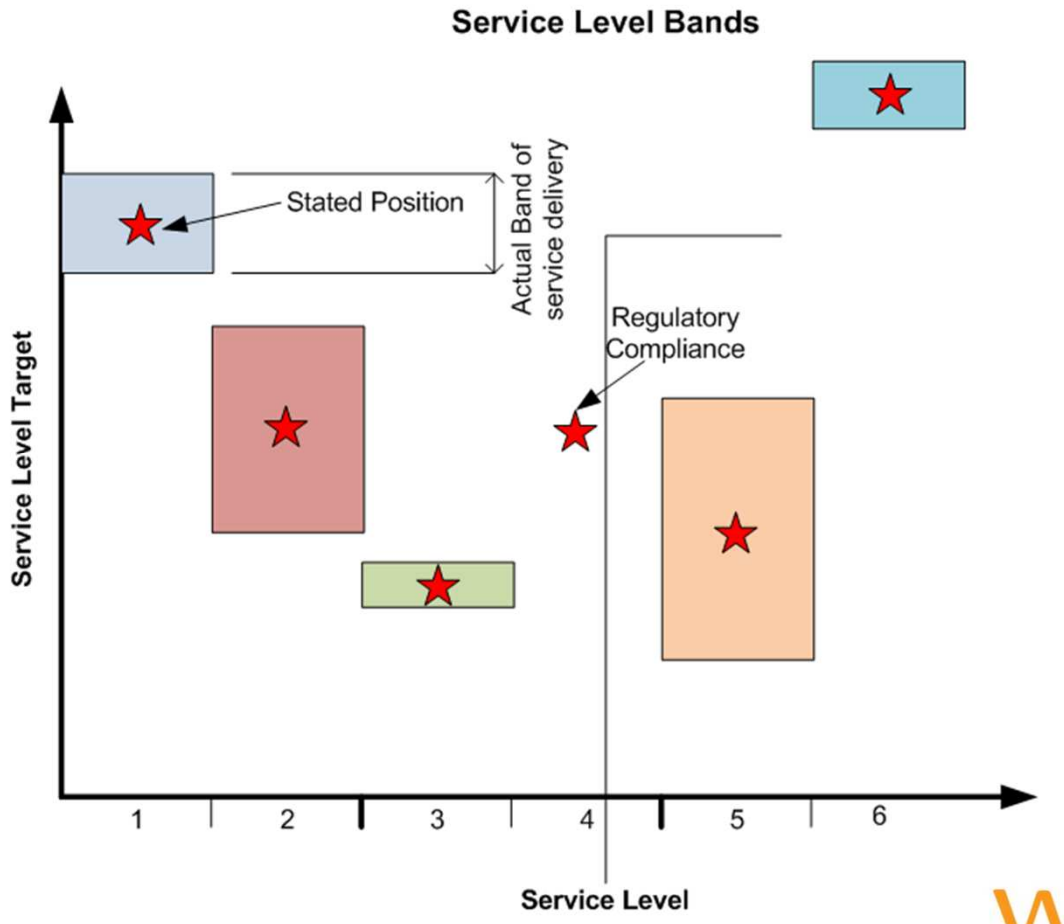
Service Level Bands



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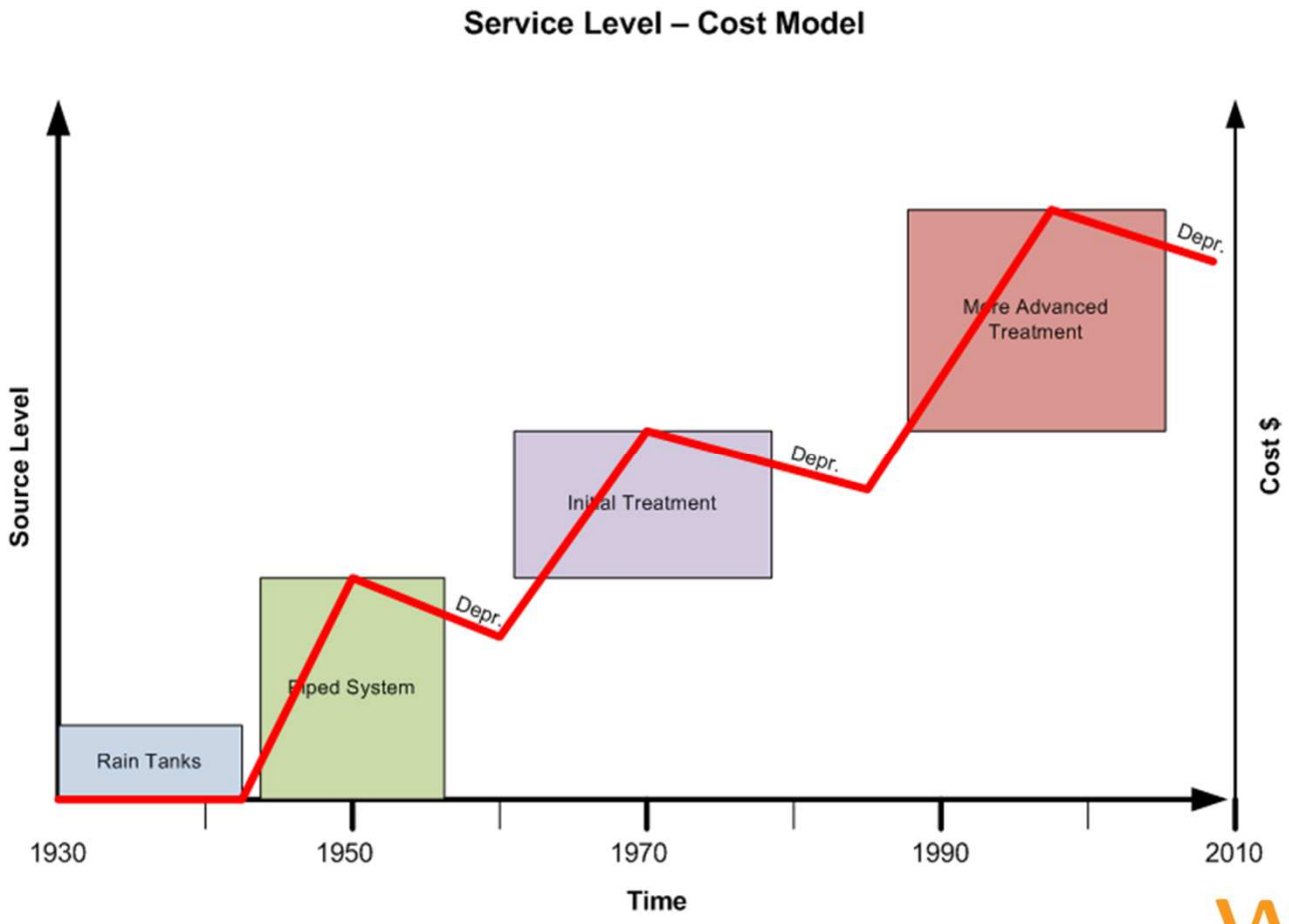
Service Level Cost Change



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2010/11 Issues

- All the costs are on the table for next 10 yr
- Huge community debate (3 years) around affordability of services – commissions, hearings, Council elections
- Populist politicians still do their stuff
- BUT debate is informed by facts – communities can wrestle with trade-offs

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John Howard, JRA Challenge – AMP on 7 Slides

1. What are the drivers?
2. What is the target?
3. What are various ways to get there?
4. What are the obstacles, issues?
5. How do we measure progress?
6. How do we get over the obstacles?
7. What don't we know?

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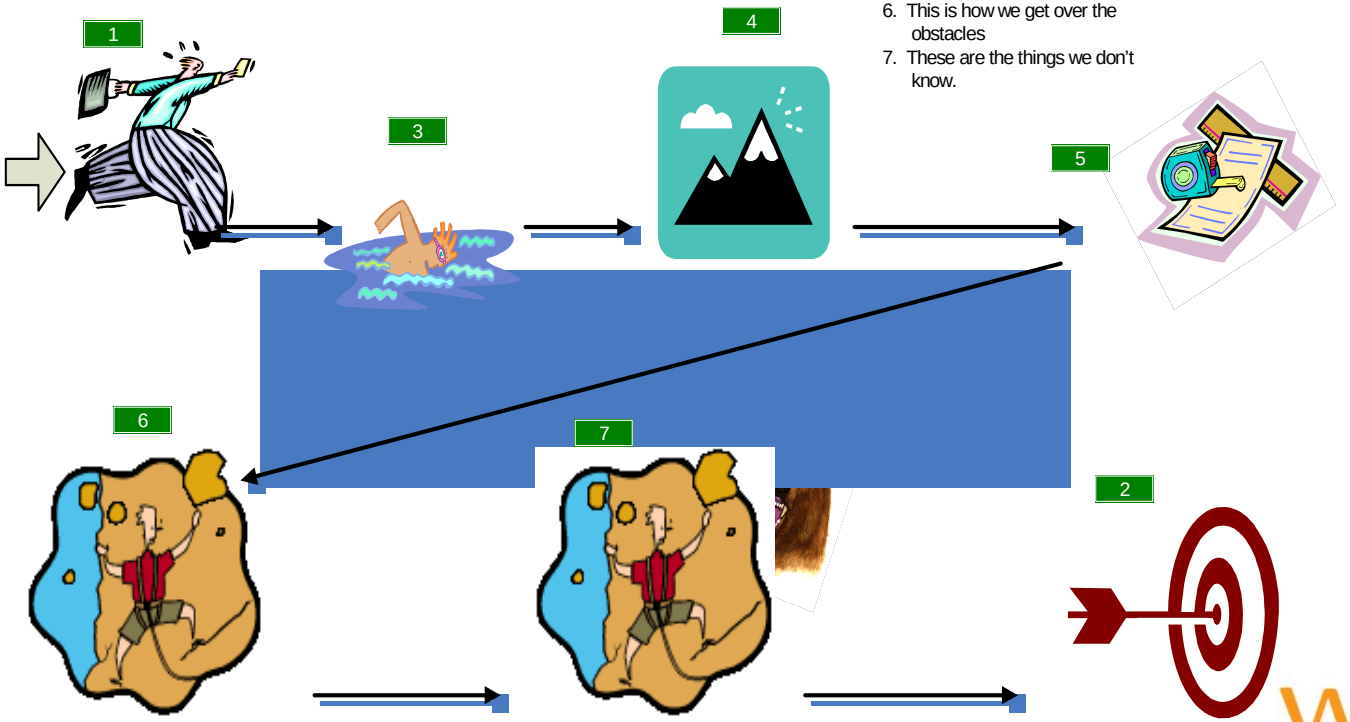
7 Key Points for AMPs

Key Points for
7 Slide AMP's



KEY POINTS:

1. These are the things that drive us
2. This is the target we are going for
3. These are the various ways of getting there
4. These are the obstacles/hills/ challenges/issues
5. This is how we measure our progress
6. This is how we get over the obstacles
7. These are the things we don't know.

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AM - No Lone Rangers, No Silver Bullets

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The Onion Scene

- All smelly
- Make people cry
- LAYERS

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NZ Experiences

- Significant Assets
- Regulatory Service Levels
- Off Balance Sheet Caution
- AMIP / PCG Governance structures
- Across Portfolio considerations

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Asset Management a journey

- 1998 – LTFS – 1st AMP, Renewals
- 2001 – First AMP revisions
- 2005 – LTCCP – 2nd AMP, CAPEX
- 2008 – LTCCP – 3rd AMP

AMP a 20 year plan, improving information each cycle

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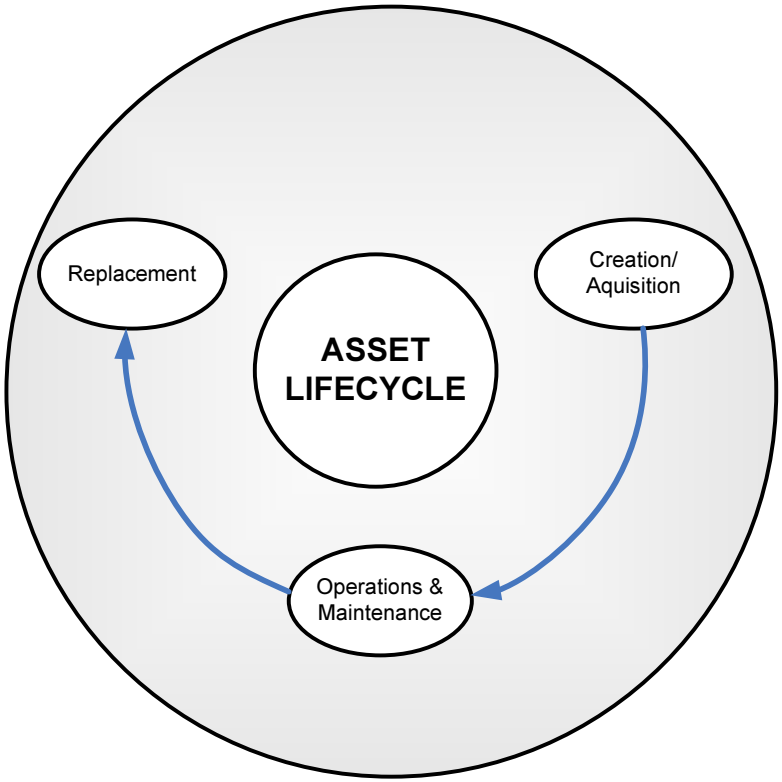
Basic Asset Management



Basic
Asset Management

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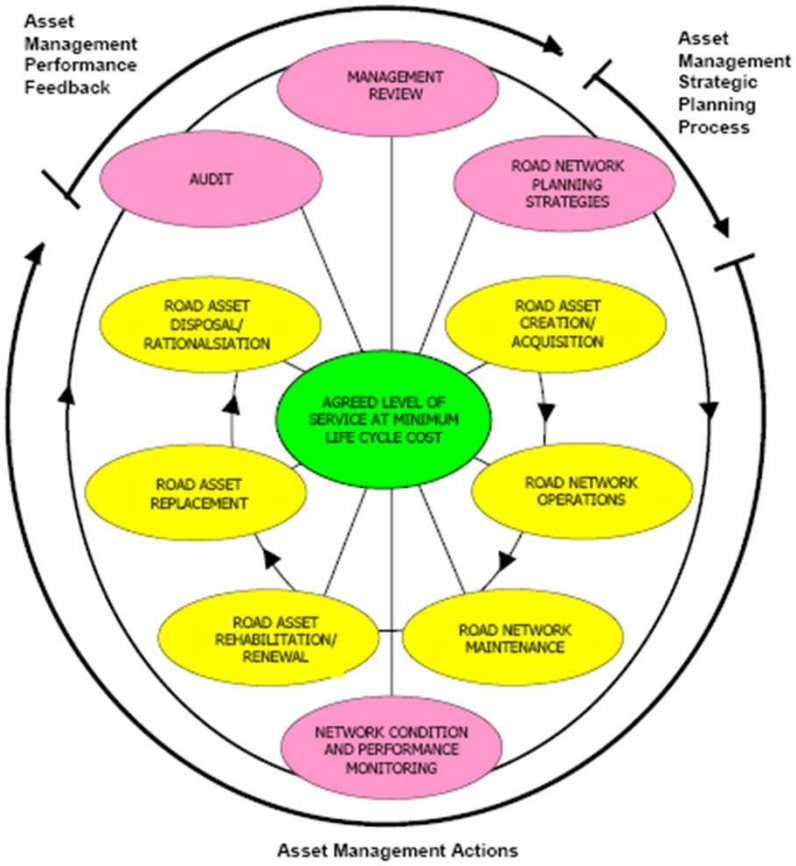
Comprehensive Asset Management



Comprehensive Asset Management

Adapted from:

Integrated Asset Management Guidelines for Road Networks (Austroads 2002)

AM Policies

AM Policy – IIMM Guidance

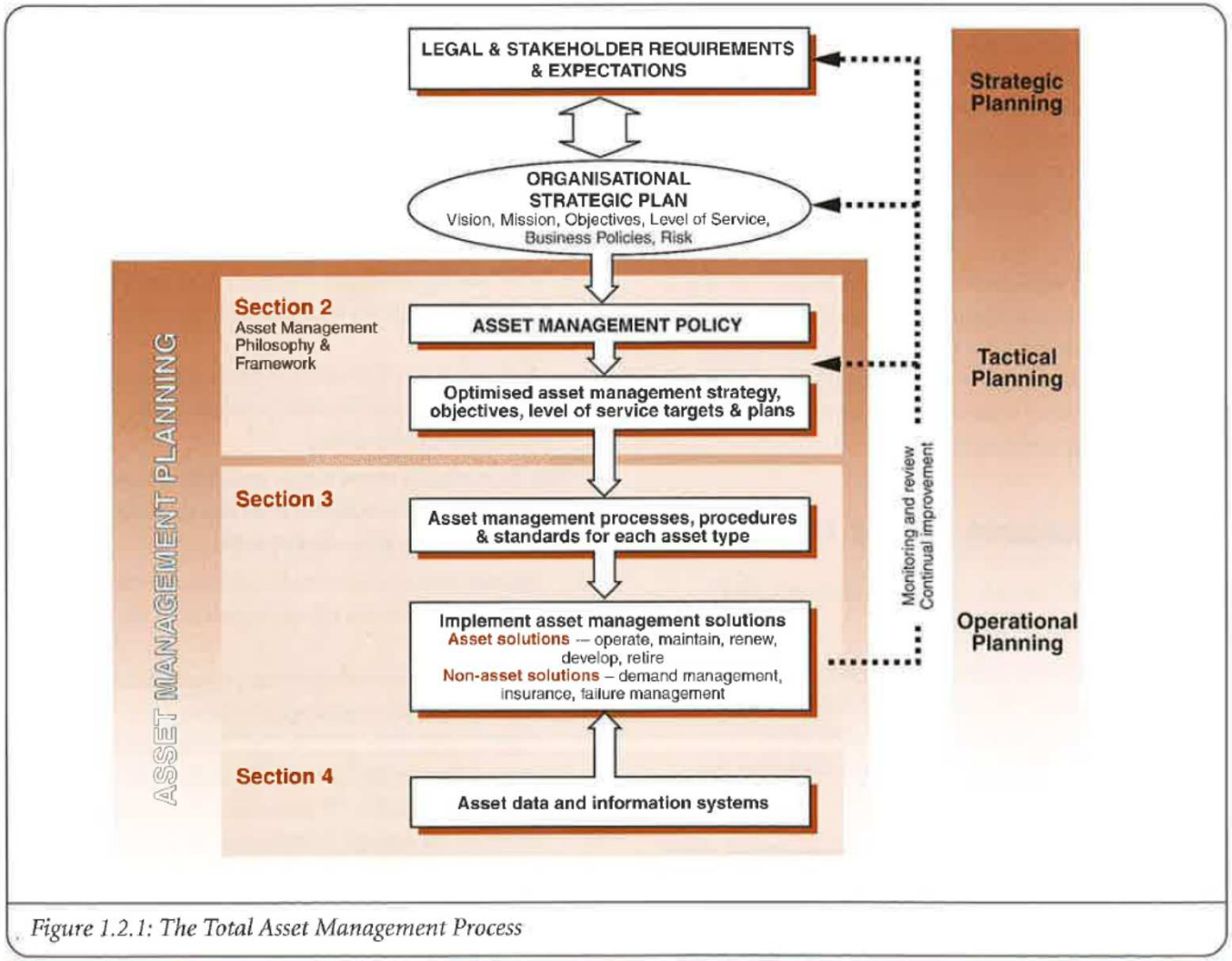
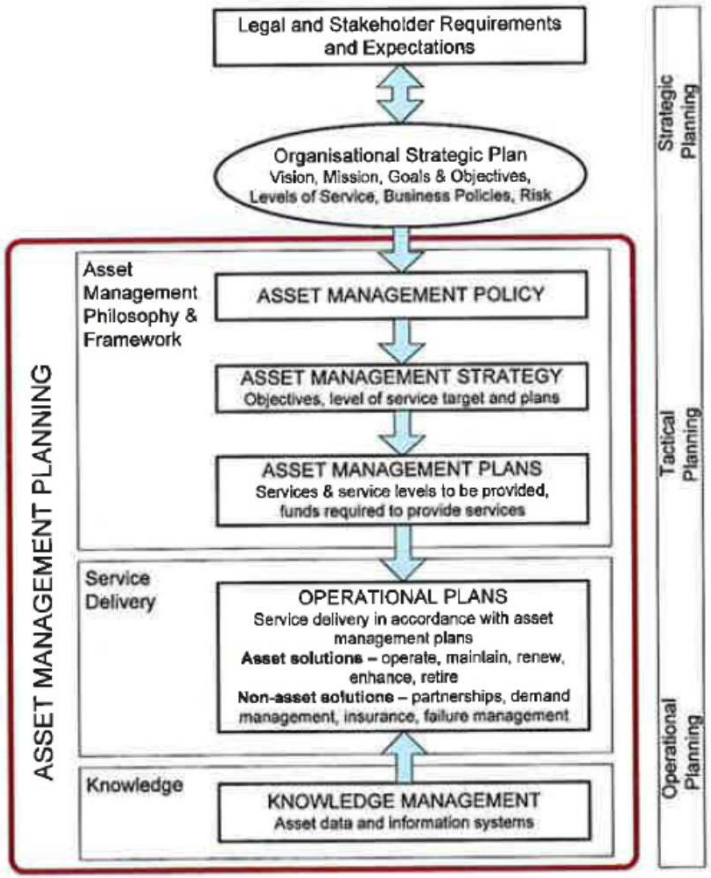


Figure 1.2.1: The Total Asset Management Process

Aust. Financial Guidelines

Fig 4: Asset Management Planning Process



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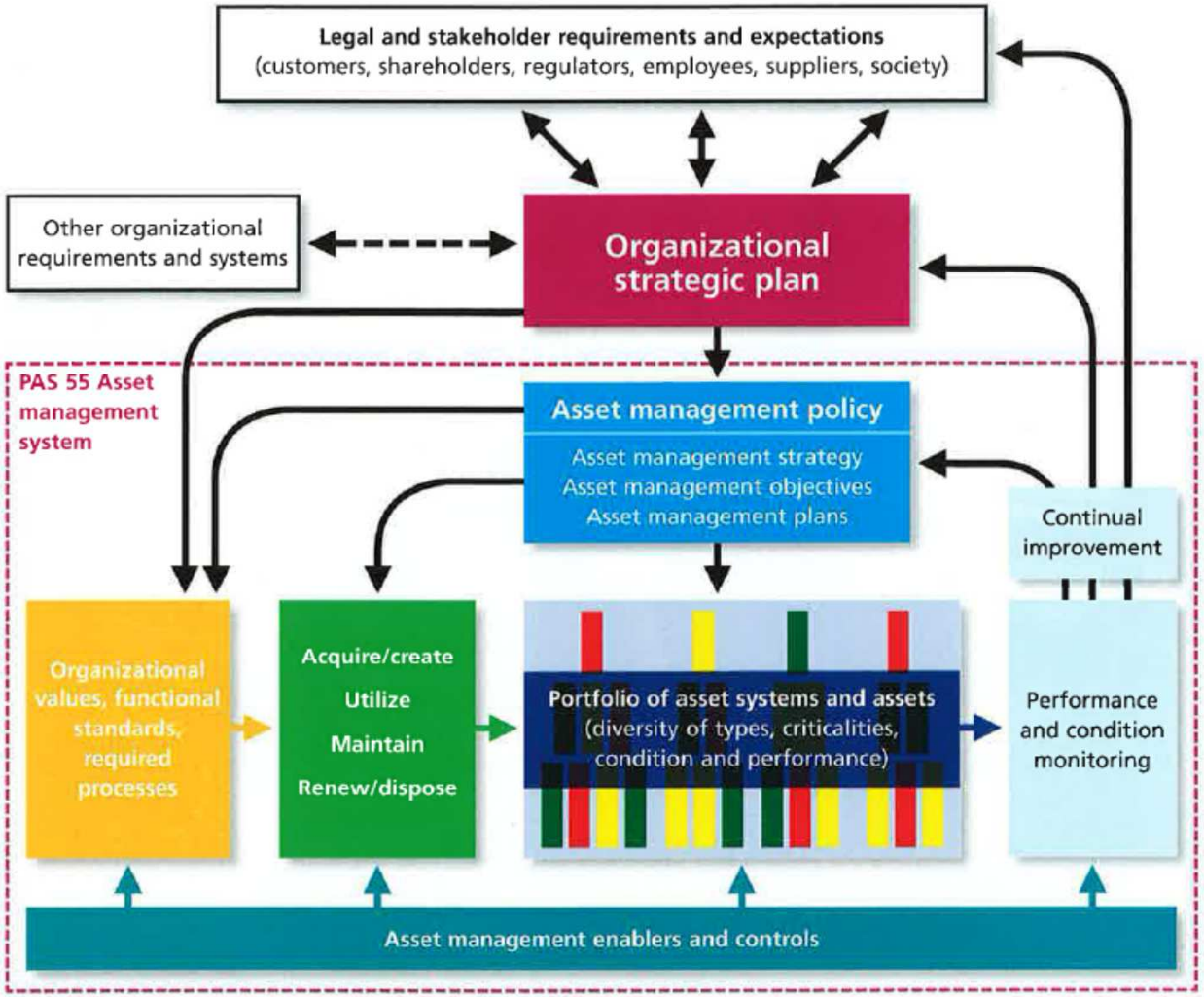

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Context of Policy – LGA 2002

Subpart 2—Reporting

Subpart 3—Financial management

Compulsory Policies

a) a revenue and financing policy; and

b) a liability management policy; and

c) an investment policy; and

d) a policy on development contributions or financial contributions; and

e) a policy on partnerships between the local authority and the private sector; and

f) a policy on the remission and postponement of rates on Maori freehold land.

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Asset Management Policies

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

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

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

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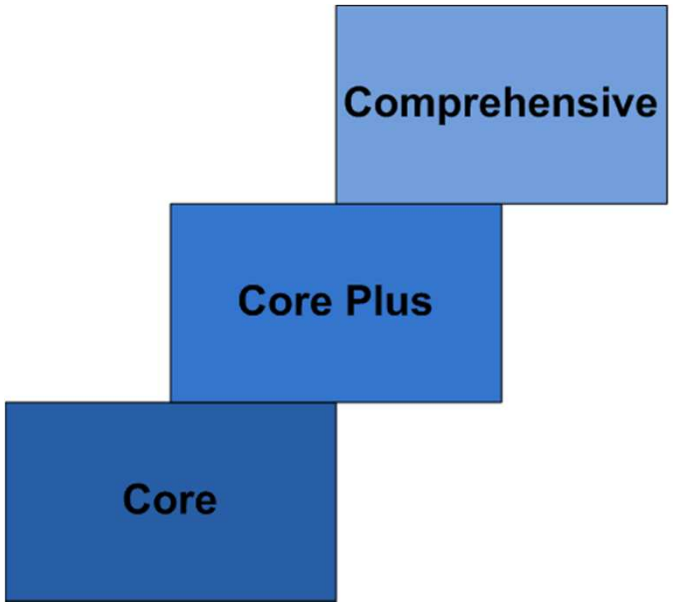
Asset Management Policies

Key Issue - Selecting the Appropriate Level of Asset Management

Authorities that manage assets on behalf of their communities need to define an appropriate level of asset management for the asset or activity being managed.



For some authorities and asset / activity groups this may not necessarily be fully comprehensive (advanced) practices.

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Selecting the Appropriate Level of Asset Management

‘Core’ asset management practice is basic technical asset management planning undertaken at a level designed to meet minimum legislative and organisational requirements for financial planning and reporting.

‘Core’ practice provides technical management outputs for current levels of service, demand management, asset lifecycles, asset forward replacement programmes, new capital expenditure and associated cash flow projections.

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Selecting the Appropriate Level of Asset Management

‘Core Plus’ asset management practice is undertaken at a level between ‘Core’ and ‘Comprehensive’ practice.

The focus is to build on the basic technical asset management planning of ‘Core’ practice by introducing improved maintenance management and more advanced asset management techniques (as appropriate).

Further use is made of risk management, asset lifecycle management, and service standard optimisation techniques.

(Previously undefined)

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Selecting the Appropriate Level of Asset Management

‘Comprehensive’ asset management practice is system optimisation planning undertaken to optimise activities and programmes to meet agreed current and future service standards.

This is achieved through the development of management tactics based on the collection and analysis of key information on asset condition, performance, demand for service, lifecycle costs, risk costs and asset lifecycle treatment options.

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Selecting the Appropriate Level of Asset Management

IIMM Section 2.2.4 states:

- *Selecting the appropriate asset management level for an organisation, which for some organisations or asset types may not need to progress beyond a core approach, will depend on a number of factors, including:*
- *The costs and benefits to the organisation*
- *Legislative requirements*
- *The size, condition and complexity of the assets*
- *The risk associated with failures*
- *The skills and resources available to the organisation*
- *Customer expectations*

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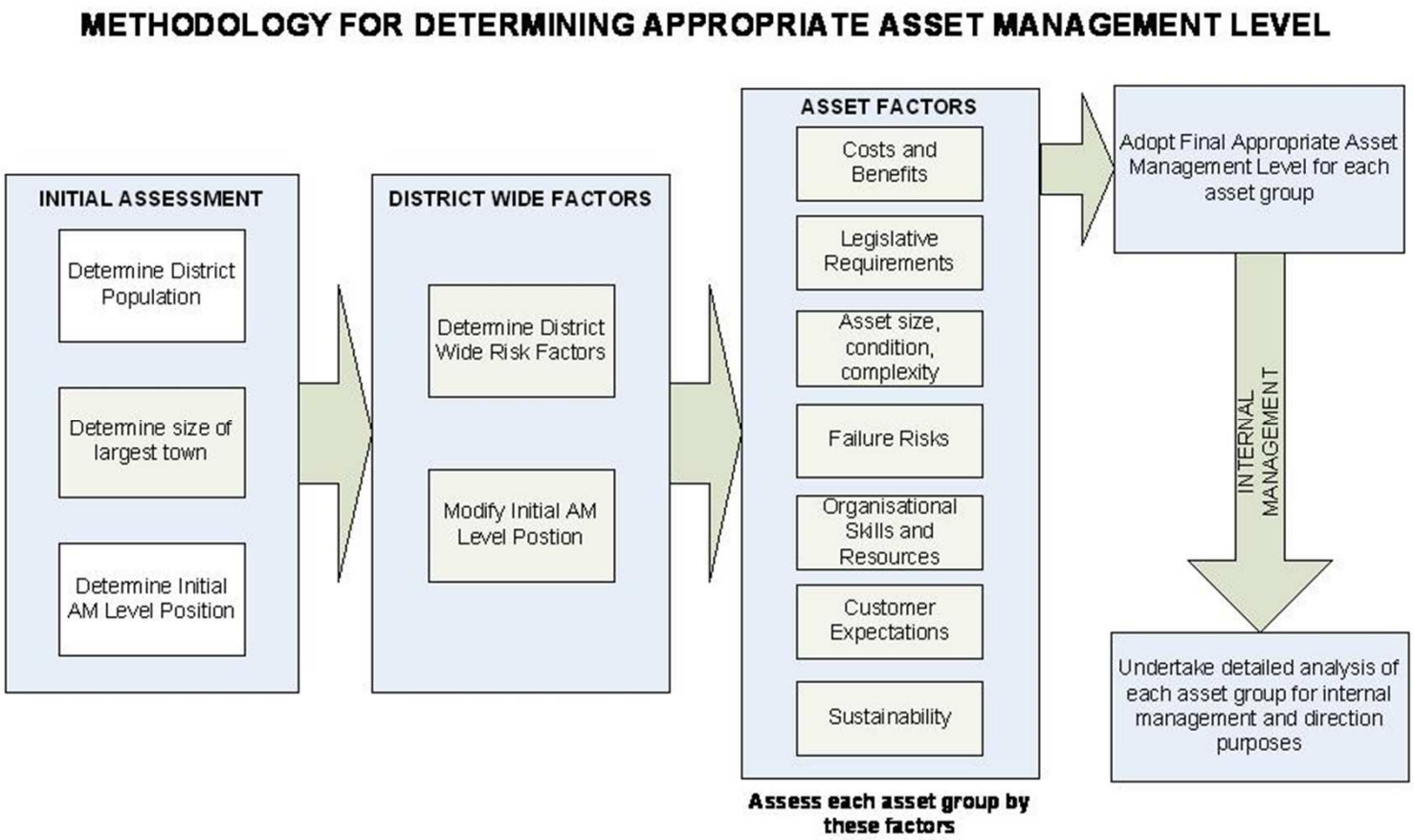
Proposed Methodology



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Selecting the Appropriate Level of Asset Management

Initial Assessment: Population Analysis - NZ

2006 Census Main and Secondary Urban Areas

(Usually Resident Population Count)

Total New Zealand	4,027,947
Total Main Urban Areas	2,892,831
Total Secondary Urban Areas	243,081

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Selecting the Appropriate Level of Asset Management

Number Towns	Population	Suggested Initial AM Level (Waugh Infrastructure Mgmt Ltd)	Notes
10	90,000 and above	Comprehensive (Advanced)	Auckland split by Councils
34	10,000 – 90,000	Core Plus	
31	5,000 – 10,000	Core	
559	Less than 5,000	Core	

www.drinkingwater.org.nz

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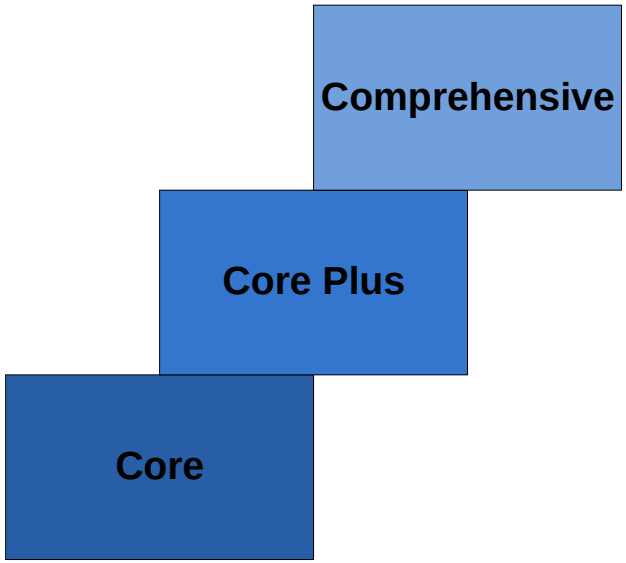
Recap: Asset Management Policy

- Develop 2 page (approx policy) for each asset group
- Summarise the results of the practice analysis
- Outline overall objectives of service delivery for that asset group
- Insert into introduction of AMP
- Council adopts as policy
- Sets appropriate practice for that asset group
- Allows management of AM practice sophistication



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Levels of Service

Levels of Service

- Align to deliver community outcomes
- Community and Technical levels of service
- Management and public reporting
- Community consultation on levels of service (see example)
- Presentation of costed options
- Community agreed service levels set tariffs, charges, rates

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Customer Levels of Service

Level Of Service Number	Customer Levels of Service
UW1	Water is safe to drink
UW2	The water looks, smells and tastes good
UW3	There is enough water for my needs
UW4	There is adequate Fire Fighting supply
UW5	Problems are resolved promptly
UW6	Council manages Water Supply service wisely
RW1	Water is safe to drink
RW2	The water looks, smells and tastes good
RW3	There is enough water for my needs
RW4	Problems are resolved promptly
RW5	Council manages Water Supply service wisely

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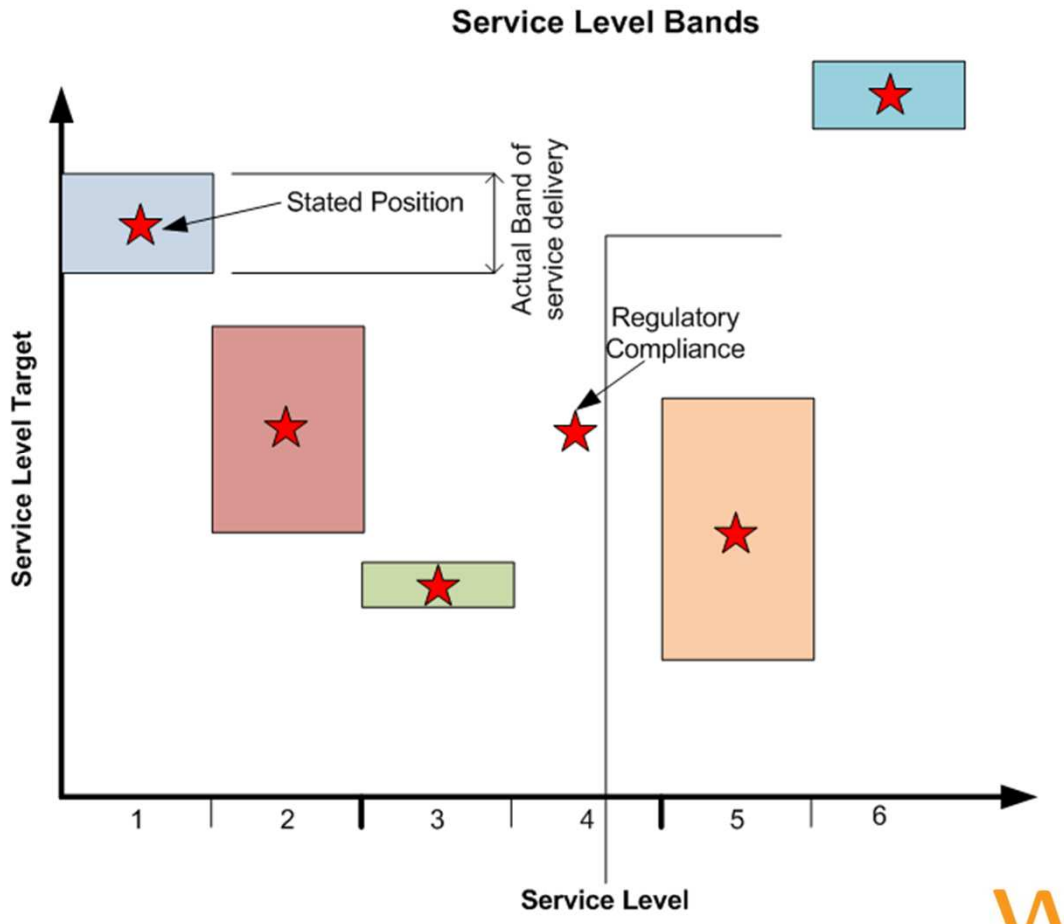
Service Level Bands



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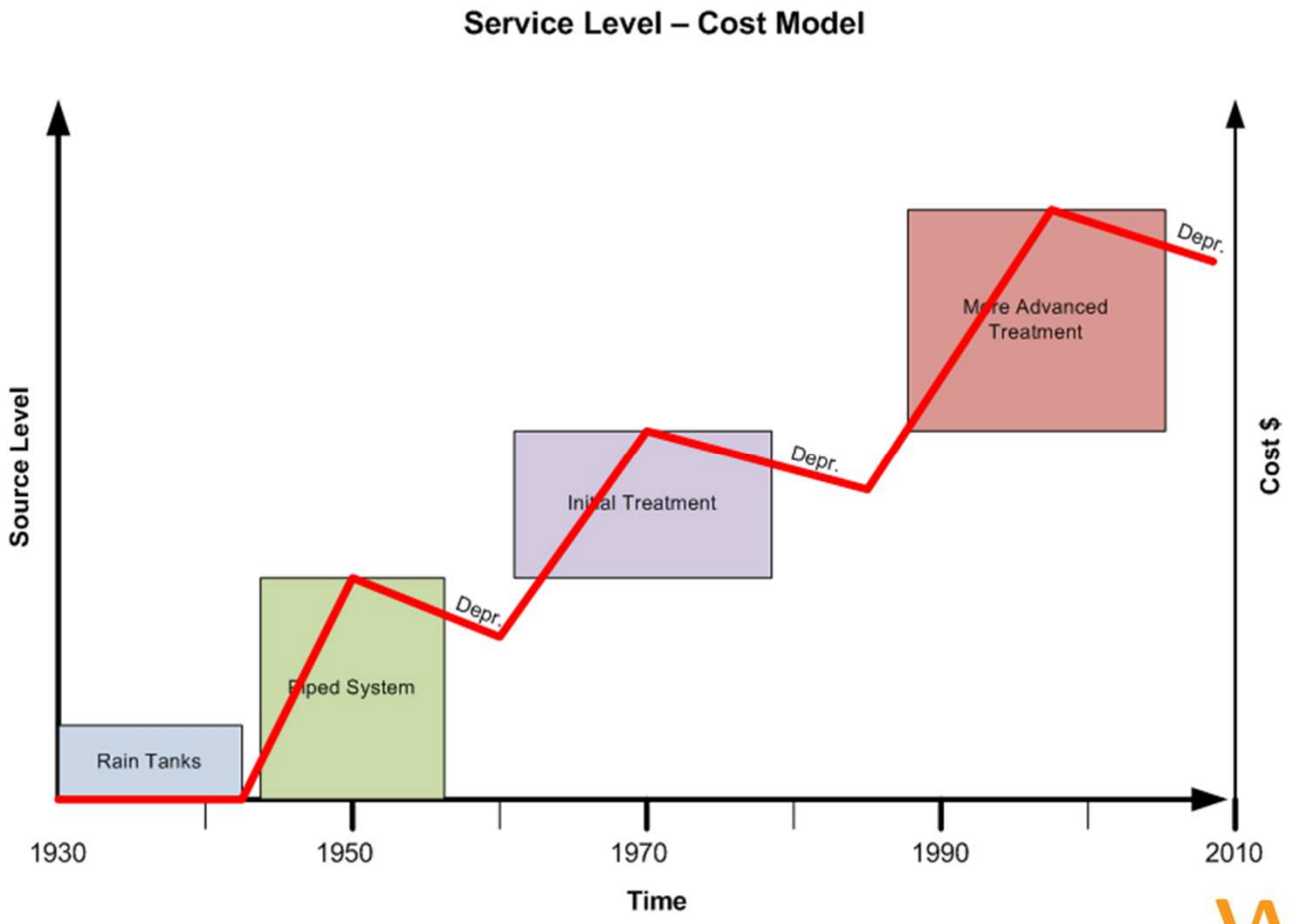
Service Level Cost Change



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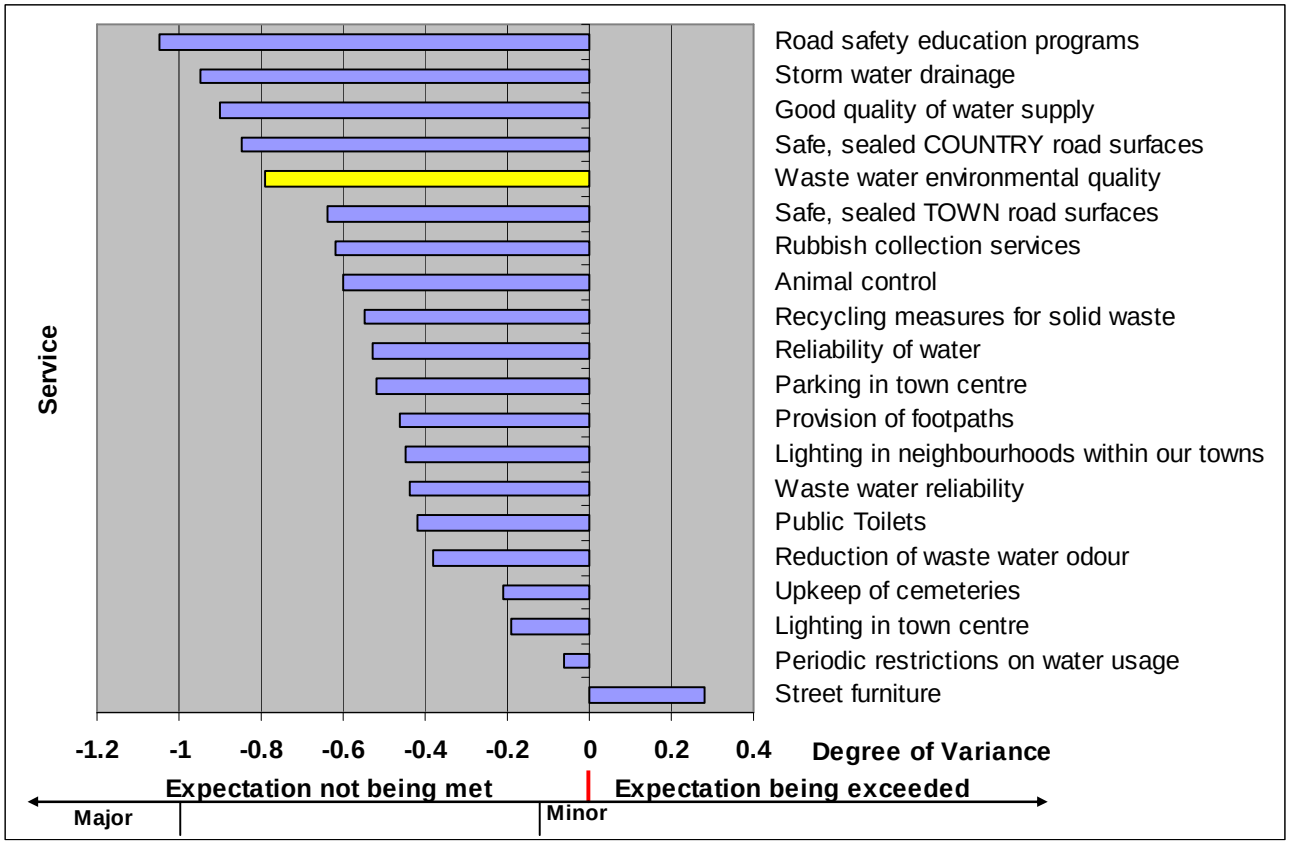
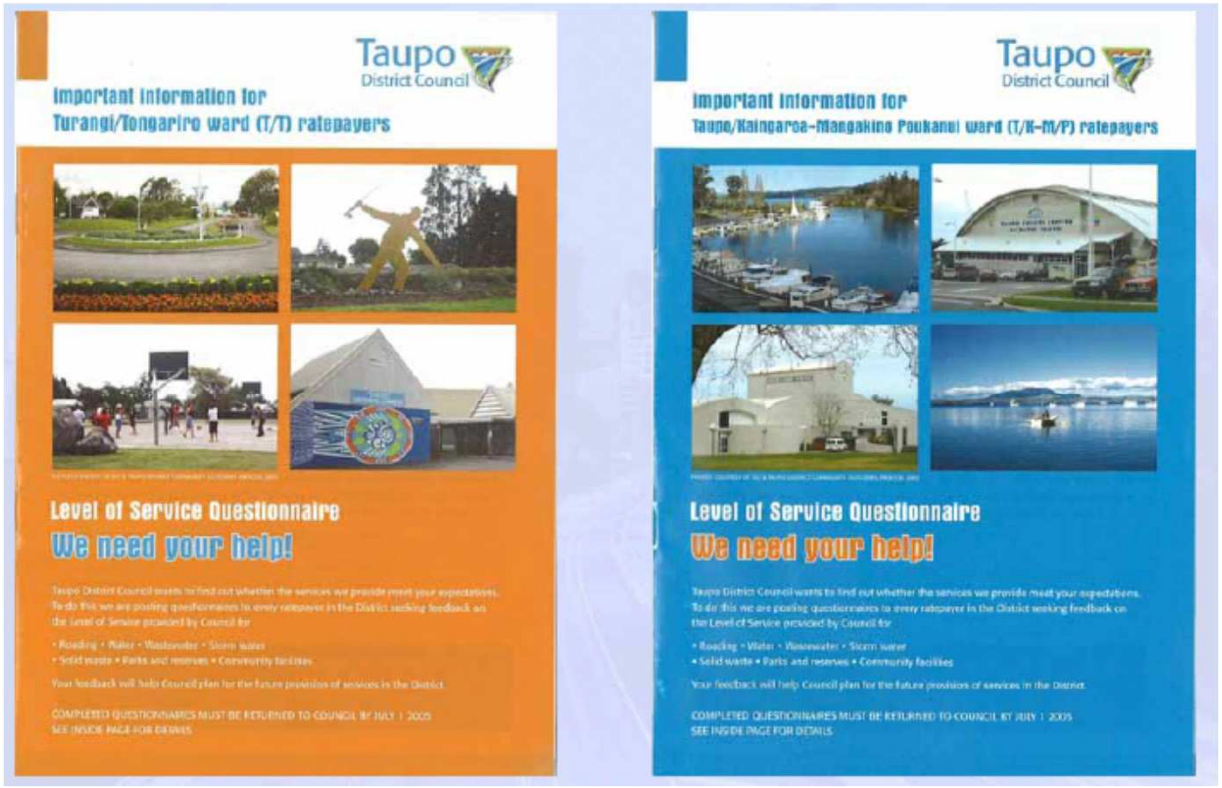
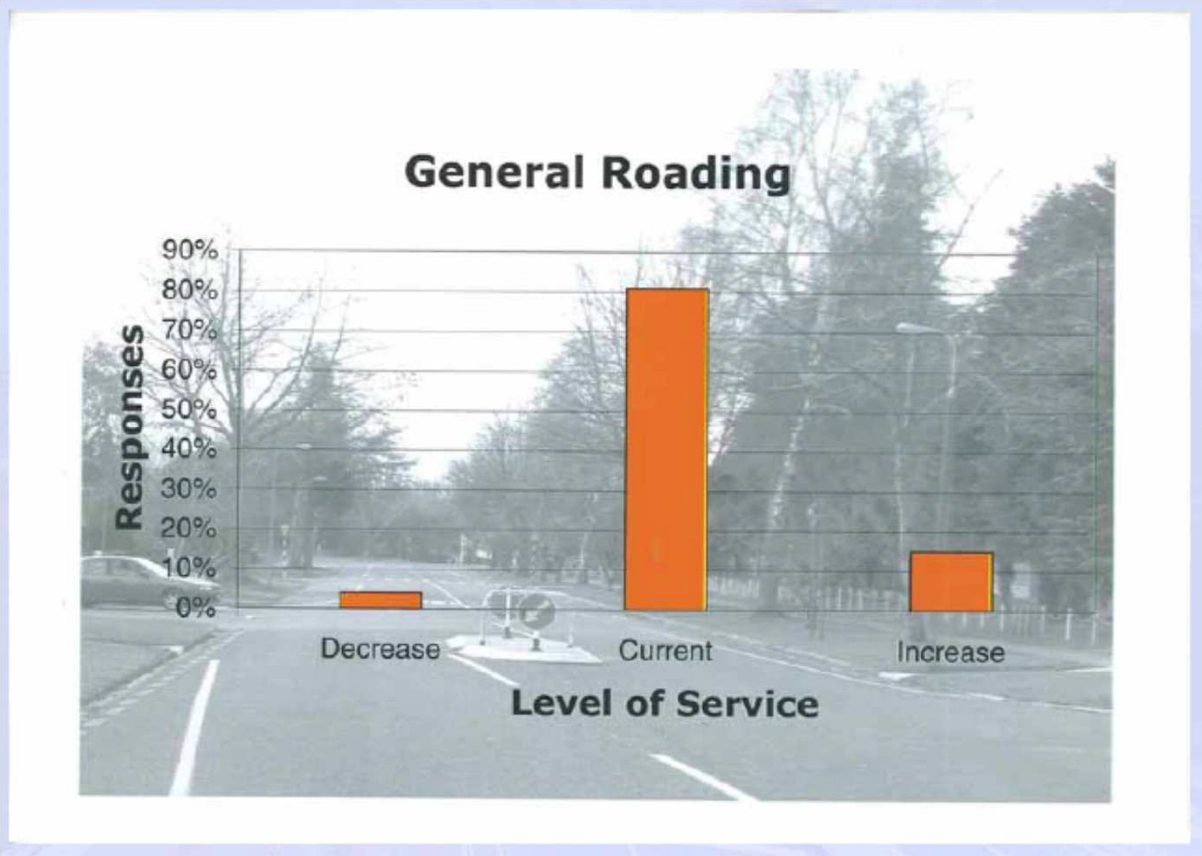
Importance verses Satisfaction



Community Consultation



Response Analysis



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Levels of Service Linkages

Wastewater						
	Community Outcomes	**How the Wastewater Activity Contributes**	**Measurement (Level of Service)**	**Measurement Procedure**	**Current Level of Service**	**Target Level of Service**
	High standards of public and environmental health	Protecting the communities from wastewater related health issues by providing community reticulated systems in agreed areas	Adoption of a Sanitary assessment for the district as required by the LGA, update every 12 years.	Resolution of Council	Adopted June 2006	Adopted and updated every 12 years
	Sustainable, sate and healthy infrastructure	Long term planning through Asset Management Plans will provide confidence of a sustainable infrastructure	Adoption of an approved Asset Management Plan	Resolution of Council	Adopted and updated every 3 years	Adopted and updated every 3 years
		Managing appropriately the discharges to air, water and land from the wastewater system ensures a healthy and safe infrastructure.	Discharges from treatment plants meet standards set by Environment Waikato	Wastewater testing carried out as per EW requirements	Full compliance with Resource Consent conditions in TA	Full compliance at both treatment plants
					Non-compliance for nitrogen and phosphorous in Cambridge	Full compliance at both treatment plants
			Number of Pump station overflow	Review Failure information sheets	Not currently measured	No more than x dry weather overflows from pump stations per year
					Not currently measured	No more than y overflows from pump stations per rainfall event
			Customer complaints of odour events	Quarterly audit of odour events (EW and INFRA)	9 complaints per annum	<= 5 odour events per year
	Efficient and effective utility services	Long term planning of maintenance, renewals and provision for growth will provide assurance for a sustainable and efficient utility service	Adoption of an approved Asset Management Plan	Resolution of Council	Not adopted	Adopted
		Satisfaction with Councils services/facilities reflects how effective the utility service is to the community	Percentage of satisfied residents with the overall performance of the wastewater systems	Annual NRB Survey	63% residents are satisfied with the services	70% satisfied residents
	Affordable services	Plan for future growth	A Development Contribution Policy has been adopted	Resolution of Council	Adopted	Adopted
		Monitor the Customer Satisfaction Level of the overall wastewater service provided to reticulated areas	Percentage of satisfied residents with the overall performance of the wastewater systems	Annual NRB Survey	63% residents are satisfied with the services	70% satisfied residents
	High standards of infrastructure	Ensure appropriate response times to the public requests for service are maintained and the wastewater system that directly affects the use of the system is operating correctly.	Percentage of satisfied residents with the overall performance of the wastewater systems	Annual NRB Survey	63% residents are satisfied with the services	70% satisfied residents

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Demand Management

Demand Management

- Planning and managing future demand
- Use of demand models
- Monitoring technological changes
- Population shifts
- Demographic shifts
- Water resources

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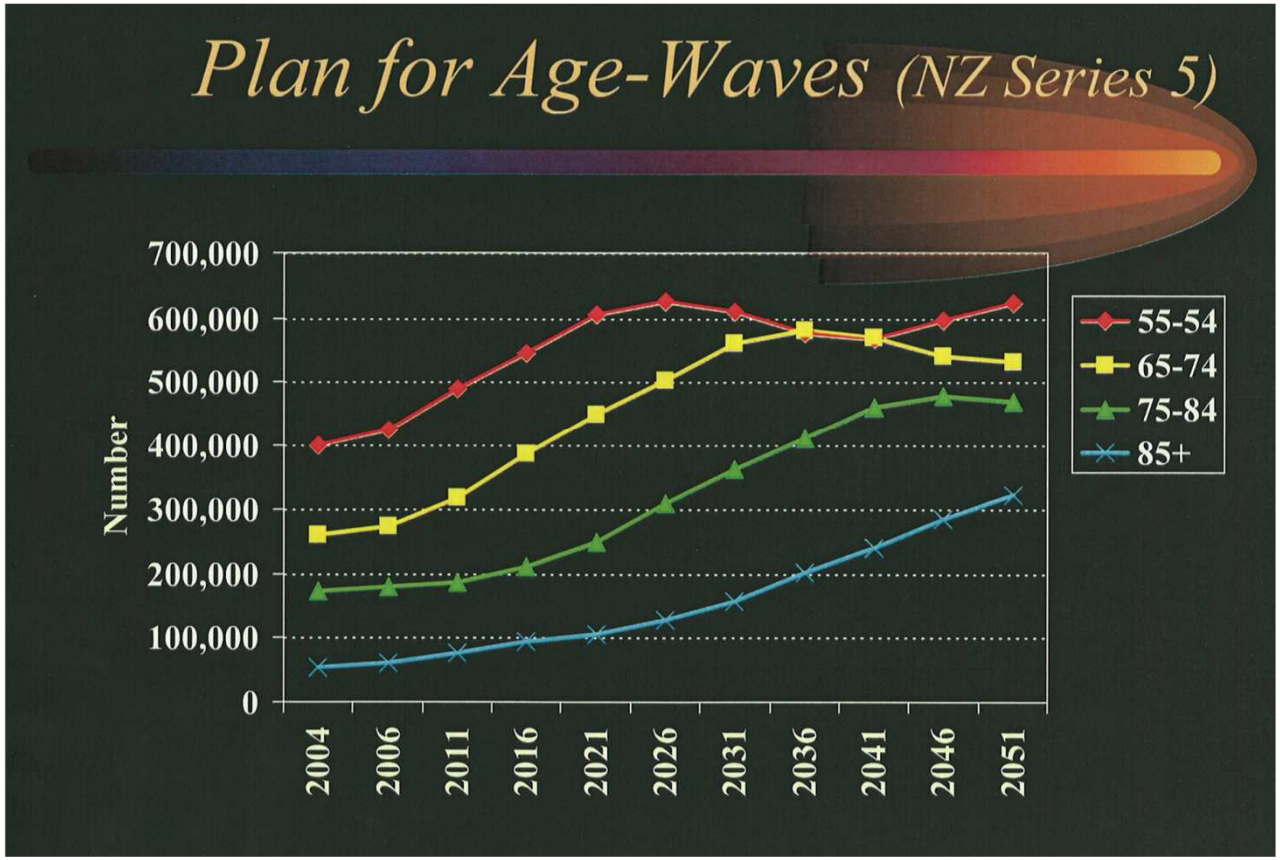
Social – Age changes

(source Dr Natalie Jackson, Infrastructure Management Summit, Rotorua, 2005)



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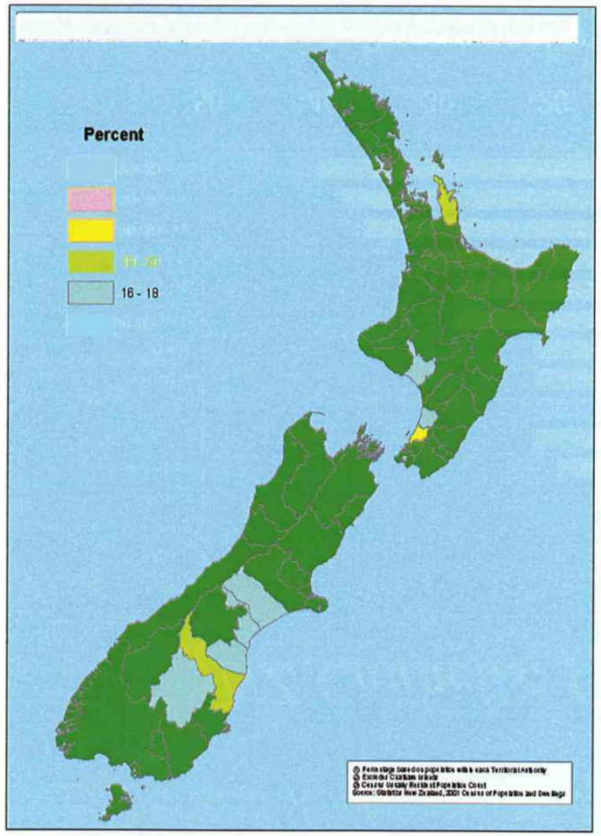
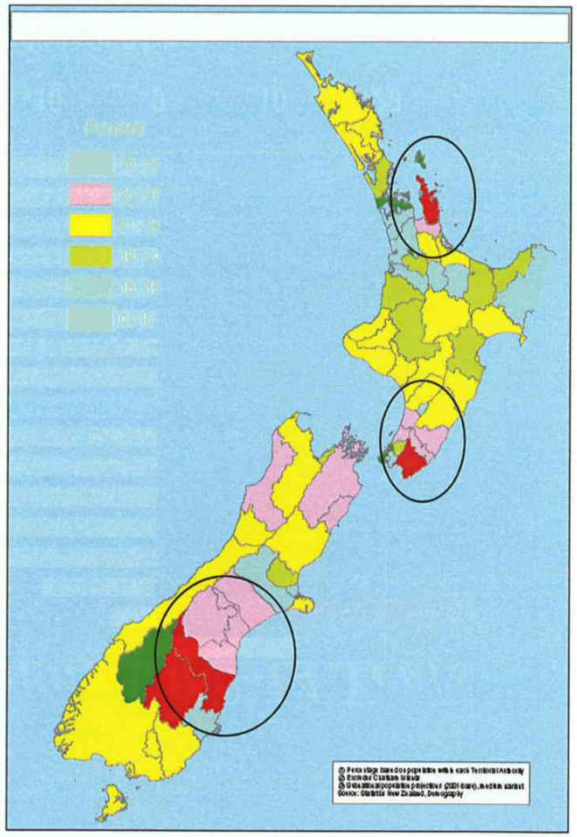
Social – Age change by TLA

(source Dr Natalie Jackson, Infrastructure Management Summit, Rotorua, 2005)





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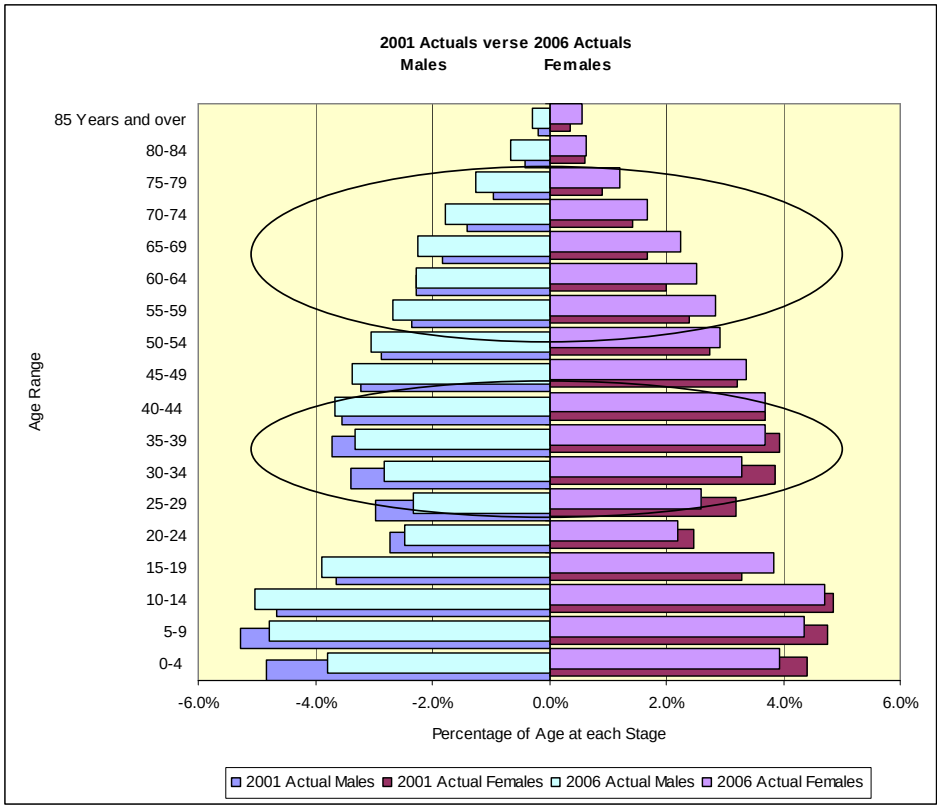
Demographic changes



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Risk Management

Risk Management

- Business Risks
- Organization wide risks
- Asset criticality analysis
- Emergency risks
- Use ISO Standards for risk management

Asset Criticality

What is Risk and Why Assess It?

The consequences of an asset failing can be measured against the four well-beings:

- Economic
- Environmental
- Social
- Cultural

The probability of failure can be expressed in words e.g.

- Almost certain to occur (score = 1, one)
- Likely to occur
- Moderate
- Unlikely to occur
- Rare to occur (score = 0, zero)

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Asset Criticality

Calculation of Criticality

Well-beings	Effect	Weighting	Weighted Well-being
Social	Public image	5%	45%
	Service Availability	20%	
	Public Health and Safety	20%	
Economic	Difficulty/Cost repair	10%	25%
	Financial loss to customer	10%	
	Financial loss to Council	5%	
Cultural	Offensive to Culture	10%	10%
Environmental	Pollution/ Contamination/ Scouring	20%	20%

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Asset Criticality

Calculation of Criticality

SAMPLE: Water Criteria

Well-being	Effect	Items to Consider	Severity	Score
Social	**Public Image**	Loss in Public Confidence	No Result	0
			Council looks bad	1
			Council makes paper	2
			Council make National TV	3
			Council Lawsuit	4
	Service Availability	Number of People Affected Type of People affected (schools, elderly, hospitals, industry as 'equivalent number of domestic connections')	1 Connection	0
			2-20 Connections (half block)	1
			21-40 Connections (Block)	2
			41-500 Connections	3
			>500 Connections	4
	Public Health and Safety		No problem	0
			Damage to property	1
			People become sick for a short period	2
			Injury to people	3
			Loss of life	4

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Asset Criticality

Calculation of Criticality

	Assessment of Effects								Criticality Scoring				
	Social			Economic			Cultural	Environmental					
Weighting	5	20	20	10	10	5	10	20					
Criteria	Public Image	Service Availability	Public Health and Safety	Difficulty/Cost of Repair	Financial Loss to Customer	Financial Loss to Council (insurance, fines)	Offensive to Culture	Pollution Contamination Scouring	Total Score = Weighting x Level	Highest individual weighted point Score	Criticality Assessed from Total Score	Criticality Assessed from Highest Point	Overall Criticality
Backflow preventer (4 found in AMS)	3	3	4	4	2	3	2	3	310	80	High	Medium	High
Facilities- SCADA, Repeaters, Bores/Pumps, Disinfection Plant. ('High' criticality, manage separately)	3	4	3	4	2	2	2	3	305	80	High	Medium	High

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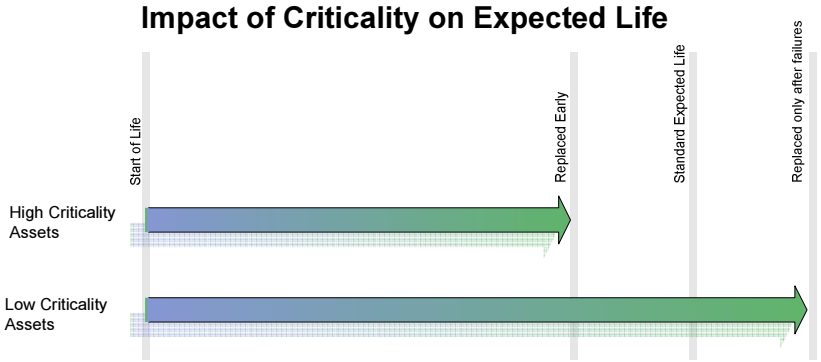
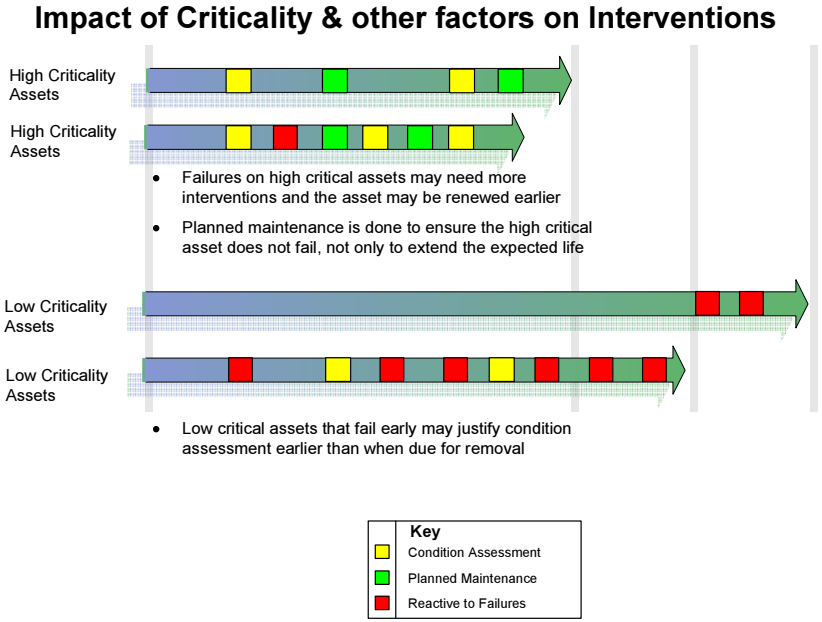
Impact of Criticality on Expected Life





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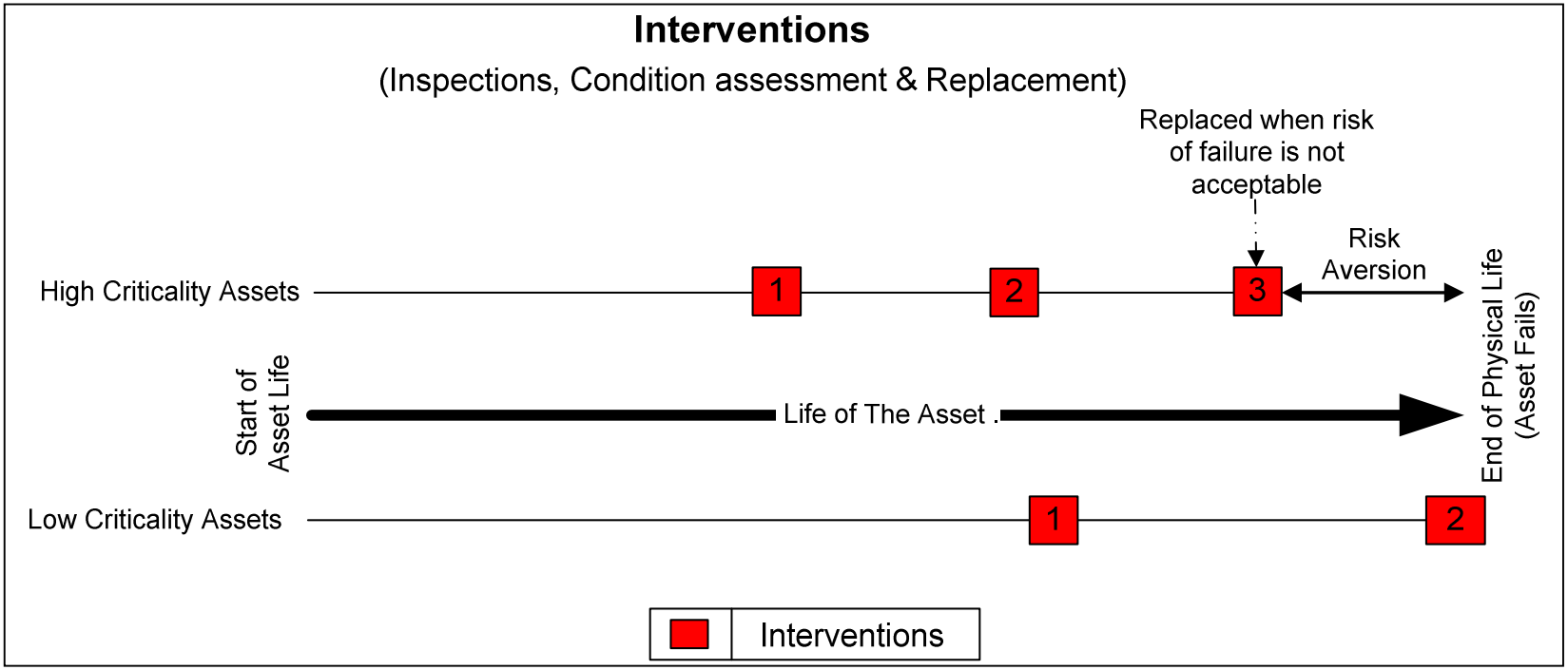
Risk Aversion



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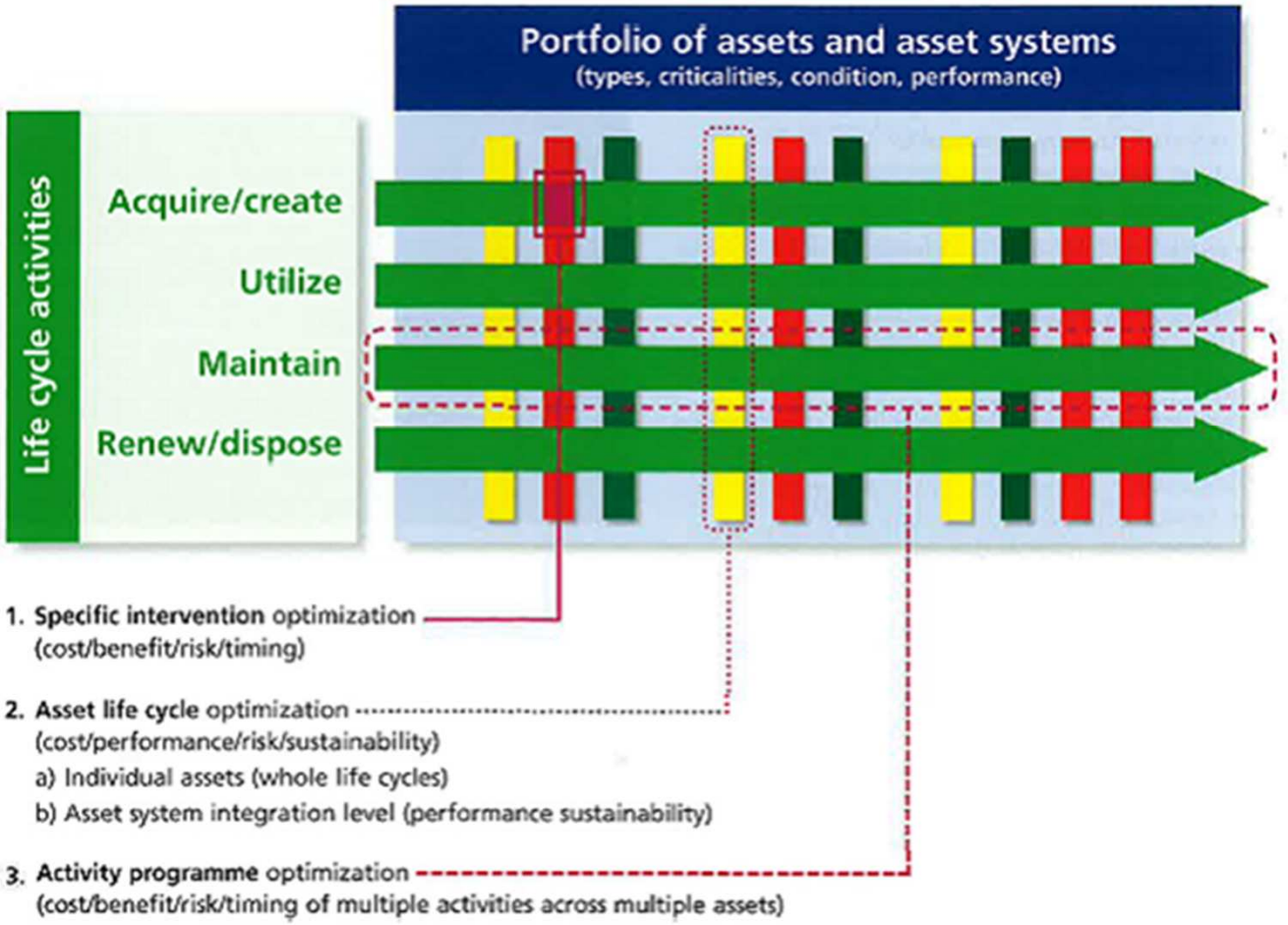
PAS55 AM Activities

Figure 5 – Primary requirements for optimization of asset management activities



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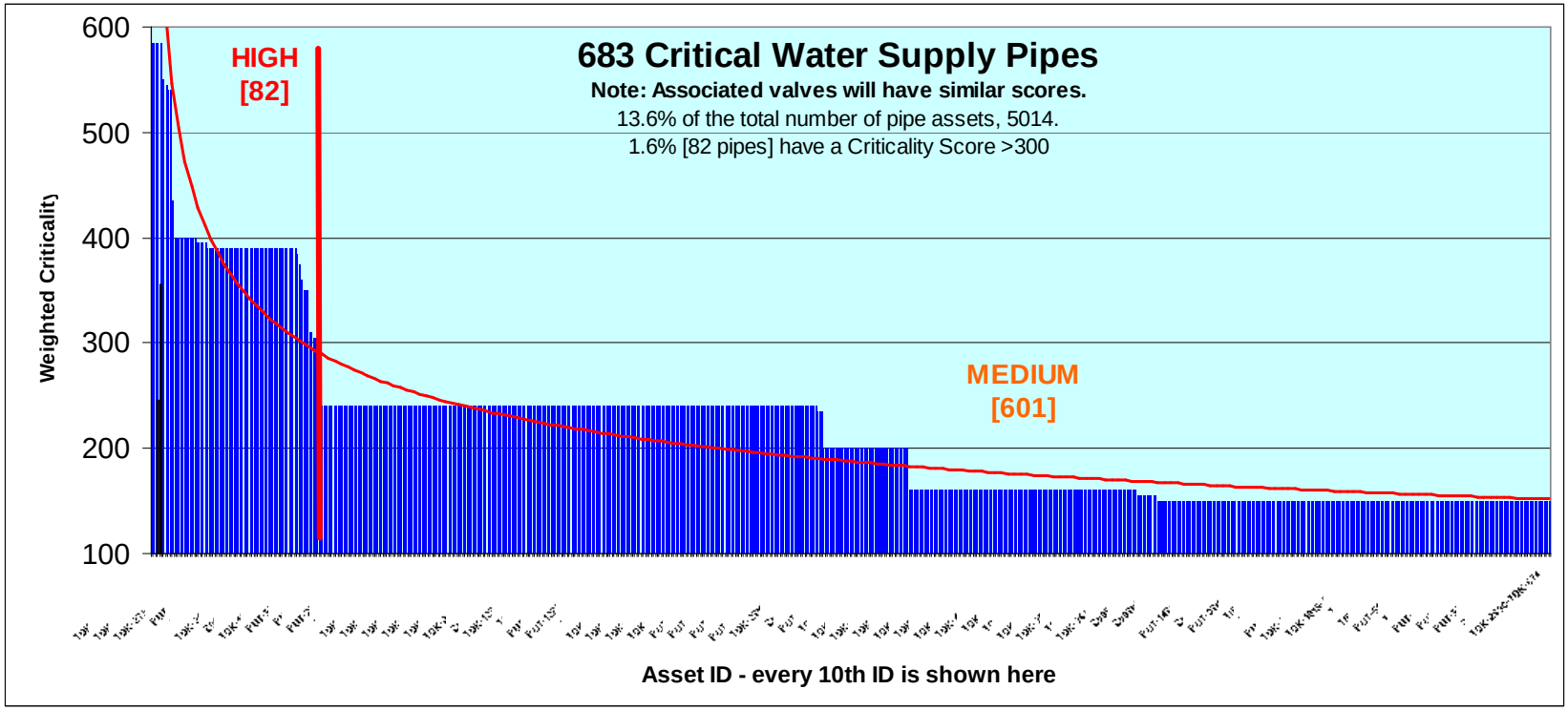
Individual Pipe Analysis



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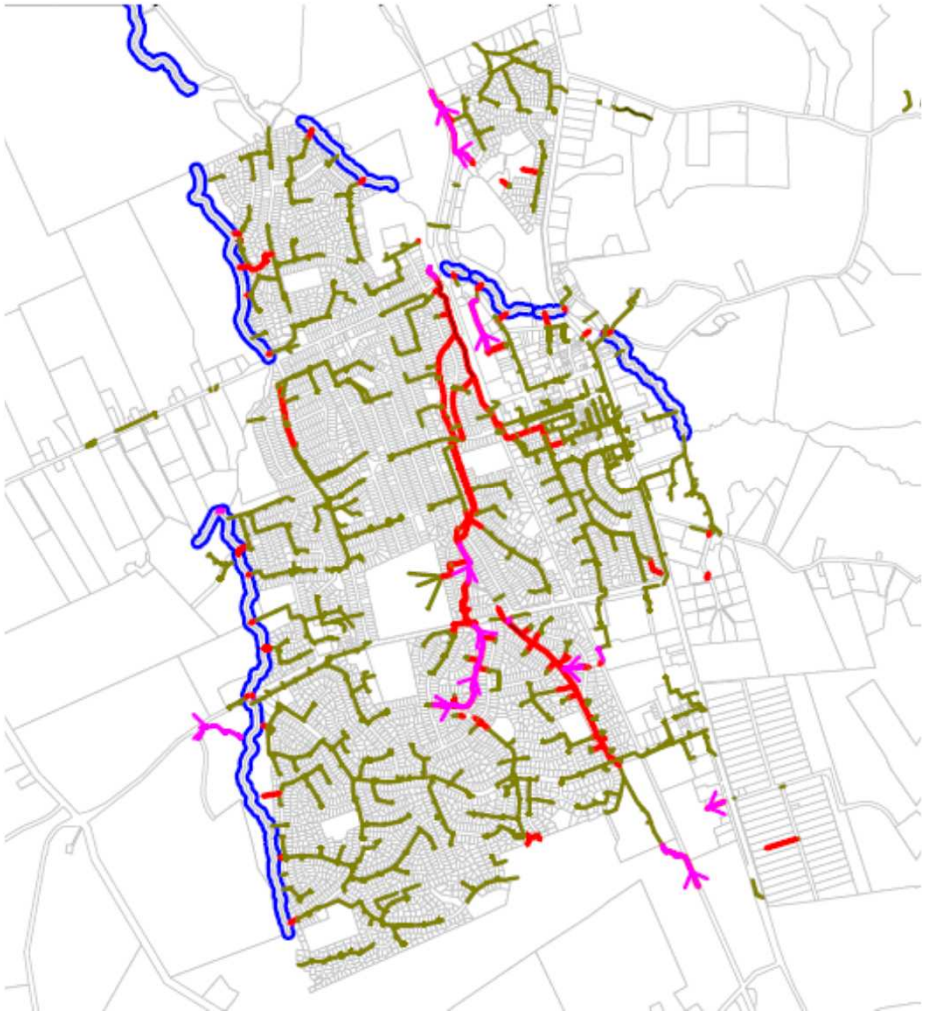
Critical Asset Analysis



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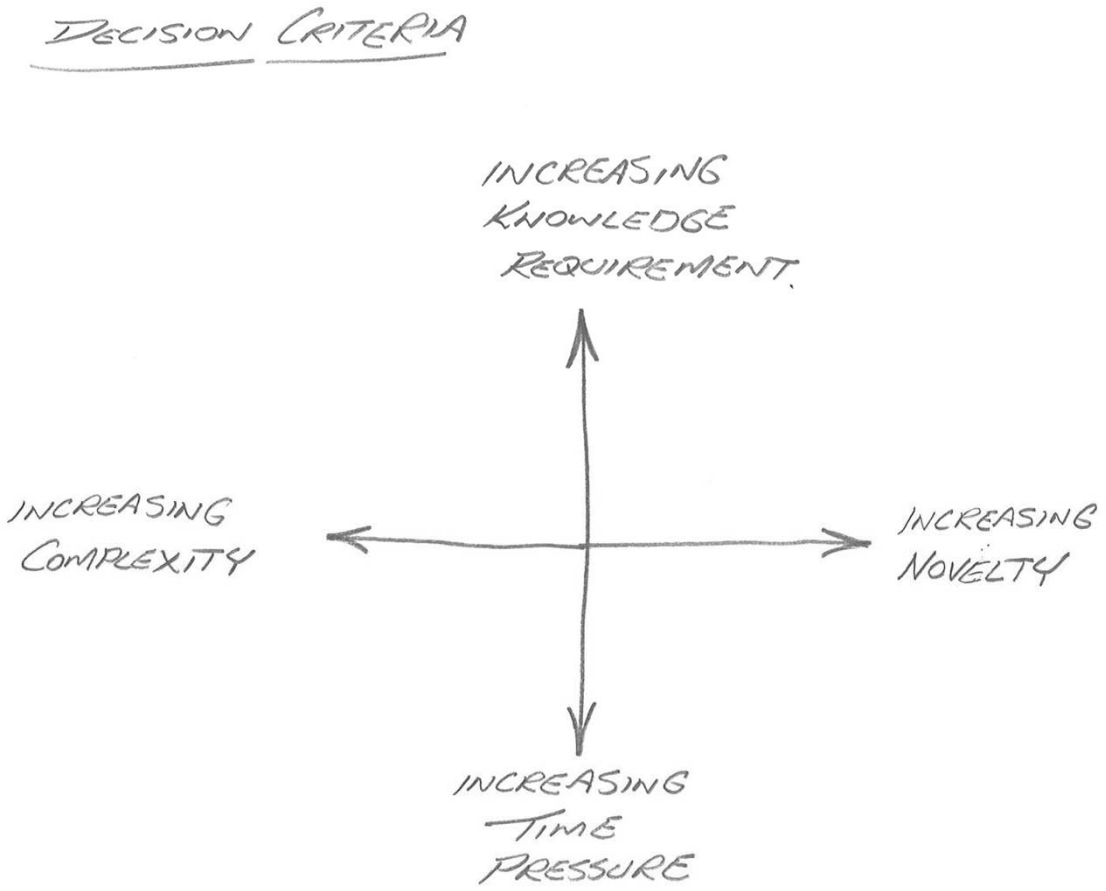
Canterbury University Risk Course (Associate professor Piet Beukman)



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Risk model cont'd

- Decision criteria to focus effort
  - Larger the box, greater the effort needed
  - Increasing knowledge requirement – More development required
  - Increasing complexity – More formal method required
  - Increasing time pressure – More individual autonomy required
  - Increasing novelty – More understanding required

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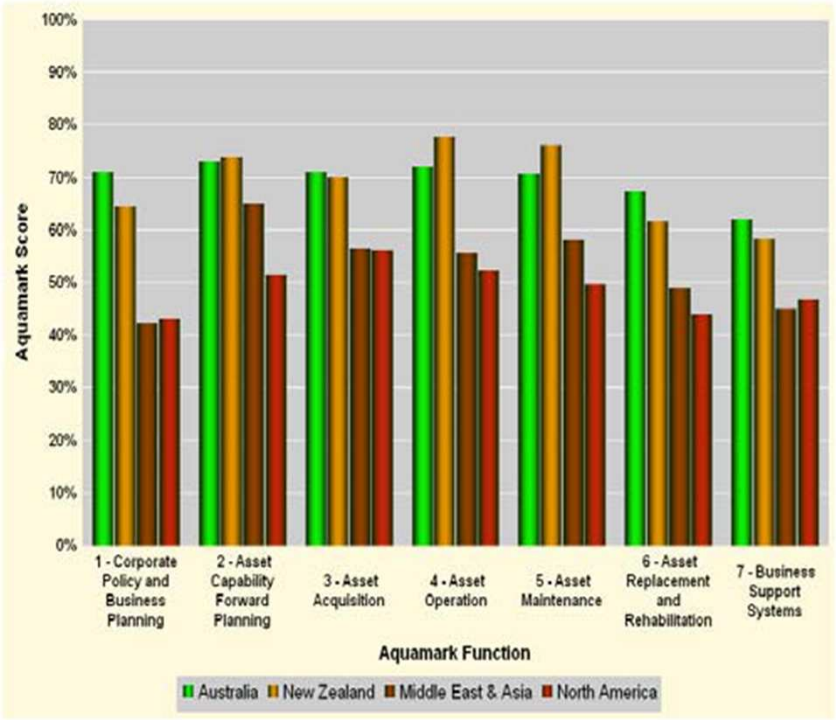
Benchmarking

AM Practice and Scorecards

Source: Don Vincent, GHD Australia



Sector	Australia 2001	NZ 2004
National Roads	C	All Roads D-
State Roads	C-	Bridges C+
Local Roads	D	
Railways	D-	D-
Airports	B	C+
Ports	B	C+

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Aust. Scorecard

Table 3 2001 Australian Infrastructure ratings by sector

Sector	Rating
Transport	
National Roads	C
State Roads	C-
Local Roads	D
Railways	D-
Aviation and Airports	B
Ports	B
Water	
Water – potable	C
Water – wastewater	C-
Stormwater and Flood control systems	D
Irrigation	D-
Energy	
Electricity	B-
Gas	C
Telecommunications	
Telecommunications	B

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NZ Scorecard

Table 4 2004 New Zealand Infrastructure Ratings by ACENZ

Sector	Rating
Transport	
Roads	D-
Railways	D-
Air and sea ports	C+
Bridges	D
Water	
Water – potable	C
Water – wastewater and stormwater	D
Energy	
All energy combined (Electricity and Gas not rated separately)	E
Telecommunications	
Telecommunications	B

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City of Hamilton Example

CAMG Recommended Actions *Short Term*

Action: Report Card

Definition: A way to clearly display the current and projected status of assets.

Example: The City of Hamilton, Alberta uses an infrastructure report card to rate and describe trends for its major assets.

City of Hamilton
2006 Infrastructure Report Card

Asset Group	Rating 2006	Comments	Trend 2020
Public Transit Services	B	The transit system appears to be sufficiently funded at this time, on a tax/pay-as-you-go basis. Ratio of fares to subsidy is currently about 1:1. Tariffs projected to increase to 1.2:1 as ridership increases. Future growth of the City, as well as plans to improve and expand service will require annual increases in the Transit budget of 3% plus inflation.	→
Central Fleet Services	C	Fleet Services is now on a full-cost recovery basis with full replacement charges to the user departments. Larger increases in reserve fund contributions can result in significantly lower cost over an and should be implemented as soon as possible.	→
Waste Management Services	C	Waste Management Services are rapidly growing. This will create a "backlog" of assets that will require rehabilitation and replacement in a similar short time frame in the future. Future growth of the City will also put tremendous pressure on this service. The Waste Management Master Plan is currently being developed. However, failure to develop and implement the necessary infrastructure reinvestment policies in the short-term will cause the future trend to deteriorate rapidly.	→
Forestry Services	F	Forestry Services face the largest revenue gap of all Public Works assets, or approximately 4x the current levels. Forestry assets offer significant environmental benefits, and realistic expectations and plans must be developed. Reliance on capital will only exacerbate the problem, ultimately increasing cost 42%. Doubling the tree canopy coverage from 14% to 30% needs to be revisited. Even if developers were forced to plant one tree per new property, ongoing liability for these increased forestry assets need to be considered.	↓
Traffic Services	C	Traffic Services are under-funded by at least $1.0 million / year. Growth of the City will increase assets. Some current assets are approaching the end of their useful life and pavement markings and signage are not up to standards.	↓
Cemetery Services	B	Cemetery Services are slightly under-funded. However, analysis includes contributions to reserves for rehabilitation of facilities and ultimately replacement of those facilities. This risks that should be addressed through future analysis and policy. Insufficient funding in the trust funds require annual contribution of $2M from the levy and private cemeteries being transferred to the City should be abandoned.	→
Facilities – Communal & Corporate	F	Facilities face a significant shortfall in revenue. Lack of operating and maintenance funding results in accelerated deterioration. Facilities are more capital intensive than most assets. Unlike other assets, a good proportion of operating budgets is spent on program delivery and not necessarily on asset preservation. Service levels and expectations are easily impacted, with portion funding coming from user fees with the associated sensitivity to social impact and quality of life. There is still a great deal of work to be done in this area in terms of more-well founded State of the Infrastructure Report in the future.	↓

Investment Profiles

Investment Constraints

- Investment Drivers
- Investment Constraints
- Underfunding Investment
- The UK investment experience
- Smoothing the investment profile

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LTCCP Progress 2002 - 2008

- The right debate: too much technical detail
- Still signs of 3 year budgeting
- Many AMP's not sufficiently robust
- Systems and process issues
- Resource shortages in planning
- Resource shortages in delivery (40 – 50% carryover's)

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LTCCP Progress 2006 - 2009

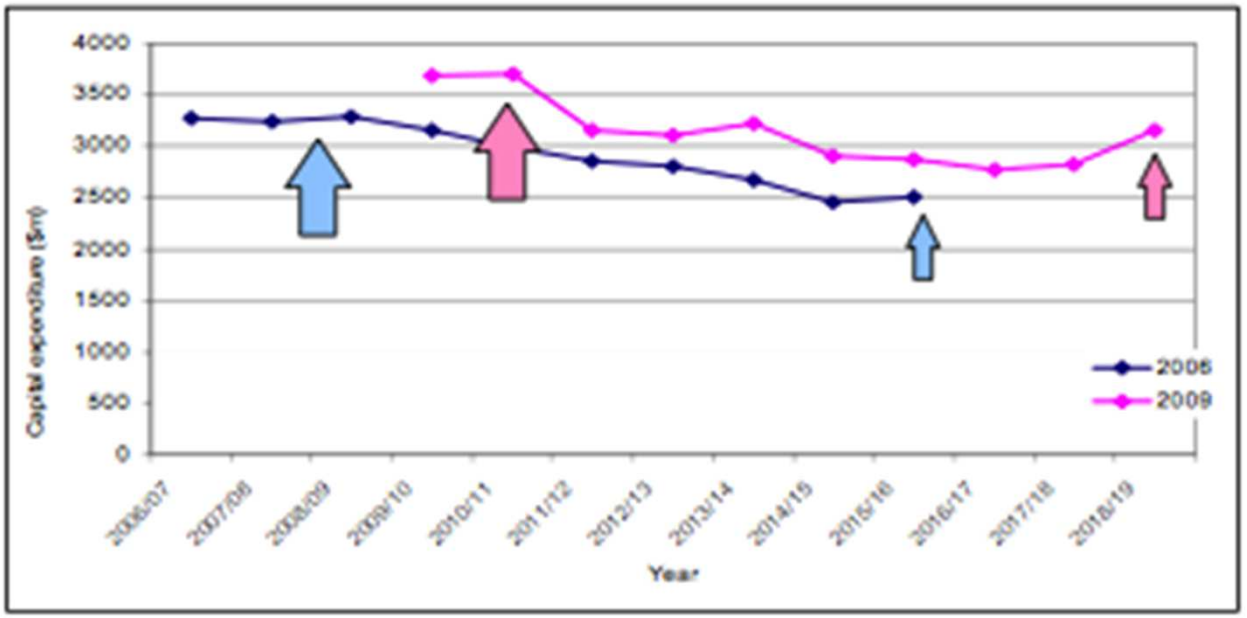

Figure 9 – Comparison of forecast capital expenditure between the 2006 and 2009 LTCCPs. Note the trend toward larger increases in expenditure in the first years of the plan (large arrows), with an increase or 'spike' in the last year (small arrows).

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Capital Expenditure

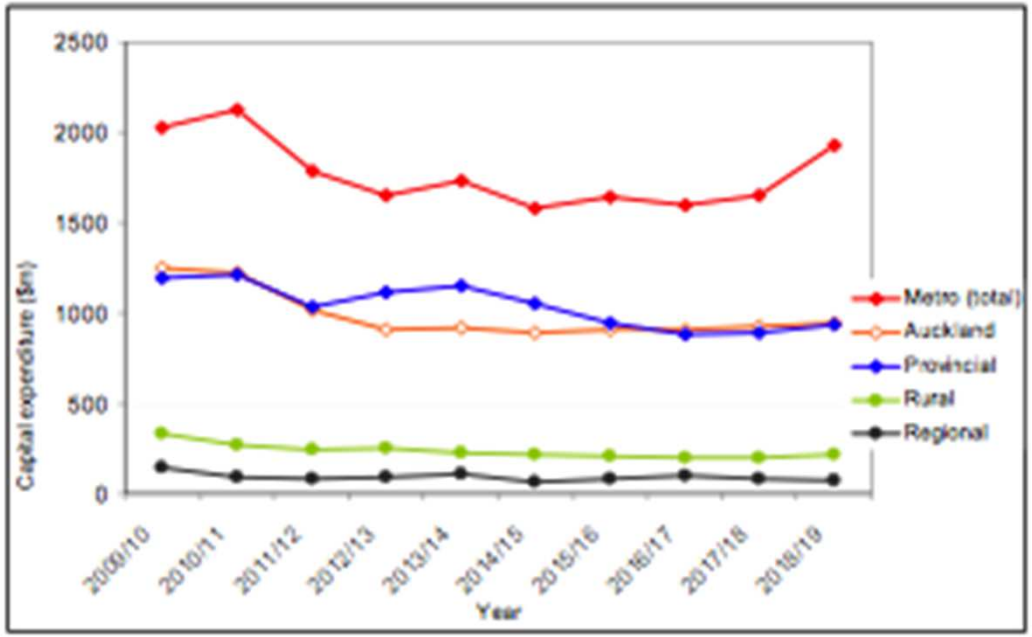

Figure 10 - Total capital expenditure by sector over the ten year period. Metropolitan councils (including Auckland councils) account for 54% of annual capital in year 1, rising to 61% by year 10. Auckland councils (also shown as a subset) account for around one third of all annual capital expenditure.

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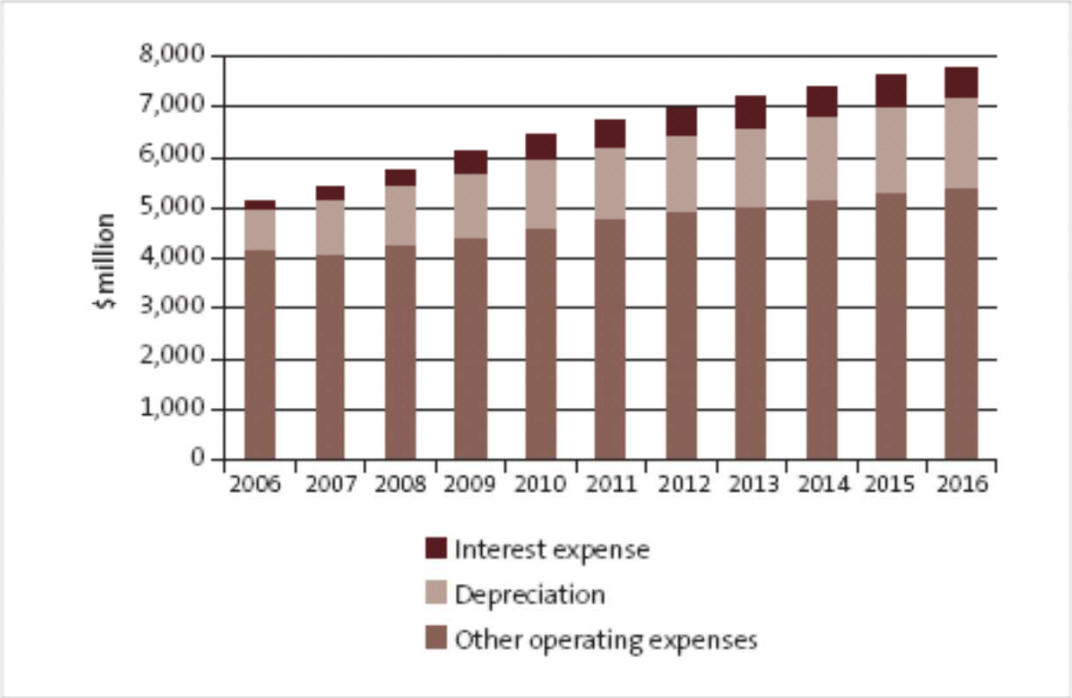
NZ Forecast Operating Expenditure

Figure 3

Forecast operating expenditure from 2006 to 2016



Note: The 2006 amount comes from 2005/06 annual plans.

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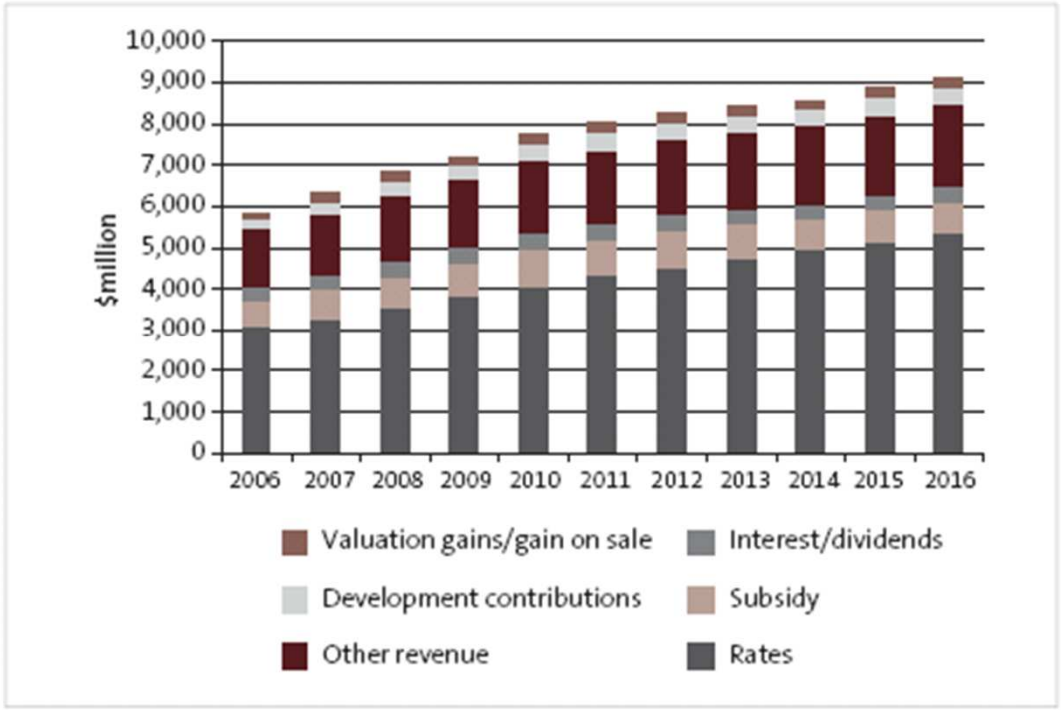
NZ Forecast Operating Revenues

Figure 4

Forecast operating revenues from 2006 to 2016



Note: User-pays charges are included as "other revenue". The 2006 amount comes from 2005/06 annual plans.

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ACC SW 10 year financial forecast

SUMMARY	($'000)													
	Current	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2025/26	Totals
OPERATIONAL														
Management	1,193	1,243	1,193	1,192	1,192	1,192	1,192	1,192	1,192	1,192	1,192	962	962	21,798
Planning	870	895	770	770	770	770	770	770	770	770	770	-	-	7,625
Environmental	600	600	600	600	600	600	600	600	600	600	600	-	-	6,000
Other Maintenance	250	160	280	396	509	621	749	882	1,014	1,146	1,280	5,786	5,786	64,699
Sub-Total	2,913	3,098	3,043	3,158	3,271	3,383	3,511	3,644	3,776	3,908	4,042	6,769	6,769	102,522
MAINTENANCE														
Planned	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	3,265	3,571	56,730
Unplanned	165	165	165	165	165	165	165	165	165	165	165	34	34	1,990
Consequential	200	200	200	200	200	200	200	200	200	200	200	-	-	2,000
Sub-Total	2,620	2,620	2,620	2,620	2,620	2,620	2,620	2,620	2,620	2,620	2,620	3,299	3,605	60,720
Total Opertnal & Mtnce	5,533	5,718	5,663	5,778	5,891	6,003	6,131	6,264	6,396	6,528	6,662	10,068	10,374	163,242
														-
RATES & INSURANCE	1,267	3,371	3,371	3,371	3,371	3,371	3,371	3,371	3,371	3,371	3,371	-	-	33,712
DEPRECIATION	10,534	12,751	13,163	13,626	13,955	14,351	14,112	15,441	14,883	14,456	13,902	13,959	14,472	282,793
														-
Total OPEX	17,333	21,840	22,198	22,776	23,218	23,726	23,615	25,076	24,651	24,355	23,935	24,026	24,845	479,747
CAPITAL EXPENDITURE														
Ensure sustainability	3,500	6,053	5,979	5,410	3,320	3,320	3,320	3,320	3,320	3,320	3,320	3,320	3,320	73,681
Flood reduction	16,541	18,868	24,230	22,211	25,996	26,035	26,960	28,940	29,030	29,006	28,941	26,941	26,941	531,633
Overflow/Sediment reduction	2,555	4,455	4,640	5,366	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	48,461
Total CAPEX	22,596	29,375	34,849	32,986	31,316	31,355	34,280	34,260	34,350	34,326	34,261	32,261	32,261	653,975
Infrastructure Auckland Funding	2,020	3,582	2,867	1,191	-	-	-	-	-	-	-	-	-	7,640
CAPEX less Infrastructure Auckland Funding	20,576	25,793	31,982	31,796	31,316	31,355	34,280	34,260	34,350	34,326	34,261	32,261	32,261	646,335
Total Utility Planning Expenditure	37,909	47,633	54,180	54,572	54,534	55,081	57,894	59,336	59,001	58,682	58,197	56,288	57,107	1,126,082
Total Stormwater Expenditure	39,929	51,215	57,047	55,762	54,534	55,081	57,894	59,336	59,001	58,682	58,197	56,288	57,107	1,133,722

Table 7-2: Financial Forecast

MCC Roads – 20 year expenditure

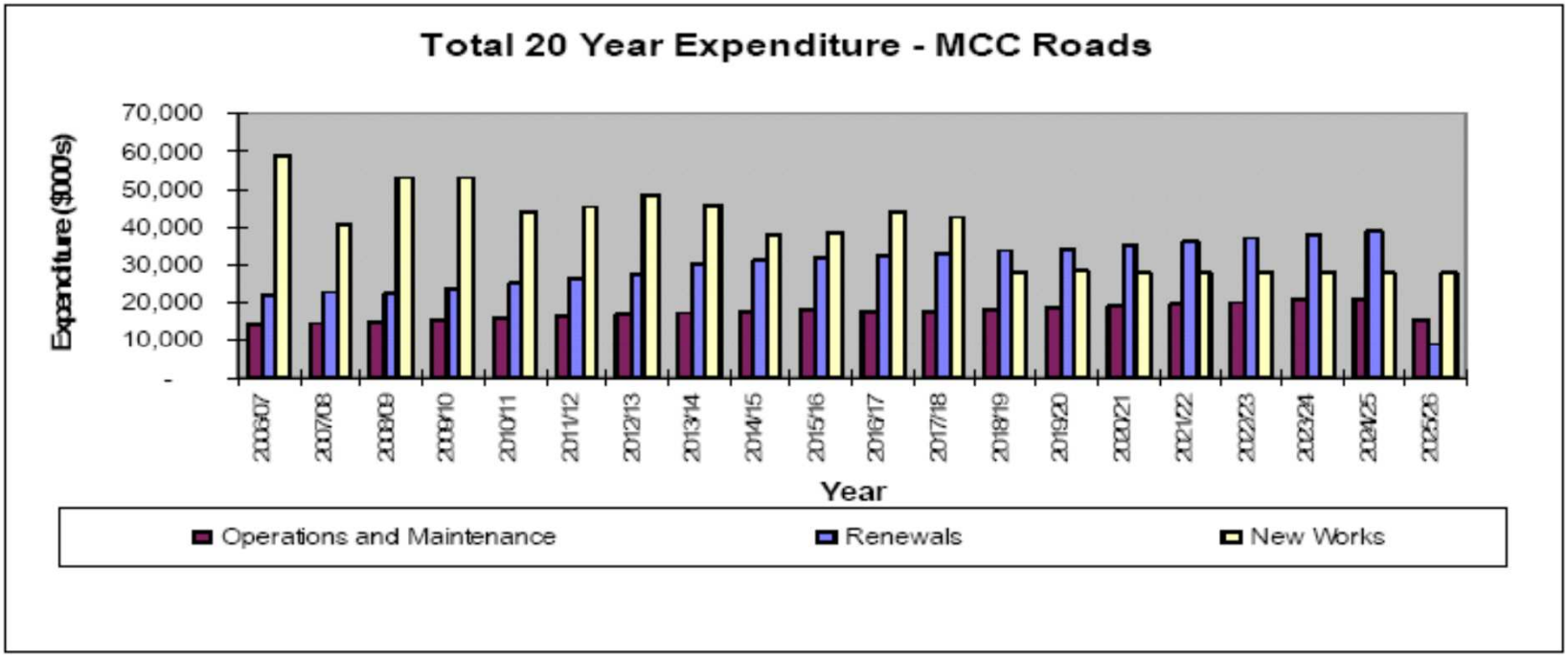

Figure K: 20 Year Financial Forecast

Asset Lifecycle Management

- Asset creation
- Asset operation and maintenance
- Asset renewal
- Capital expenditure requirements
- Asset disposal and aftercare

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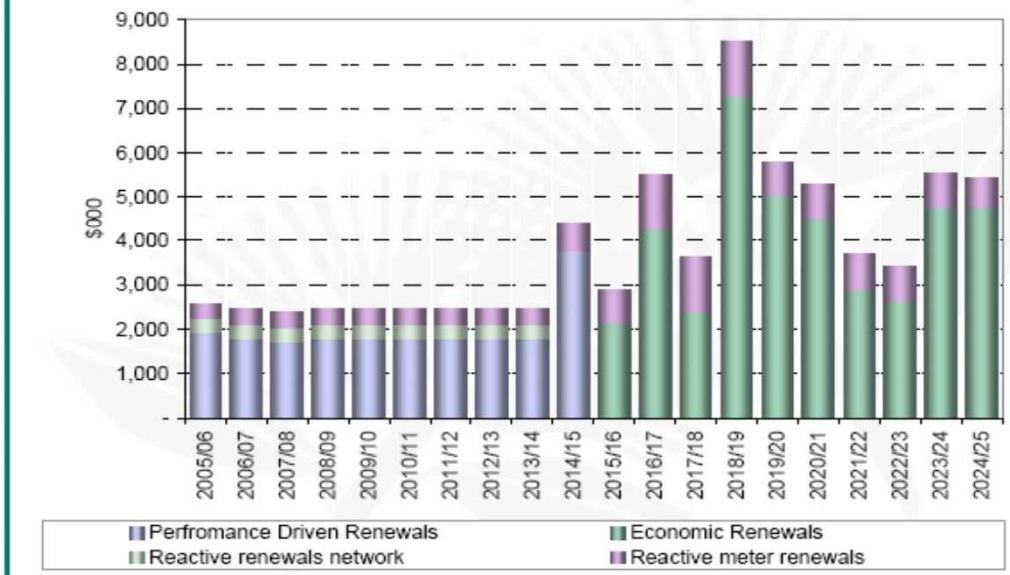
Renewal Forecasts - NSCC

Figure 6.3 Water Supply Renewal Forecast



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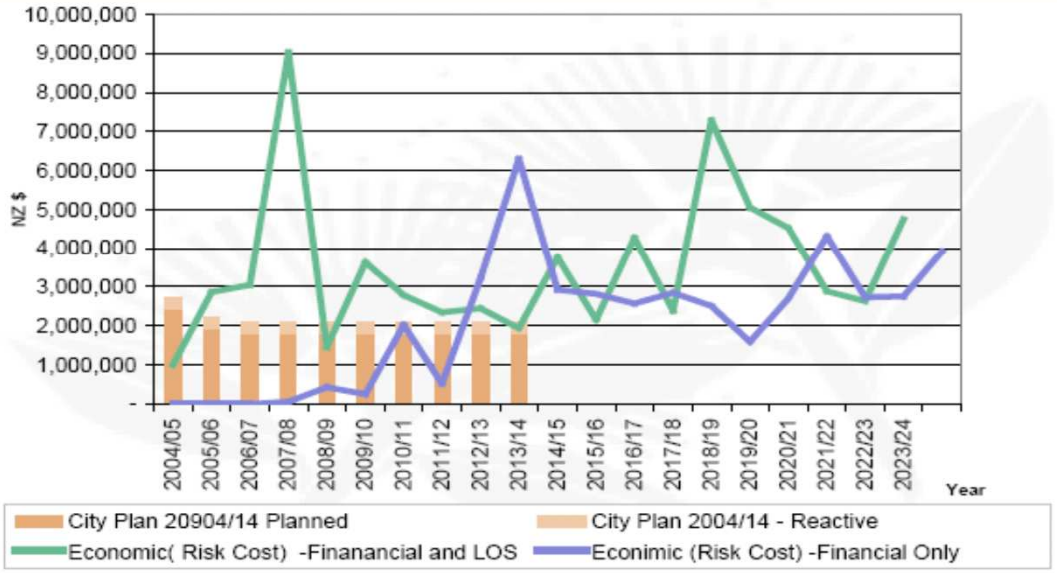
Economic renewals

Figure 6.4 Modelled Economic Renewals 2004/23 vs City Plan 2004/14 Budgets



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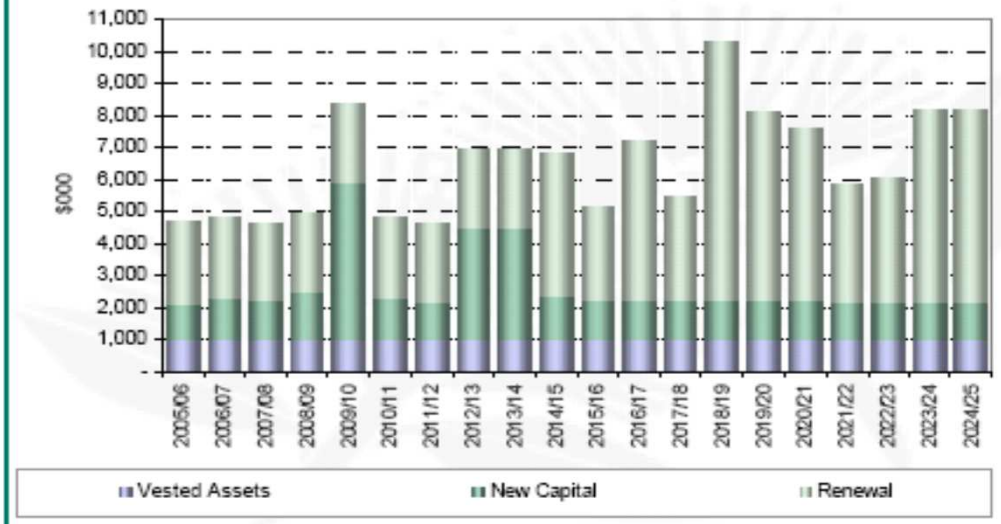
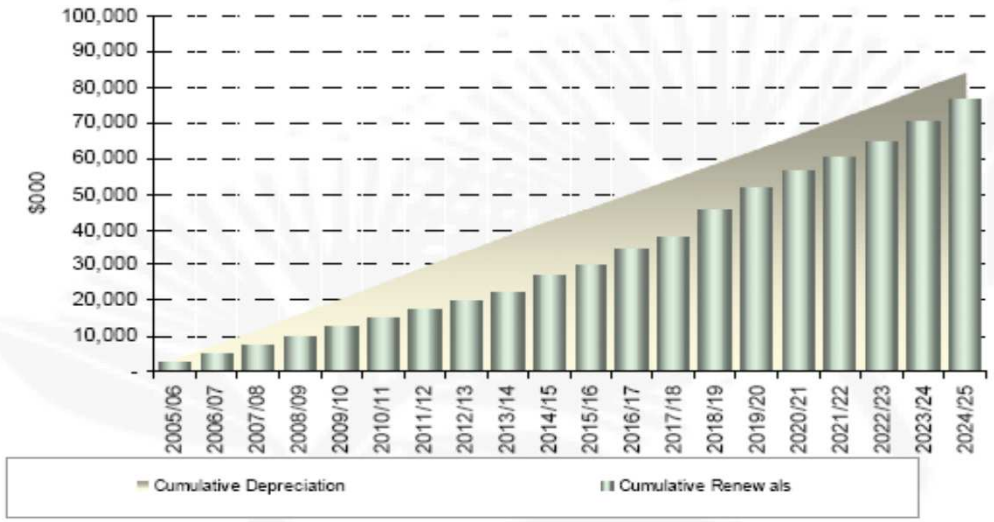
Total Capital Expenditure

Figure 7.8 WS Total Capital Expenditure Forecast



Renewals vs. Depreciation

Figure 7.11 WS Cumulative Renewals and DISP



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Depreciation Calculations

Table 7.6 Fair Value of WS Assets as of 30 June 2004					
Asset Class	Quantity	Unit	Optimised Replacement cost $ 000	Depreciated Replacement Cost $ 000	Annual Depreciation $000
Pipes	1,276.	km	142,155	101,562	1,633
Valves	13,012	no	20,803	13,648	383
Fire Hydrants	6,918	no	7,774	4,764	140
Pump Stations	10	no	1,794	1,507	53
Reservoirs	3	no	4,353	795	44
Other Facilities	37	no	680	420	16
Service Connections	73,251	no	21,023	15,866	199
Water Meters	73,367	no	21,764	13,222	856
		Total	220,346	151,784	3,324

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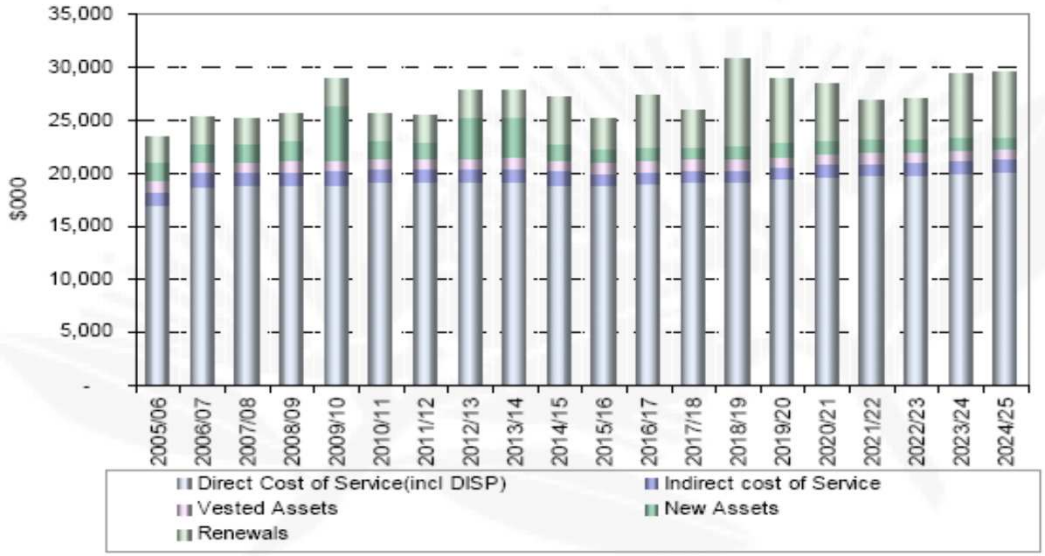
Expenditure Forecasts

Figure 7.1 WS Expenditure Forecast



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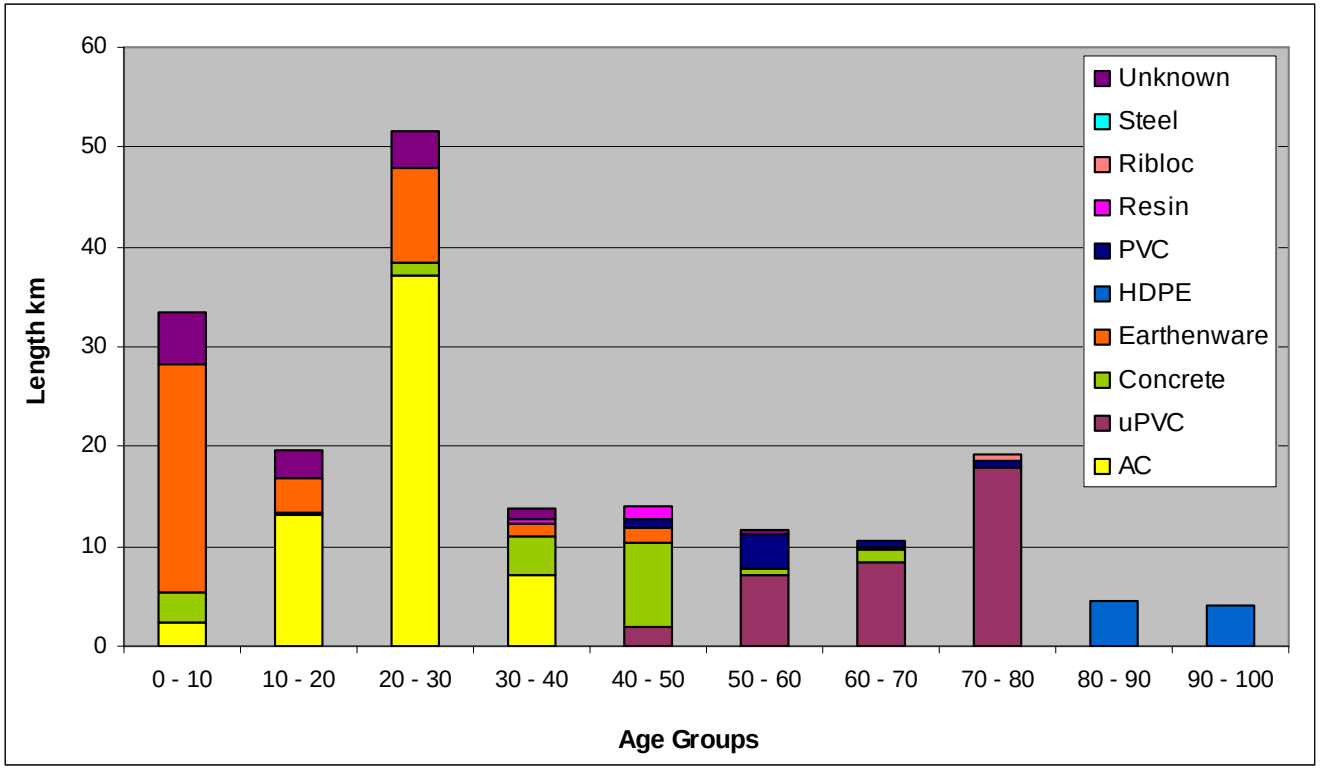
Remaining useful life, pipe length and material type



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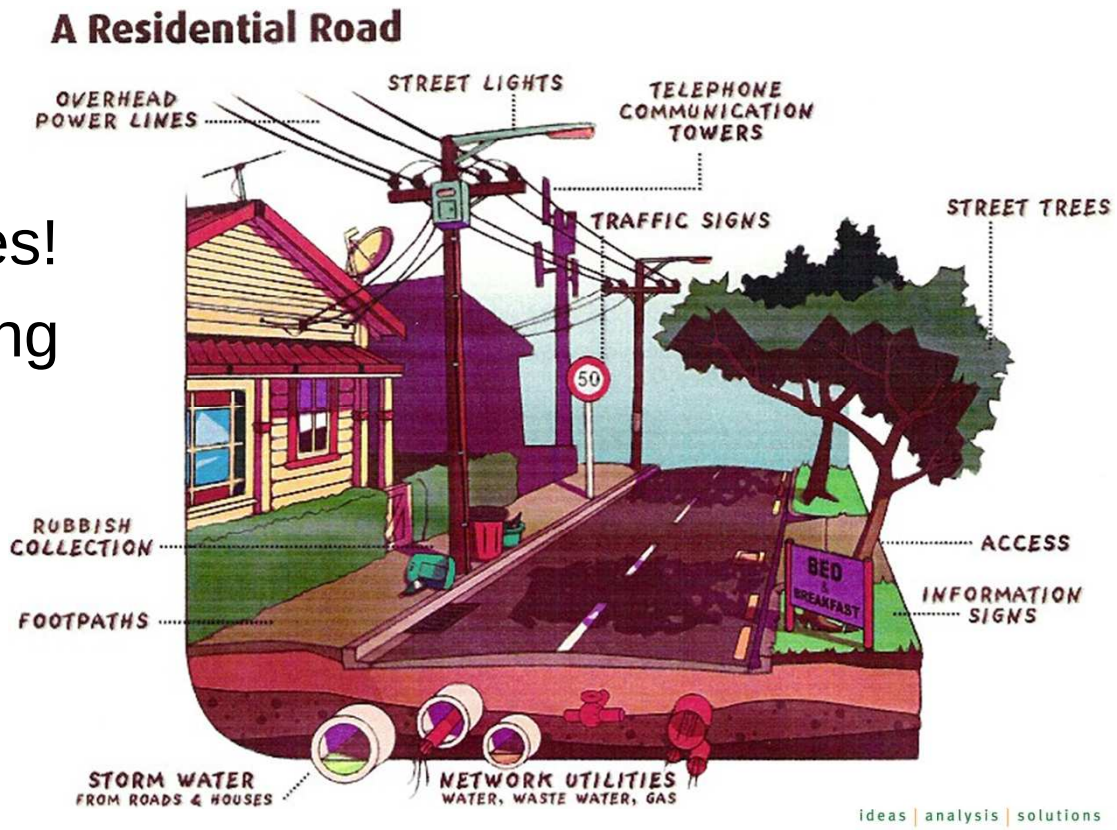
An Integrated Approach

Consider

Infrastructure

Interdependencies!

- Still not handling this well
  - Contract Separation
  - Integrated Planning



Financial Management

- 10 year financials
- Generally supported by 20 years asset analysis
- Must state significant assumptions
- Feed into LTCCP financials

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NSCC WS Confidence Ratings

Table 7.7 Confidence Rating

Income/ Expenditure Category		D	C	B	A
Income	Water Sales				
	Others				
OPEX	Water supply operation and maintenance				
	Pump station operation and Maintenance				
	Decline in service potential				
	Direct Administration				
CAPEX	Rates Collections costs				
New capital	Extension				
	Statutory requirements				
Renewals	Pipe Condition driven				
	Pipe Performance driven				
	Pipe Capacity driven				
	Pipe Economic Renewals				

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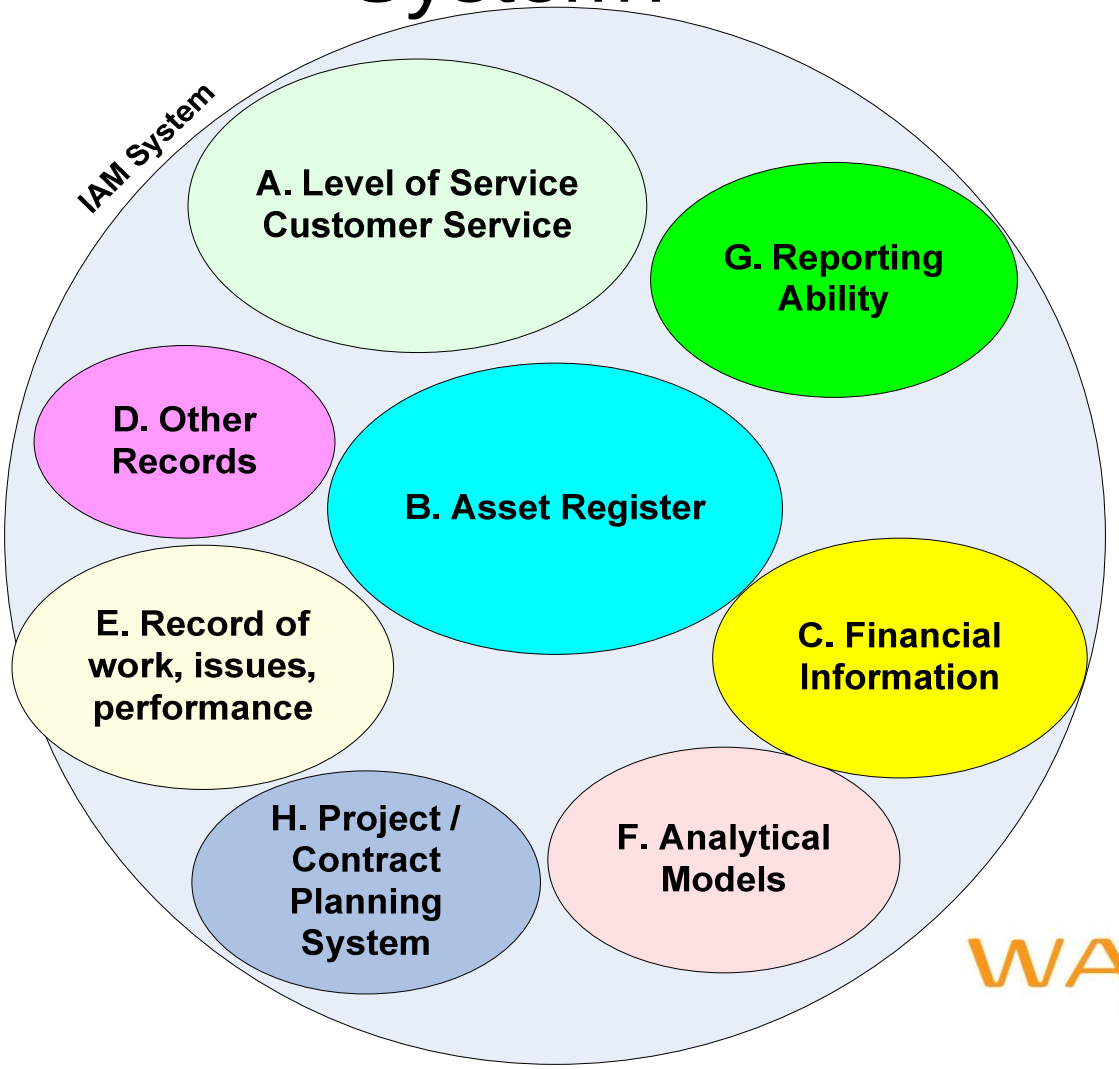
Asset Systems

What is needed in an AM Information System?



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Council Size – AMIS Selection

Category	2006 Pop. Band	# Councils	Typical AMIS Type	Typical AMIS
Large City	405,000 – 104,000	9	ERP Propriety	SAP Hansen
City – Prov. District	100,000 – 40,000	24	Propriety	Confirm Hansen
District	40,000 – 20,000	15	Small Propriety or Simple/GIS	Huefner BizeAsset
Small District	Less than 20,000	24	Simple/GIS	BizeAsset

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Systems and Processes

- Systems and processes support AM
- Critical to success
- NZ RAMM/DTims for Roading
- Multiple different systems for utilities, parks, property
- Business process integration vital
- Audit look for reliability of systems and processes

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Condition Assessment

AC Condition Assessment

South Waikato District Council

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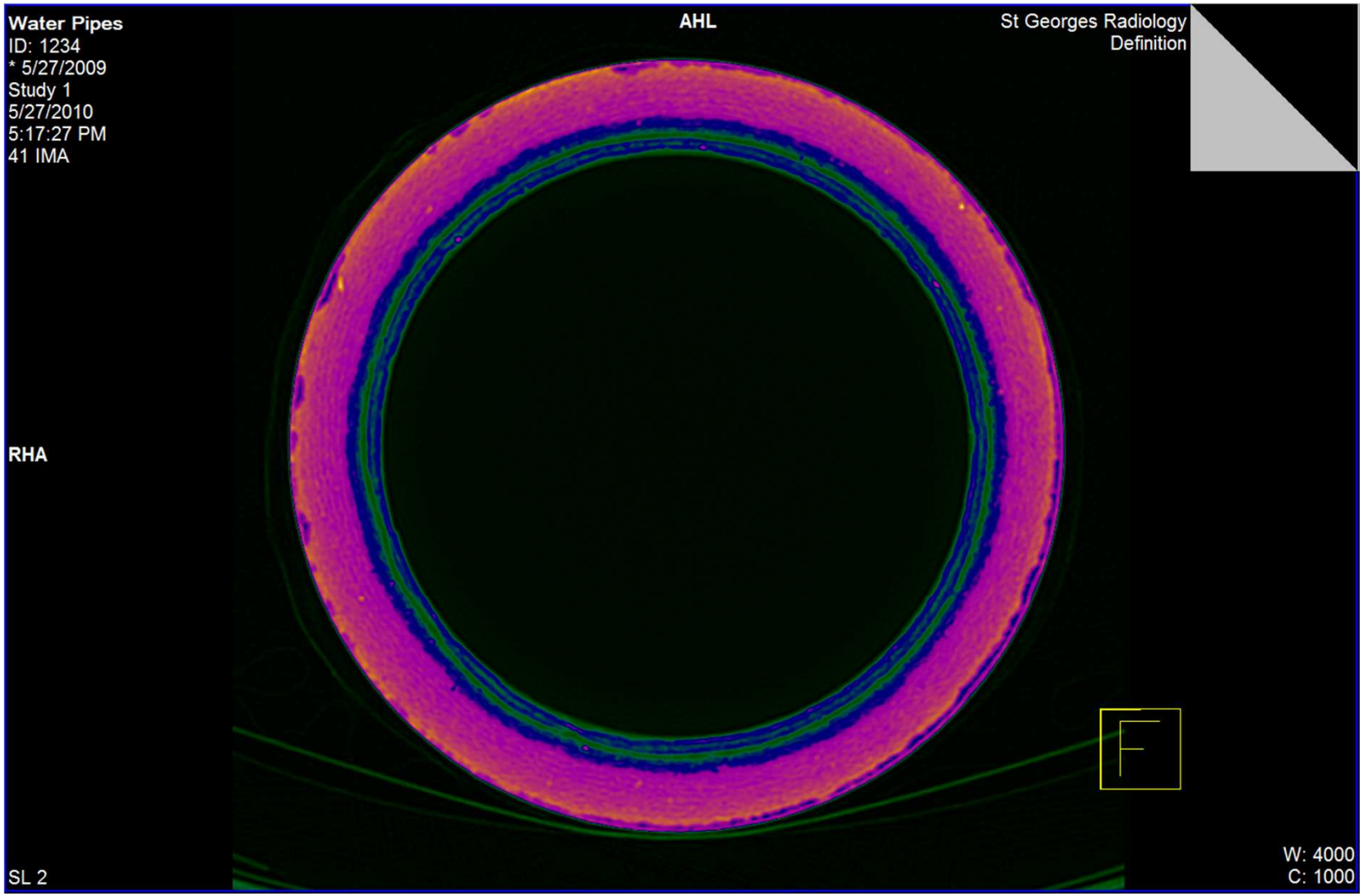
Putaruru

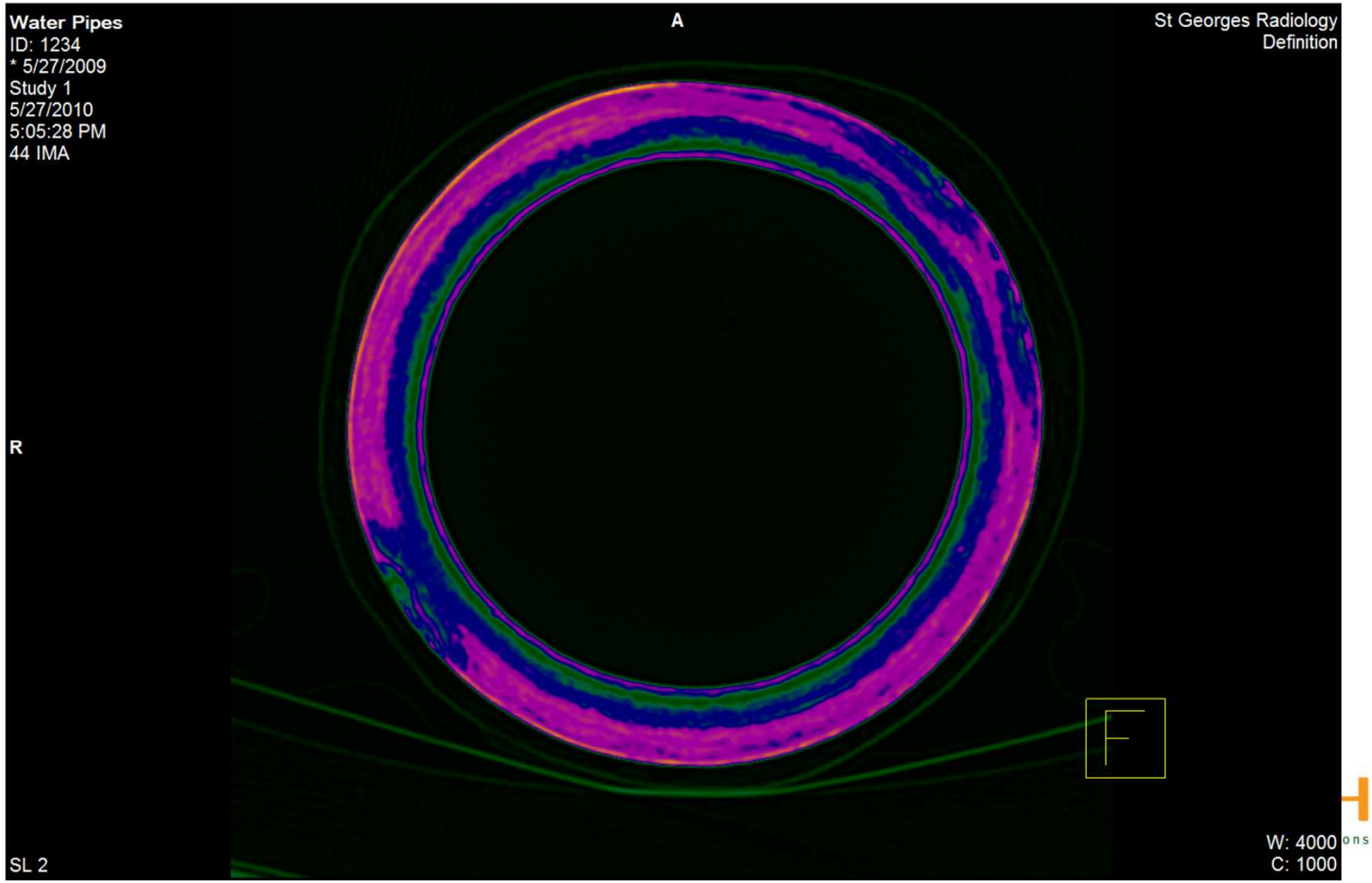
Size:150mm, Install Date: 1955, Year of First Deterioration: 2030



Tirau

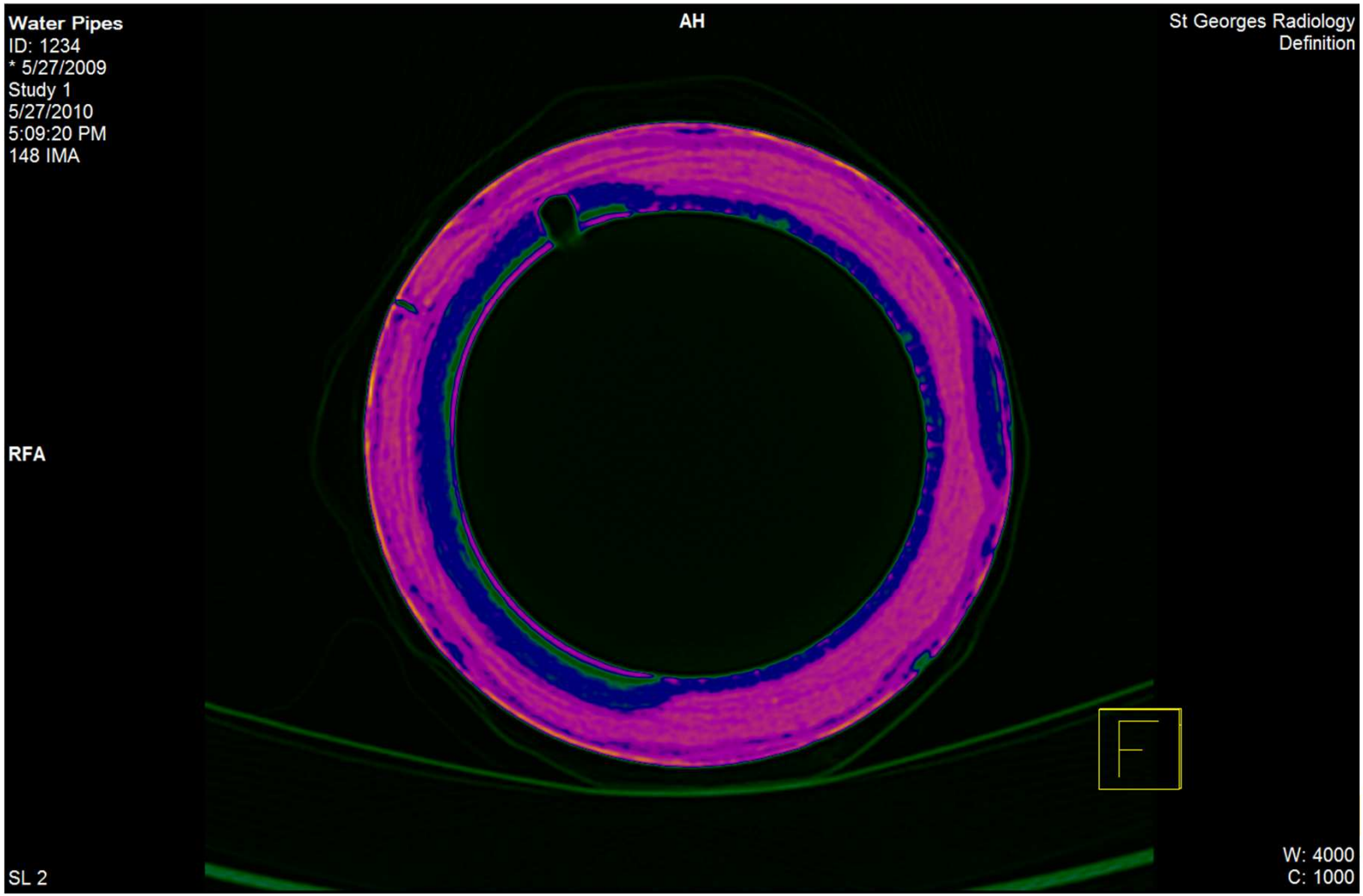
Size:100mm, Install Date: 1937 (some of the first AC installed in New Zealand),

Year of First Deterioration: 2011-2015



Tokoroa

Size:100mm, Install Date: 1955,
Year of First Deterioration: 2011-2015



AM Improvement

Improvement Planning

- Cover the gaps in practice
- 3 years forward programme
- Must be funded and resourced
- Delivery of programme is audited
- Best results – monthly improvement team meeting

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Resources

- AM programmes must be adequately resourced
- Adding AM to a large job description is not going to work
- A good operational/project engineer is not necessarily a good asset manager
- On-going AM budget is required (additional to historic budgets)
- Small Councils have difficulty attracting and retaining experienced Asset Managers

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Sustainability Management

Asset Management Practice - NZ

Asset Management Practice NZ

1. NAMS and Manuals
2. Asset Management Plans
3. Levels of Service
4. Demand Management
5. Risk Management
6. Asset Lifecycle Management
7. Financial Management
8. Systems and Processes
9. Improvement Planning

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National Asset Management Steering Committee (NAMS)

Member Organisations

- **INGENIUM- The Association of Local Government Engineering in New Zealand**
  http://www.ingenium.org.nz/
- **SOLGM - Society of Local Government Managers New Zealand**
  www.solgm.org.nz
- **LGNZ - Local Government New Zealand**
  www.lgnz.co.nz
- **Office of the Auditor General NZ**
  http://www.oag.govt.nz/
- **NZWWA- New Zealand Water and Waste Association**
  http://www.nzwwa.org.nz/
- **NZRA- New Zealand Recreation Association.**
  http://www.nzrecreation.org.nz/
- **ALGIM- Association of Local Government Information Managers**
  www.algim.org.nz
- **LAPA- Local Authority Property Association**

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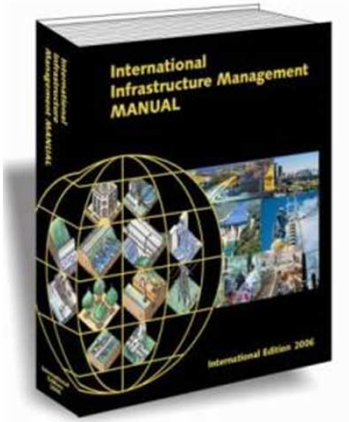
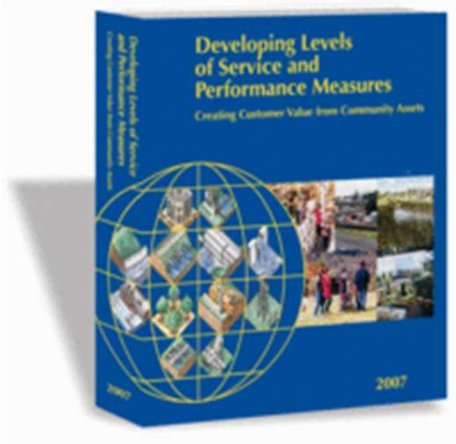
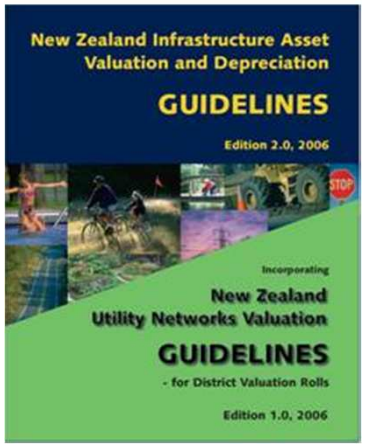
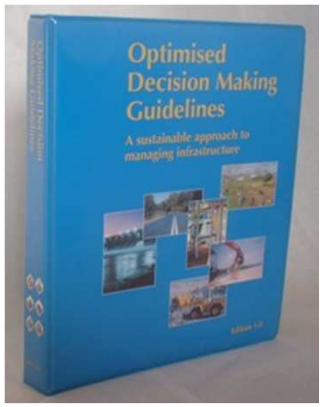
NAMS Manuals









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Infrastructure Asset Management – What is it?

"The goal of infrastructure asset management is to meet a required level of service , in the most cost effective manner, through the management of assets for present and future customers."

International Infrastructure Management Manual (IIMM) 2006

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Infrastructure Asset Management – What is it?

- A lifecycle approach
- Cost effective management strategies
- For the long term
- Defined Levels of Service
- Monitoring performance
- Managing the impact of growth
- Managing Risk
- Sustainability

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Infrastructure Asset Management

- Why do it?

- Improve governance and accountability
- Enhance Service Management and customer satisfaction
- Improve Risk Management
- Improve financial efficiency
- Make sustainable decisions

Be proactive – not reactive

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1998 AMP's – Renewal Focus

- Collection of data and building of asset registers
- Analysis of information to support 10 year financial plans
- Infrastructure effects of 1984 – 1994 recession become apparent
- Major asset renewal and maintenance backlogs are recorded

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Local Government Act 2002

- Previous Act 1974
- Provides power of general competence
- Requires extensive community consultation
- Requires 10 year financial plans that must be formally updated and audited every 3 yrs
- Requires 10 year plans supported by asset or activity management plans

Long Term Council Community Plans (LTCCP)

- 10 year plan, updated 3 yearly
- Community Outcomes – healthy, wealthy and wise
- 4 well-beings: Economic, Environmental, Social and Cultural
- Delivering agreed levels of service to the community

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New Zealand

New Zealand Overview

1. Geology and Geography
2. Development History
3. Asset Management Commences
4. Renewals and Backlogs
5. Local Government Act 2002
6. Long Term Council Community Plans
7. Progress 2002 - 2008

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Geography - New Zealand Regions

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Geography South Island - Timaru

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Geology - Alpine Fault

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Geology Alpine Fault (2)

Geology - Wellington Fault

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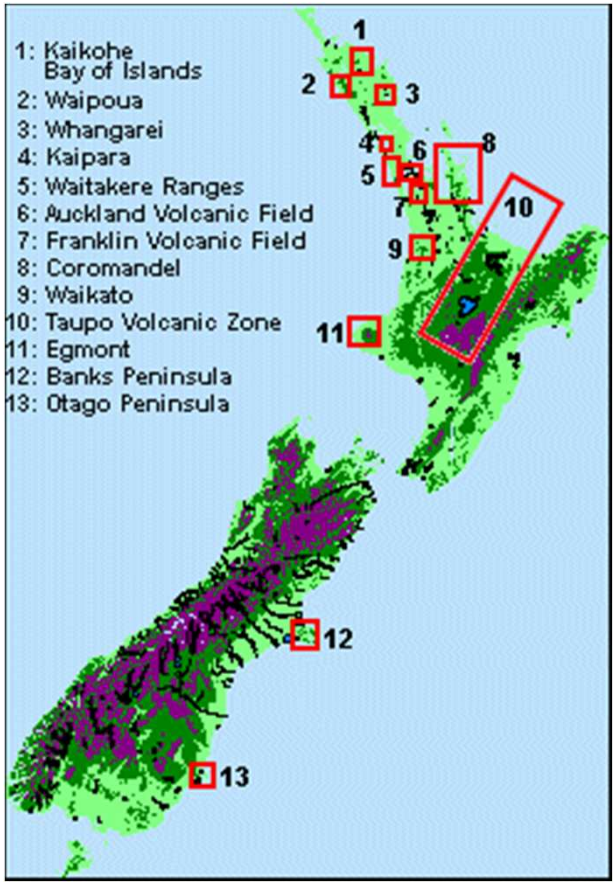
Geology - Volcanoes



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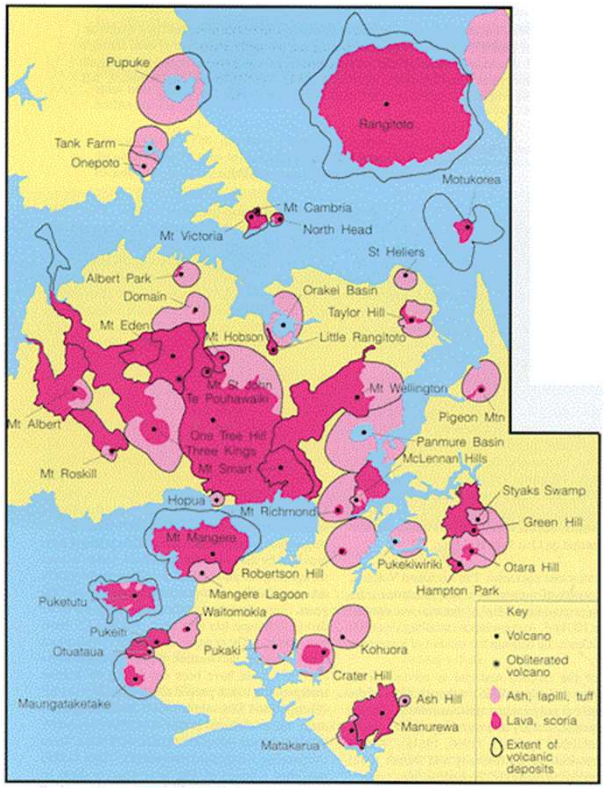
Geology – Auckland Volcanoes



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Infrastructure Development History

- 1840 European Settlement
- 1840 – 1900 breaking in
- 1900 – 1930 infrastructure build phase 1
- 1946 – 1975 infrastructure build phase 2
- 1984 – 1994 maintain
- 1995 – 2005 infrastructure build phase 3

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Infrastructure development

- Settlement - Early 1900's Initial infrastructure build. Loans from UK.
- 1950's/1960's – wealth effect and next infrastructure build. Govt subsidy.
- 1980's/1990's – relatively poor = maintain
- 2000's-2020's – relatively wealthy = replace and build
- 2030 onwards – less new build? Maintain?

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Infrastructure 1800’s - 1900’s

Rakaia River Bridge, Bollman Truss, completed 1882

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Infrastructure 1960’s

Benmore Dam commissioned 1965

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Infrastructure Now

Mangere WWTP commissioned 2003

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Future Infrastructure?

Waitakere CC Massey Leisure Centre

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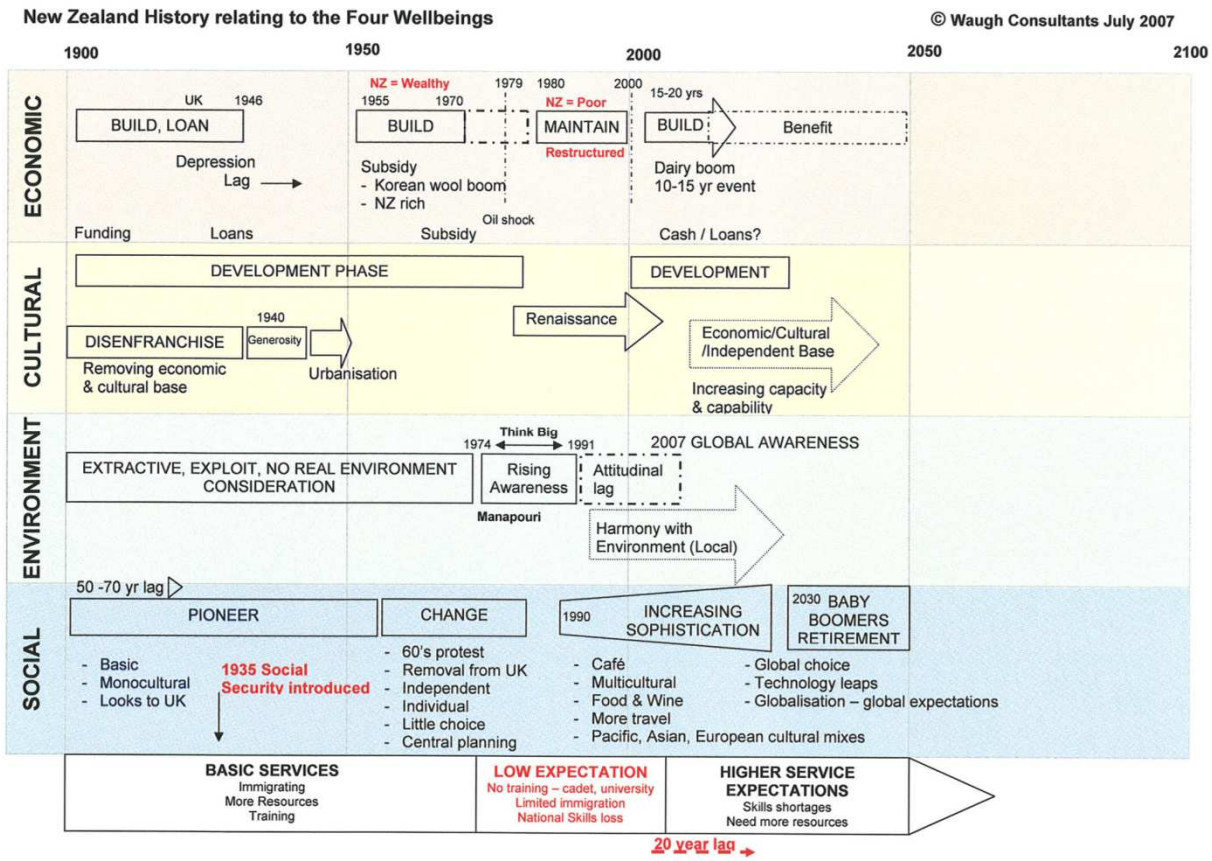
NZ History and Possible Trends



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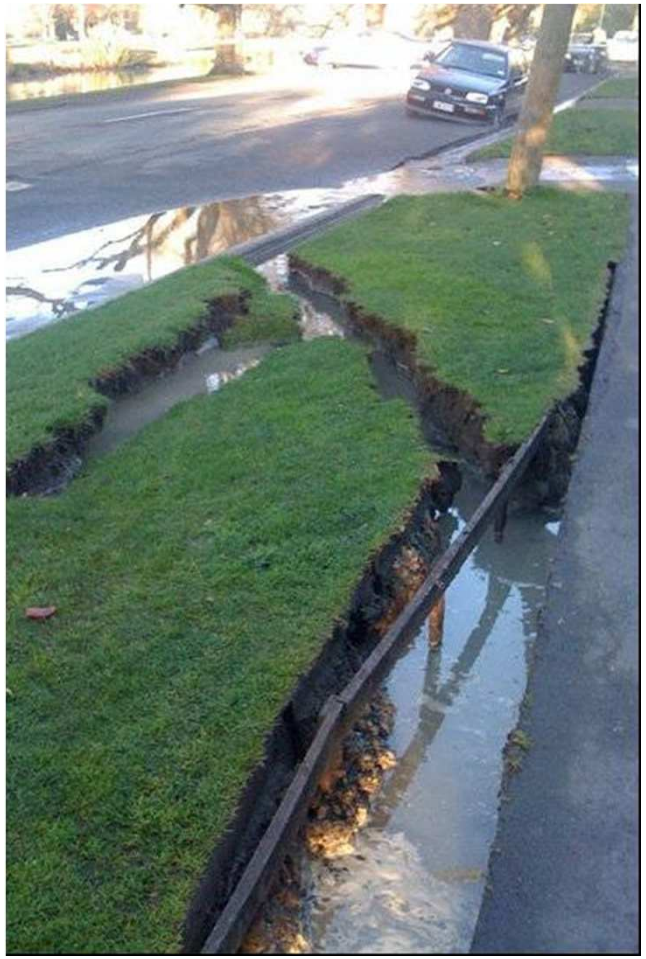
Timaru

Timaru

Christchurch Earthquake

Earthquake Damage



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Earthquake Damage

Earthquake Damage

The Deans Homestead, used in the film The Lion, the Witch and the Wardrobe, is one of Canterbury's most famous historic homes - but it has been destroyed by the earthquake. Photo / Mark Mitchell

Earthquake Damage

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