

**Learning from audit findings
2015 to 2017**

Asset management and long-term planning

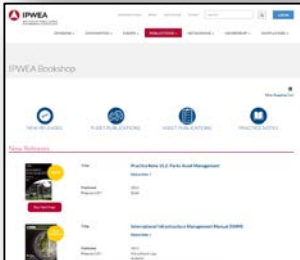
Asset management and long-term planning



Good practice



www.nams.org.nz



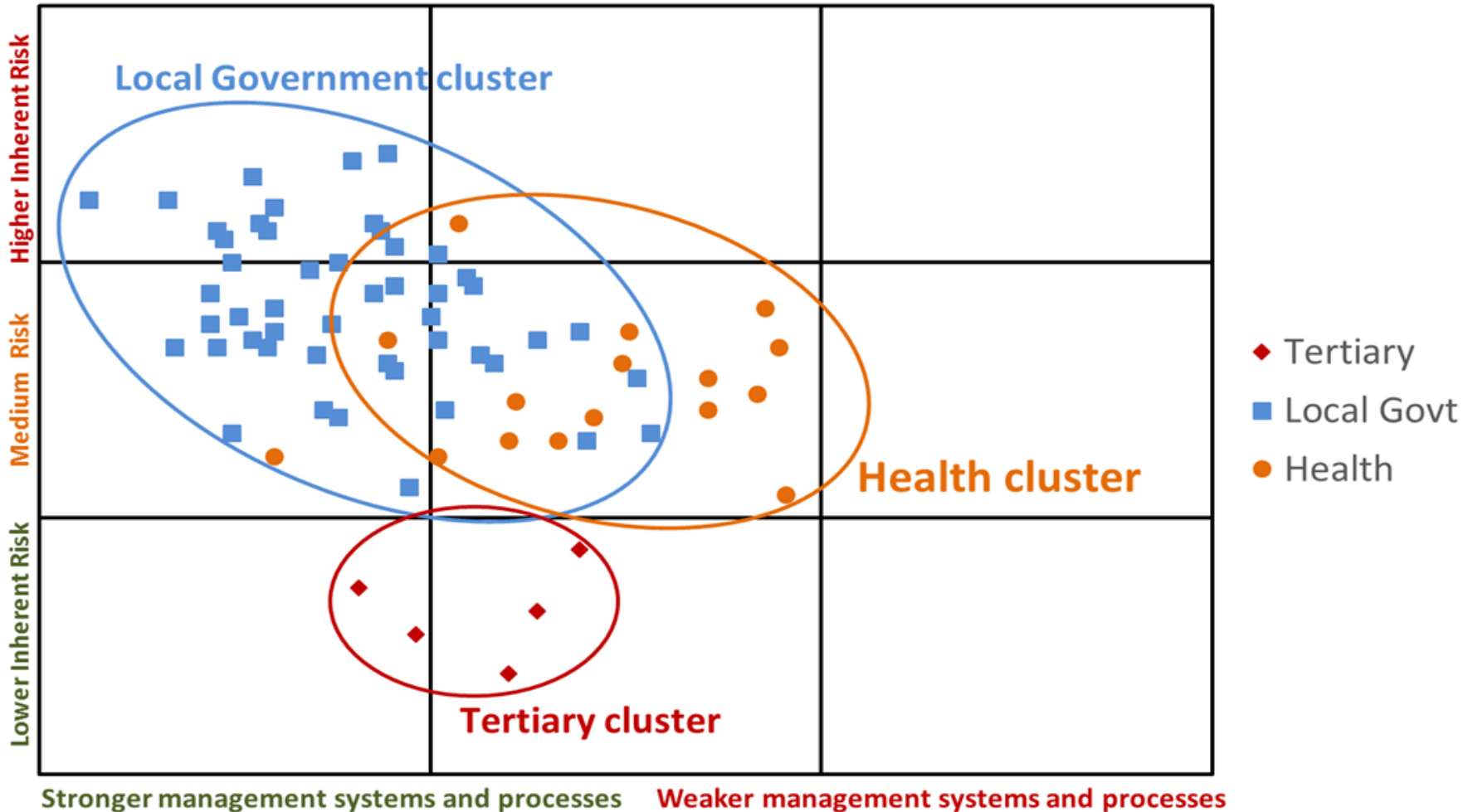
www.ipwea.org



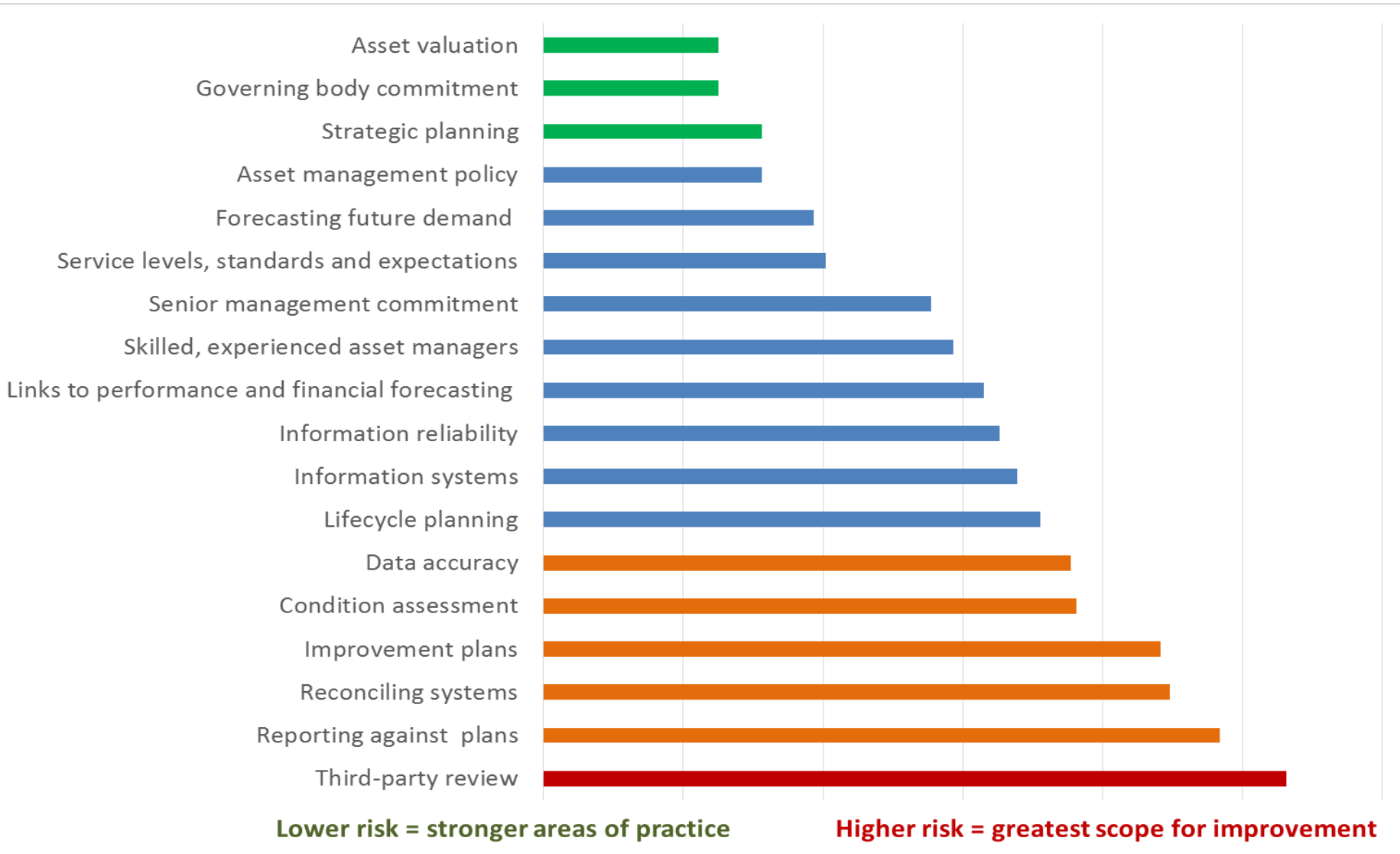
www.iso.org

Assessing risk and opportunities for improvement

Recent asset management risk ratings



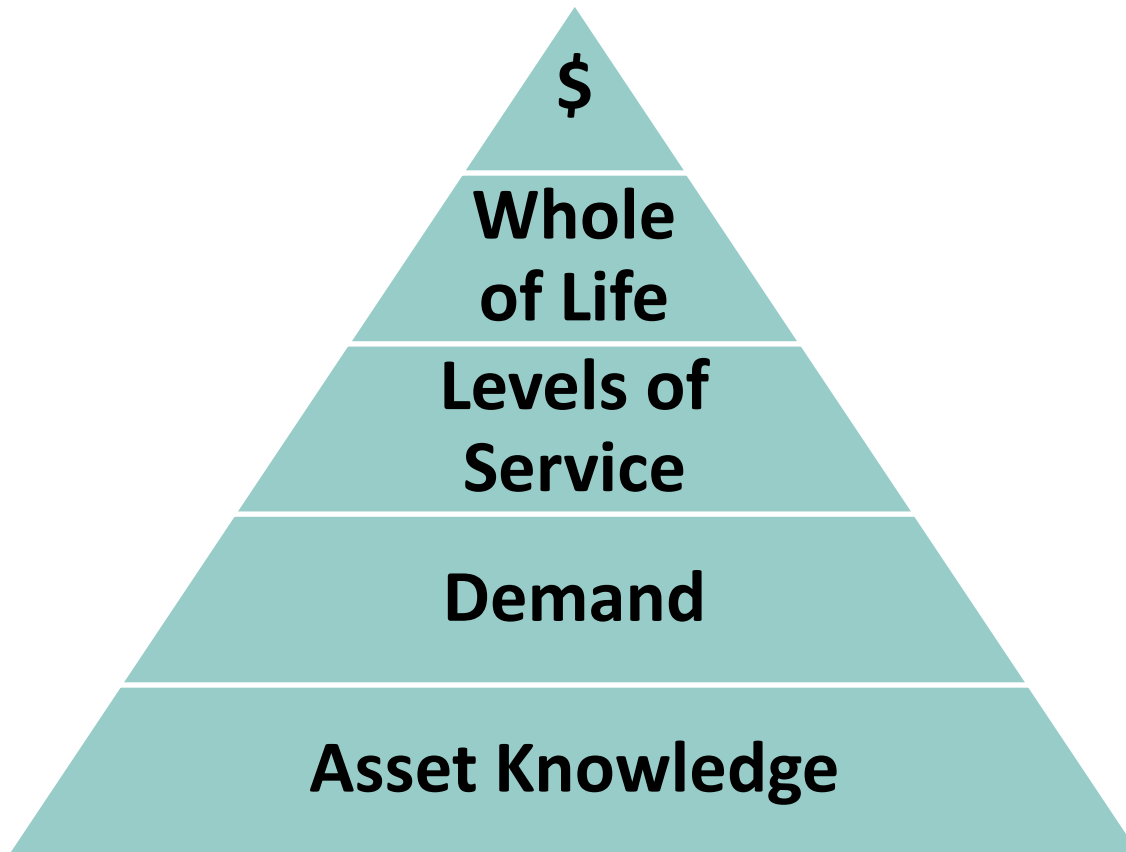
Where are the opportunities for improvement?



A closer look at the opportunities for improvement



The asset management pyramid



Policy

Risk

Continuous
Improvement

Strategic asset management

DETAIL

OUTLINE

KEY



TRANSPORT



COMMUNITY



PARKS & GREENS



WASTE WATER

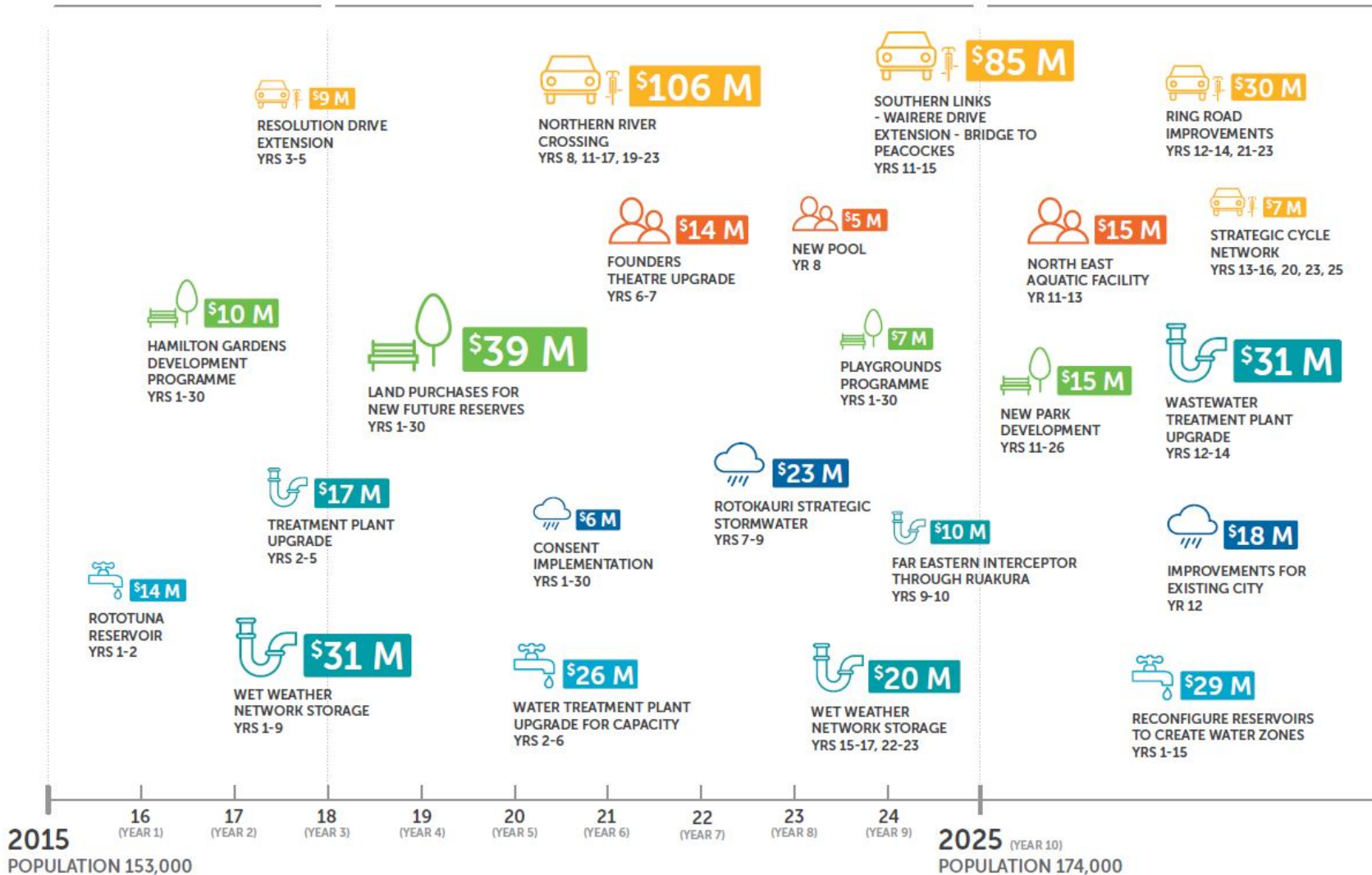


STORMWATER



WATER SUPPLY

*ALL COSTS DO NOT INCLUDE INFLATION

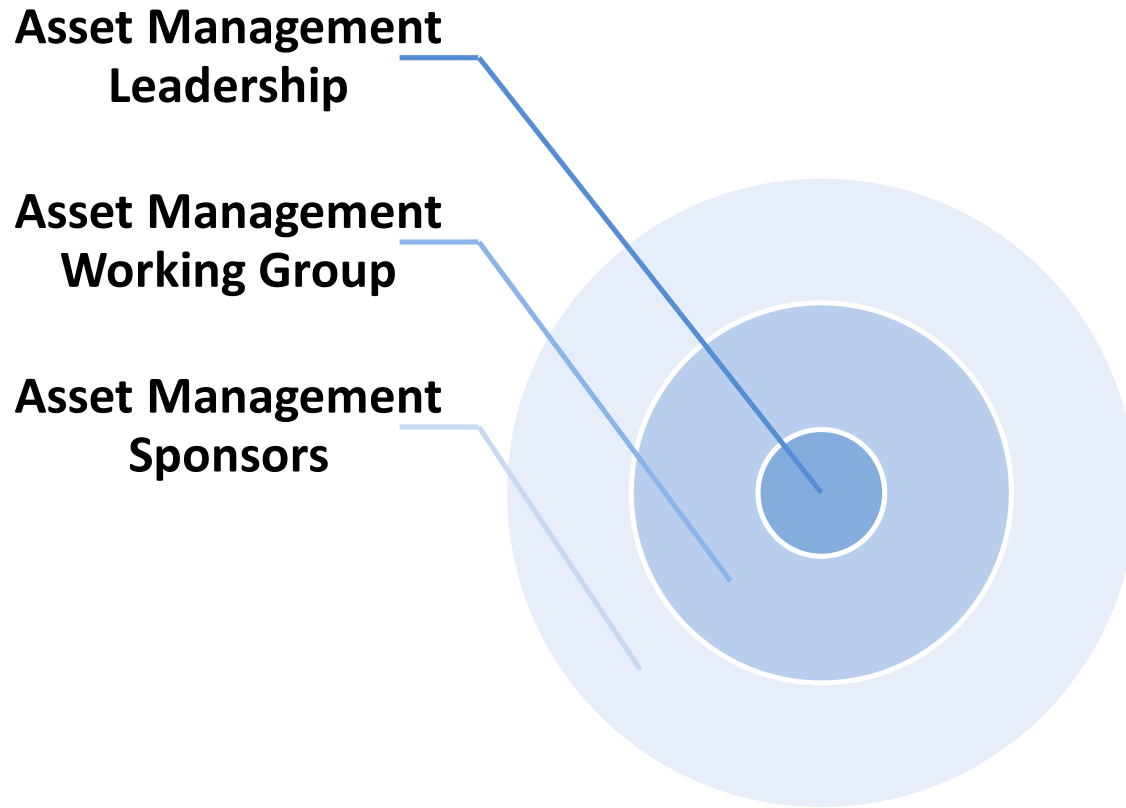


2015
POPULATION 153,000

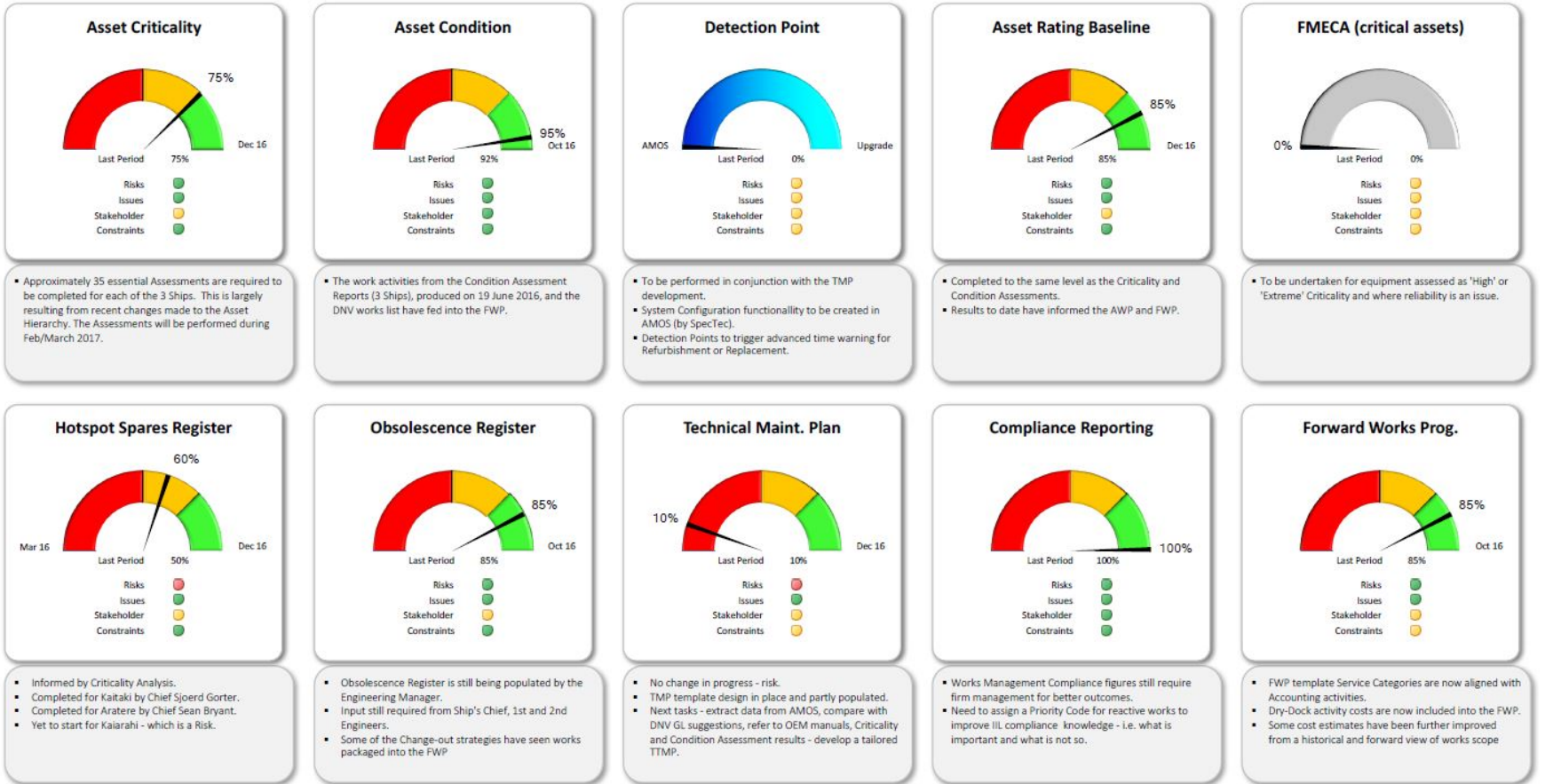
2025 (YEAR 10)
POPULATION 174,000

Planning for success

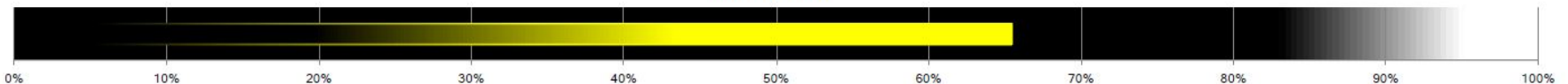
Good asset management takes a team



Data basics



Overall Progress



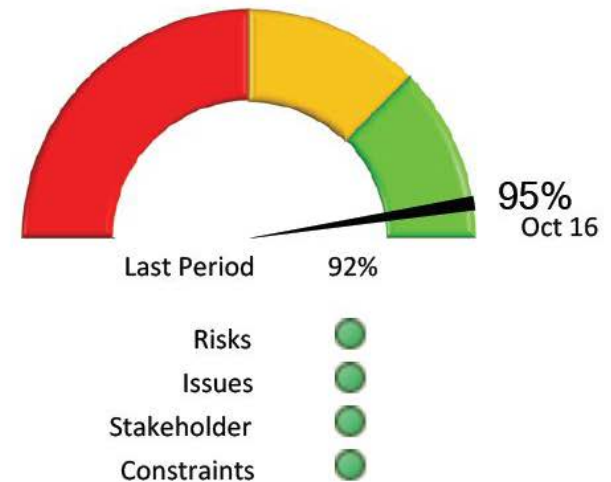
Data basics – a closer look

Asset Criticality



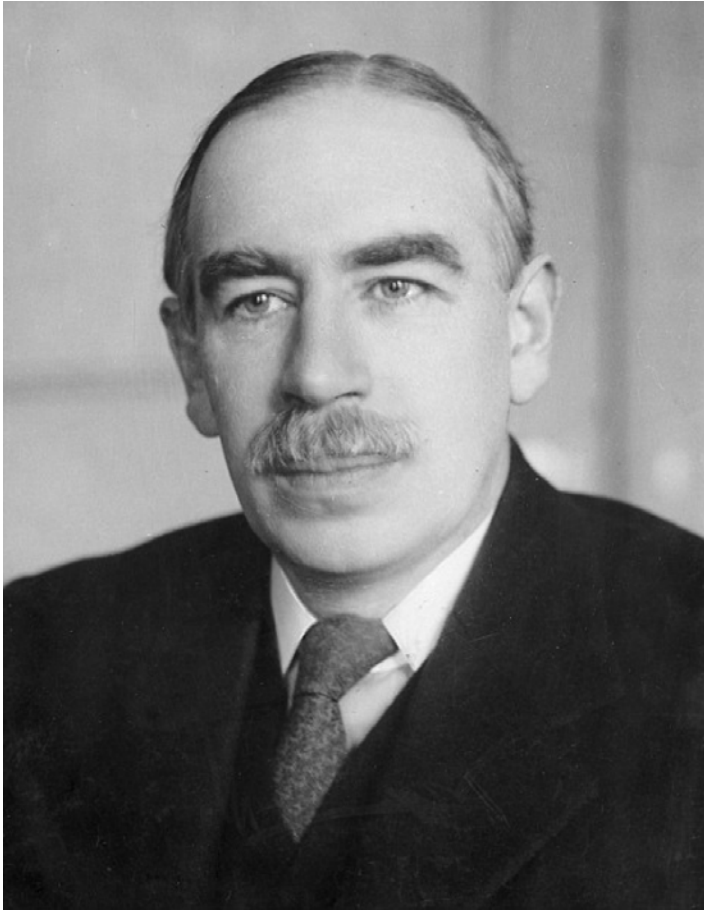
- Approximately 35 essential Assessments are required to be completed for each of the 3 Ships. This is largely resulting from recent changes made to the Asset Hierarchy. The Assessments will be performed during Feb/March 2017.

Asset Condition



- The work activities from the Condition Assessment Reports (3 Ships), produced on 19 June 2016, and the DNV works list have fed into the FWP.

Well informed assumptions



**“When the facts
change, I change
my mind.
What do you do?”**

John Maynard Keynes, 1883-1946

AUDIT NEW ZEALAND

Mana Arotake Aotearoa

Well informed assumptions

	Assumption	Level of uncertainty
Population trends	<p>That the regional population will continue to grow at the medium growth rate as projected by Statistics New Zealand and will reach approximately 538,700 by 2026 and 559,900 by 2046.¹</p> <p>Natural increase is the primary driver for growth. More than three quarters of the region's projected growth will be at 65+ years. Population decline is expected at the 0-4 and 15-29 year age groups. The ratio of elderly (65+ years) to children (0-14 years) will increase rapidly from the current 0.64 (six elderly for every ten children), to 1.16 (12 elderly for every ten children) by 2031.</p> <p>Only modest changes to the overall ethnic composition of the region. The 'European / Other' ethnic group is expected to decrease slightly to 67.7% by 2021. Maori, Pacific Island, and Asian groups will increase slightly.²</p>	Medium
Indicative areas of urban growth / intensification	<p>Our assumptions on where urban growth and intensification will take place are based on the best publically available information from territorial authorities various urban growth / development strategies including:</p> <ul style="list-style-type: none"> • Kāpiti Coast: Choosing Futures - Development Management Strategy 2007 (Kāpiti Coast District Council) • Proposed Kāpiti Coast District Plan 2012 (Kāpiti Coast District Council) • 2007 Urban Growth Strategy (Upper Hutt City Council) – <i>under review</i> • 2012-2032 Urban Growth Strategy (Hutt City Council) • Wellington Urban Growth Plan 2014-2043 (Wellington City Council) • Porirua Development Framework 2009 (Porirua City Council) • Operative Wairarapa Combined District Plan (Masterton, Carterton and South Wairarapa District Councils) – Subdivision, Land Development & Urban Growth chapter. 	Medium
Economic growth³	<p>Employment in the region is projected to grow from 226,600 full-time equivalents (FTEs) in 2013 to 285,300 FTEs in 2041. This equates to an annual growth rate of 0.82% (which is 0.33% below the national average).</p> <p>GDP in the region is projected to grow from \$23,020 million in 2013, to \$44,180 million in 2041. This equates to an annual growth rate of 2.36% (which is 0.15% below the national average).</p>	Medium

Helping your auditor can be helping yourself

AUDIT NEW ZEALAND

Mana Arotake Aotearoa

AUDIT NEW ZEALAND

Mana Arotake Aotearoa

LTP audit structure

Part 1: Pre-engagement (covering both audits)	
Consultation Document	LTP
Part 2: Planning the Consultation Document audit	Part 5 Completing the Final LTP audit
Module 2.1 Planning and risk identification	Module 5.1 Planning for the final LTP
Part 3: Fieldwork – Consultation Document	
Module 3.1: Activity management planning	Module 5.2: Performance management
Module 3.2: Asset management planning	Module 5.3: Review of the final LTP
Module 3.3: Infrastructure Strategy	
Module 3.4: Assumptions	
Module 3.5: Financial model and overall analytical review	
Module 3.6: Financial Strategy	
Module 3.7: Review of the consultation document	
Part 4: Conclude – Consultation Document	
Module 4: Conclude and report on the Consultation Document	Module 5.4: Conclude and report on Final LTP audit
Part 6: LTP Amendments	

LTP audit structure

Part 1: Pre-engagement (covering both audits)	
Consultation Document	LTP
Part 2: Planning the Consultation Document audit	Part 5 Completing the Final LTP audit
Module 2.1 Planning and risk identification	Module 5.1 Planning for the final LTP
Part 3: Fieldwork – Consultation Document	
Module 3.1: Activity management planning	Module 5.2: Performance management
Module 3.2: Asset management planning	Module 5.3: Review of the final LTP
Module 3.3: Infrastructure Strategy	
Module 3.4: Assumptions	
Module 3.5: Financial model and overall analytical review	
Module 3.6: Financial Strategy	
Module 3.7: Review of the consultation document	
Part 4: Conclude – Consultation Document	
Module 4: Conclude and report on the Consultation Document	Module 5.4: Conclude and report on Final LTP audit
Part 6: LTP Amendments	

Activity Management

Control environment

Activity related
information supports
materially accurate
planning

Assumptions
and
disclosures

Information
flow

The planning
system

Levels of
service

Demand
forecasting

Track record
of spending

Politics /
affordability /
backlogs

Risks

Assumptions
and
disclosures
clearly stated
and
adequately
cover
uncertainty

Flow of
information
to the
financial
model

Asset Management

Control environment

Asset related information supports materially accurate planning

Assumptions and disclosures

Information flow

The planning system

Levels of service

Lifecycle management, growth and demand

Reliability of forecasts

Track record of spending

Politics / affordability / backlogs

Risks

Assumptions and disclosures clearly stated and adequately cover uncertainty

Flow of information to the financial model

Assess the asset management planning system (control environment)

- **Context of the Organisation**
- **Leadership and Commitment**
- **Support**
- **Operation and Control**
- **Performance Evaluation**
- **Improvement**

Levels of service – well defined? Any changes? History of underperformance? Any risks due to funding levels?

Levels of Service

Levels of service are key business drivers and influence all AM decisions. Levels of service statements describe the outputs the organisation intends to deliver to customers and other stakeholders and therefore must be written in terms the end user can understand and relate to.

Levels of service typically relate to service attributes such as quality, reliability, responsiveness, sustainability, timeliness, accessibility and cost.

Levels of service provide the link between higher level corporate and AM objectives and more detailed technical and operational objectives.

Performance Measures

Performance measures are used to indicate how the organisation is delivering levels of service. In this Manual, the following terms are used:

- 'customer performance measure', which is the service the customer receives; and
- 'technical performance measure', which measures the service that the organisation provides (and which may use technical indicators of performance such as the condition of the asset).

For example:

Level of service: A continuous water supply is provided.

Customer performance measure: Less than (x) service disruptions > (y) minutes per year per property.

Performance Target: > 99.9% of properties

Technical performance measure:

Less than (z) loss of supply > (w) minutes per 100km pipe per year.

Performance Target: < 50

The purpose of considering Levels of Service is to assess whether asset management planning will achieve its ultimate purpose – of meeting the required level of service - OR - whether there is risk and uncertainty to that being the case.

Demand and Lifecycle

- **Monitoring current demand;**
- **Analysing demand drivers;**
- **Developing demand forecasts;**
- **Modelling demand scenarios;**
- **Demand management.**
- **Decision-making methods**
- **Managing risk and building resilience**
- **Operational planning**
- **Capital investment planning**
- **Financial management**

Your assessment of reliability

Guidance for Developing Forecasts

When generating financial forecasts it is important to:

1. Develop an audit trail so that the key assumptions made in the preparation of forecasts are noted. This is important not only for external audit but also when updating forecasts, so that a record is available so the basis of the forecasts can be recalled.
2. Comment on the reliability of the data used as a basis for forecasting. If the asset register is incomplete or lacks key information about the age or condition of assets, a lower grade of confidence will be assigned than if reliable data and information are available. Data to be considered in assessing data confidence include age, condition and performance, and demand data. An example of a confidence grading system is included in Table 3.5.3.
3. Be sure that consequential operating costs and depreciation arising from forecast capital expenditure is factored into the forecasts.
4. Comment on the reliability of the assumptions.
5. Identify data inputs that are considered to have the most significant impact on the accuracy of forecasts (e.g. unit replacement costs, asset condition, assessment of residual lives, location, inaccurate asset registers).
6. Assess the likely variances for each of the data inputs (median and upper/ lower bounds).
7. Undertake statistical analysis to determine the upper and lower bounds for the financial forecast and the sensitivities to the accuracy of the inputs.

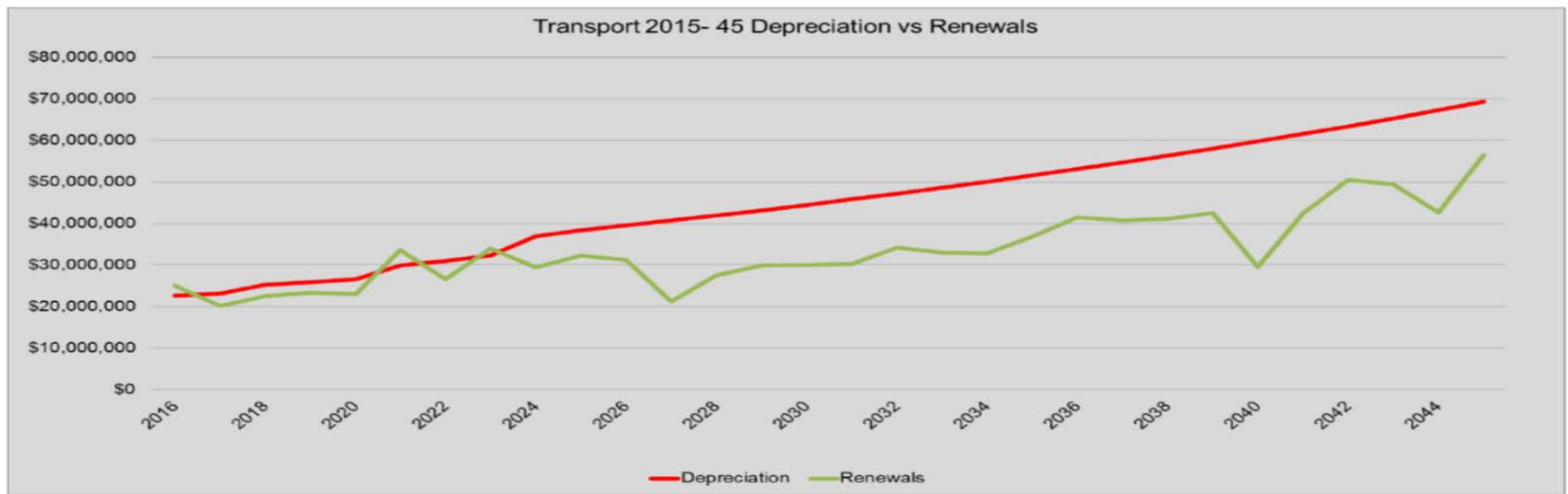
Confidence Grade	General Meaning
A Highly reliable.	Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment.
B Reliable.	Data based on sound records, procedures, investigations, and analysis, documented properly but has minor shortcomings, for example the data are old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.
C Uncertain.	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available.
D Very uncertain.	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.

Table 3.5.3: Confidence Grades

The results can be used to formulate data collection programmes targeted at making the greatest impact on the accuracy of forecasting, leading to an incremental improvement in confidence in the outputs.

Track record of spending

- Track record of actual spend against forecast: is forecast expenditure a reasonable estimate of what happens in practice?
- Are depreciation and renewal forecasts reasonable?



Note

The above graph shows the projected capital renewal expenditure for 30 years of the Transport activity. The movement in renewals reflect the age and condition of the asset and its replacement cycle.

Political and affordability issues

It is perfectly appropriate, and good practice for financial forecasts to be smoothed from the “theoretical” version produced for asset information systems... but consider

- Undue political interference in decision-making unrelated to asset need
- Affordability issues and decisions to limit spending to a pre-determined level of rate rise
- Backlog issues and what the Council is planning to do about this.

Quality and comprehensive assumptions and disclosures

Likely corporate assumptions, for example:

- NZTA subsidy for roading work;
- depreciation rates and asset lives;
- population growth/decline.

Assumptions made at asset management planning level, including:

- physical asset assumptions
- financial assumptions
- demand assumptions
- service assumptions

Disclosures address uncertainty

Information flow

Does information from asset management planning accurately flow into the financial model and Infrastructure and Financial Strategies?

We need a robust explanation of any variances between planning and the financial model.

Infrastructure strategy

**A SAMP to support
consultation**

Alignment

**Statutory
purpose**

A good
strategic asset
management
plan

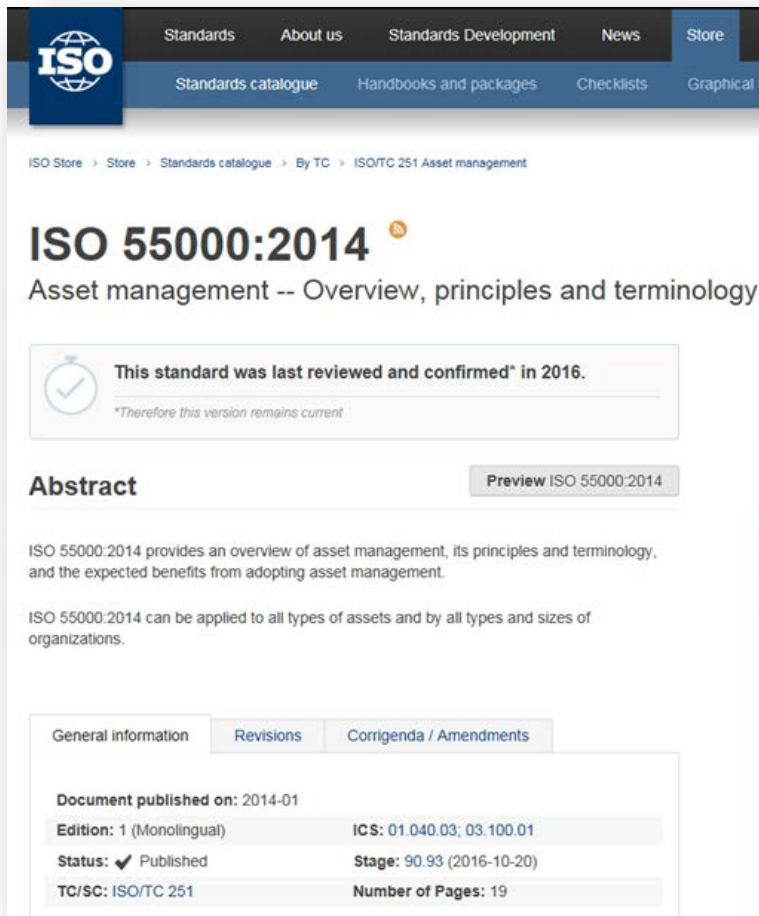
Engaging and
effectively
supports
consultation
and
accountability

Alignment
between
Infrastructure
Strategy and
Financial
Strategy

Flow of
information
to and from
the
Infrastructure
Strategy

Check the
Infrastructure
Strategy meets
the statutory
purpose

A good strategic asset management plan

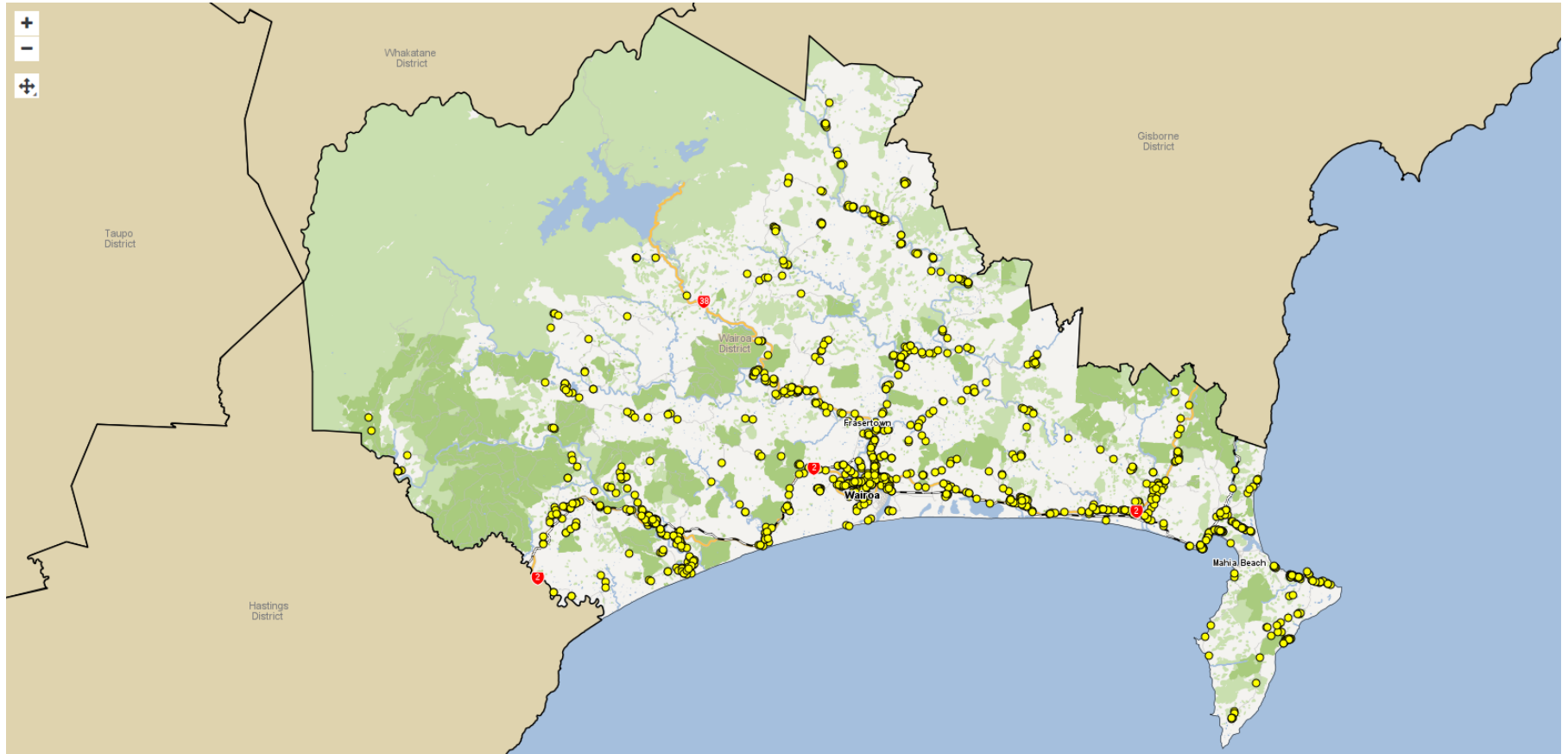


The screenshot shows the ISO 55000:2014 standard page. The header includes the ISO logo and navigation links: Standards, About us, Standards Development, News, and Store. Below the header, there are sub-navigation links: Standards catalogue, Handbooks and packages, Checklists, and Graphical S. The main content area features the title 'ISO 55000:2014' with a gold seal icon, followed by the subtitle 'Asset management -- Overview, principles and terminology'. A callout box states 'This standard was last reviewed and confirmed* in 2016.' with a note '*Therefore this version remains current'. Below this is an 'Abstract' section with a 'Preview ISO 55000:2014' button. The abstract text reads: 'ISO 55000:2014 provides an overview of asset management, its principles and terminology, and the expected benefits from adopting asset management.' and 'ISO 55000:2014 can be applied to all types of assets and by all types and sizes of organizations.' At the bottom, there are tabs for 'General information', 'Revisions', and 'Corrigenda / Amendments'. The 'General information' tab is active, showing details: 'Document published on: 2014-01', 'Edition: 1 (Monolingual)', 'ICS: 01.040.03; 03.100.01', 'Status: Published', 'Stage: 90.93 (2016-10-20)', 'TC/SC: ISO/TC 251', and 'Number of Pages: 19'.

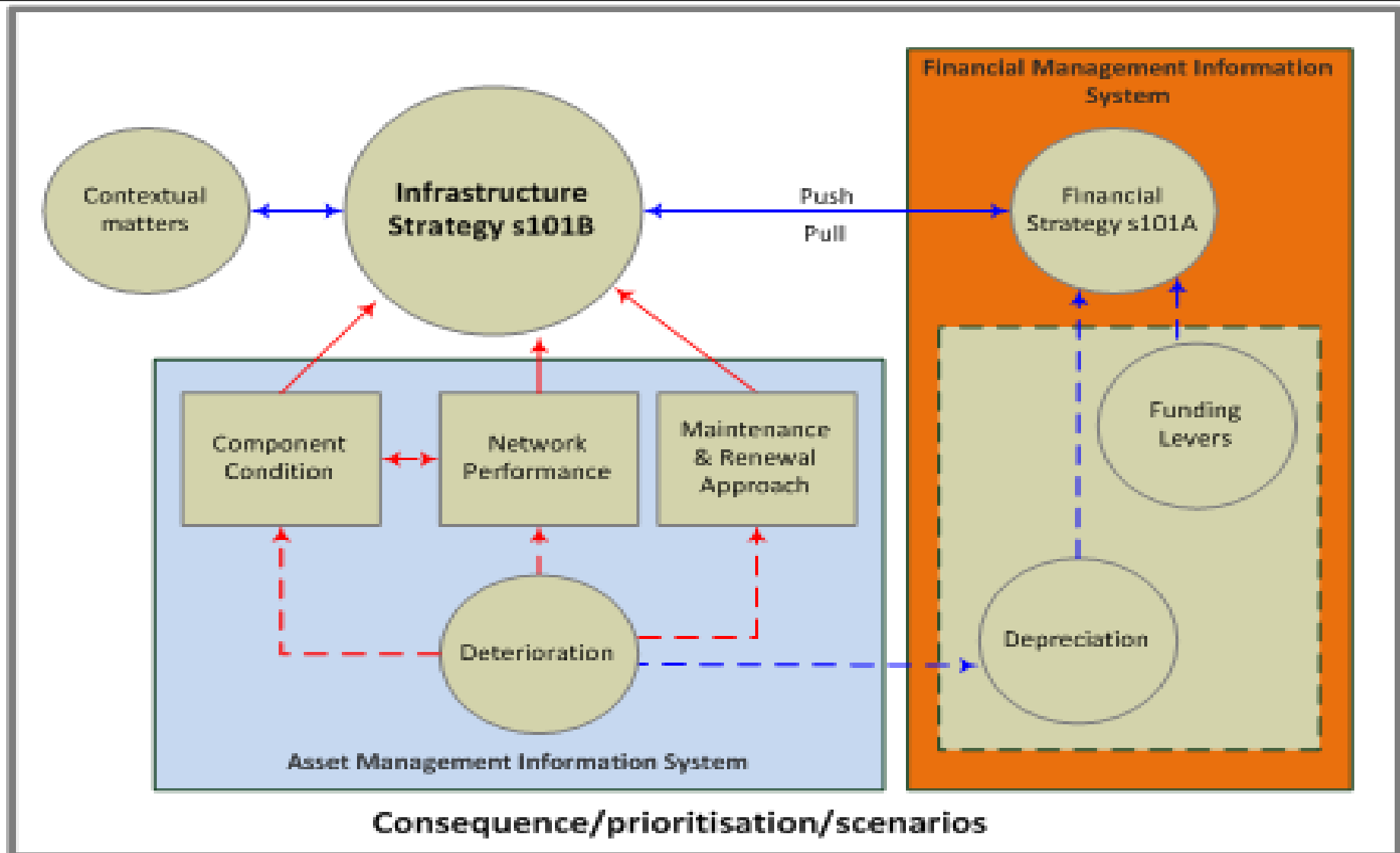
“The SAMP should document the relationship between the organisational objectives and the asset management objectives, and should define the framework required to achieve the asset management objectives.”

- expectations and requirements of stakeholders
- activities that extend beyond the routine planning timeframe
- processes to establish its asset-related decision-making criteria.

Engaging and effectively supports consultation and accountability



The relationship to the financial strategy



Meeting the statutory purpose

101B Infrastructure strategy

- (1) A local authority must, as part of its long-term plan, prepare and adopt an infrastructure strategy for a period of at least 30 consecutive financial years.
- (2) The purpose of the infrastructure strategy is to—
 - (a) identify significant infrastructure issues for the local authority over the period covered by the strategy; and
 - (b) identify the principal options for managing those issues and the implications of those options.
- (3) The infrastructure strategy must outline how the local authority intends to manage its infrastructure assets, taking into account the need to—
 - (a) renew or replace existing assets; and
 - (b) respond to growth or decline in the demand for services reliant on those assets; and
 - (c) allow for planned increases or decreases in levels of service provided through those assets; and
 - (d) maintain or improve public health and environmental outcomes or mitigate adverse effects on them; and
 - (e) provide for the resilience of infrastructure assets by identifying and managing risks relating to natural hazards and by making appropriate financial provision for those risks.
- (4) The infrastructure strategy must outline the most likely scenario for the management of the local authority's infrastructure assets over the period of the strategy and, in that context, must—
 - (a) show indicative estimates of the projected capital and operating expenditure associated with the management of those assets—
 - (i) in each of the first 10 years covered by the strategy; and
 - (ii) in each subsequent period of 5 years covered by the strategy; and
 - (b) identify—
 - (i) the significant decisions about capital expenditure the local authority expects it will be required to make; and
 - (ii) when the local authority expects those decisions will be required; and
 - (iii) for each decision, the principal options the local authority expects to have to consider; and
 - (iv) the approximate scale or extent of the costs associated with each decision; and
 - (c) include the following assumptions on which the scenario is based:
 - (i) the assumptions of the local authority about the life cycle of significant infrastructure assets;
 - (ii) the assumptions of the local authority about growth or decline in the demand for relevant services;
 - (iii) the assumptions of the local authority about increases or decreases in relevant levels of service; and
 - (d) if assumptions referred to in paragraph (c) involve a high level of uncertainty,—
 - (i) identify the nature of that uncertainty; and
 - (ii) include an outline of the potential effects of that uncertainty.
- (5) A local authority may meet the requirements of [section 101A](#) and this section by adopting a single financial and infrastructure strategy document as part of its long-term plan.
- (6) In this section, **infrastructure assets** includes—
 - (a) existing or proposed assets to be used to provide services by or on behalf of the local authority in relation to the following groups of activities:
 - (i) water supply;
 - (ii) sewerage and the treatment and disposal of sewage;
 - (iii) stormwater drainage;
 - (iv) flood protection and control works;
 - (v) the provision of roads and footpaths; and
 - (b) any other assets that the local authority, in its discretion, wishes to include in the strategy.

Section 101B: inserted, on 8 August 2014, by [section 36](#) of the Local Government Act 2002 Amendment Act 2014 (2014 No 55).



New Zealand Legislation

AUDIT NEW ZEALAND

Mana Arotake Aotearoa

Top ten questions for governors and senior managers

- 1. Have you got a strategy for the long term sustainability of your assets?**

Top ten questions for governors and senior managers

**2. Have you set an asset
management policy?**

Top ten questions for governors and senior managers

3. **Do you have good quality up-to-date asset management plans for achieving your strategy?**

Top ten questions for governors and senior managers

4. **Does your organisation have appropriate asset management skills and experience?**

Top ten questions for governors and senior managers

5. Do you know the reliability of your asset information?

Top ten questions for governors and senior managers

6. **Do you have a structured approach to assessing the condition and performance of your assets?**

Top ten questions for governors and senior managers

- 7. Have you defined a clear and comprehensive set of service levels to be delivered or supported by the assets?**

Top ten questions for governors and senior managers

8. **How well do you forecast future demand for the services that are delivered or supported by your assets?**

Top ten questions for governors and senior managers

9. **Do you report, and get reports on, achievement of your asset management plan(s)?**

Top ten questions for governors and senior managers

10. Do you have a backlog of repairs, maintenance, and asset renewals? and what are you doing about it?

Asset management and long-term planning

