

8.0 Continuous Improvement

8.1 Level of Asset Management

The 'core' AM planning criteria were prepared by the OAG in 2005, see Table 104, and are recognised as a standard for minimum compliance for financial and activity management provisions in the LGA 2002. The 'advanced' criteria describe audit expectations for the management of complex and high value infrastructure with high associated risks.

The Waugh Assessment did not assess the AM Plans against the OAG criteria but recommended that the size of the community should reflected the status of the AM Plan.

The status of this plan has been self-assessed as being of 'core' status in all areas and 'advanced' in some areas. SDC will be working towards 'advanced' status for the larger (>2,000 people) communities of Riverton, Te Anau, and Winton.

The table below outlines areas where SDC see strengths and weaknesses in current AM Planning.

Table 104 – Self-assessment against the OAG criteria

Attribute	'Core' Asset Management Planning Criteria ⁴¹	'Advanced' Asset Management Planning Criteria ⁴²	SDC Status
1. Description of assets	<p>An adequate description of the asset, both physically and in financial terms, with the ability to aggregate and disaggregate information.</p> <p>State the remaining useful lives of assets.</p> <p>A financial description of the assets that is linked to the physical description and meets the requirements of</p> <ul style="list-style-type: none"> - Financial Reporting Standard 3 - Valuation Standard 3, augmented by the NZ Depreciation and Valuation Guidelines. 	<p>As for 'Core', plus</p> <p>A reliable physical inventory of assets at both an individual asset level and at a network level. This would include:</p> <ul style="list-style-type: none"> - physical attributes such as location, material, age etc - systematic monitoring & analysis of physical condition - systematic measurement of asset performance (including utilisation/capacity). 	<p><u>Strengths:</u> Physical attribute and financial information is good for all schemes (Section 5.0).</p> <p>Remaining life information and a financial description is stated (Section 6.5).</p> <p><u>Weaknesses:</u> Monitoring and analysis of condition, performance and capacity could be improved.</p>

⁴¹ This criteria was prepared by the Auditor-General and is recognised as minimum compliance with the LGA 2002.

⁴² This criteria applies to the management of activities with a substantial asset base or where there are potentially high associated risks to the well-being of the community.

Attribute	'Core' Asset Management Planning Criteria ⁴¹	'Advanced' Asset Management Planning Criteria ⁴²	SDC Status
2. Levels of Service	<p>AM planning should define the level of service or performance required of the asset, linked to the strategic/community outcomes of the organisation.</p> <p>The significant services (for which service levels should be subject to consultation and agreement) should be stated.</p> <p>Define the length of time for which the asset network must deliver the required service.</p>	<p>As for 'Core', plus</p> <p>For each significant service;</p> <ul style="list-style-type: none"> - Evaluating level of service options. - Undertaking consultation on level of service options with the community and other relevant stakeholders (using consultation processes which meet industry recognised standards). - Adoption by the Council or governing body, of the service level & standards after consultation. - Public communication of the service level & standards in a 'Customer Charter' or equivalent public document. - Regular monitoring & public reporting of the organisation's adherence to agreed service level and standards. <p>Ensuring the AM plans of each significant service reflect and are based on the agreed levels of services, including technical performance measures which underpin the customer agreed levels of service and standards.</p>	<p><u>Strengths:</u></p> <p>LOS are defined and linked to a primary community outcome (Section 2.8.2).</p> <p>Significant services are stated (Section 1.1.3).</p> <p>Performance targets are stated over a 10-year programme (Section 2.8.2)</p> <p>LOS have been agreed with the community using the consultative process and communicated through the LTCCP2009-19 processes (Section 2.8.1</p> <p>Regular monitoring against LOS is carried out through quarterly and annual reporting (Section 2.9).</p> <p>LOS have customer agreed service levels underpinned with technical measures (Section 2.8.2).</p> <p><u>Weaknesses:</u></p> <p>Options for different Levels of Service have not been identified or evaluated.</p>
3. Managing Growth	<p>Demand forecasts for each network or facility for a 10 year period are based on latest growth forecasts.</p> <p>Demand management strategies and demand drivers are understood and documented.</p>	<p>Demand forecasts include analysis of the different factors that comprise demand.</p> <p>The sensitivity of asset development (capital works) programmes to demand changes is understood.</p>	<p><u>Strengths:</u></p> <p>Demand forecast includes latest population projections. Demand drivers are understood.</p> <p><u>Weaknesses:</u></p> <p>Need to quantify the key factors that make up demand (e.g. leakage) especially in peak-sensitive areas.</p>

Attribute	'Core' Asset Management Planning Criteria ⁴¹	'Advanced' Asset Management Planning Criteria ⁴²	SDC Status
4. Risk Management	Risk management to identify critical assets and associated risks and risk management strategies.	<p>Management of assets must include recognition and application of the principles of integrated risk management, specifically</p> <ul style="list-style-type: none"> - risk management should be consistent with AS/NZS4360, and industry good practice such as the NZ Local Government Handbook for risk management. - Asset risk management should be integrated with other corporate risk management processes - asset risk management should encompass - identification and risk management strategies for critical assets - engineering lifelines based risk assessments and mitigation plans, including reference to the organisation's disaster recovery and business continuity plans - the link to maintenance and replacement strategies 	<p><u>Strengths:</u> IRM project underway that is consistent with NZS4360 and identifies risks at a corporate level.</p> <p>Comprehensive activity level risk assessments carried out using same framework.</p> <p><u>Weaknesses:</u> Lack of risk policy identifying the Council's appetite for risk.</p> <p>Identification of critical assets is at an elementary level.</p> <p>Lack of engineering lifelines and recovery plans.</p>
5. Lifecycle (Optimised) Decision-making	<p>Identify gaps between current service capability and the required service capability to meet future demand and target service levels and reflect these gaps in an asset development programme.</p> <p>Evaluation and ranking, based on suitable criteria, of options for significant capital investment decisions.</p>	<p>The ability to predict robust and defensible options for asset treatments that can assist in achieving optimal costs over the life cycle of the asset or asset network, including;</p> <ul style="list-style-type: none"> - applying appropriate economic evaluation tools (or other Council endorsed prioritisation systems) in developing short-term project lists, and - using predictive modelling techniques to provide defensible long-term financial forecasts. 	<p><u>Strengths:</u> Service level gaps have been identified and projects programmed to address these gaps.</p> <p>Options have been identified to address different issues.</p> <p>Solutions have been selected based on workshop with key council staff.</p> <p>Projects have been prioritised (ranked) based on risk and availability of central government funding.</p> <p><u>Weaknesses:</u> Lack of processes for capturing and analysing lives, incorporating factors which influence asset lives. Lack of processes for predicting condition decay based on pipe failure records. Lack of processes to analyse maintenance/renewal options.</p>

Attribute	'Core' Asset Management Planning Criteria ⁴¹	'Advanced' Asset Management Planning Criteria ⁴²	SDC Status																
6. Financial Forecasts	<p>AM Planning should translate the physical aspects of planned maintenance, renewal and new work into financial terms for at least the ensuing 10 years and in a manner that is fair, consistent and transparent.</p> <p>The forecasts should include sufficient information to enable decline in service potential (depreciation) of an asset to be measured. Guidance on depreciation is included in the NZ Valuation and Depreciation Guidelines.</p>	<p>AM Planning should translate the physical aspects of planned operational, maintenance, renewal and new works into financial terms;</p> <ul style="list-style-type: none"> - generally over the timeframe in which the asset network must deliver services - in more specific terms over the period for which the organisation has a strategic plan - The compilation of financial forecasts should be consistent, reliable and provable. - The sensitivity of the forecasts to potential significant changes in assumptions should be analysed and discussed in the AM plan. 	<p><u>Strengths:</u> All physical work identified for the 20-year period with the 10-year programme included in the budgeting system.</p> <p>Depreciation and renewals projections have been made in order to forecast loss in service potential.</p> <p><u>Weaknesses:</u> The sensitivity of the forecasts has not been tested.</p> <p>Lack of utilisation of unit rates used in current contracts (incorporating factors which influence costs).</p> <p>Asset Valuation process is very time/resource consuming.</p>																
7. Planning Assumptions and Confidence Levels.	<p>AM Planning should</p> <p>List all assumptions & provisos under which the plan and financial forecasts are prepared;</p> <p>Indicate the degree of confidence of data reliability underpinning the AM plan; particularly</p> <ul style="list-style-type: none"> - data on asset condition; - data on asset performance; - accuracy of asset inventory; and - demand/growth forecasts <p>On the basis of the preceding assumptions and confidence of underlying data, provide a level of precision, or confidence, on the expenditure forecasts for the asset network.</p>	<p>As for 'Core', plus</p> <p>AM Planning should</p> <ul style="list-style-type: none"> - List all the assumptions and provisos in the AM plans, and note key assumptions regarding AM planning in the organisations strategic plans. - Have degrees of confidence on the data as follows: <table border="1" data-bbox="715 1346 1074 1480"> <thead> <tr> <th></th> <th>Critical Assets</th> </tr> </thead> <tbody> <tr> <td>Inventory data</td> <td>Grade 1</td> </tr> <tr> <td>Condition data</td> <td>Grades 1 or 2</td> </tr> <tr> <td>Performance data</td> <td>Grades 1 or 2</td> </tr> </tbody> </table> <table border="1" data-bbox="715 1514 1114 1648"> <thead> <tr> <th></th> <th>Non Critical Assets</th> </tr> </thead> <tbody> <tr> <td>Inventory data</td> <td>Grade 2</td> </tr> <tr> <td>Condition data</td> <td>Grades 1, 2, or 3</td> </tr> <tr> <td>Performance data</td> <td>Grades 1, 2 or 3</td> </tr> </tbody> </table>		Critical Assets	Inventory data	Grade 1	Condition data	Grades 1 or 2	Performance data	Grades 1 or 2		Non Critical Assets	Inventory data	Grade 2	Condition data	Grades 1, 2, or 3	Performance data	Grades 1, 2 or 3	<p><u>Strengths:</u> Assumptions in preparing these forecasts have been documented.</p> <p>Confidence levels in data have been stated for general lifecycle information.</p> <p><u>Weaknesses:</u> Confidence levels could be more specific.</p>
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8. Outline improvement programmes	<p>AM planning should state what needs to be done to improve AM processes and techniques.</p> <p>Improvement programmes should outline:</p> <ul style="list-style-type: none"> - the weak areas; - how weak areas will be addressed - the timeframe over which the improvements will occur; and - the resources (human and financial) needed. 	<p>As for 'Core', plus</p> <p>Improvement programmes should outline key performance indicators (KPIs) for monitoring AM improvement.</p> <p>The improvement plan should comment generally on achievements against the previous plan, and formally reports against KPIs.</p>	<p><u>Strengths:</u> 3-year improvement plan has been prepared.</p> <p><u>Weaknesses:</u> Develop better KPI's for the improvement plan.</p>
9. Planning by qualified persons	<p>AM planning must be undertaken by a suitably qualified person, for example an engineer specialising in the relevant activity.</p> <p>If plans are prepared by persons not suitably qualified, the plans should be independently assessed by a qualified person.</p> <p>The planning process should be peer reviewed.</p>	<p>AM planning must be undertaken by a suitably qualified person who is skilled in asset management techniques and has a good knowledge of the assets involved (for example, a suitable qualified person would be a Level 6 (Tactical) or Level 7 (Strategic) National Diploma in AM or equivalent skill level).</p> <p>If plans are prepared by persons not suitably qualified, the plans should be independently assessed by a qualified person.</p> <p>The planning process should be peer reviewed.</p>	<p><u>Strengths:</u> This AM plan was originally prepared by SDC with assistance from Maunsell in 2005. Key contributors included local operators (Fulton Hogan), valued advisors (MWH, Roly Hayes Water Engineer, and other SDC staff such as Area Engineers.</p> <p>This 2009 update has been carried out by Maunsell in association with SDC W&WS staff members.</p> <p>This 2009 version has been reviewed by a chartered professional engineer at Maunsell.</p> <p><u>Weaknesses:</u> None identified.</p>

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10. Commitment	<p>The Asset AM Plan must be approved and adopted by the governing body, Board or Council. This includes approval of the improvement element of the plan.</p> <p>AM plans must be seen as the key planning tool for infrastructure assets and/or significant physical assets which provide the inputs for Council's strategic plans (LTCCP).</p> <p>AM Plans must be regularly updated to reflect the most current future plans for the assets (it is expected that "Core" AM planning will be significantly revised in the light of action under improvement programme. In the first few years annual revisions of AM Plans are likely).</p>	<p>As for 'Core', plus</p> <p>The organisation must demonstrate that AM plan requirements are being implemented through operational plans, and formally report discrepancies.</p> <p>AM planning is seen as a constantly evolving process, with underpinning AM systems constantly providing better information.</p> <p>It is expected that formal AM plans, and overarching AM strategies will be formally revised every three years, with the timing of revisions linked to the organisation's strategic planning cycles.</p>	<p><u>Strengths:</u> This AM Plan has been prepared to flow into the LTCCP2009-19 and is directly linked to the LTCCP by the Executive Summary.</p> <p>This AM Plan is being implemented as seen through the quarterly and annual reporting process.</p> <p>This AM Plan will be updated in three years to flow into the LTCCP2012-22.</p> <p><u>Weaknesses:</u> Continue with three yearly AM Plan review cycle to flow into the LTCCP2012-22.</p>

Areas of weakness identified above flow through into the short term and long term AM Plan improvement programmes in Section 8.3.

8.2 Improvements Achieved

The following achievements have been achieved by SDC since the 2005 AM Plan, see table below.

Table 105 – Progress against previous improvement plan

AM Area	Improvement Project	Task	Status
<ul style="list-style-type: none"> Capacity Data Demand Forecasting Processes CAPEX Contract Management 	Capital development works planning	<ul style="list-style-type: none"> Understand network capacity. 	Partially completed – the capacity of treatment plants and pumping stations is recorded in Hansen for most items. Where information is found to untrue it is amended.
		<ul style="list-style-type: none"> Document process for determining demand projections considering all demand influences and analysing usage/capacity trend information and identifying implications. 	Not completed.
		<ul style="list-style-type: none"> Develop Project Management Manual/Code. 	Not completed.

AM Area	Improvement Project	Task	Status
<ul style="list-style-type: none"> • Condition Data • Performance Data • Asset Life Data • Financial Data • Failure Prediction • Risk Management Strategy • Optimised Decision Making 	Capital renewal works planning	<ul style="list-style-type: none"> • Develop and document process for monitoring critical assets. 	Not completed.
		<ul style="list-style-type: none"> • Develop process for predicting condition decay based on pipe failure records 	Not completed.
		<ul style="list-style-type: none"> • Identify critical assets and undertake more detailed risk assessment. Develop process for routine review of risk 	Not completed.
		<ul style="list-style-type: none"> • Develop process to analyse maintenance/renewal options 	Not completed.
<ul style="list-style-type: none"> • Asset Categorisation • Location Data • Physical Attributes Data & M Data • & M Monitoring • Asset Register System • Maintenance Management System 	Data Collection and Processes	<ul style="list-style-type: none"> • Develop documented procedures for collection, entry and quality assurance. 	Completed - process developed and being implemented.
		<ul style="list-style-type: none"> • Develop standard reports from Hansen to readily analyse O&M information. 	Completed – Crystal reports developed to assist at O&M Contract meetings.
		<ul style="list-style-type: none"> • Utilise Hansen database 	Completed – Hansen is utilised.
		<ul style="list-style-type: none"> • Encourage O&M Contractor to utilise maintenance function 	Completed – O&M contractor using function.
<ul style="list-style-type: none"> • Risk Management Data • AM Improvement 	Asset management improvement	<ul style="list-style-type: none"> • Review the completeness of the O&M plans and update as required 	Partially Completed – Plant sheets revised when major change to facility.
		<ul style="list-style-type: none"> • Develop project task sheets for each planned improvement activity 	Not completed.
<ul style="list-style-type: none"> • Legislative Compliance 	Asset management staff resources	<ul style="list-style-type: none"> • Review processes in place to keep staff abreast of legislative change 	Completed – Library system developed and implemented.

8.3 Improvement Programmes

8.3.1 Introduction

SDC strives to maintain a culture of continuous improvement, monitoring the performance of water supply assets and the effective management strategies and processes in delivering the required activity outputs. A programme of improvements to enhance the quality of services and activity management is outlined below. The improvement tasks have been identified based on the assessment against the OAG criteria in Section 8.1.

8.3.2 3-Year Improvement Programme

SDC have refocused the 3-year plan into manageable and appropriate improvement programme focussing on critical assets. Improvement areas identified in the previous plan that have still not been completed have been reassessed some items deferred to a later date, see Section 8.3.3.

Table 106 – 3-year improvement plan

<i>AM Area</i>	<i>Improvement Task</i>	<i>Target Completion</i>	<i>Resources Required</i>
Description of assets	<ul style="list-style-type: none"> Improving confidence in condition, performance and capacity information for plant items. 	Dec 2012	W&WS staff, O&M Contractor (ongoing)
	<ul style="list-style-type: none"> Improving confidence in condition information for pipe assets. 	Dec 2012	W&WS staff, O&M Contractor (ongoing)
Managing Growth	<ul style="list-style-type: none"> Analyse demand/capacity trend information and identifying implications for larger towns. 	Dec 2012	SDC staff (2 months)
Risk Management	<ul style="list-style-type: none"> Develop and document process for monitoring critical assets. 	Dec 2011	SDC staff (2 months)
	<ul style="list-style-type: none"> Review risk data routinely 	Dec 2010 Dec 2011 Dec 2012	SDC staff (1 month)
Financial Forecasts	<ul style="list-style-type: none"> Carryout valuation of infrastructure assets annually and look to optimize process. 	Dec 2010 Dec 2011 Dec 2012	Engineering consultant (1 month)
Commitment	<ul style="list-style-type: none"> Update AM Plan 	Dec 2012	W&WS staff, engineering consultant assistance (6 months)

8.3.3 Long-term Aspirations

The following long-term aspirations have been identified for the development of asset management practices at SDC, see table below.

Table 107 – Long-term improvement plan

AM Area	Long-term Improvement Task
Levels of Service	<ul style="list-style-type: none"> Options for different Levels of Service have not been identified or evaluated.
Risk Management	<ul style="list-style-type: none"> Complete engineering lifelines project Consider adopting risk policy Consider developing recovery plans
Lifecycle (Optimised) Decision-making	<ul style="list-style-type: none"> Review and document processes for capturing and analysing lives, incorporating factors which influence asset lives. Develop process for predicting condition decay based on pipe failure records. Develop process to analyse maintenance/renewal options.
Financial Forecasts	<ul style="list-style-type: none"> Include unit rates used in current contracts (incorporating factors which influence costs). The sensitivity of the forecasts has not been tested.
Planning Assumptions and Confidence Levels.	<ul style="list-style-type: none"> Consider including the level of confidence in the specific expenditure forecasts.
Outline improvement programmes	<ul style="list-style-type: none"> Develop better KPI's for the improvement plan.
Commitment	<ul style="list-style-type: none"> Continue with AM Plan updates on a 3-yearly cycle.

8.4 Activity Management plan review and monitoring

To ensure the plan remains useful and relevant the following on-going process of AM plan monitoring and review activity schedules in the table below will be undertaken.

Table 108 – Improvement Actions

Activity	Action	Target Date
Activity management plan review & development	<ul style="list-style-type: none"> Adoption of activity management plan by Council. 	March 2009, then at least 3 yearly.
	<ul style="list-style-type: none"> Annual review of plan context; <ul style="list-style-type: none"> check AM plan content for consistency with adopted council programmes and plans compliance with agreed AM improvement programmes effectiveness and adequacy of AM processes, systems and data 	June each year
	<ul style="list-style-type: none"> Full review of the activity management plan and external review of technical content. 	May 2009 then 3 yearly
	<ul style="list-style-type: none"> External review of activity management plan information by Audit New Zealand 	Annually

Activity	Action	Target Date
Levels of service	<ul style="list-style-type: none"> Review service performance measures (including public consultation process) and formally adopt levels of service Measure actual level of service delivered and report in Annual Report 	March annually (with fuller review 3 yearly) September each year
Risk	<ul style="list-style-type: none"> Review of risk register by Activity Managers 	June each year

The following indicators will be monitored to measure the effectiveness of this AM plan.

Table 109 – Improvement Performance Indicators

Indicator	Measure	Source of Information
Compliance with legislative requirements	<ul style="list-style-type: none"> Unqualified Audit opinion relating to activity plan outputs. 	Audit NZ reports
Quality of services delivered	<ul style="list-style-type: none"> Increasing, or 100%, compliance with LoS targets. 	Annual Report
Quality of risk management	<ul style="list-style-type: none"> No event occurring outside of risk profile. 	Audit of risk register.

8.5 Financial Programmes

Financial Programmes below are sourced from the Council's front end budgeting system and Crystal reports.

Table 110 – Financial Programme

PLACE HOLDER: Insert table