NSW Water and Sewerage Strategic Business Planning Guidelines

Leading policy and reform in sustainable water management
The NSW Office of Water manages the policy and regulatory frameworks for the state’s surface water and groundwater resources to provide a secure and sustainable water supply for all users. The Office of Water also supports water utilities in the provision of water and sewerage services throughout New South Wales.

NSW Water and Sewerage Strategic Business Planning Guidelines
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Compiling editors:
Sam Samra, Senior Manager, Water Utility Performance
Colin McLean, Executive Director, Urban Water

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Minister’s foreword

The provision of water supply and sewerage services in NSW is continuing to undergo significant change and reform.

Customers, the wider community, and Government are demanding increased accountability, better service, and increased efficiency from their water utilities. Regulators are imposing more stringent environmental protection and health regulations. In many cases, aging assets and infrastructure are approaching the time for replacement.

Coupled with climatic uncertainty and economic challenges, the demands faced by local water utilities are increasing.

NSW non-metropolitan water utilities have achieved significant improvements in the provision of water supply and sewerage services, and I am proud of the efforts of these utilities. It is essential that the NSW Government and the NSW local water utilities continue to work effectively together in order to successfully meet future challenges.

The NSW Government released *Best-Practice Management of Water Supply and Sewerage Guidelines* in 2004. Updated in 2007, the Guidelines encourage continuing improvement in performance through a number of key requirements, including preparation of a 20 to 30 year strategic business plan and financial plan, which is the peak planning document for a utility. Achievement of best practice management ensures efficient, effective and sustainable water supply and sewerage services.

The NSW Water and Sewerage Strategic Business Planning Guidelines assist local water utilities to prepare and implement a sound strategic business plan and financial plan for water supply and sewerage in accordance with the *Best-Practice Management Guidelines*. Such planning enables each utility to improve the management and the efficiency of its operations.

I encourage all NSW local water utilities to use these updated Strategic Business Planning Guidelines. The Guidelines will help utilities to operate more efficiently, improve water and sewerage services and provide value for money to their communities.

The Hon Katrina Hodgkinson MP
Minister for Primary Industries
Minister for Small Business

NSW Office of Water, July 2011
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Glossary of Terms

10 year Community Strategic Plan*  A council’s highest level plan which identifies the community’s main priorities and aspirations for the future and plans strategies for achieving these goals. The plan provides a road map of what is important to the community and where it wants to go.

Resourcing Strategy*  Using total asset management planning, work force planning and financial planning, the Resourcing Strategy identifies what a council will do to address the community’s main priorities in the Community Strategic Plan. The Strategic Business Plan and Financial Plan are a council’s resourcing strategy for water supply and sewerage.

4 year Delivery Program*  Identifies principal activities to be undertaken by a council over the next 4 years to implement its Community Strategic Plan. It is substantively the activities in the first 4 years of the Resourcing Strategy.

Action Plan  Annual Plan prepared by each LWU based on the review of its TBL performance report. The Plan addresses any areas of under-performance and ‘closes the planning loop’ with the utility’s strategic business plan by comparing its Typical Residential Bill with the projection in it strategic business plan and documenting any necessary corrective action.

Annual Operational Plan*  Identifies projects and activities to be undertaken each year to implement the Delivery Program.

Annual Report*  A report to the community on Council’s implementation of the Delivery Program and Operational Plan.

Australian Drinking Water Guidelines (ADWG)  Released by the National Health and Medical Research Council and Natural Resources Management Ministerial Council (NHMRC/NRMMC) in 2004, sets out requirements for drinking water quality. Revised guidelines are expected to be issued in 2011.

Best-Practice Management  NSW Government’s Best-Practice Management of Water Supply and Sewerage Guidelines, 2007 which are the key driver for reform of planning and management and performance improvement by the NSW local water utilities.

Capital Works Plan  Plan which sets out timing, nature and estimated cost of proposed future capital works. Works for each of growth, improved standards and renewals separately identified.

Community Involvement / Consultation  A high level of community consultation and involvement is required in the delivery of water supply and sewerage services. Appropriate community consultation must be carried out by each water utility prior to any significant decision making.

Customer Service Plan  Plan for activities which interface between the utility, and its customers and the community.

Drinking Water Quality Compliance  Compliance with the health-related requirements of the Australian Drinking Water Guidelines 2004 (ADWG), including microbiological and chemical water quality (page 31).

Due Diligence  Efforts made to anticipate hazards which may harm the environment and to take all feasible steps to prevent, control and mitigate the potential of their occurrence.

Financial Plan  Plan which provides the utility’s future projection of Typical

* The 10 year Community Strategic Plan, Resourcing Strategy, 4 year delivery program, Annual Operational Plan and Annual Report are key elements of the Local Government Integrated Planning and Reporting Framework.
Residential Bills in current (Year 1) dollars. It sets out the utility’s financial objectives and Strategies and Actions to attain these together with the projected annual financial statements (income statement, balance sheet and cash flow statement).

FINMOD

The NSW Financial Planning Model.

Integrated Water Cycle Management (IWCM) Strategy

A 30-year strategy for water supply and sewerage, and where cost-effective stormwater, which identifies the scenario which provides the best value for money on a triple bottom line (TBL) basis, on the basis of social, environmental and economic considerations.

Levels of Service

The level of performance provided by a water supply system or sewerage system as perceived by the end user.

LWU

Non-metropolitan NSW local water utility.

Mission Statement

A statement of a water utility’s basic purpose and function for water supply and/or sewerage.

NSW Best-Practice Management of Water Supply and Sewerage Framework

A comprehensive framework for implementing the Goal of the NSW Government’s Country Towns Water Supply and Sewerage Program by each LWU (page 2).

NSW Financial Planning Model (FINMOD)

A powerful tool for long-term financial planning developed by the NSW Office Water. The model enables a water utility to readily carry out a 30-year projection of its annual financial statements and Typical Residential Bill in current dollars and to quickly answer a range of ‘what if’ questions to determine the levels of service and asset management options which provide the best value for money for the community (page 81).

NSW Framework for Regulation of Sewerage and Trade Waste

A rigorous preventative risk management approach to address the ‘Tragedy of the Commons’ in the use of common pool resources by dischargers to the sewerage system (pages 2 and 47)

NSW Performance Monitoring System

Annual water supply and sewerage performance monitoring system (page 93) involving preparation of:

- NSW Performance Monitoring Report;
- NSW Benchmarking Report;
- 2-page TBL Performance Report for each LWU; and
- Action Plan by each LWU to address any areas of apparent under-performance.

NSW Pricing Requirements

The NSW Best-Practice Management Guidelines require LWUs to determine fair pricing of their water supply, sewerage and trade waste services to achieve full cost recovery and provide strong pricing signals to enable each user to balance the benefits and costs of using the utility’s services (page 46).

NSW Reference Rates Manual

Manual developed by the NSW Office of Water. LWUs are required to determine the fair value and the current replacement cost of their water supply, sewerage and stormwater assets in accordance with this manual, which is based on competitive tender prices.

NWI Pricing Principles

Adopted by the Natural Resource Management Ministerial Council (www.nwc.gov.au) in April 2010, Principle 1 provides guidance on achieving cost recovery for capital expenditure. Principle 2 addresses urban water supply tariff requirements. Principle 3 addresses cost recovery for water resources planning and management by bulk rural water suppliers. Principle 4 provides
Objective

A defined result or outcome to be achieved. Defined in Sub-Plans for key result areas.

Operation Plan

Plan for operating the overall water supply or sewerage system and individual facilities.

Recycled Water

Treated sewage effluent.

Risk-based Drinking Water Quality Management Plan

Preparation and implementation of a risk management plan by a LWU in accordance with the Drinking Water Quality Management Framework of ADWG (page 31). Such a plan is required by the Public Health Act 2010.

Sub-Plan

A component plan of the Strategic Business Plan in a key result area eg. Maintenance Plan, Operation Plan.

TBL

Triple Bottom Line (social, environmental and economic considerations).

TBL Evaluation of IWCM Scenarios

A rigorous basis for evaluation of IWCM scenarios developed by a LWU to identify the scenario which provides the best value for money on the basis of social, environmental and economic considerations. Set out in the NSW Office of Water’s IWCM Information Sheet No. 6 (www.water.nsw.gov.au).

TBL Performance Report

Annual 2-page triple bottom line (TBL) performance report for over 50 key performance indicators provided by the NSW Office of Water to each LWU.

Total Asset Management Plan

Plan for the procurement, operation, and maintenance of capital assets.

Typical Residential Bill

Principal indicator of the overall cost of a water supply or sewerage system and is the bill paid by a residential customer using the utility’s average annual residential water supplied.

Upper Bound Pricing

A LWU which meets of the NSW Best-Practice Management requirements and pays an ‘efficiency dividend’ from the surplus of the water supply and sewerage businesses to the council’s general revenue will be moving towards ‘upper bound’ pricing, which is required under the National Water Initiative where practicable.

Water and/or Sewerage Strategic Business Plan

A utility’s peak planning document for water supply and/or sewerage which identifies the levels of service to be provided, the utility’s asset management and work force activities and the resulting typical residential bill in current dollars.

WELS

A Water Efficiency Labelling Scheme introduced by Australian Governments in 2006 to provide objective information on the water use efficiency of specific appliances. Appliance purchasing decisions will be aided by such information.
Acknowledgements

These guidelines have been prepared by the NSW Office of Water in conjunction with a review team comprising the following representatives from Local Government. Their contribution is gratefully acknowledged.

LOCAL GOVERNMENT AND SHIRES ASSOCIATIONS:

Councillor Bill McDonald (Hume Shire)
Chairman, Water Supply & Resources Committee
Local Government and Shires Associations

John McSullea
Deputy Secretary
Local Government and Shires Associations

Stewart McLeod
Director Technical Services
Orange City Council

INSTITUTE OF MUNICIPAL ENGINEERING:

Mike Steer
Works Manager
Penrith City Council

INSTITUTE OF MUNICIPAL MANAGEMENT:

Charles Chatwood
General Manager
Taree City Council

DEPARTMENT OF LOCAL GOVERNMENT

Zac Lalic
Senior Policy And Research Officer
Department of Local Government

The 1993 Guidelines, which were prepared under the direction of Mr Peter Mackenzie, Deputy Director Water and Sewerage, Public Works are a ground breaking document. Water supply and sewerage strategic business planning by the local water utilities in non-metropolitan NSW has been carried out in accordance with these Guidelines, and 91% of the utilities have now completed a sound 20 to 30 year strategic business plan and financial plan.

The 2011 Guidelines extend and update the 1993 document and have been prepared by the NSW Office of Water. The valuable contributions of the Local Government Association of NSW and Shires Association of NSW (LGA and SA), the NSW Local Government Water Industry Directorate and a number of Local Water Utilities (LWUs) are gratefully acknowledged.
1. Introduction

1.1. Best-Practice Management Guidelines

The NSW Government’s Best-Practice Management of Water Supply and Sewerage Guidelines, 2007 (Figure 1 on page 2) have been developed as a practical means of implementing the Goal of the Government’s Country Towns Water Supply and Sewerage Program. The Guidelines consolidate earlier initiatives and involve 6 criteria:

- Strategic business planning and financial planning
- Pricing and regulation of water supply, sewerage and trade waste (including pay-for-use water pricing, strong pricing signals, full cost recovery, commercial sewer usage, trade waste and developer charges and a trade waste regulation policy).
- Water conservation and demand management
- Drought management
- Annual performance monitoring – including annual 2-page triple bottom line (TBL) Performance Report and Action Plan by each utility
- Integrated Water Cycle Management

The outcome of a local water utility (LWU) complying with the Best-Practice Management Guidelines is appropriate, affordable and cost-effective services to meet community needs while protecting public health and the environment and making best use of regional resources.

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1 Appropriate, affordable and cost-effective water supply and sewerage services in urban areas of non-metropolitan NSW which meet community needs, protect public health and the environment and make best use of regional resources (page 2 of Reference 1 on page 97).

2 Annual performance monitoring since 1986, Security of Supply basis for sizing of water supply headworks (Reference 2 on page 97), total asset management (References 3 and 24 on page 97), strategic business planning (page xi), financial planning (Reference 4 on page 97), IPART Pricing Principles (Reference 5 on page 97).

3 I.e. fit for purpose, with no ‘gold plating’.

4 Effective and efficient services including appropriate use of modified standards for small communities, eg. National Handbook for Affordable Water Supply and Sewerage for Small Communities (Reference 6 on page 97).

5 The major public health benefits (Reference 6 on page 97) of reticulated public water supplies and safe management of wastewater for urban areas (ie. cities, towns and villages) make it highly desirable to provide cost-effective services to urban areas wherever practicable. In 2009-10, the non-metropolitan NSW coverage for reticulated water supply and sewerage was 97.9% and 95.3% respectively. [Source: 2009-10 NSW Performance Monitoring Report].

In addition, providing backlog sewerage for small towns also provides public health and environmental benefits to non-residents of the towns, as well as improved environmental outcomes for the region – eg. the absence of health and environmental risks from pollution of waterways by overflowing septic tanks (pages 5-9 and 5-10 of Reference 6 on page 97).
**NSW BEST-PRACTICE MANAGEMENT OF WATER SUPPLY AND SEWERAGE GUIDELINES, 2007 (BPMG)**

**BPMG Elements**

1. Integrated Water Cycle Management (IWCM)
2. Strategic Business Planning (SBP)
3. Regulation and Pricing of Water Supply, Sewerage and Trade Waste
4. Water Conservation
5. Drought Management
6. Performance Monitoring

**Outputs**

- 30-year IWCM Strategy
- 20 to 30-year SBP, Total Asset Management Plan (TAMP) & Financial Plan (FP)
- Water Conservation Plan
- Drought Management Plan
- Annual TBL Performance Report & Action Plan to Council

**Outcomes**

- Best-value IWCM Scenario Identified
- Sustainable Water and Sewerage Services Implemented
- Complying Water & Sewerage Tariffs, Full Cost Recovery, Strong Pricing Signals to encourage efficient use of services
- Comply with NSW Framework for Regulation of Sewerage and Trade Waste
- Efficient water use
- Exposure to drought mitigated
- Corrective action implemented following annual TBL performance review

**Other Considerations**

- Drinking Water Quality Management
- Security of Water Supply
- Environmental Management
- Sewer Backlogs
- Quality Management Plan
- Occupational Health & Safety
- Community Consultation

**National Requirements**

- COAG Strategic Framework for Water Reform
- National Competition Policy
- Australian Drinking Water Guidelines
- National Water Initiative
- National Performance Reporting
- Wastewater Source Management Framework
- National Urban Water Planning Principles
- NWI Urban Water Reforms
- NWI Pricing Principles

Note that the NSW Best-Practice Management of Water Supply and Sewerage Guidelines, 2007 (BPMG) are the practical means of implementing the Goal of the NSW Government's Country Towns Water Supply and Sewerage (CTWSS) Program by the non-metropolitan NSW local water utilities (LWUs), which are expected to comply with the Guidelines.

CTWSS PROGRAM GOAL:

Appropriate, affordable and cost-effective water supply and sewerage services in urban areas of non-metropolitan NSW which meet community needs, protect public health and the environment and make best use of regional resources.

**Figure 1** The NSW Best-Practice Management of Water Supply and Sewerage Framework
1.2. National Requirements

The *Best-Practice Management of Water Supply and Sewerage Guidelines*, 2007 address the following national requirements:

- COAG Strategic Framework for Water Reform 1994
- National Competition Policy (NCP) 1996
- Australian Drinking Water Guidelines (ADWG) 2004
- National Water Initiative (NWI) 2004
- National Performance Reporting (NPR) since 2005-06
- National Framework for Wastewater Source Management 2008
- National Urban Water Planning Principles 2009
- NWI Urban Water Reforms 2010
- NWI Pricing Principles 2010

LWUs which comply with the NSW *Best-Practice Management Guidelines* also comply with the above national requirements. In addition, national guidelines have been issued for:

1. Residential customers’ water accounts6 2006
2. Broad guidance on pricing of recycled water and stormwater reuse
   (Principle 4 of the NWI Pricing Principles 2010)
3. Metering Code of Practice

LWUs are encouraged to also address the matters in (1) and (2) above and their performance in this regard is disclosed in the annual NSW Benchmarking Report [Reference 8 on page 97].

It is understood that the Division of Local Government is proposing to amend the *Local Government Act 1993* to align with the new metering code.

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1.3. Local Government Integrated Planning and Reporting Framework

NSW local government councils are required to comply with the Local Government Integrated Planning and Reporting Framework 2010 (References 10 and 11 on page 97), which includes requirements to prepare the following:

- 10 year Community Strategic Plan
- Resourcing Strategy
- 4 year Delivery Program
- Annual Operational Plan
- Annual Report

An outline of these requirements is shown in Appendix A on page 99. As noted on page 99, the water supply and sewerage strategic business plan and financial plan are the Council’s resourcing strategy for these services.

![Figure 2 NSW Local Government Integrated Planning and Reporting Framework](image-url)
1. Introduction

However, page 20 of the Division of Local Government’s Planning and Reporting Manual7 2010 (Reference 11 on page 97) highlights the following more stringent requirements which apply for water supply and sewerage:

“Councils responsible for water supply and sewerage infrastructure

Councils that have responsibility for water supply and sewerage infrastructure need to comply with the requirements and timeframes of the NSW Government’s Best-Practice Management of Water Supply and Sewerage Guidelines, 2007. These requirements include:

- Preparing and implementing a 30 year Integrated Water Cycle Management (IWCM) Strategy
- Preparing and implementing a 20-30 year Strategic Business Plan, Financial Plan and associated asset management plans
- Annual Performance Monitoring, including preparing an annual Action Plan to review the council’s performance and to identify and address any areas of under-performance. The review also includes whether the current Typical Residential Bill is in accordance with the projection in the Strategic Business Plan and any proposed corrective action.

The development of both the IWCM Strategy and the Strategic Business Plan require significant community involvement. Further information on these requirements is available from the NSW Office of Water website www.water.nsw.gov.au.”

In addition, page 74 of the above Manual identifies the asset management planning requirements for water supply and sewerage:


These requirements include the need to prepare an Asset Register, a 20 to 30 year Operation Plan, Maintenance Plan and a Capital Works Plan which identifies the required renewals, works for improved levels of service and works for serving new growth. Councils must continue to meet these asset management planning requirements for their water supply and sewerage infrastructure.’

To facilitate council reporting under the NSW Local Government Integrated Planning and Reporting Framework, the strategic business plan now includes appendices for:

- Water and sewerage input to 10-year Community Strategic Plan (section 15.1 on page 95)

7 Page 19 of the Planning and Reporting Manual indicates:

‘It is not expected that County Councils will prepare a Community Strategic Plan as such, because this work will be undertaken by their constituent councils.

However, County Councils will be required to prepare a minimum 10 year strategic plan for the activities undertaken by their organisation. This plan must give due regard to the Community Strategic Plan/s of the constituent councils and be developed in consultation with the constituent councils. Community engagement will also be required on the issues specific to the County Council’s plan.’

A county council’s water supply and sewerage strategic business plan must address the above requirements. Refer also to Appendix F on page 119.
1. Introduction

- Water and sewerage input to 4-year Delivery Program and the Annual Operational Plan (section 15.3 on page 96)
- Water and sewerage input to Annual Report (section 15.4 on page 96)

In addition, councils may wish to include the Executive Summary of their Strategic Business Plan for water supply and sewerage as an appendix to their Community Strategic Plan.

1.4. Water and/or Sewerage Strategic Business Plans

Water and sewerage capital investments tend to be large and lumpy, and assets are long-lived, e.g. the economic life of a water main or dam are 80 and 100 years respectively. For this reason, financial projections in Strategic Business Plans need to cover at least the next 20 years and, preferably, 30 years. The projections for the next three years would be based on reasonably firm estimates of costs, and, beyond this time, projections would normally be reasonable, indicative amounts only.

It is important that each LWU owns its Strategic Business Plan. It is therefore preferable that the core of the Strategic Business Plan preparation be carried out in-house by Councillors and staff, though studies in specialist areas and general facilitation work can be undertaken by consultants.

Each utility’s strategic business plan and financial plan must address each item in the Check List in Appendix F on page 119.

Strategic Business Plans will provide many benefits:

At Utility Level, they -
- improve management performance;
- improve financial performance;
- avoid or minimise increases to Typical Residential Bills (TRBs); and
- increase accountability to customers.

At State Level, they -
- provide the State Government with an overview of the current status and future water supply and sewerage needs of non-metropolitan NSW; and
- assist in directing policy and programs for financial and technical assistance towards the needs of the utilities.

As noted in section 1.1 on page 1, a satisfactory Strategic Business Plan is a key requirement of the Best-Practice Management Guidelines. Substantial compliance with the Best-Practice Guidelines is also a pre-requisite for State Government financial assistance towards the capital cost of backlog water supply and sewerage infrastructure and for payment of a dividend from the surplus of the water supply or sewerage business to the council’s general revenue.

As noted in section 1.3 on page 4, the water and sewerage strategic business plan is Council’s Resourcing Strategy for water supply and sewerage. As also noted in Section 1.3, water and sewerage input to the Community Strategic Plan, Delivery Program, Operational Plan and Annual Report is provided in sections 15.1 to 15.4 on pages 95 and 96.

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8 The State-wide 2009-10 TRB for water supply and sewerage was $900 per assessment (2009-10$) and has increased by a total of 2% over the past 14 years (page 6 of Reference 7 on page 97).
PART A - OVERVIEW

1. Introduction

These Strategic Business Planning guidelines are based on a **total asset management** approach to the provision of water supply and sewerage services.

Standard Mission Statement; Levels of Service; and Objectives, Strategies and Actions in the key result areas of customer services, total asset management, work force, and finance are provided as a guide. Each utility will need to adapt these to its circumstances.

Check lists of sub-plan contents are intended as a reminder. Each utility should examine each item in the check lists to determine whether its circumstances require action in the Plan.

These guidelines complement other publications by the NSW Office of Water including:

- “2008-09 NSW Water Supply and Sewerage Performance Monitoring Report” – Reference 7; and
2. Need for a Total Asset Management Approach

2.1. Characteristics of Water Supply and/or Sewerage Services

The provision of water supply and sewerage services is a highly capital intensive industry. In non-metropolitan NSW, the current replacement cost of assets is almost $20 billion in Jan. 2010 dollars. This is equivalent to an investment in fixed assets of around $25,000 per connected property. By comparison, the state-wide median annual operating cost is only $670 per connected property.

In common with other capital intensive utilities and businesses which produce commodities, the characteristics of a water supply or sewerage operation include:

- fixed process train;
- continuous production process;
- high quality control requirement;
- high volume production;
- long lead time for investment;
- long lead time for recoupment of invested capital; and
- domination by capital costs.

These characteristics have a number of implications for managers of water supply and sewerage systems who wish to provide high standard and cost effective services:

- availability and reliability of service are critical;
- capital investment must be closely balanced with demand;
- specification and location of plant are important;
- new technology must be exploited;
- tight process control is required; and
- asset replacement must be considered.

Management of assets is clearly a key issue.

2.2. Implications for Management

In a new and fast growing area, the first priority of management is the construction of new assets to extend services in order to keep pace with demand. Capital expenditures on new works are large and are justified by the expectation of a large future revenue stream. The importance of value for money in making investments and managing investment risk may be neglected, although these investments will dominate future income requirements and Typical Residential Bills (TRBs).

Most water supply or sewerage systems will, at some stage, undergo a transition to maturity when growth slows and assets age. Management priority should then change from building assets, to improving management of existing systems and assets and planning for system renewal.
If a LWU fails to appreciate that the situation has changed, there are inherent dangers:

- management placement of emphasis may not be appropriate;
- improvement of the performance of existing assets or maintenance of existing assets may be ignored in favour of continuing the building of new assets;
- deterioration of assets may be left unnoticed; and
- response to change may become increasingly difficult due to the long lead times and high costs (e.g., for replacement of the asset base).

A total asset management approach to planning for these services is clearly required, and this must be integrated into the Strategic Business Plan.
3. Structure of Strategic Business Plans

3.1. General Structure

Figure 3 on page 11 sets out the recommended Strategic Business Planning Process for water supply and/or sewerage which is consistent with a total asset management approach. The following components are involved:

- The **Operating Environment Review** should consider all corporate, community, environmental, financial, legislative, institutional, and regulatory elements which can affect your water supply and sewerage activities (see Section 5 on page 19);

- The **Mission Statement** should describe your long term desired position with regard to water supply and sewerage services (see Section 6 on page 27). This Mission, which is likely to be similar for most utilities, will be developed within the context of the Operating Environment, your aims and ambitions for the future delivery of your water supply and sewerage services, and your charter;

- **Levels Of Service** should set out the quality of services which you undertake to provide to customers (see Section 7 on page 29);

- **Service Delivery** should describe the means you intend to use to deliver the service to your customers, eg., by using in-house resources or contracting to the private sector. This could cover part or all of the service (see Section 8 on page 38); and

- **Separate Sub-Plans for the key result areas** below –
  - **Customer Service**, which covers negotiating levels of service with customers, areas serviced, demand management, pricing, customer/community involvement in decision making, public health protection, environment protection and sustainable development (see Section 9 on page 41);
  - **Total Asset Management**, which is concerned with service delivery, operation, maintenance, and capital works associated with the physical infrastructure (see Section 10 on page 56).
  - **Work Force**, which covers staffing issues such as skill development, health and safety, and resource planning (see Section 11 on page 74); and
  - **Finance**, which covers overall financial management of the system including the financing of future capital works and the required Typical Residential Bills (see Section 12 on page 80).

The achievement of your **Levels of Service**, in conjunction with the **Customer Service Plan**, effectively drives the operation, maintenance, and capital works plans which are established within the **Total Asset Management Plan**. These, in turn, drive the **Work Force** and **Financial Plans**. As shown in Figure 3 on page 11, this planning process is iterative and must continue until an appropriate balance is reached between Levels of Service and Typical Residential Bills.
3.2. Development of Sub Plans

You should establish a set of Objectives for each key result Sub-Plan described in section 3.1.

An Objective is simply a statement of a result or outcome to be achieved. It should have an associated measurable Performance Target(s). This Performance Target will allow the utility to assess whether the Objective has been met.

Strategies should then be developed to enable achievement of each of the Objectives.

Actions needed to implement the Strategies should then be listed.
3. Structure of Strategic Business Plans

In this manner, Action support Strategies, Strategies support Objectives, and Objectives lead to the ultimate achievement of the Mission.

Performance Indicators should then be specified which can be used to monitor progress towards meeting an Objective (see also section 14 on page 93 and Appendix B on page 101).

It is recommended that the list of Objectives for the entire Strategic Business Plan be kept relatively short. "Motherhood" type objectives and conflicting or contradictory objectives should be avoided.

In setting your Objectives, Performance Targets, Strategies, and Action steps, you should bear in mind at all times the **S-M-A-A-R-T principle**. That is, that Objectives, Strategies and Actions be:

- **S** = Specific
- **M** = Measurable
- **A** = Actionable
- **A** = Achievable
- **R** = Relevant
- **T** = Trackable

An example of an Objective, Performance Target, and Performance Indicator for the Marketing (sub) Plan for a water supply system is:

**OBJECTIVE**       Reduce waste and unnecessary use of water.

**PERFORMANCE TARGET**       Reduce average annual residential water supplied per connected property by 5% by (date) and 10% by (date).

**PERFORMANCE INDICATOR**     Average annual residential water supplied.

3.3. Overview of Actual Plan Content

Each utility should adopt the standard format shown in the Table of Contents given in **Table 1** on page 13. This format will enable you to fulfil the Strategic Business Planning Process in a comprehensive and systematic manner. A standardised approach will also assist the NSW Office of Water to provide feedback to the utilities on State-wide planning issues and absolute performance. Table 1 implements the Planning process shown in **Figure 3**.
### Table 1: Table of Contents for a Water Supply or Sewerage Strategic Business Plan

<table>
<thead>
<tr>
<th>EXECUTIVE SUMMARY</th>
<th>OPERATING ENVIRONMENT REVIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> OPERATING ENVIRONMENT REVIEW</td>
<td>Institutional Arrangements, Legislative Framework and Statutory/Regulatory Obligations</td>
</tr>
<tr>
<td></td>
<td>Situation Analysis and Growth Projections</td>
</tr>
<tr>
<td><strong>2.</strong> MISSION STATEMENT</td>
<td></td>
</tr>
<tr>
<td><strong>3.</strong> LEVELS OF SERVICE</td>
<td></td>
</tr>
<tr>
<td><strong>4.</strong> SERVICE DELIVERY</td>
<td></td>
</tr>
<tr>
<td><strong>5.</strong> CUSTOMER SERVICE PLAN</td>
<td>Review of Levels of Service</td>
</tr>
<tr>
<td></td>
<td>Areas Serviced</td>
</tr>
<tr>
<td></td>
<td>Demand Management</td>
</tr>
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<td></td>
<td>Pricing and Regulation of Services</td>
</tr>
<tr>
<td></td>
<td>Customer and Community Involvement</td>
</tr>
<tr>
<td></td>
<td>Environment Protection and Sustainable Development</td>
</tr>
<tr>
<td><strong>6.</strong> TOTAL ASSET MANAGEMENT PLAN</td>
<td>Operation Plan, Maintenance Plan and Capital Works Plan</td>
</tr>
<tr>
<td><strong>7.</strong> WORK FORCE PLAN</td>
<td>Positions Analysis</td>
</tr>
<tr>
<td></td>
<td>Work Force Audit Resource Development</td>
</tr>
<tr>
<td><strong>8.</strong> FINANCIAL PLAN</td>
<td>Projections of Revenue, Expenditure, Total Borrowings, annual Financial Statements</td>
</tr>
<tr>
<td></td>
<td>Typical Residential Bill</td>
</tr>
<tr>
<td></td>
<td>Projected Principal Performance Indicators</td>
</tr>
<tr>
<td><strong>9.</strong> ANNUAL PERFORMANCE MONITORING</td>
<td>TBL Performance Report [from NSW Office of Water]</td>
</tr>
<tr>
<td></td>
<td>Action Plan to Council</td>
</tr>
</tbody>
</table>

**APPENDIX A - INPUTS TO COUNCIL’S:**

- Community Strategic Plan
- 4-Year Delivery Program and Annual Operational Plan
- Annual Report

**OTHER APPENDICES AS REQUIRED**
4. Executive Summary

The Executive Summary of the water supply and sewerage Strategic Business Plan\(^9\) should contain a plan of the system and information on the following items:

- Summary of Operating Environment Review;
- Mission Statement;
- Levels of Service;
- Service Delivery; and
- Summary of principal planning information from Customer Service, Total Asset Management, Work Force, and Financial Sub-Plans, i.e.:
  - Objectives and Performance Targets;
  - Strategies and key Actions;
  - Performance Indicators and at least a 20 year projection of the Typical Residential Bill in current (Year 1 dollars);
  - Other key activities; and
  - Other significant planning information.

The following sections give an EXAMPLE of the typical detailed content of an Executive Summary.

4.1. Operating Environment Review

(see Section 5 on page 19)

Institutional and Legislative -

Arrangements briefly outlined.

Levels of Service met -

Levels currently met.

Customer pressure for improvement.

List all serviced and unserviced towns, their population and whether the present facilities are satisfactory.

\(^9\) Note – many utilities elect to prepare a combined strategic business plan for their water supply and sewerage businesses. This is satisfactory, but utilities must include a separate total asset management plan and financial plan for each of water supply and sewerage and must specify the projected Typical Residential Bill for each service.
Service Delivery -
   Current strategy and potential changes for the future.

Customer Service -
   Growth and development trends.
   Demand projections
   Current level of compliance with the requirements of the *Best-Practice Management Guidelines*.

Strategic Business Plans - Water Supply & Sewerage Systems
   Current customer satisfaction with system described.
   Current customer or community involvement.

Total Asset Management -
   The current replacement cost and written down current cost of system assets\(^{10}\).
   Condition and likely replacement needs within the next 10 years.
   Spare capacity in the system and approximate time for augmentation.
   Trend of water quality of the source and level of compliance with Australian Drinking Water Guidelines 2004 (Reference 15 on page 97).
   Documented procedures availability.
   Capital works plan availability.

Work Force -
   The total number of staff /needs.
   The general skill level.
   Employee type breakdown.

Finance -
   The current and projected financial position.
   Current key Performance Indicators.
   The key cost drivers.
   Current Typical Residential Bill.

4.2. Mission
   Mission Statement for water and/or sewerage (see section 6 on page 27).

4.3. Levels of Service
   Levels of Service adopted (see Table 5 on page 30, Table 6 on page 32 and Table 7 on page 34 Standard Levels of Service).

\(^{10}\) Asset valuation must be in accordance with the NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets, 2011 – Reference 12 on page 97.
4. Executive Summary

4.4. Service Delivery Strategy

The Service Delivery Strategy adopted (see section 8 on page 38).

4.5. Customer Service Plan

Objectives and Performance Targets, Strategies, Actions, Performance Indicators for areas serviced, demand management, pricing and regulation of services, customer relations, community involvement, and environmental protection and sustainable development (See Table 9 on page 43 to Table 10 on page 45).

Procedure for review of Levels of Service described.

Service provision policy.

Demand management policy.

Pricing policy, tariff structure, and proposed charges.

Customer and community involvement policy.

Details of the environmental impacts of the system’s activities and proposals to moderate.

4.6. Total Asset Management Plan

Objectives and Performance Targets, Strategies, Actions, Performance Indicators for operation, maintenance, and capital works (See Table 15 on page 60, Table 17 on page 64 and Table 19 on page 69).

Detailed growth and demand projections.

Maintenance Plan outline.

Breakdown Response Plan outline.

Capital works options examined.

Proposed capital works plan showing proposed timing and cost of new works to provide levels of service for existing customers and future customers; and renewal/replacement of existing works.

4.7. Work Force Plan

Objectives, Strategies, Actions, Performance Indicators (Table 21 on page 76).

Outputs from work force plan (Table 22 on page 77).

4.8. Financial Plan

Financial Performance Indicators (Table 23 on page 88).

Required outputs from Financial Plan (Table 24 on page 89).

Financing policy, projected revenue, expenditure and borrowings.

At least 20-year projection of Typical Residential Bill in current (Year 2) dollars.
4.9. Overview of Other Key Activities (section 13 on page 91)

These include:

- Integrated water cycle management.
- Drinking water quality management.
- Security of Water Supply
- Environmental management.
- Demand management.
- Drought management.
- Community consultation.
- Occupational health and safety.

4.10. Summary of Action Plan to Council (section 14.3 on page 93)
5. Operating Environment

- Operating Environment Review
- Mission Statement
- Levels of Service
- Service Delivery
- Customer Service Plan
- Total Asset Management Plan (Operation, Maintenance, Capital Works)
- Work Force Plan
- Financial Plan
5. Operating Environment Review

Before you establish your Mission and draw up Objectives and Performance Targets, Strategies, and Actions for your water supply and sewerage services, it is essential that you understand the external and internal environment within which you currently operate and within which you expect to operate in the future.

You should review:

- institutional arrangements;
- legislative framework; and
- emerging issues.

This will define the boundaries within which you can provide water supply and sewerage services.

You should also review the key service provision result areas:

- customer service;
- total asset management;
- work force; and
- financial management.

In this part of the Strategic Business Plan, you will assess your overall current and future situation in terms of the quantity and the type of services provided, and you will identify areas where problems or constraints (financial, legal, customer pressure, etc.) exist which could affect your utility’s options.

Succeeding sections will address these issues in turn.

5.1. Institutional Arrangements for Service Provision

State Government has delegated to Local Government Councils the responsibility for provision of water supply, sewerage, and drainage services for non-metropolitan NSW. The statutory framework for provision of these services by Councils is provided by the Local Government Act 1993.

The Minister for Primary Industries has significant powers under this Act for water supply and sewerage (sections 57 to 66). The Minister for Primary Industries also administers the Country Towns Water Supply and Sewerage Program which has been providing technical and financial assistance to local water utilities for over 100 years.

You should consider your own institutional arrangements for providing water supply and/or sewerage both within your organisational structure and externally in the regional context to determine that these arrangements are appropriate and optimal. There may be advantages in internal re-organisation of responsibility, or in taking advantage of regional networking (eg. purchasing bulk water supply instead of developing a new source), forming a resource sharing alliance with neighbouring councils such as the Lower Macquarie Water Utilities Alliance, or amalgamation of the services of several councils by forming a council-owned regional water corporation or county council.

Your review of your Operating Environment should consider the above issues and any other applicable institutional arrangements.
5. Operating Environment

5.2. Legislative Framework

The following is a brief overview of the legislative framework within which your water supply and sewerage activities are delivered. **This overview is not intended to provide a definitive statement of all legislation.** Your personnel should acquaint themselves with all the requirements. For more details see Appendix E.

- Local Government Act (1993)
- Environmental Planning and Assessment Act (1979)
- Catchment Management Act (1989)
- Soil Conservation Act (1938)
- Dams Safety Act (1978)
- Public Health Act (2010)
- Water Administration Act (1986)
- Independent Pricing and Regulatory Tribunal Act (1992)
- Water Management Act (2000)
- Water Industry Competition Act (2006)
- Fluoridation of Public Water Supplies Act (1957)

5.3. Situation Analysis

Utilities may wish to carry out a strengths, weaknesses, opportunities, threats and emerging issues analysis at this stage.

Examples of a utility’s present level of compliance with Best-Practice Requirements for water supply and sewerage and targets for addressing any outstanding requirements are provided in Table 2 and Table 3 overleaf. LWUs should include such tables in their SBP.

You should then consider a number of basic issues at the macro level in respect of the key result areas of your Water Supply and/or Sewerage activities. Table 4 on page 22 provides a list of such issues. This is not a complete list, and it is provided only as a guide.

**One major part of this review is to document the Levels of Service currently provided to customers and/or those Levels of Service which you intend to provide in the immediate future.**
### Table 2 Example of compliance with Best-Practice Requirements for Water Supply

<table>
<thead>
<tr>
<th>Best-Practice Requirement</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Strategic Business Planning</td>
<td>This document</td>
</tr>
<tr>
<td>2. Pricing</td>
<td></td>
</tr>
<tr>
<td>- Full cost recovery without significant cross subsidies</td>
<td>Comply</td>
</tr>
<tr>
<td>- Complying residential charges with pay-for-use water pricing, independent of land value</td>
<td>Comply</td>
</tr>
<tr>
<td>- Complying non-residential charges</td>
<td>Aim to comply July 2011</td>
</tr>
<tr>
<td>- Development servicing plan, commercial developer charges</td>
<td>Comply</td>
</tr>
<tr>
<td>- At least 75% of residential revenue from usage charges</td>
<td>Aim to comply July 2011</td>
</tr>
<tr>
<td>3. Water Conservation</td>
<td>Demand management plan completed in November 2009</td>
</tr>
<tr>
<td>4. Drought Management</td>
<td>Drought management plan completed in 2010</td>
</tr>
<tr>
<td>5. Performance Monitoring</td>
<td>Comply annually</td>
</tr>
<tr>
<td>6. Integrated Water Cycle Management (IWCM)</td>
<td>IWCM evaluation completed in 2010</td>
</tr>
<tr>
<td></td>
<td>IWCM strategy will be completed in 2011/12</td>
</tr>
</tbody>
</table>

### Table 3 Example of compliance with Best-Practice Requirements for Sewerage

<table>
<thead>
<tr>
<th>Best-Practice Requirement</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Strategic Business Planning</td>
<td>Comply; Update required by June 2011</td>
</tr>
<tr>
<td>2. Pricing</td>
<td></td>
</tr>
<tr>
<td>- Full cost recovery without significant cross subsidies</td>
<td>Comply</td>
</tr>
<tr>
<td>- Complying residential charges, independent of land value</td>
<td>Comply</td>
</tr>
<tr>
<td>- Complying non-residential charges</td>
<td>Aim to comply July 2011</td>
</tr>
<tr>
<td>- Development servicing plan, commercial developer charges</td>
<td>Comply</td>
</tr>
<tr>
<td>- Complying trade waste fees and charges</td>
<td>Comply</td>
</tr>
<tr>
<td>- Complying trade waste policy and approval for all dischargers</td>
<td>Comply</td>
</tr>
<tr>
<td>5. Performance Monitoring</td>
<td>Comply annually</td>
</tr>
<tr>
<td>6. Integrated Water Cycle Management (IWCM)</td>
<td>IWCM evaluation completed in 2010</td>
</tr>
<tr>
<td></td>
<td>IWCM strategy will be completed in 2011/12</td>
</tr>
</tbody>
</table>
## 5. Operating Environment

### Table 4 Service Provision Review

<table>
<thead>
<tr>
<th>KEY RESULT AREA</th>
<th>CURRENT POSITION</th>
<th>FUTURE POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LEVELS OF SERVICE</strong></td>
<td>• What levels of service are currently provided?</td>
<td>• What total quality management systems are in place?</td>
</tr>
<tr>
<td></td>
<td>• Are there pressures for an increase or reduction in levels of service?</td>
<td>• Are these industry accepted standards?</td>
</tr>
<tr>
<td><strong>SERVICE DELIVERY</strong></td>
<td>• What is the present balance between in-house and contract service provision</td>
<td>• Are there possible efficiency improvements in changing method of service delivery (e.g., from in-house to contracting out, Build Own Operate &amp; Transfer (BOOT), Build Own Operate (BOO)).</td>
</tr>
<tr>
<td><strong>CUSTOMER SERVICE</strong></td>
<td>• Are any areas unserviced? [List each unserviced town and its population]</td>
<td></td>
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<tr>
<td>• Areas Serviced</td>
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<tr>
<td>• Demand Management</td>
<td>• Is water demand high, average or low for the geographic/climatic area?</td>
<td>• Is sound water conservation and Demand management in place?</td>
</tr>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>• Pricing and Regulation of</td>
<td>• Have you met the 11 Pricing and Regulation requirements (section 9.3 on page 46) of the Best-Practice Management Guidelines (Reference 1)?</td>
<td>• Full cost recovery for each of the water supply and sewerage businesses.</td>
</tr>
<tr>
<td>Services</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Operating Environment

<table>
<thead>
<tr>
<th>KEY RESULT AREA</th>
<th>CURRENT POSITION</th>
<th>FUTURE POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Appropriate water usage charge/kL with no water allowance; independent of land value.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• At least 75% of residential revenue for water usage charges [for utilities with 4,000 or more connected properties].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• At least 50% of residential revenue from water usage charges [for utilities with under 4,000 connected properties].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Uniform annual sewerage bill per residential property, independent of land value.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Two-part tariff with appropriate water usage charge/kL and access charge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Water access charge for non-residential customers reflective of the cost of providing the water supply service.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Two-part tariff with appropriate sewer usage charge/kL and sewer discharge factor for each non-residential customer. Access charge reflective of the cost of providing these sewerage services.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Appropriate trade waste fees and charges for all liquid trade waste dischargers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Trade waste usage charge for dischargers with prescribed pre-treatment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excess mass charges for large dischargers and industrial waste.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Non-compliance excess mass charges and non-compliance trade waste usage charges imposed on non-compliant dischargers, in accordance with your LWU’s Policy.</td>
<td></td>
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</tr>
<tr>
<td>• Trade Waste Regulation Policy in accordance with Reference 14 on page 97 adopted and implemented. Trade waste approval issued to each liquid trade waste discharger.</td>
<td></td>
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</tr>
<tr>
<td>• Development Servicing Plan with commercial developer charges; disclosure of any cross-subsidies in accordance with Reference 17.</td>
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<td></td>
</tr>
<tr>
<td>• Are any contentious issues likely to arise?</td>
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</tr>
<tr>
<td>• Is the service ecologically sustainable?</td>
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</tbody>
</table>

Table 4 (continued)
## Table 4 (continued)

<table>
<thead>
<tr>
<th>KEY RESULT AREA</th>
<th>CURRENT POSITION</th>
<th>FUTURE POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL ASSET MANAGEMENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Integrated Water Cycle Management (IWCM) Strategy</td>
<td>• Are you doing anything to protect environmentally sensitive areas?</td>
<td>• What environmental issues could become community concerns?</td>
</tr>
<tr>
<td></td>
<td>• Is or will there be a total catchment management plan covering the area?</td>
<td>• If so, what effect will this have on operations?</td>
</tr>
<tr>
<td></td>
<td>• Has your utility recently completed an IWCM Strategy?</td>
<td>• If so, your total asset management planning should involve ‘fine tuning’ of your strategy as indicated in section 10 on page 56.</td>
</tr>
<tr>
<td>• Operation</td>
<td>• What is the type, size, age and current replacement costs of assets (from asset register)?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• In what condition are the assets?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Are the assets being used efficiently (i.e. is there unused spare capacity; can they work harder)?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How does any spare capacity compare with projected future demand?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Are there documented operating procedures?</td>
<td></td>
</tr>
<tr>
<td>• Maintenance</td>
<td>• Are there documented maintenance procedures?</td>
<td>• What is the likely timing of significant maintenance?</td>
</tr>
<tr>
<td></td>
<td>• Is there a spares inventory system; are there manuals, etc.?</td>
<td></td>
</tr>
<tr>
<td>• Capital Works</td>
<td>• Is there a capital works plan, and is it current?</td>
<td>• What is the likely timing of significant rehabilitation, replacement works?</td>
</tr>
<tr>
<td>General</td>
<td></td>
<td>• What is the likely timing for augmentation of major system components?</td>
</tr>
<tr>
<td>Water</td>
<td>• What natural sources are used?</td>
<td>• Is quality of resource likely to deteriorate or improve?</td>
</tr>
<tr>
<td></td>
<td>• What bulk supply services are used and in what quantities?</td>
<td>• What are the options for augmentation (e.g., ground water, run-of-river pumping, capacity sharing, networking, etc.)?</td>
</tr>
<tr>
<td></td>
<td>• How secure is the source?</td>
<td>• Will water source limitations become a problem?</td>
</tr>
<tr>
<td></td>
<td>• What is the quality?</td>
<td>• Do you consistently comply with the Australian Drinking Water Guidelines 2004 (Reference 15 on page 97) for each of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Microbiological quality;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Chemical quality; and</td>
</tr>
</tbody>
</table>
### 5. Operating Environment

#### Table 4 (continued)

<table>
<thead>
<tr>
<th>KEY RESULT AREA</th>
<th>CURRENT POSITION</th>
<th>FUTURE POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sewerage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Have you minimized the risk of boil water alerts?</td>
<td>• Refer to guidance on page 4 of Reference 8 (on page 97).</td>
</tr>
<tr>
<td></td>
<td>• Have you implemented effective monitoring of water quality in your distribution system?</td>
<td>• Refer to guidance on page 243 of Reference 8.</td>
</tr>
<tr>
<td></td>
<td>• Have you prepared and implemented a risk-based drinking water quality management plan in accordance with ADWG?</td>
<td>• Refer to page 7 of Reference 8.</td>
</tr>
<tr>
<td></td>
<td>• What means are used for effluent management?</td>
<td>• Is EPA likely to increase effluent discharge standards? If so, what would be the impact?</td>
</tr>
<tr>
<td></td>
<td>• What is the quality and volume of effluent?</td>
<td>• Will current effluent discharge/management practices be continued?</td>
</tr>
<tr>
<td></td>
<td>• How much effluent is recycled?</td>
<td>• Will recycling or discharge to land be necessary?</td>
</tr>
<tr>
<td></td>
<td>• What opportunities are there for cost-effectively recycling more effluent?</td>
<td></td>
</tr>
<tr>
<td><strong>WORK FORCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What skills do staff have, and are they appropriate to needs?</td>
<td>• What new skills may be required?</td>
</tr>
<tr>
<td></td>
<td>• Are there sufficient numbers for needs?</td>
<td>• What staffing levels may be required?</td>
</tr>
<tr>
<td></td>
<td>• Are sufficient training programs in place?</td>
<td>• What staff training may be required?</td>
</tr>
<tr>
<td></td>
<td>• Can multi-skilling allow staff reduction?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Can gaps be filled by contract staff?</td>
<td></td>
</tr>
<tr>
<td><strong>FINANCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What is the current financial position of your Utility?</td>
<td>• How will stakeholders benefit and who will pay for any new development?</td>
</tr>
<tr>
<td></td>
<td>• How do you currently fund its capital works (ie., debt and equity)?</td>
<td>• What government subsidies will be available towards the capital cost of backlog infrastructure?</td>
</tr>
<tr>
<td></td>
<td>• How do you invest income which is surplus to operating expenses?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What are the key cost drivers in service delivery within administration, operation, maintenance and capital works?</td>
<td></td>
</tr>
</tbody>
</table>
6. Mission Statement

- Operating Environment Review
- Mission Statement
- Levels of Service
- Service Delivery
- Customer Service Plan
- Total Asset Management Plan (Operation, Maintenance, Capital Works)
- Work Force Plan
- Financial Plan
6. Mission Statement

After review of the operating environment, you should be in a position to prepare a Mission Statement for the Water Supply and Sewerage Strategic Business Plans.

A Mission Statement should state concisely the role you, as a local water utility, wish to play in the provision of water supply or sewerage services to your customers and the key factors that should guide your actions.

A suggested suitable Mission Statement for most water supply and/or sewerage systems is:

To provide a cost effective water supply/sewerage service to (area) which meets the Levels of Service to which customers have agreed, and for which they are prepared to pay, and which satisfies all statutory requirements. The service will be provided equitably and in a commercial manner, taking into account the values of the broader community. The service will be environmentally sensitive, promote ecological sustainability within the area of operations, protect public health and make best use of regional resources.

It is noted that 'protection of public health' and 'protection of the environment' are included in the Mission Statement above as these, together with 'improvement of the quality of life', constitute the principal reasons for provision of reticulated water supply and sewerage services. Refer also to footnote 5 on page 1.
7. Levels of Service

OPERATING ENVIRONMENT REVIEW

MISSION STATEMENT

LEVELS OF SERVICE

SERVICE DELIVERY

CUSTOMER SERVICE PLAN

TOTAL ASSET MANAGEMENT PLAN
  Operation  Maintenance  Capital Works

WORK FORCE PLAN

FINANCIAL PLAN
7. Levels of Service

The term Levels of Service is used to define explicitly the standards required from water supply/sewerage systems from the perspective of the individual customer. Levels of Service are, in effect, an expansion of the Mission Statement.

All water utilities will meet some levels of service even though those levels of service may not have been quantified, documented, or communicated to customers. Without the appropriate 'Levels of Service', planning will not be directed towards achieving any defined 'end'. Basic target Levels of Service must be established before any further detailed planning can be commenced, though these Levels can be refined during the planning process. You should therefore quantify and document the existing Levels of Service being provided as an interim measure prior to formal revision and communication with customers.

Once formally set, Levels of Service become the primary driving force for a water supply and/or sewerage utility. It is convenient to consider achievement of target Levels of Service as the Primary Objective of a system – see Table 5 on page 30.

Levels of Service will largely shape the Objectives and Requirements for Operation, Maintenance, and provision of Capital Works in the Total Asset Management Plan. These, in turn, drive the Work Force Plan and the Financial Plan11. Setting appropriate Levels of Service is one of the critical decisions in the development of an effective total asset management strategy for water supply and sewerage systems.

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11 Please note that ‘Levels of Service’ are not ‘finalised’ until the Financial Plan has demonstrated they are affordable (Figure 3 on page 11), the community has been consulted and the Strategic Business Plan has been approved by Council.
### Table 5 Standard Objective, Strategies and Actions - Levels of Service

**OBJECTIVE 1:**  
System Operation meets the currently adopted Levels of Service, as documented.

**PERFORMANCE TARGET:**  
Nil cases of non compliance.

**STRATEGY/ACTIONS:**  
Determine and document the current Levels of Service which are provided. Operate to these until amended.

**PERFORMANCE INDICATORS:**

**WATER -**

- **Availability**
  - Pressure at critical locations
  - Duration, frequency and severity of drought water restrictions (eg. NSW Security of Supply basis – ‘5/10/10 rule’)  
  - Peak daily demand/capacity  
  - Length of supply interruption - planned and unplanned

- **Quality**
  - Microbiological parameters
  - Turbidity
  - Colour
  - Ph
  - etc.

- **Response Times**
  - Supply failure by category

- **Customer Complaints**

- **Special Customers**

**SEWERAGE -**

- **Availability**
  - Number of failures per year

- **System Failures**

- **Response Times**
  - System faults by category  
  - General complaints

- **Customer Complaints**

- **Odours**
  - Number of complaints per year

- **Impact on Surrounding Residents**

- **Effluent Discharge/Sludge Management**
  - Number of failures to meet standards - marginal and significant

- **Systems Security**

**Note:** Indicators should be particularly selected in critical areas where the consequences of failure are most severe and where there is a low margin between standard delivered and the Level of Service.
7.1. Standard Levels of Service

Table 6 and Table 7 on pages 32 and 34 outline a set of Levels of Service which will meet minimum requirements for a basic water supply and/or sewerage system serving a country city or town.

Note that a special set of water supply and sewerage Levels of Service have been established for small towns where it is not cost-effective to provide these standards - Reference 6 on page 97.

7.1.1 Water Supply Services

Levels of service with respect to water supply systems would typically be concerned with four aspects:

- availability of supply;
- water quality;
- response times to supply failures;
- customer complaints; and
- special customers.

Section 3 of the Asset Management Guidelines (Reference 3 on page 97) gives more details on Levels of Service.

---

**Australian Drinking Water Guidelines (ADWG) 2004**

A high priority for each NSW local water utility is to provide a drinking water supply which:

1. Complies with ADWG for microbiological quality (health related).
2. Complies with ADWG for chemical quality (health related).
3. Minimises the incidence of ‘boil water alerts’ through providing appropriate water supply and treatment infrastructure and carrying out the necessary operation and maintenance activities. These include adjusting treatment processes in response to changes in raw water quality and regular inspections of service reservoirs in order to detect and repair any breakdown in the bird and vermin proofing of the reservoir roof.
4. Maintains effective disinfection of the utility’s water supply distribution system (including a minimum free chlorine residual of about 0.2 mg/L throughout the distribution system).

Guidance on items 3 and 4 above is available on pages 10 and 246 of the 2009-10 NSW Water Supply and Sewerage Benchmarking Report.

In view of their importance for ensuring public health protection, any failures to achieve microbiological compliance in the last 2 financial years or any ‘boil water alerts’ in the last 18 months, the corrective action implemented and whether it was successful must be reported in your LWU’s annual Action Plan to Council. Refer also to page 128.

In addition, utilities responsible for drinking water supplies need to prepare and implement a risk-based drinking water quality management plan in accordance with ADWG (Public Health Act 2010).

Assistance is available from your NSW Office of Water Regional Water and Sewerage Inspector (refer to page 34 of the NSW Benchmarking Report). Tools are being developed by NSW Health and the NSW Office of Water to assist LWUs and assistance is available from the Office of Water (Bill Ho on Tel (02) 8281 7326, fax (02) 8281 7351, e-mail Bill.Ho@water.nsw.gov.au).
### Table 6: Standard Levels of Service - Water Supply Services

<table>
<thead>
<tr>
<th>(a) Availability of Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pressure</strong></td>
</tr>
<tr>
<td>Provide pressures between 12 and 90 m head of water in the reticulation system whilst conveying a minimum of 6 litres per minute per residential connection under normal conditions.</td>
</tr>
</tbody>
</table>

**Consumption Restrictions in Droughts (‘5/10/10 rule’)**
- Restrictions should not be applied for longer than 5% of the time.
- Restrictions should not be imposed more often than once every 10 years on average.
- The water supply system should be able to supply 90% of normal demand (ie. 10% reduction in consumption) through a repeat of the worst drought on record.

**Peak Day Demand**
- 4000 L/tenement/d Coast and Tablelands
- 5000 L/tenement/d Western Slopes
- 5000 L/tenement/d Riverina and Plains (fully filtered supply)
- 7000 L/tenement/d Riverina and Plains (dual supply)

**Interruptions to Supply**
- **Planned:** Domestic customers will receive 24 hours written notice and industrial customers will receive 7 days written notice.
- **Unplanned:** Not to occur more than 2 times per year nor last longer than 12 hours.

**Water for Fire-Fighting**
Water will be available from reticulation fire hydrants for fire-fighting at minimum flow rates determined by guidelines for specific types of development as set out in Local Government Regulations and the conditions established by the NSW Fire Brigade.

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12 While a boil water alert will be necessary to protect the community, for example if a LWU’s raw water sources become highly turbid due to major flooding, over 80% of recent boil water alerts in non-metropolitan NSW were found to be avoidable through appropriate maintenance and chlorine residuals (page 10 of 2009-10 NSW Benchmarking Report). LWUs need to follow the NSW Health response protocol if *E. coli* bacteria is found, or if there is failure of the disinfection system, or disinfection is otherwise ineffective eg. due to poor treated water quality. ([http://www.health.nsw.gov.au/publichealth/environment/water/nswhrp_microbiological.asp](http://www.health.nsw.gov.au/publichealth/environment/water/nswhrp_microbiological.asp))

* To be based on current peak day demand for your utility, but not exceeding the values shown. Most NSW local water utility peak day demands are now well under half of the values shown. Refer to Figure 7 on page 43 of the 2009-10 NSW Water Supply and Sewerage Benchmarking Report.
Table 6 (continued)

(b) Water Quality

Potable Water Supply

Should meet the Australian Drinking Water Guidelines 2004, published jointly by the National Health and Medical Research Council (NHMRC) and the National Resource Management Ministerial Council (NRMMC) – Reference 15 on page 97.

Non-Potable Water Supply (Dual Water Supply Systems)

The quality of non-potable water should meet public health standards with respect to bacteria, contaminants and pathogens, consistent with its use.

(c) Response Times to Customer Complaints of Supply Failure

Response time defined as time to have staff on site to commence rectification of problem after notification by public or own staff.

* "Normal" Conditions

Priority 1 - defined as failure to maintain continuity or quality of supply to a large number of customers or to a critical use at a critical time.

- 1 hour (during working hours)
- 2 hours (after working hours)

Priority 2 - defined as failure to maintain continuity or quality of supply to a small number of customers or to a critical user at a non-critical time.

- 3 hours (during working hours)
- 4 hours (after working hours)

Priority 3 - defined as failure to maintain continuity or quality of supply to a single customer.

- One working day

Priority 4 - defined as a minor problem or complaint which can be dealt with at a time convenient to the customer and the water authority.

- Within 2 weeks

Catastrophe

Any situation of this nature would prompt immediate action involving senior personnel and emergency services with the aim of containing and resolving the situation as quickly as possible.

(d) Customer Complaints & Inquiries of General Nature

(i.e. complaints other than supply failure.)

Respond to 95% of written complaints or inquiries within 10 working days.
Respond to 95% of personal complaints or inquiries within 1 working day.

(e) Special Customers

Certain customers may have special needs by virtue of specific health, commercial or industrial circumstances.

Specific levels of service and associated charges should be negotiated with these customers.
7.1.2 Sewerage Services

Levels of service with respect to sewerage systems would typically be concerned with the following aspects:

- availability of service;
- system failures;
- response to system faults;
- customer complaints and inquiries;
- odours/vectors (flies, vermin, etc.);
- impact of sewage treatment works on surrounding residents; and
- effluent and biosolids management.

Note that discharge of effluent, and biosolids, noise and odours are covered by statutory obligations and regulations concerning environmental protection.

Section 3 of the Asset Management Guidelines (Reference 3 on page 97) gives more details on Levels of Service.

Table 7 Standard Levels of Service - Sewerage Services

(a) Availability of Service
- Connections for domestic sewage should be provided to all houses, units or businesses within the defined service area.
- Acceptance of commercial and industrial wastes (trade waste) should be in accordance with your utility’s approval conditions for each discharger (Reference 14 on page 97).

(b) Average System Failures
- Controlled, expected (overflow structure) - related to rainfall and design:
  Not more than 2 times in 1 year on average.
- Controlled, unexpected (flow relief structure):
  Not more than once in 5 years.
- Uncontrolled, unexpected:
  Private Property:
  Not more than once per 200 allotments per year.
  Public Property - sensitive areas (e.g., main street):
  Not more than once per 5 years.
  Public Property - Elsewhere:
  Not more than once per 10 km of main per year.

(c) Response Times to System Faults
Response time defined as time to have staff on site to commence rectification of problem after notification by public or own staff.
Table 7 (continued)

- Priority 1: defined as 'major failure to contain sewage within the sewer system or any problem affecting a critical user at a critical time'.
  Response time 1 hour (working hours) or 2 hours (after hours)
- Priority 2: defined as 'minor failure to contain sewage within the sewer system or any problem affecting a critical user at a non-critical time'.
  Response time 3 hours (working hours) or 4 hours (after hours)
- Priority 3: defined as 'minor failure to contain sewage affecting a single property or as bad odours'.
  Response time - next working day

(d) Response Times to Customer Complaints & Inquiries of a General Nature

Defined as a 'minor operational problem, complaint, or inquiry, which can be dealt with at a time convenient to the customer and the local authority' (e.g., adjustment of a manhole or other non-critical structures bill inquiry).

Response time defined as time to advise customer of intended action. Respond to 95% of written complaints or inquiries within 10 working days.

Respond to 95% of personal complaints or inquiries within 2 working days.

(e) Odours/Vectors

Not more than 2 incidents per year that result in complaints.

(f) Impact of Sewage Treatment Works on Surrounding Residents

The impact of treatment works on surrounding residents is generally due to noise and odour, both of which are subject to certain minimum standards set by statutory requirements and regulations.

- The maximum level of noise should not be more than 5 dB above the background noise level.

- Odour should not be detectable outside the utility’s buffer zone around the treatment works.

(g) Effluent Discharge/Biosolids Management

The minimum performance standards for effluent discharge and biosolids management are set by statutory requirements and regulations through licensing.

7.2. Review of Levels of Service

While minimum standards in some areas such as water quality, noise, odour, effluent discharge and biosolids management are covered by statutory and licence requirements, the community may desire standards which are of higher standard than the regulatory requirements. These higher standards may be seen as reflecting local community aspirations. It is appropriate that the additional costs should be met locally and depend on the extra cost that the community is willing to carry. As for the other
aspects, a trade-off between a level of service and associated Typical Residential Bill (TRB) can be "negotiated" with the community.

There are also operational levels of service relating to service reliability, responsiveness to complaints, frequency of drought restrictions, average annual residential water to be supplied, pressure, peak daily capacity, etc., which are not covered by regulation. These can be negotiated with customers on the basis that higher service levels will require higher TRBs.

It must also be understood that you cannot negotiate with customers Levels of Service which are of lower standard than regulatory requirements. In these Guidelines, whenever "Levels of Service" is mentioned, it is assumed that regulatory requirements are met. This also applies to the health related parameters of ADWG in regard to drinking water quality (section 7.1.1 on page 31).

Table 8 provides Objectives, Strategies and Actions which you should adopt to develop your own Levels of Service. This process should be repeated every four years for each update of your strategic business plan.

Table 8 Standard Objectives, Strategies and Actions - Review of Levels of Service

<table>
<thead>
<tr>
<th>OBJECTIVE 2:</th>
<th>New documented Levels of Service which take into account financial implications, statutory/regulatory requirements, customer desires, and industry standards.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMANCE TARGET:</td>
<td>Introduce new Levels of Service by (date).</td>
</tr>
<tr>
<td>STRATEGY:</td>
<td>Undertake a complete review of the Levels of Service currently provided, then establish new Levels of Service in consultation with customers with full awareness of the cost attached to their decision choices.</td>
</tr>
<tr>
<td>ACTIONS:</td>
<td>Survey customers to gain a broad determination of the attitude to the service currently provided by (date). Investigate options to obtain desired Levels of Service and determine resulting Typical Residential Bill (TRB – in current dollars) by (date). Put these options (with attendant TRBs) to customers for their decision choice by (date). Establish agreed Levels of Service (by date).</td>
</tr>
<tr>
<td>PERFORMANCE INDICATORS:</td>
<td>Dates to have Actions completed.</td>
</tr>
</tbody>
</table>
8. Service Delivery

The Service Delivery strategy is the means you use to provide or deliver the service to your customers. It applies to all three areas of total asset management: operation, maintenance, and capital works. It also has significant implications for Customer Service, Work Force, and Financial Plans, and it may involve fundamental changes to your institutional arrangements.

In this part of the Strategic Business plan, you should outline your future intentions for Service Delivery.

8.1. Private Sector Resources

Local water utilities have traditionally used in-house resources and Council-owned assets to provide services. Overseas experience, and an increasing amount of Australian experience, indicates that external service delivery strategies can offer advantages such as cost savings, reduction in risk, and financing.

The appropriate strategy for private sector resource use will depend on a range of factors such as system/project size, location, available internal resources, available external resources, etc. Each utility will need to examine its own situation.

8.1.1 Contracting Out Various Operations

The following are examples of tasks where external private resources can replace in-house resources within traditional arrangements:

**Operation** -
- Minor operations such as lawn mowing, weed control etc.;
- Day to day operation of treatment works;
- Laboratory testing;
- Meter reading;
- Billing; and
- Operator training.

**Maintenance** -
- Asset inventory and condition surveys;
- Maintenance contracts for equipment (pumps, valves, electrical, etc.);
- General system maintenance contracts - planned and/or unplanned;
- Pipeline cleaning and flushing; and
- Leakage/infiltration detection and control.

**Capital Works** -
- Engineering, economic, and environmental studies;
- Detailed designs and contract documentation; and
- Construction (by tendered contract).
8. Service Delivery

Work Force -

- Specialist consultants or contract staff for specific purposes.

8.1.2 Private Sector Involvement

The trend in Australia and overseas is for water utilities to move towards commercialisation of their services and, in some cases, full corporatisation.

Two methods used for private sector involvement are the Build Own Operate (BOO) or Build Own Operate Transfer (BOOT) schemes for whole systems or major sub-systems. The scheme could cover, for example, a new major treatment plant or a dam, treatment plant, and transfer system.

Where a water utility has major projects, they may wish to investigate this option (Reference 18 on page 97).

8.2. Alliances/Shared Resources

In view of the increasing complexity of the requirements which need to be addressed by the NSW local water utilities (Figure 1 on page 2) and to facilitate skill and resource sharing, it is recommended that utilities examine opportunities for formal regional alliances such as the Lower Macquarie Water Utilities Alliance and CENTROC Water Utilities Alliance. The strong benefits of the Lower Macquarie Water Utilities Alliance have been well documented.¹³

Such alliances will strengthen the technical skill base available to the member utilities and provide cost effective regional skill and resource sharing platforms to facilitate early compliance with all of the Best-Practice requirements. In addition, such an alliance will enhance your utility’s ability to address any emerging issues which are on the national water agenda.

8.3. Impact on Planning

It is recommended that local water utilities examine their arrangements for providing service in the long term.

When developing detailed sub-plans for Total Asset Management, Customer Service, Work Force, and Finance, you must first make provisional decisions about the method of service delivery: this is a fundamental issue, and it has a significant impact on all these areas.

You may wish to examine various options for service delivery before determining your service delivery strategy and finalising your sub-plans.

¹³ The Lower Macquarie Water Utilities Alliance: A Working Model of a Binding Alliance With Two Years Experience Behind It, Stewart McLeod, LGSA Water Management Conference, September 2010 – Reference 19 on page 97.
9. Customer Service Plan

There are major differences between commercial businesses in competitive markets and water supply and/or sewerage systems. Water supply and/or sewerage systems in non-metropolitan New South Wales are natural monopolies which are owned by the water utility. These provide essential services which are basic to our standard of living. They involve use of water: a public good, a limited non-substitutable resource which is re-useable and environmentally crucial.

To cater for these features of the industry, the Customer Service Plan to be developed will be distinctly different from that of a competitive business. It will, nevertheless, need to include commercial aspects such as establishing customer needs, maintaining customer satisfaction with services, pricing appropriately, and controlling environmental effects of operations, etc., within the framework of the regulatory and policy requirements set by the State.

For the purpose of these Guidelines, Customer Service has been taken to cover activities which involve interaction between you and your customers and the wider community.

Given the above, it is necessary for the Customer Service Plan Objectives, Strategies, and Actions for water supply and/or sewerage to cover the following main elements:

- review of Levels of Service;
- areas serviced;
- demand management;
- pricing and regulation of water supply, sewerage and trade waste;
- customer and community consultation in decision making; and
- environment protection and sustainable development.

Refer Figure 4 on page 42.

All of these elements need to be negotiated between the local water utility, its customers, and the wider community within the framework of the utility’s Operating Environment (see Section 5).

This section of the Guidelines outlines the principles of Customer Service for water supply and sewerage services. Standard sets of Customer Service Objectives, Strategies and Actions are also given at the end of each subsection. A check list of outputs from the Customer Service Plan is provided in Table 14 on page 54.
Figure 4 Components of a Customer Service Plan for Water Supply and/or Sewerage

9.1. Areas Serviced

You should determine a long range plan for extending services to unserviced urban areas and, in some cases, rural areas. Priority in providing services to unserviced urban areas should be established on public health, environmental protection, and public amenity grounds, as well as on preparedness to pay. New development should have these services provided and financed by the developer.

The strategic business plan must show all serviced and unserviced towns and villages, their population and whether the present facilities are satisfactory.
Table 9 Standard Objectives, Strategy and Actions - Areas Serviced

<table>
<thead>
<tr>
<th>OBJECTIVE 3:</th>
<th>Water supply and/or sewerage services extended to all remaining unserviced urban areas where economically feasible.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERFORMANCE TARGET:</td>
<td>Extend services to all feasible areas by (date).</td>
</tr>
<tr>
<td>STRATEGY:</td>
<td>Plan and construct works to extend services progressively to (list areas) commencing next year to be completed by (list dates to match areas).</td>
</tr>
<tr>
<td>ACTIONS:</td>
<td>Carry out feasibility studies with community consultation. Check financial implications (refer Financial Plan). Survey resident attitudes in areas to proposed charges (Refer Customer Service Plan). Proceed with planning and implementation of capital works if satisfactory. Include provision of works needed to extend services in the Capital Works Plan (refer section 10.3 on page 66).</td>
</tr>
<tr>
<td>PERFORMANCE INDICATORS:</td>
<td>Dates to complete areas in Strategy.</td>
</tr>
</tbody>
</table>

9.2. Demand Management

9.2.1 Water Supply

Demand management aims to reduce wastage and make customers aware that water is a valuable resource, that provision of water supply is costly, and that inefficient and wasteful practices need to be eliminated. It is an increasingly important area for all water utilities in view of the high cost of capital works, increasing competition for water, and increasing limitations on development of new sources. Demand management enables utilities to effect large cost savings through avoiding or deferring the need to invest in new capital works and through reduction of operating costs. The available demand management measures include the following:

- suitable water pricing structure (as required in section 9.3 on page 46);
- communication with and education of customers;
- leakage reduction through a systematic program of leakage detection and repair;
- use of water-efficient appliances;
- water restrictions; and
- use of recycled water or stormwater reuse.

Water conservation and demand management are important for effectively managing a water supply system and encouraging efficient water use.

The Best-Practice Management Guidelines requirements for water conservation and demand management are:
9. Customer Service Plan

- Sound water conservation and demand management implemented
- Identification of the most cost-effective demand management initiatives
- Subsidisation and promotion of at least two of the identified demand management initiatives
- Include demand monitoring, leakage measurement and reduction and community education

Each LWU’s current water conservation initiatives are shown on page 146 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report (Reference 8 on page 97).

The NSW LWUs have been highly successful in encouraging efficient water use as the Statewide median ‘average annual residential water supplied’ is 175kL/connected property, which has fallen by 47% over the past 18 years. The strong pricing signals provided have enabled the NSW LWUs to avoid over $1 billion in capital expenditure over the last decade for augmenting water supply headworks and treatment capacity and the associated increases in typical residential bills.

9.2.2 Sewerage

Before planning major modifications and extensions to an existing sewerage system, the actual loadings and performance of the system must be investigated so that planning is directed towards the most cost-effective solution. For systems where actual wet weather flows are significantly greater than the normal design levels, it could prove very costly to design a system which accepts all flows.

Groundwater Infiltration is the flow in a sewer due to the groundwater table exerting a hydraulic head on faults such as cracked joints, cracked pipes, etc., in sewer pipes and manholes. This flow is not directly related to rainfall. Stormwater Inflow is the flow in a sewer system due to surface runoff finding its way directly or indirectly into the system.

By conducting an infiltration/inflow investigation, the nature of the problem can be identified and characterised, and a rational decision can then be made about the most cost-effective solution. Corrective action will sometimes be necessary to avoid or minimise pollution from systems with significant sewer overflows.
**Table 10 Standard Objectives, Strategies and Actions - Demand Management**

**OBJECTIVE 4A (Water supply):**

Wastage of water reduced.

**PERFORMANCE TARGET:**

Eliminate wastage to reduce residential water supplied per connected property.

**STRATEGY:**

Introduce a pricing structure to provide strong pricing signals to avoid wasting water by (date)

**ACTIONS:**

(See Pricing and Regulation of Water Supply, Sewerage and Trade Waste Section 9.3).

**STRATEGY:**

Educate the community to encourage efficient water use and use of water efficient appliances, etc. The Water Efficiency Labelling Scheme (WELS – Reference 35 on page 98) introduced by Australian Governments in 2006 provides objective information on the water use efficiency of specific appliances.

**ACTIONS:**

Distribute a customer information kit on wise water use by (date). Investigate feasibility of advertising, talks to schools, etc. The water efficiency of new appliances disclosed to the public through WELS labelling.

**STRATEGY:**

Reduce waste in the utility’s system.

**ACTIONS:**

Investigate and implement a system leakage reduction program and implement where cost-effective (by date).

Investigate the use of reclaimed water to replace the potable supply for industrial, urban open space irrigation, and residential non-potable uses by (date). Implement where cost effective.

**PERFORMANCE INDICATORS:**

Dates to have Actions completed.

Consumption per property.

**OBJECTIVE 4B (Sewerage):**

Wet weather hydraulic sewage loading reduced to its economic limit.

**PERFORMANCE TARGET:**

Reduce hydraulic sewage loading per capita by 5% by (date).

**STRATEGY:**

Educate the public to reduce their illegal or inappropriate discharges to the sewerage system.

**ACTIONS:**

Distribute a customer information kit on sewerage use by (date). Investigate feasibility of advertising campaigns, talks to schools, etc.

**STRATEGY:**

Reduce system infiltration and illegal connections.

**ACTIONS:**

Implement Infiltration control program where cost-effective by (date). Implement a program to identify illegal connections by (date)

**PERFORMANCE INDICATORS:**

Dates to have Actions completed.

Peak wet weather flow/connection.
9.3. Pricing and Regulation of Water Supply, Sewerage and Trade Waste

The primary purpose of water supply and sewerage pricing is to determine fair pricing of services which achieve full cost recovery and provide strong pricing signals to enable each customer to balance the benefits and costs of using the utility’s services.

To determine the appropriate level of annual income from water supply, sewerage and liquid trade waste charges, each LWU needs to prepare a strategic business plan with a 30-year financial plan. The NSW Financial Planning Model (FINMOD) enables each LWU to readily prepare such a financial plan\(^{15}\). After inputting proposed commercial developer charges\(^{16}\), revenue from non-residential charges\(^{17}\) and appropriate liquid trade fees and charges\(^{18}\), and proposed annual dividend\(^{19,20}\), FINMOD enables the LWU to determine the lowest level of typical residential bills\(^{21}\) (in current dollars) to ensure the long-term financial sustainability of the business. This would involve providing the levels of service negotiated with the community and meeting projected recurrent costs (OMA – operation, maintenance and administration), the projected capital cost of new and replacement infrastructure and any dividend and tax-equivalent payments.

The *Best-Practice Management of Water Supply and Sewerage Guidelines* have the following 11 requirements\(^{22}\) for pricing and regulation of water supply, sewerage and trade waste:

<table>
<thead>
<tr>
<th>Water Supply</th>
<th>Sewerage and Trade Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Full cost recovery without significant cross subsidies</td>
<td>1 Full cost recovery without significant cross subsidies</td>
</tr>
<tr>
<td>2 Complying residential charges with pay-for-use water pricing, independent of land value</td>
<td>2 Complying residential charges, independent of land value</td>
</tr>
<tr>
<td>3 Complying non-residential charges</td>
<td>3 Complying non-residential charges</td>
</tr>
<tr>
<td>4 Development servicing plan with commercial developer charges</td>
<td>4 Development servicing plan with commercial developer charges</td>
</tr>
<tr>
<td>5 At least 75% of residential revenue from water usage charges for 4,000 or more properties [50% for &lt;4,000 properties]</td>
<td>5 Complying trade waste fees and charges</td>
</tr>
<tr>
<td></td>
<td>6 Appropriate trade waste regulation policy and approvals</td>
</tr>
</tbody>
</table>

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\(^{16}\) In accordance with *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater, NSW 2002* (Reference 17 on page 97).

\(^{17}\) In accordance with pages 24 and 25 of the *Best-Practice Management of Water Supply and Sewerage Guidelines, 2007* (Reference 1 on page 97).

\(^{18}\) In accordance with *Liquid Trade Waste Regulation Guidelines, NSW Office of Water, 2009* (Reference 14 on page 97).

\(^{19}\) In accordance with page 15 of *Best-Practice Management of Water Supply and Sewerage Guidelines, NSW 2007* – maximum dividend of $30/assessment for each of water supply and sewerage. This $30 maximum includes any tax-equivalent payments of up to $3/assessment.

\(^{20}\) A LWU which meets all the requirements of the *Best-Practice Management Guidelines* is encouraged to pay an ‘efficiency dividend’ from the surplus of its water supply and sewerage businesses to the council’s general revenue. A LWU which pay such an ‘efficiency dividend’ will be moving towards upper bound pricing which is required under the National Water Initiative (Reference 20 on page 98) where practicable.

\(^{21}\) The Typical Residential Bill (TRB) is the principal indicator of the overall cost of a water supply or sewerage system and is the bill paid by a residential customer using the utility’s average annual residential water supplied per connected property.

\(^{22}\) Full details of these requirements are shown on pages 22 to 24 of the *Best-Practice Management of Water Supply and Sewerage Guidelines, NSW 2007* (Reference 1 on page 97). The requirements address the concerns of the IPART Pricing Principles for Local Water Authorities (Reference 5 on page 97). LWUs which comply with the *NSW Best-Practice Management Guidelines* also comply with the *NWI Pricing Principles*, April 2010 (Reference 21 on page 98). Refer also to section 1.2 on page 3.
Regulation of sewerage and trade waste in non-metropolitan NSW is required to comply with the rigorous NSW Framework for Regulation of Sewerage and Trade Waste, which is set out on page 9 of the Liquid Trade Waste Regulation Guidelines, 2009 (Reference 14 on page 97). This Framework addresses the ‘Tragedy of the Commons’ in the use of common pool resources. LWUs which comply with the NSW Best-Practice Management Guidelines also comply with the National Wastewater Source Management Framework, 2008 (Reference 22 on page 98). Refer also to Figure 1 on page 2.

9.4. Customer and Community Involvement

9.4.1 Customer Relations

In general, good customer relations can be maintained by providing a quality service, keeping customers informed of your intentions, and responding to customer and community needs.

Some means which you can use to maintain good customer relations are:

- set and meet agreed Levels of Service with customers (refer section 7 on page 29);
- improve your performance in dealing with customers;
- establish a fair charging system for the service (refer section 9.3);
- extend services to new areas where they would be cost-effective or are needed to address significant public health or environmental risks (refer section 9.1 on page 42 and table 4 on page 22);
- discourage wastage of water which ultimately leads to price rises (refer section 9.3) and water resource work; and
- facilitate adequate communication with your customers so as to keep them informed of developments and avoid misunderstandings.

Customer Satisfaction

The delivery of personal service to customers by you, as the utility, and your staff plays an important part in attaining customer satisfaction. This is facilitated by maintaining good communication with customers. Good performance in this area can sometimes offset the effects of poor standards of service. The reverse can also occur where poor personal service can cause overall dissatisfaction despite the fact that you may have attained high Levels of Service.

You should establish effective processes to manage the interaction with customers. Customers’ perception of the service will determine their opinion, and this opinion is formed by the actions you, as the water utility, take to meet their needs. The image perceived is created by your personnel at all levels, and your image affects the relationship between you and your outcomes.

Consultation

You should consult regularly with your customers to keep them informed of developments with the service and to get feedback about customer attitudes. Some of the measures available to facilitate communications are:

- distribute information newsletters;
- do a customer attitude survey at least once every 2-4 years;
9. Customer Service Plan

- establish a customer advisory committee;
- consider and be responsive to customer needs;
- publish standards of service; and
- report annually on achievements, performance, etc (refer section 14.3 on page 93 and section 15.4 on page 96).

Customer Dealings

Members of staff dealing directly with customers may need to be more customer oriented. Your procedures may also warrant review in this area. Some of the measures available to improve customer orientation are:

- set up a contract with customers specifying the Levels of Service which will be delivered;
- document customer relations procedures;
- introduce staff training programs; and
- set up a complaints system with response mechanism.

<table>
<thead>
<tr>
<th>Table 11 Standard Objectives, Strategies and Actions - Customer Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE 5:</strong></td>
</tr>
<tr>
<td>Customers are satisfied with the service delivered.</td>
</tr>
<tr>
<td><strong>PERFORMANCE TARGET:</strong></td>
</tr>
<tr>
<td>Achieve 90% satisfaction level as measured by a customer survey to be conducted at least once every three years.</td>
</tr>
<tr>
<td><strong>STRATEGY:</strong></td>
</tr>
<tr>
<td>Implement measures to achieve Levels of Service (see Objective 1).</td>
</tr>
<tr>
<td><strong>STRATEGY:</strong></td>
</tr>
<tr>
<td>Focus your organisation on customer service and implement measures to ensure it relates effectively with customers.</td>
</tr>
<tr>
<td><strong>ACTION:</strong></td>
</tr>
<tr>
<td>Establish a Customer Council Advisory Committee to provide direct input and advice by (date).</td>
</tr>
<tr>
<td>Document customer relations procedures for staff. Set up a system to monitor and deal with complaints.</td>
</tr>
<tr>
<td>Reduce the average response time to customer complaints by 20% by (date) and the number of complaints by 5% p.a. every year for the next three years.</td>
</tr>
<tr>
<td>Run a training program for appropriate staff on how to serve and deal with customers.</td>
</tr>
<tr>
<td>Produce an information newsletter for inclusion with each bill starting on (date).</td>
</tr>
<tr>
<td><strong>PERFORMANCE INDICATORS:</strong></td>
</tr>
<tr>
<td>Dates to have Actions completed.</td>
</tr>
<tr>
<td>Customer satisfaction level.</td>
</tr>
</tbody>
</table>
9.4.2 Community Consultation

The provision of water supply and sewerage services can often lead to conflict within the wider community. This is especially true regarding changes in services and the construction of significant new works which have an obvious impact on the environment.

The absence of credible mechanisms for community input to decision-making often exacerbates public opposition to projects. Sometimes this opposition rises to such an extent that worthwhile projects do not proceed. The opposition can often be due to lack of understanding of a project and the reasons it is needed, reaction to decisions made in secret, or bad project publicity manipulated by a narrow interest group. Often the opposition can be justified when one relevant issue was neglected or forgotten when making the decision.

Sometimes there may be an apparent lack of community interest in the scheme. Then, suddenly, a contentious issue will emerge at the end of the planning process, or, worse, during the design stage. It is, therefore, prudent to raise community awareness of the project at the outset.

Community consultation in decision-making can help overcome difficulties in developing schemes.

The aims of community consultation are:

- to ensure ownership of "the problem" by the community, to gain their agreement that Council action is required, and ensure that the costs associated with such action are understood;
- to ensure that the concerns of the community, particularly social and environmental concerns, have been taken into account;
- to allow the community to propose options they want evaluated; and
- to enable the community to be satisfied that you, as a Council, have made your decision after a proper evaluation of all the issues.

It is a NSW Office of Water Policy for subsidised systems that the community be involved in the planning and development of system options and the selection of a preferred option including its implementation.

There are many methods for obtaining input from the community for decision making, such as:-

- public meetings;
- liaison committees comprising representatives of interested groups;
- focus groups;
- community opinion surveys;
- newsletters;
- a mailing list of interested persons or groups;
- television and radio interviews;
- presentations to schools and service clubs;
9. Customer Service Plan

- newspaper advertisements;
- community notice boards;
- open days for facility inspections; and
- provision for input from the floor at Council meetings.

The best methods to use will depend on the nature of the project itself and the size and diversity of the community.

Community consultation should be planned into the project rather than be implemented as a reaction to opposition. The community needs to be kept informed about proposed works, community views must be sought, and potential conflicts must be identified and resolved early in the decision-making process.

Guidelines have been published on community consultation - Reference 13 on page 97.

Table 12 Standard Objectives, Strategies and Actions - Community Involvement

| OBJECTIVE 6: | A high level of community consultation and involvement in the delivery of water supply/sewerage services. Such community consultation to be undertaken prior to any significant decisions. |
| PERFORMANCE TARGET: | Achieve a 60% awareness rating in a community survey conducted at the end of the public consultation phase of project development. |
| STRATEGY: | Raise public awareness of the water supply/sewerage system and likely future developments. |
| ACTION: | Hold a community open day at treatment plants every year commencing (date). Prepare information brochures for the general public and for schools. Arrange for senior staff to give talks at local schools and service clubs. |
| STRATEGY: | Undertake a community consultation program before making a decision on the preferred option for the next stage of the system augmentation. |
| ACTION: | Organise a media campaign with regular articles in the local newspaper. Organise a series of public meetings to discuss issues (including attendant costs), to provide input to the options investigated, and to provide input to the decision. Exhibit a display of options evaluated at the local business district, community centres, and Council chambers. |
| PERFORMANCE INDICATORS: | Awareness rating. Dates to have actions completed. |
9.5. Environment Protection and Sustainable Development

You, as a local water utility, can play a significant role by managing your water supply and/or sewerage activities to minimise pollution of the environment, protect environmentally sensitive areas, and promote ecological sustainability.

You should undertake an environmental assessment to identify direct and indirect impacts that occur from the water supply/sewerage system. The study should focus on environmentally sensitive areas, and it should consider the ecological sustainability of the operation and assess any impacts which are occurring. You will then be in a position to decide if any changes and/or remedial actions are warranted to your current practices.

You should prepare a Due Diligence Strategy to manage all risks to the environment. The following are typical of what action could be required to minimise risks and impacts:

**Water Supply -**
- recharge wetlands which have been affected by water abstraction;
- construct fish ladders on weirs or restock streams above and below weirs;
- recharge groundwater aquifers;
- investigate new sources;
- regenerate affected vegetation; and
- provide environmental flows/releases from dams/weirs/abstraction points.

**Sewerage -**
- improve effluent quality;
- improve effluent management practices;
  (e.g. relocate discharges to less sensitive areas, re-use effluent to reduce discharge volumes and/or reduce extraction of water sources, construct artificial wetlands for discharge); and
- infiltration/inflow management (see section 9.2 on page 43).

**Works should be undertaken largely to meet agreed Levels Of Service to customers, to meet industry accepted guidelines, and to comply with regulatory requirements.** For works in excess of this, you will need to give careful consideration to the costs, benefits, and financial impact.

9.6. Due Diligence Requirements

The NSW Protection of the Environment Operations Act 1997 (POEO) provides substantial liability in the event of environmental harm (section 119). Due Diligence should be incorporated in the Operation Plan since it is one of the few defences available to both individuals and corporations under the Act.

Due Diligence implies that efforts should be made to anticipate hazards which may harm the environment and take all feasible steps to prevent, control and mitigate the potential of their occurrence.

The development and maintenance of a Due Diligence Program forms an essential part of Operations Planning for water supply and sewerage systems (section 118).
Due Diligence Programs should address matters listed in section 241 of the Act, namely:

- the extent of harm to the environment;
- practical measures to prevent, control, abate or mitigate that harm;
- the extent to which the person committing the offence could reasonably have foreseen the harm caused to the environment;
- the extent to which the person had control of the causes of the offence; and
- whether, in committing the offence, the person was complying with orders from an employer or supervising employee.

The steps in the development of a Due Diligence Program are:

(a) **Risk Assessment**:
- identification of operational activities with the potential to be environmentally hazardous;
- estimation of the probability and the consequences of each hazardous activity; and
- classification and quantification of the risk associated with each hazardous activity (Risk = Probability x Consequence).

(b) **Due Diligence Program development** (to address operational and organisational safeguards):
- capacity, in-line redundancy, etc of plant and equipment;
- monitoring and control systems;
- compliance with NSW Framework for Regulation of Sewerage and Trade Waste (Figure 1 on page 2 and section 9.3 on page 46);
- operating practices and procedures;
- inspection and maintenance procedures;
- emergency plans, reporting structures, response times, etc; and
- staff training and awareness.

(c) **Due Diligence Program Implementation**:
- monitoring procedures;
- compliance and effectiveness audits; and
- program review and adjustment.
Table 13 Standard Objectives, Strategies and Actions - Environment Protection and Sustainable Development

**OBJECTIVE 7:**
An ecologically sustainable system whose environmental impacts, especially in sensitive areas, are acceptable to the community.

**PERFORMANCE TARGET:**
All impacts which occur are acceptable to the community.

**STRATEGY:**
Undertake all works needed to meet the Objective.

**ACTIONS:**
- Determine any works required to meet Objective 8 (Capital Works Plan). Determine financial implications of additional works (Financial Plan). Proceed if satisfactory.
- Establish customer/community advisory committee to guide development.
- Program design and construction activities to achieve target date for commissioning of all services.

**STRATEGY:**
Be proactive in protecting the environment and promoting ecological sustainability within the scope of the water/sewerage system.

**ACTION:**
Form a local environmental advisory committee from the community to help identify issues of concern and suggest solutions.
- Undertake an environmental impact assessment on the effect of the activities of the systems on (areas). If not environmentally sustainable, then examine the requirements to make it sustainable.
- Establish a due diligence strategy to identify and respond to environmental risks.
- Consider programs to minimise environmental risks and impacts of water supply and/or sewerage systems.
- Undertake detailed investigation of preferred programs and alternative(s).

**PERFORMANCE INDICATORS:**
- Dates to have Actions completed.
- Note: Specific indicators to monitor any impacts identified should also be specified.

9.7. Output from Customer Service Plan

Obviously, each water supply and/or sewerage system is different. Each water utility is also affected by a variety of different circumstances. As a consequence, it will be necessary for each utility to describe its position in qualitative terms in its own Customer Service Plan and then amend the Objectives, Strategies, and Actions listed to suit its particular position.

Table 14 overleaf includes a check list of outputs which will result from your Customer Service Plan in accordance with these Guidelines.
Table 14 Check list of Outputs from Customer Service Plan

Some or all of:

- Statement of Financial Objectives and associated Performance Targets;
- List of Strategies and Actions to achieve these Objectives;
- List of Performance Indicators;
- Service pricing policy and tariff schedule;
- Demand management study reports (leakage/infiltration, new tariff impact etc.);
- Customer relations, procedures manual;
- Various customer/community information materials; and
- Environmental assessment study.

and proposals for:

- Customer/community advisory committee;
- Customer/community opinion surveys;
- Customer complaints system;
- Customer relations training program for staff;
- Customer service contract;
- Community consultation program for scheme development; and
- Environmental Advisory Committee.
PART B - PLAN ELEMENTS

10. Total Asset Management Plan

OPERATING ENVIRONMENT REVIEW

MISSION STATEMENT

LEVELS OF SERVICE

SERVICE DELIVERY

CUSTOMER SERVICE PLAN

FINANCIAL PLAN

TOTAL ASSET MANAGEMENT PLAN
Operation Maintenance Capital Works

WORK FORCE PLAN
10. Total Asset Management Plan

The aim of total asset management is to provide, operate, and maintain physical assets over their whole life cycle to achieve the required Levels of Service at the least cost while still satisfying statutory and regulatory requirements.

The key elements of a total asset management approach (section 2 on page 8) involve preparation of a total asset management plan comprising:

- Operation Plan;
- Maintenance Plan; and
- Capital Works Plan.

Figure 5 on page 57 shows the relationship between these elements. Each will be addressed in turn.

In this part of the Strategic Business Plan, you will give details of your plans for Total Asset Management. You should be able to demonstrate that you have a planned system for provision, disposal, operation, maintenance, and renewals (i.e. rehabilitation or replacement) of your assets to meet the Levels of Service. This information, in turn, provides essential input to the Financial Plan.

Integrated Water Cycle Management

Integrated water cycle management (IWCM) is the integrated management of the water supply, sewerage and stormwater services within a whole of catchment strategic framework having regard to catchment blueprints and other water management plans. IWCM is a framework to help identify water management problems, to address these problems, to determine the appropriate management responses and to manage the impacts of the problems so that social, environmental and economic objectives are met.

LWUs facing significant capital expenditure over the next 10 years are required to prepare and implement a 30-year Integrated Water Cycle Management (IWCM) Strategy\textsuperscript{23} for their water supply and sewerage, and where cost-effective, stormwater businesses, to determine the strategy which provides the best value of money on a triple bottom line (TBL) basis, on the basis of social, environmental and economic considerations.

Whilst the IWCM Strategy identifies the operation, maintenance and capital works expenditure for the selected scenario over the next 30 years, your utility should examine and refine the operation, maintenance and capital works plans for this scenario guided by this section of the Guidelines. Particular attention may be required for analysis and fine tuning if your utility is facing significant renewals expenditure over the next 10 years.

\textit{Tip: As much of the extensive underlying data [projections of population, assessments, water demand, total asset management plan] is common between an IWCM Strategy and a strategic business plan, it is recommended that these are prepared concurrently, with a draft strategic business plan and financial plan completed within about 3 months of completing the IWCM Strategy – except for the above ‘fine tuning’, this will avoid the need to revise and update the underlying data.}

\textsuperscript{23} The IWCM Strategy needs to be prepared in accordance with Appendix F of the \textit{Best-Practice Management Guidelines 2007}, the \textit{Integrated Water Cycle Management Guidelines, NSW 2004} (Reference 23 on page 98), the IWCM ‘Generic Scope of Work’ document and the seven IWCM information sheets available on the NSW Office of Water website (www.water.nsw.gov.au).
Section 10 of the Guidelines outlines the principles of total asset management for water supply and sewerage services. Standard sets of total asset management Objectives, Strategies and Actions are also given at the end of each sub-section. A check list of outputs from the Total Asset Management Plan is similarly included at the end of each sub-section.

The NSW Water and Sewerage Asset Management Guidelines at Reference 3 on page 97 have been developed to guide LWU asset management planning (Refer also to References 24 and 25 on page 97).

Figure 5 Total Asset Management Plan for Water Supply and/or Sewerage
10.1. Operation Plan

The purpose of the Operation Plan is to ensure that service objectives (ie., Levels of Service, statutory/regulatory requirements, and obligations, etc.) are achieved at the least cost and that the impact of any breakdowns or outages is minimised.

The operation planning process begins with an Operation Analysis which identifies performance requirements (with respect to outputs, reliability, and availability) from individual sub-systems and facilities making up the water supply and/or sewerage systems (Refer to Figure 6 on page 62). This provides the basis for subsequent development of the Maintenance and Capital Works Plans.

It is important to ensure that the Operation Plan is adequately supported by appropriate documentation and staff training.

10.1.1 Asset Registers

An Asset Register is a list of all assets with basic physical data (material, size, age, remaining life, and locations) and financial statistics (original purchase or construction cost, fair value and current replacement cost) on each asset. This information can be used to assess needs for renewal (ie. rehabilitation or replacement).

For example, for a reticulation system the register may list individual sections of pipe (between junctions) with their length, material type, age, known condition, estimated remaining service life, estimated current cost, etc.

An initial overall assessment of asset condition is a necessary input to the Operation Analysis. However, a more detailed assessment of the condition of individual assets is required for planning for replacement of capital works in the long term (refer sections 10.1.2 and 10.1.3 below).

10.1.2 Assessment of Asset Condition

Based on the information in the Asset Register, an assessment should be made of the overall condition and capacity of the existing assets in undertaking an Operational Analysis.

A good indicator of the asset condition of your water and sewerage mains is provided by your reported number of water main breaks/100km of main and sewer main breaks and chokes/100km of main. Refer to the tips on page 129 of Appendix G.

Similarly you should critically review any segments of your system with a very high value for water main breaks/100km eg. pipes laid in highly corrosive conditions such as a swamp or those in a valley with a very high water pressure.

If little information is available, and you suspect the condition is poor, condition surveys may be warranted (eg. closed circuit television (CCTV) inspections of pipes).

This information is needed to determine renewal/replacement and maintenance requirements.
10.1.3 Operation Analysis

An Operation Analysis is in effect a complete investigation of the adequacy of a water supply or sewerage system to meet present and future needs. This analysis determines whether the existing system is capable of economically meeting its Levels of Service. Where the existing system is inadequate, or where assets are found to be approaching capacity or the end of their economic life, output from the Analysis will include a schedule of required capital works.

The Operation Plan is a key part of a total asset management strategy because, in addition to “fine-tuning” operations, it also provides essential inputs to the Maintenance Plan and the Capital Works Plan. This is done by determining the performance requirements (with respect to outputs, reliability, and availability) for the individual sub-systems and facilities making up water supply and sewerage systems.

The Operation Plan should document the items shown in Table 15 on page 60.

An Operation Analysis uses Levels of Service, Asset Register, and Condition Surveys to develop an Operation Plan which comprises:

- System Operating Rules to operate the total water supply and/or sewerage system in the most effective manner during normal and breakdown conditions;
- Operating Procedures for individual facilities; and
- Due Diligence requirements under the NSW Protection of the Environment Operations Act 1997.

The Operation Planning process is shown in Figure 6 on page 62.

Chapter 4 of the NSW Water and Sewerage Asset Management Guidelines (Reference 3 on page 97) gives more detailed guidelines for developing an Operation Plan.
Table 15 Standard Objectives, Strategies and Actions - Operation

OBJECTIVE 8:
System operation ensures facilities deliver quality, capacity, and reliability to design requirements at the minimum long term cost.

PERFORMANCE TARGET:
No operations related problem causes a failure to deliver Levels Of Service.

STRATEGY:
Operate the system at all times in accordance with documented System Operating Procedures, Facility Operating Rules, and Due Diligence Program.

ACTIONS:
Produce a Register of Assets and update the value of the asset base. Assess condition of existing assets.
Review the Operation Analysis to check the capacity of the system to meet the standards of service for existing customers, and requirements for the future.
Review System Operating Rules to identify opportunities for cost savings and efficiency improvements.
Review Facility Operating Procedures for cost savings and efficiency improvements.
Contract out appropriate operating functions where cost savings can be made.
Revise estimates of operating costs and required resources.
Review Due Diligence Program for comprehensive coverage of POEO Act 1997.
Monitor actual outputs, reliability and availability of facilities.

PERFORMANCE INDICATORS:
Management cost per connected property.
Operating (operation, maintenance and administration – OMA) cost per connected property.
Power cost per connected property.
Chemical cost per connected property.
Pumping cost per connected property.
Water treatment or sewage treatment cost per connected property
Water main or sewer main per connected property
Operation cost per connected property
Maintenance cost per connected property
Dates to have actions completed.

Note: Each utility should establish and monitor indicators for its key operating cost drivers.


25 These performance indicators are available from Table 13 (page 161) and Table 18 (page 176) of Reference 8 on page 97.
10.1.4 Outputs from Operation Plan

The list given in Table 16 is a check list of the outputs which should result from producing an Operation Plan.

Table 16 Check list of Outputs from Operation Plan

- Statement of Operation Objectives.
- List of Strategies and Actions to achieve these Objectives.
- List of Performance Indicators.
- Asset Register.
- Condition Survey report.
- Capacity estimates of existing system.
- System Operating Rules for normal and breakdown conditions.
- Subsequent Facility Operating Procedures.
- Performance requirements for sub-systems and facilities.
- Due Diligence Program (POEO Act 1997).
- Inputs to projected Capital Works Plan, Maintenance Plan and Financial Plan.
10.2. Maintenance Plan

The purpose of the Maintenance Plan is to support the Operation Plan by ensuring that the actual outputs, reliability, and availability of the individual sub-systems, facilities, and components, as specified in the Operation Plan, are achieved in the most cost effective manner.

Maintenance is generally planned in two ways:

- Scheduled (also known as planned or preventive) maintenance and is either:
  - Fixed-time maintenance; or
  - Condition-Based Maintenance.
- Breakdown (also known as corrective) maintenance.
10.2.1 Scheduled Maintenance

Scheduled maintenance is normally used for critical items where a breakdown would be costly and would cause large interruptions to service.

**Fixed-Time Maintenance** is undertaken at pre-determined intervals (e.g., every 6 months, every 10,000 hours, etc.) generally in accordance with technical manuals and specifications or recommendations of the manufacturers.

**Condition-Based Maintenance** is based on condition inspections and assessments with maintenance tasks being initiated once the condition of a component reaches a certain pre-defined trigger point (e.g., oil into a car engine once the oil level is below a certain gauge mark). Condition-based maintenance may be as simple as painting something before it begins to rust, or it may be as complex as replacing bearings in a motor when a vibration analysis indicates that substantial deterioration has occurred.

For your water supply and sewerage systems, the extent of condition-based maintenance will typically be limited to direct condition assessments or measurements and the use of pre-defined "trigger conditions" to initiate certain maintenance tasks. For example, dirty water complaints - flush the suspect mains.

Condition-based maintenance helps to avoid unexpected failures and, through condition monitoring and assessment, helps to generate crucial information about such matters as rates of deterioration. This is essential data for predicting service life of components and the optimum time for their upgrade, rehabilitation, or replacement. A great deal of effort is being directed by water utilities into condition monitoring and assessment of underground assets such as water and sewer pipes. Requirements for scheduled maintenance should be documented in a **Scheduled Maintenance Program**.

10.2.2 Breakdown Maintenance

Breakdown maintenance is generally reserved for the less critical components, for situations where scheduled maintenance is not possible or for conditions not feasible, or for conditions where remedial action can be taken quickly with minimal disruption to services. Breakdown maintenance should be supported by appropriate **Breakdown Response Plans**.

Scheduled Maintenance can offer cost advantages over Breakdown Maintenance, because work can be scheduled for optimum periods (from system operation and resource availability perspectives) rather than during either peak operational periods or 'after business hours' periods during which a breakdown may require expensive overtime work.

An outline of the process for development of a Maintenance Plan is shown in Figure 7 on page 65.

Maintenance Plans are very "system-specific" and must be based on an Operational Analysis of each water supply and sewerage system. Furthermore, Maintenance Plans must be supported by appropriate maintenance documentation and manuals, spares, support equipment, and staff training.
Table 17 Standard Objectives, Strategies and Actions - Maintenance

**OBJECTIVE 9:**
System maintenance ensures facilities can deliver design quality, capacity, and reliability requirements at the minimum long term cost.

**PERFORMANCE TARGET:**
No maintenance related problem causes a failure to deliver Levels Of Service.

**STRATEGY:** Maintain the system at all times in accordance with documented Maintenance Procedures.

**ACTION:**
- Assess deficiencies in maintenance of existing assets.
- Review Scheduled Maintenance Program and Breakdown Response Plan to check the ability to meet the required sub-system and facility reliability and capacity requirements.
- Review Maintenance Plan for cost savings and efficiency improvements. Obtain all appropriate maintenance manuals.
- Prepare an inventory of available and required spares and support equipment.

**ACTION:** Contract out appropriate maintenance functions where net cost savings can be made.

- Revise estimates of maintenance costs and required resources. Monitor breakdowns frequency for future review of Maintenance Plan. Monitor actual outputs, reliability, and availability of facilities.

**PERFORMANCE INDICATORS:**
- Maintenance cost per assessment.
- Dates to have Actions completed.
- Note: You should establish indicators for your key maintenance cost drivers.

### 10.2.3 Output from Maintenance Plan

The list given in Table 18 is a check list of the outputs which should result from producing a Maintenance Plan. These should be documented.

Table 18 Check list of Outputs from Maintenance Plan

- Statement of maintenance Objectives.
- List of Strategies and Actions to achieve these Objectives.
- List of Performance Indicators.
- Scheduled Maintenance Program - Fixed Time and Conditioned Based.
- Breakdown Response Plans.
- Estimates of human and other resources required, plus costs.
- All appropriate maintenance manuals.
- An inventory of spares and support equipment.
Chapter 5 of Reference 3 on page 97 provides detailed steps for Developing a Maintenance Plan.
10.3. Capital Works Plan

Capital investment commonly accounts for about 70% of the overall cost of a water supply or sewerage system (refer to section 2.1 on page 8). So when capital investment is required, the cost as a proportion of your utility’s total budget usually means that it has significant impact on your overall finances. The Capital Works Plan is therefore of crucial importance.

The purpose of the Capital Works Plan is to:

- document your anticipated future Capital Works requirements and expenditures to meet the Levels of Service; and
- provide a basis for financial planning and capital budgeting.

The plan should cover a 30 year time frame with detailed estimates for the first three years, decreasing in detail to 10 years, thereafter rough estimates. The plans should be in current dollars.

10.3.1 Need for Capital Works

The need for new capital works might arise from:

- infill development of an existing area served;
- decisions to extend services (eg. to cater for new development); or
- lack of facilities or capacity to meet the Levels of Service.

The need for rehabilitation or replacement of existing assets might arise when:

- performance is inadequate for the achievement of the Levels of Service and/or other operational Objectives. This can also include cases where assets have become technologically obsolete; or
- operation and maintenance costs exceed the total cost of refurbishment or replacement.

The Operation Plan and Maintenance Plan, discussed in the previous sections, provide information used in determining the need for both construction of new works and the rehabilitation or replacement of existing works.

10.3.2 Timing for Capital Works

Predicting when capital works will be required is a critical component of the Capital Works Plan.

The timing for new capital works is generally derived from an analysis of the capacity of the existing system and its ability to meet projected demands, ie. its Operational Analysis.

The timing for rehabilitation or replacement of an existing asset is when it can no longer function economically or when it can no longer meet its Levels of Service.

In practice, the full economic life will rarely be achieved. The catalyst for replacement will more usually be technological obsolescence or failure to meet Levels of Service.

Chapter 6 of the Asset Management Guidelines (Reference 3 on page 97) provides more detailed steps for estimation of replacement costs and asset values and balancing maintenance and replacement costs.
10.3.3 Developing a Capital Works Plan

A Capital Works Plan comprises a schedule of estimated costs (in current dollars) and timing of works for:

- Construction of new works -
  - growth related (ie. to serve new or infill development);
  - improved standards (ie. to improve Levels of Service);
- Rehabilitation or replacement of existing works; and/or
- Disposal of Assets.

To produce a reliable plan, you will normally need to undertake a Strategy Study* which analyses planning projections, estimates future demands and system requirements, formulates options, and analyses all of these. This analysis will determine the costs, economics of meeting Objectives, needs of the community and environmental impacts. From these, you can then select a financially viable option.

This process is shown in Figure 8 on page 71.

The level of detail needed in the strategy study will depend on a number of factors such as:

- size of the system;
- complexity of the system;
- impact of forthcoming short term decisions on the available long term options;
- time frame for the next stage of work;
- rate of growth in demand for services;
- size of asset base;
- time frame for the need for major rehabilitation/replacement of existing assets;
- likely scale of needed works and relative cost;
- impact on the environment; and
- impact on the community.

Long Term planning should be undertaken especially where the demand for services is growing rapidly. Obviously, the accuracy of projections will decrease for future years; however, these projections are worthwhile as they guard against short-term thinking and indicate longer term financial requirements.

With water supply and sewerage, the Capital Works Plan is the most important input to the financial plan.

Where major capital works are required or a new system is envisaged, system design procedures, such as those set out in various NSW design and investigation manuals, should be consulted.

* NSW utilities facing significant capital expenditure over the next 10 years are required to prepare and implement an Integrated Water Cycle Management (IWCM) Strategy for water supply, sewerage, and where cost-effective, stormwater. This enables the utility to determine the future scenario which provides the best value for money on a triple bottom line (TBL) basis. Refer also to section 10 on page 56.
It is stressed that the proposed capital works program, as reflected in your Capital Works Plan, should be the outcome of a thorough evaluation of the available options. It is not to be undertaken in isolation. It must be consistent with the agreed Levels of Service you are seeking to achieve after consultation with the community (see section 7 on page 29).

10.3.4 Capital Works Plan Analysis

For major projects, detailed analyses are required to ensure that the project will have net benefit for the wider community and maximise value for money. These analyses include:

- life Cycle Cost Analysis; and
- value Management Study.

The **Asset Life Cycle Cost** is the total cost of ownership over the life of the asset. Typically, the capital cost of water supply and sewerage assets will be about 70% of the life cycle cost (refer also to section 2.1 on page 8).

A life cost analysis should be undertaken which examines capital costs, recurrent costs (operation, maintenance and administration -OMA), financing arrangements, and residual costs at end of life. (Note that this is a standard analysis required for all NSW water and sewerage Strategy Studies).

A **Value Management Study** is a structured analytical process which seeks to ensure that the project achieves all of the necessary functions at the lowest total cost. It does this by examining the relationship between function, cost, and worth. An external group of specialists examines the project and challenges the solution to identify cost savings. The process is applied both at concept and design phases.

All Government funded projects which exceed $5 million are required to have a value management study. Experience indicates that value management studies generally produce savings or benefits significantly greater than the cost of the study, and these studies are recommended regardless of project size.

More detail on all the above analyses can be obtained from the Total Asset Management Manual - Reference 7 on page 97.

Public Works has developed procedures to manage risk in the planning and delivery of particular capital works for State Government Projects - Reference 10 on page 97. Figure 9 on page 72 illustrates the planning process that should be followed before a decision is taken to proceed with procurement. The procedures in these Strategic Business Planning Guidelines embrace this philosophy, but they allow you a longer lead time so that planning non-structural solutions can be developed progressively and implemented in successive Strategic Business Plans.

Utilities undertaking major capital works should set up their own risk management procedures or engage a suitable consultant with established procedures to manage the process.
OBJECTIVE 10:
Capital works program provides facilities to deliver quality, capacity, and reliability requirements at the minimum long term cost.

PERFORMANCE TARGET:
Lack of adequate facilities does not cause a failure to deliver Levels of Service.

STRATEGY:
Construct the necessary capital works to ensure that existing and future demands can continue to be met at the agreed Levels of Service within financial constraints.

ACTIONS:
Determine capital works needs to ensure Levels of Service can be met in terms of quality, quantity, and reliability for existing and future customers.
Determine capital works needs for renewal/replacement of existing assets.
Develop options for provision of works and examine feasibility on technical, environmental, and costs grounds.
Select an option in consultation with the community.
Undertake a value management study to minimise costs (if required).
Prepare an integrated program of capital works with estimated costs and timing.
Investigate cost savings and financial advantages of alternative means of service delivery such as contracting out construction of works, BOO or BOOT proposals.
Arrange detailed design of the next stage of works. Construct Project X by (date), Construct Project Y by (date).

PERFORMANCE INDICATORS
Dates in construction program met.

10.3.5 Output from Capital Works Plan
The list given in Table 20 is a check list of the outputs which should result from producing a Capital Works Plan.
Table 20 Check list of Outputs from Capital Works Plan

- Statement of maintenance Objectives.
- List of Strategies and Actions to achieve these Objectives.
- List of Performance Indicators.
- Strategy Study including:
  - Works needs to meet Levels of Service;
  - Projections of demand;
  - Planning constraints;
  - Consideration of all "Non-build" options (eg. water supply demand management, infiltration minimisation, etc.);
  - Consideration of all "Build" options (ie. rehabilitation in lieu of replacement, alternatives for new systems and system augmentations);
  - Capital and 0 & M cost estimates;
  - Life Cycle Cost Estimates (ie., present worth of capital costs and 0 & M cost);
  - Environmental impacts;
  - Community concerns;
  - Preferred scheme;
  - Adopted program of works - Timing and annual expenditure for the next 30 years; and
  - Value Management Study (if required).
Figure 8 Capital Works Planning Process

Refer also to Figure 3 on page 11.
Figure 9 Capital Works Provision Process 'L - Curve'

Community Demand

Total Asset Management Plan
- Operation Plan
- Capital Works Plan

Customer Service Plan
- Demand Management

Service Delivery Strategy

Levels of Service

Project Definition

Procurement Method

Design and Documentation

Tender

Construct

Review

Non-Build Solutions

Private-Sector Capital Works Provision

Deliver

The importance to business of work force management is growing. This is due to the realisation that employee performance at all levels in the organisation is crucial to the success of the organisation. Performance is strongly linked to motivation and morale. Maintenance of high levels of employees' performance is a complex issue, and this maintenance will not necessarily emerge after implementation of a work force plan. The basic principles are that a climate of trust, co-operation, and confidence must be developed with employees. This requires attention to a wide range of issues.

Many organisations have a stated position that their staff is their major asset. Further, the payroll is normally the largest single operating expense. For both of these reasons, a formal plan for the management of the work force should be undertaken.

**Work Force management** - covers a wide range of issues including:

- work force planning;
- recruitment;
- personnel management (motivation, communication, performance appraisal etc.);
- remuneration policy;
- productivity agreements;
- training;
- succession planning;
- occupational health and safety; and
- equal employment opportunity.

Most local water utilities address these Work Force management issues, including EEO management planning, at the corporate level. These Guidelines assume this to be the case and, hence, these issues have not been covered in detail in the Guidelines.

For water supply and/or sewerage, the specific area which needs to be addressed individually is **Work Force Planning**. The aim here is to ensure that you have the appropriate staff numbers with the necessary skills to meet current and future requirements in order that the Levels Of Service can be met.

In this section of the Strategic Business Plan, you should outline the Objectives, Strategies, and Actions for **Work Force Planning** which are specific to the water supply and/or sewerage system.

A **Work Force Plan** should cover the following elements:

- Work Force Planning Objectives;
- Strategies and Actions for -
  - Position analysis;
  - Resources audit; and
  - Resource development.

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26 Work force management planning is a key requirement of the Local Government Integrated Planning and Reporting Framework 2010 (Reference 11 on page 97).

Figure 10 shows an outline of the work force planning process.

Note that the inclusion of detailed guidelines for work force planning is beyond the scope of these Guidelines. A summary of the main issues to be addressed has, however, been included. A standard set of Work Force Planning Objectives, Strategies and Actions has also been included. A check list of outputs from the Work Force Plan is included in Section 11.4. For detailed information specialist publications should be consulted.

11.1. Position Analysis

An analysis should be undertaken to identify the positions required to meet the Levels of Service and, specifically, to meet the Operational Requirements of the Total Asset Management Plan. This analysis should also consider the organisational structure to determine if it needs to be re-structured.

For each identified position an analysis of the following should be undertaken:

- Position description -
  - Duties;
  - Responsibilities; and
  - Reporting lines.

- Position specification -
  - Qualifications;
  - Experience;
  - Skills; and
  - Personal qualities.

This analysis should be completed for all the positions identified.

11.2. Work Force Audit

An audit of available work force needs should be undertaken to identify action required to ensure adequate work force will be available. The audit should then match overall needs to availability of resources in the following areas (as illustrated in Figure 10 on page 78):

- Numbers;
- Skills;
- Qualifications;
- Experience; and
- Performance.

This audit will indicate the variations necessary to the current resources available.

11.3. Resource Development

From the work force audit, Strategies and Actions should be developed to ensure that adequate resources will be available. These may cover:

- General increase or reduction in staff numbers as necessary;
- Redeployment/retraining/retrenchment of redundant staff;

- Productivity agreements;
- Job restructure (e.g., multi skilling, job redesign);
- Recruitment of specific skills;
- Training programs;
- Leadership development;
- Career path development;
- Performance appraisal; and
- Alternative resources (private sector).

**Table 21 Standard Objectives, Strategies and Actions - Work Force Planning**

**OBJECTIVE 11:**
Have the appropriate staff numbers in the correct positions with the necessary skills to meet the operational requirements of the Total Asset Management Plan by (date).

**PERFORMANCE TARGET:**
No deficiency in work force causes a failure to deliver Levels Of Service.

**STRATEGY:**
Complete positions analysis, work force audit and resource development plan by (date).

**ACTIONS:**
Implement the above strategy.

Recruit new staff to meet specialist and other identified needs. Redeploy, retrain, or retrench redundant staff.

Establish a training program covering all members of staff with a minimum of 5 days training for each staff member per year.

Identify staff members for leadership development.

Establish a career development program for staff identified with leadership potential.

**PERFORMANCE INDICATORS:**
Numbers of staff available/number required by category. Dates to have Actions completed.
OBJECTIVE 12:
Total productivity of staff is improved.

PERFORMANCE TARGET:
Achieve a reduction in the staff/customers ratio by 5% by (date) and by 10% by (date).

STRATEGIES/ACTIONS:
Negotiate a productivity agreement with staff by (date) to restructure position specifications to include multi-skilling and Performance Targets.
Set up a staff performance appraisal system by (date).
Implement a redundancy program for targeted surplus staff with overall reduction in staff if necessary to meet Performance Target.
Review structure to gain optimal results from multi-skilling.

PERFORMANCE INDICATORS:
Number of staff per customer.
Dates to have Actions completed.

Note: Although all Utilities will wish to improve total productivity of staff, some Utilities may need to increase staff/customers ratio in order to meet their Levels of Service (section 7 on page 29).

11.4. Outputs from Work Force Plan
Table 22 is a check list of the outputs which should result from producing a Work Force Plan using these Guidelines.

Table 22 Check list of Outputs from Work Force Plan

- Statement of Work Force Objectives and associated Performance Targets.
- List of Strategies and Actions to achieve these Objectives.
- List of Performance Indicators.
- Positions analysis statement.
- Work Force Audit.

Note: It is assumed that the wider Work Force Management issues have been addressed elsewhere in your utility's corporate planning.
Figure 10 Work Force Planning Process
12. Financial Plan

The Financial Plan is fundamental to enable a local water utility to meet its Levels of Service over the long term. The Plan brings together all of the financial aspects of your system to ensure that it is financially viable over the long term.

Since water supply and sewerage are highly capital intensive (Section 2.1 on page 8) and capital investments tend to be large and lumpy, projections must cover at least 20 years and preferably 30 years. The projections for the next five years would be based on firm estimates, and, beyond this time, projections would be reasonable indicative amounts (Section 2.2 on page 8).

- 5 yrs on detailed estimates;
- 5-10 yrs on preliminary estimates; and
- 10-30 yrs on feasibility estimates.

It is necessary for the Financial Plan to cover the following elements:

- Projections of -
  - Income Statement (ie. Profit and Loss - Special Schedule 3 – Water; 5 – Sewerage);
  - Balance Sheet (Special Schedule 4 – Water; 6 – Sewerage);
  - Cash Flow Statement;
  - Typical Residential Bill\(^{27}\); and
  - Financial Performance indicators.

- Financial Objectives; and
- Strategies and Actions to achieve the Objectives.

The NSW Financial Planning Model\(^{28}\) FINMOD (Appendix D) is a powerful tool for calculating projections for these elements. The Model enables a utility to quickly answer a range of "what if" questions – eg. the impact of a $30M new water treatment works on the required Typical Residential Bill (TRB) or the impact of a 10 year deferral\(^{29}\) of a new dam as a result of a utility’s strong pricing signals and water conservation measures.

Whilst a Financial Plan could be prepared for each water and/or sewerage system which is managed as a single financial entity, this is not generally recommended and almost all of the NSW utilities have elected to prepare a single financial plan for their water operations and another for their sewerage operations.

This section of the Guidelines outlines the principles of Financial Planning for water supply and sewerage services. Required outputs from the Financial Plan are shown in section 12.7 on page 89. More detailed guidance on financial planning is provided in the FINMOD User Manual. The Financial Plan is required to address each item in the Check List in Appendix F on page 119.

\(^{27}\) Refer to footnote 21 on page 46.

\(^{28}\) The FINMOD User Manual, which includes an Overview of Financial Planning and How FINMOD Works, are provided by the NSW Office of Water to licensed users of the FINMOD software (Reference 4 on page 97).

\(^{29}\) This is a not uncommon question for NSW LWUs as a result of the 47% reduction in the Statewide average annual residential water supplied per connected property over the last 18 years (page 8 of Reference 7 on page 97).
12.1. The Benefit of Financial Planning

The benefit of implementing a long term Financial Plan is that you will be in a better position to meet your Levels of Service. A Projection of your future financial position will inform your utility of its financial ability to fund operation, maintenance, replacement of major assets that are wearing out, and undertaking of new capital works. It will also enable you to communicate and negotiate the resulting Typical Residential Bill with your customers.

When setting new Levels of Service, you may investigate the financial implications of a range of levels. These may each entail options for Total Asset Management, particularly capital works. Each of these requires analysis of alternative financial plans. This process is shown in Figure 11 below.

After this investigation, you can then put to customers, a number of alternative Levels of Service and/or Total Asset Management Strategies, together with attendant Typical Residential Bills to enable customers to make an informed decision on the Level of Service that provides the best value for money.

For example, your utility may be considering the merits of constructing a $30M water treatment works to improve aesthetic water quality (this is not health related and may involve on average 10 days annually where the water does not comply with the colour value in the Australian Drinking Water Guidelines 2004 (ADWG) (Reference 15 on page 97) and 1 day annually where it does not comply with turbidity). The financial plan would determine that this treatment works would require say a $50 increase to the water supply typical residential bill, which would enable you to consult your community as to whether such a new facility would provide value for money for your water supply.

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**Figure 11** Financial Analysis of Alternative Levels of Service
12. Sources of Funding

The main sources of funding for your capital works are:

- Income from annual access and usage charges;
- Trade Waste Charges;
- Grants\(^{30}\);
- Developer charges;
- Interest income; and
- Borrowings.

In addition, you may have income from asset sales and you may wish to consider private sector financing (e.g. BOOT - build, own, operate, transfer) schemes\(^{31}\).

12.3. General Guidelines for Funding

Each local water utility will be in a different situation in terms of the size, age, and condition of its water supply and or sewerage system. Further, each utility will be in a different financial situation in terms of current borrowings and revenue. Thus, it is recognised that the method of funding capital works will vary from utility to utility. It is the responsibility of each utility to determine the best way of funding future new capital works and renewals through the development of its own financial plan which will reflect the conditions pertaining to its situation.

12.3.1 Choice of Funding Sources

Typically, you should fund your Capital Works program along the following lines:

- Minor works - from revenue;
- Major new works (non-growth related) - From borrowings and revenue, assisted where appropriate, with Government grants (up to 50% of the backlog component, where available);
- Major new works (growth related) - from developer charges, with the remainder from borrowings and income; and
- Major renewals - from accumulated cash and investments, with the remainder from borrowings.

An important question to consider is the extent to which you should set aside amounts each year from income to fund future capital works instead of using debt funding. This question is complicated by the fact that you may also have considerable existing water and sewerage borrowings. If you build up such funds for future works, then the water supply system would have both loans and cash reserves. The system would be paying a "penalty" for keeping cash and investments equal to the difference between borrowing rates and investment rates on the amount held. To avoid such a penalty, LWUs facing major capital expenditure for growth or for improved standards should

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\(^{30}\) Grants comprise:
- Grants towards the capital cost of backlog water supply and sewerage infrastructure.
- Annual grants of 55% of the pensioner rebate subsidy of $87.50/assessment for each of water supply and sewerage.

\(^{31}\) Water and Sewerage Infrastructure Delivery Options, NSW, 1999 (Reference 18 on page 97).
aim to fund the bulk of that expenditure from borrowings, after using the available funds from the accumulated cash and investments. As noted in footnote 37 on page 87, the principal criterion for developing a sound financial plan is minimizing the Typical Residential Bill while maintaining an acceptable minimum level of cash and investments.

Before you can decide on which source(s) of financing are most appropriate you must consider a number of factors, such as:

- The present level of borrowings;
- The potential adverse reaction of the community to increases in the Typical Residential Bill to construct capital works;
- The potential sources and adequacy of income available to meet estimated ongoing and future financing requirements;
- The likely timing for major asset renewals;
- The timing of proposed capital works;
- Whether further efficiencies can be made to reduce the extent of estimated future costs; and
- The reliability of the estimates of growth and the required future levels of service.

After you have considered the above factors, you will be able to readily examine the merits of a range of alternative strategies using FINMOD.

12.3.2 Typical Categories of Council

The following are general guidelines for three typical categories of Council situation. It is emphasised that these are very generalised cases, and you will need to examine your own individual situation.

**Recommended Funding Methods**

**Category - A** (high growth): Councils situated in high growth areas where there is continuing demand for new water supply and sewerage facilities to meet growth.

Additional capital works to meet growth are likely to be required at relatively frequent intervals of around seven to 10 years. Therefore, the major financing priority is likely to be new capital works to service new growth. There is also a requirement for maintenance and replacement of existing facilities, but this is of relatively lower significance. This situation would be typical of many coastal Councils.

It can be argued that, because the majority of new works are required to facilitate future population growth, it would be unfair to charge the existing population for these works. It would seem to be more equitable to borrow now and initially to raise funds to meet the borrowing payments through slightly higher Typical Residential Bills. These could then be offset by developer charges in the future. Therefore, this type of capital works is preferably financed through a mixture of borrowings, developer charges, and a modest increase in Typical Residential Bills. Commercial developer charges would recover much of cost of growth works.

Conversely, the future replacement of existing assets is preferably funded mainly through the Typical Residential Bills.
**Category - B** (moderate growth): Councils in more established areas with moderate growth rates.

The major financing priorities are likely to be new capital works and the replacement and maintenance of existing assets that are wearing out and becoming uneconomical or obsolete. This situation would be typical for many of the larger, well established inland cities.

There will be relatively equal need to provide capital works first, for growth and, second, for the replacement of existing assets which are becoming unserviceable or obsolete. The lack of rapid revenue growth will preclude a Council in this category from relying as heavily on borrowings for capital works as Category A. It is preferable that these Category B Councils fund the capital works required partly through accumulated cash and investments.

**Category - C** (low growth): Councils in well established areas with low growth rates or with a static or declining situation.

The major financing requirements in these areas are normally the replacement and maintenance of existing assets together with the potential of asset surpluses if the population is falling. This situation would be typical of some of the smaller rural inland Councils.

As these Councils have a relatively static, or possibly falling, income base, it is inappropriate to borrow significant funds, since it would be difficult to repay these loans. Therefore, the replacement of existing assets will need to be analysed carefully to see if the future facilities that are required to replace existing assets can be streamlined to reflect the fall in population. Given the small customer bases of these Councils, it is likely that the funding for these works will have to be financed primarily through accumulated cash and investments.

In summary, your Financial Plan will have estimates of the required capital expenditure over the next 20 to 30 years. Management will make decisions on the method(s) of financing. A target can then be set for the minimum level of accumulated cash and investments (refer to footnotes 36 and 37 on page 87). FINMOD will enable you to quickly determine the lowest level of Typical Residential Bill which can meet the commitments in your total asset management plan (refer to section 12.4 on page 85).

**Projected Financial Statements**

a) **Income Statement**

As **Category A** type Councils are growing, their income is likely to come predominantly from developer charges. A **Category B** type Council is likely to have income that comes predominantly from access and usage charges, with some developer charges. **Category C** type Councils are likely to have static income or possibly declining income if their populations are falling. Their income will, therefore, consist predominantly of annual access and usage charges.

Councils in each of these categories will have similar types of expenses; however, the **Category A** type Councils may have larger interest expenses due to external borrowings being undertaken to finance new capital works.
The actual operating surplus target that each Council should set will be related to the cash target required to fund the required future capital expenditure of the Council.

b) Balance Sheet

The Balance Sheet of a Council consists of assets and liabilities. Therefore, the main impact on the balance sheets of the Councils in each of these categories will occur when a Council obtains external borrowings to finance its capital works program. Category A Councils will probably increase their level of borrowings in relation to total liabilities more than the other Categories, because they are more likely to use borrowings as a source of finance.

Category C type Councils may find it difficult to accumulate significant cash and investments, especially if their population is falling.

12.4. The Financial Planning Process

The financial planning process should encompass the following steps:

**Step 1 Assemble Data**

- Alternative total asset management Strategies for the various levels of service being considered (refer to Figure 11 on page 81).
- Existing Typical Residential Bill, No. of Assessments and Projected growth.
- Data from your utility’s latest annual financial statements [Special Schedules 3 to 6] (Reference 26 on page 98).
- Projected developer charges.
- Projected principal and interest payments for existing loans.
- Projections of financial parameters such as future interest rates and inflation rates.

**Step 2 Financial Modelling**

As shown in section 9.3 on page 46, 11 requirements apply for the pricing and regulation of water supply, sewerage and trade waste (5 for water supply and 6 for sewerage). Requirements 3, 4 and 5 from page 46 are discussed below:

- Requirement 3 specifies requirements 32 for commercial non-residential water supply and sewerage charges – where an LWU has previously implemented such pricing, it will already be included in its Special Schedules 3 and 5 (for water supply and sewerage respectively); if not, future income projections need to be adjusted to reflect the utility’s implementation of this requirement.
- Requirement 5 applies to commercial trade waste fees and charges. Similar considerations apply to those indicated above for Requirement 3.

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32 These include the need for strong pricing signals and commercial charging for services for each of water supply and sewerage (section 9.3 on page 46).
12. Financial Plan

- Requirement 4 applies to commercial developer charges and you will need to enter the relevant developer charge per assessment\(^{33}\) (in Year 1$) into FINMOD for each year of your projection.

After inputting the relevant information from your latest annual financial statements (Special Schedules 3 and 4 for water supply and 5 and 6 for sewerage respectively), your existing annual loan payments (principal and interest), your existing number of assessments (residential and non-residential) and your projections for inflation, borrowing and investment rates, FINMOD enables you to determine the lowest level of Typical Residential Bill in current (Year 2) dollars which can meet\(^ {34}\) the commitments in your total asset management plan.

FINMOD provides projections of your annual financial statements (income statement, balance sheet and cash flow statement) over the next 30 years as well as a range of key performance indicators, including those in Table 23 on page 88.

By varying the total asset management plan, you can determine the resulting impact on the Typical Residential Bill and key performance indicators.

Similarly, you can readily carry out sensitivity analysis to determine the impact of alternative financing strategies, changes to the inflation rate and the borrowing and interest rates and higher or lower growth rates on your capital works program and the required Typical Residential Bill and key performance indicators.

FINMOD provides results as both tables and graphs. Graphs are more effective for communicating results with your utility’s management, councillors and your community.

**Step 3 Customer Involvement**

Ensure that customers are willing to pay the required Typical Residential Bill for providing their desired level of service (refer Customer Service Plan – section 9 on page 41).

**Step 4 Adoption of Plan**

Following community consultation on your draft strategic business plan and financial plan, formal adoption of the plans by your LWU. Refer also to Figure 3 on page 11.

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\(^{33}\) A Utility’s Development Servicing Plan (DSP) determines its developer charge per equivalent tenement (ET) ie. a detached residential house. FINMOD calculations are based on ‘assessments’ – the bills issued to residents each year for the water supply and sewerage services. In most cases, using the developer charge/ET from your DSP is satisfactory. An exception may be a utility with a significant proportion of new growth occurring in 1 or 2 bedroom units or flats which the utility has determined as say 0.7 ET/unit. In such cases, a weighted average value of the developer charge/assessment (eg. 90% of the charge/ET) should be calculated and input into FINMOD. Note that whilst LWUs with growth of under 5 lots/a are exempt from Requirement 4, they may nevertheless elect to levy commercial developer charges.

\(^{34}\) Recurrent expenditure is met from annual income. You may specify the extent of capital works to be funded from the current year’s income and accumulated Cash and Investments, with the remainder of capital expenditure to be met from borrowings. As water and sewerage capital works generally have an economic life of 50 to 80 years, 20-year loans are recommended in order to facilitate inter-generational equity and avoid an unfair financial burden on existing customers.
12.5. The NSW Financial Planning Model

As noted on page 80, the NSW Financial Planning Model (FINMOD) is powerful software which was developed to enable NSW local water utilities to prepare a robust financial plan for their water supply or sewerage systems. An Overview of the Model is provided at Appendix D on page 105.

The main inputs to the Model are your current income, expenditure, financial position, projected development, and projected Capital Works Plan. From these, the Model makes the following annual projections:

- Income Statements;
- Balance Sheets; and
- Cash Flow statements;

and, various Performance Indicators such as:

- Typical residential bill;
- Economic real rate of return; and
- Debt.

The methodology is shown in Figure 12 on page 90.

For each level of service considered, FINMOD enables you to readily determine the lowest Typical Residential Bill in current (Year 2) dollars over the next 30 years, whilst maintaining a satisfactory level of minimum cash and investments. You should review the projection for the financial performance indicators in Table 23 to confirm your projection is satisfactory; if not, carry out fine tuning of your financial strategy until a satisfactory projection is obtained.

In addition, you should carry out sensitivity analysis and determine a 4-year price path in accordance with Section 8 of the FINMOD User Manual.

For more detail on the model, refer to Appendix D on page 105 and the User Manual - Reference 4 on page 97.

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35 It is important to note that a sound strategic business plan can only be developed if the LWU has a supporting financial plan which demonstrates how it will fund the proposed asset management plan and discloses required Typical Residential Bills. Only then can the utility demonstrate to its community that its asset management plan is affordable and that appropriate levels of service have been selected.

36 About 10% of your current annual income is generally a satisfactory minimum level of Cash and Investments for your financial planning.

37 Minimising the Typical Residential Bill while maintaining an acceptable minimum level of cash and investments each year is the principal criterion for a sound financial plan.

Reviewing results for the performance indicators in Table 23 will enable you to carry out some ‘fine tuning’ of your financial strategy.

You should be undeterred from taking 20-year loans for your capital expenditure where needed as generally, the asset would nevertheless be debt-free for over 70% of its economic life (Footnote 34).

It is important to note that most NSW LWUs have relatively little borrowings at present. In 2009-10 the Statewide median net debt/equity for LWU water and sewerage was -7% (range -75% to 30%). The 2009-10 debt/equity for major Australian utilities include 120% for Sydney Water, 85% for ACT Electricity and Water, 75% for Melbourne Water, 40% for Water Corporation (WA) and 39% for Hunter Water (Reference 27 on page 98). Providing you have a soundly based asset management plan and financial plan (including sensitivity analysis), debt/equity of up to 50% when financing a major capital works program for growth and/or improved levels of service, would be satisfactory for NSW LWUs.
12. Financial Plan

ACHIEVING FULL COST RECOVERY FOR WATER SUPPLY – CIRCULAR LWU 11

Some NSW utilities have been using a long-term financial model where they input water supply access and usage charges and projected volumes of water supplied to determine the required future revenue. A number of these utilities have experienced significant revenue shortfalls in recent years as a result of reduced water sales due to more efficient water use by residents and/or drought water restrictions.

Accordingly, it is recommended that utilities do not use models involving access and usage charges in order to avoid such revenue shortfalls as well as potentially misleading customers on the required future access and usage charges. Rather, utilities should use a model such as FINMOD which determines the required future typical residential bill and annual revenue in current dollars.

Your utility can then set each year’s water supply tariff in accordance with Circular LWU 11 of March 2011 using an evidence based estimate of the residential water to be supplied in the next financial year, together with the access and usage charges required to yield the Typical Residential Bill and annual revenue in accordance with your 20 to 30-year financial plan.

Such an approach is transparent as the financial modelling discloses the required Typical Residential Bill (and annual revenue) in current dollars as required by Items 1 and 16 of the Check List in Appendix F on page 119. In addition, annually setting your water supply tariff in accordance with Circular LWU 11 will minimise the risk of revenue shortfalls while maintaining Typical Residential Bills in accordance with your LWU’s financial plan. Assistance is available from the Office of Water (Dilip Dutta on Tel (02) 8281 7372, fax (02) 8281 7351, e-mail Dilip.Dutta@water.nsw.gov.au).

In addition, each LWU which meets all the requirements of the Best-Practice Management Guidelines is encouraged to pay a dividend from the surplus of its water and sewerage businesses to the council’s general revenue. A LWU which pays such an ‘efficiency dividend’ will be moving towards upper bound pricing, which is required under the National Water Initiative, where practicable.

12.6. Financial Performance Indicators

Financial Performance Indicators can assist you in assessing performance in financial planning for your water supply or sewerage. The set listed in Table 23 is recommended as a minimum and are included in FINMOD.

Table 23 Financial Performance Indicators

- Typical Residential Bill
- Economic Real Rate of Return
- Net Debt/Equity
- Debt Service Ratio
- Operating Sales Margin
- Average Loan Payment
12.7. Output from Financial Plan

The financial plan should cover the following items:

Table 24 Required Outputs from Financial Plan

- At least 20-year Projection of **Typical Residential Bills** (in current (Year 1) dollars\(^{38}\))
- Projected Performance indicators (eg., economic real rate of return, debt/equity, debt service ratio etc.).
- Method of funding of capital works (eg., loans, grants, accumulated cash and investments).
- Projected Borrowings.
- Projected Cash and Investments
- Projected Income Statement.
- Projected Balance Sheet.
- Projected Cash flow Statement.
- The income statement is to include:
  - Annual projections of income:
    - Access and Usage Charges (residential and non-residential)
    - Trade Waste Charges
    - Developer Charges
    - Grants
    - Other.
  - Annual projections of expenditure:
    - Management (including administration and billing)
    - Operation and maintenance
    - Depreciation
    - Financing costs (existing and new loans)
    - Other.

In accordance with Item 19 of the Check List on page 125 you should document your financial planning in a Financial Plan Report which shows the input data, results and sensitivity analysis carried out and the recommended 4-year price path. An example Financial Plan Report is provided in Appendix E of the FINMOD User Manual (Reference 4 on page 97).

Similarly, in accordance with Item 20 of the Check List on page 125, you need to prepare a brief report to Council annually on your update of the financial plan. An example report is provided at Appendix H on page 131.

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\(^{38}\) All projections must be in current dollars.
12. Financial Plan

**PART B - PLAN ELEMENTS**

**NSW Water and Sewerage Strategic Business Planning Guidelines**

**ASSET MANAGEMENT COSTS**
- O&M
- Capital Works

**CUSTOMER SERVICE COSTS**

- Levels of Service
  - Customer Service Plan*

**WORKFORCE COSTS**

- Work Force Plan*

**Initial Results**
- Refine Initial Results
  - Cost Projections
  - Op. Surplus

**Projected Data**
- Interest
- Inflation
- Growth
- Developer Charges
- Trade Waste Charges
- Non-Residential Income

**Financial Plan**

- Strategic Business Plan (SBP) Approved by Council
- Implement SBP
- Annual TBL Performance Report* and Preparation of an Annual Action Plan to Council
- Input to Council’s Annual Report*

**Investigates required Typical Residential Bill and annual income. Enables Council to negotiate with its customers a balance between levels of service and the resulting Bill.**

**Council adopts and implements the strategic business plan. Provides input to Council’s Community Strategic Plan, Delivery Program and Operational Plan.**

* These plans reflect the proposed levels of service and define the required capital, operation and maintenance expenditures.

**Figure 12 Development of a Financial Plan Using NSW Financial Planning Model**
13. Summary of Other Key Activities

As the strategic business plan is a utility’s peak planning document, each utility is required to include a summary of its activities and plans in each of the following key areas.

13.1. Integrated Water Cycle Management
[Reference 23 on page 98].

13.2. Drinking Water Quality Management
[Reference 15 on page 97].

13.3. Environmental Management
[Reference 29 on page 98].

13.4. Demand Management
[Reference 30 on page 98].

13.5. Drought Management
[Reference 31 on page 98].
In addition to a summary of the drought management activities, LWUs with a surface water supply and their own dam or weir (refer to item 17 on page 25 of the 2008-09 NSW Water Supply and Sewerage Performance Monitoring Report – Reference 9 on page 97) should also provide a summary of the findings, and a reference, to their latest security of water supply analysis (Reference 2 on page 97).

13.6. Community Consultation
[Reference 13 on page 97].

13.7. Occupational Health & Safety
[Reference 32 on page 98].
13.8. Other Risk Management Measures

Please also list other contingency plans or risk management measures, including any reference documents, adopted by your utility to address hazards such as the following:

1. Water Supply
   - Dam safety
   - Chlorination plant failure
   - Water treatment works failure
   - Major power failure
   - Localised power failure
   - Raw water pump failure
   - Water supply distribution system contamination
   - Service reservoir contamination
   - Revenue decline from reduced water sales

2. Sewerage
   - Sewage treatment works failure
   - Major power failure
   - Localised power failure
   - Minor pump main failure
   - Sewer Blockages/Chokes
   - Sewer Overflows
14. NSW Water Supply and Sewerage Performance Monitoring System

The NSW annual Water Supply and Sewerage Performance Monitoring System has been operating since 1986, (predates performance reporting elsewhere in Australia by over 5 years).

Each utility reports its performance data through a web-based reporting system using the NSW Performance Monitoring Database. In addition, financial data is obtained from each utility’s audited annual financial statements (Notes 2 and 3 of the Special Purpose Financial Report and Special Schedules 3 to 6 – Reference 23 on page 98), together with Pricing Information from each utility’s website. The following reports are produced annually.

14.1. Performance Monitoring Report


14.2. Benchmarking Report

The NSW Benchmarking Report (Reference 8 on page 97) contains the full suite of NSW performance indicators (including the 117 indicators in the National Performance Report for Urban Water Utilities - Reference 27 on page 98), together with benchmarking data to enable each utility to monitor trends in its performance over the past 6 years and to benchmark its performance against that of similar utilities (www.water.nsw.gov.au).

14.3. Utility Annual TBL Reports and Action Plans

[Pages 61 to 64 of 2008-09 NSW Performance Monitoring Report – Reference 7].

The NSW Office of Water provides each LWU with an annual 2-page TBL Performance Report and a template for its Action Plan to council for its water supply business and for its sewerage business. The TBL reports provide a summary of the LWU’s compliance with the requirements of the Best-Practice Management Guidelines and its performance for over 50 key performance indicators together with the Statewide medians and the LWU’s relative performance against similar sized LWUs.

Each LWU is required to prepare an annual Action Plan to council, based on its review of the TBL performance report. The Action Plan should address any areas of under-performance and should also document any target dates for remedial actions. It should also report results for the financial year for the key actions set out in the utility’s Strategic Business Plan.

Appendix G on page 127 provides guidance for councillors on understanding your utility’s annual TBL Performance Report and Action Plan.
A key role for the utility’s annual Action Plan is to ‘close the planning loop’ with the utility’s strategic business plan. The utility must therefore compare its Typical Residential Bill (TRB) with the projection in its strategic business plan and document any necessary corrective action in the Action Plan.

Your strategic business plan must include your latest annual TBL Performance Report and Action Plan to Council.


The NSW Office of Water annually provides audited data for the 29 eligible NSW non-metropolitan urban water utilities to the National Water Commission for inclusion in the National Performance Report (Reference 27 on page 98). All eligible NSW utilities have reported in the National Performance Report since commencement of reporting in 2005-2006.

15. Council Integrated Planning and Reporting

Appendix A is a summary of key requirements from the Local Government Integrated Planning and Reporting Framework (References 10 and 11 on page 97) for:

- Community Strategic Plan;
- Resourcing Strategy
- Delivery Program;
- Annual Operational Plan; and
- Council’s Annual Report.

As Council’s strategic business plan and associated total asset management planning and financial planning covers at least the next 20 years, Council should provide inputs to these documents as an appendix to its water supply and sewerage strategic business plan along the lines indicated in sections 15.1 to 15.4 below.

15.1. Input to Council’s Community Strategic Plan

A suitable water and sewerage input to Council’s Community Strategic Plan may be along the lines of that adopted by Shoalhaven City Council:


Council should also highlight any proposed major water or sewerage projects or extension of services to presently unserved areas.

In addition, if Council fully complies with the Best-Practice Management Guidelines, it is encouraged to pay an ‘efficiency dividend’40 from the surplus of its water and sewerage businesses to the Council’s general revenue. If Council elects to pay such a dividend, it may wish to include an input along the following lines in its Community Strategic Plan:

“Responsible Community Returns from Water and Sewerage – Deliver to Council an appropriate community dividend from Council’s water supply and sewerage operations.”

15.2. Resourcing Strategy

The Resourcing Strategy is required to determine appropriate and realistic resources for achieving the objectives of the Community Strategic Plan (CSP) through:

- Long Term Financial Planning (LTFP);
- Workforce Planning; and
- Asset Management Planning.

The water supply and/or sewerage strategic business plan is the council’s resourcing strategy for these services.

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40 Payment of such a dividend would move council towards ‘upper bound pricing’, which is required under the National Water Initiative where practicable (Reference 20 on page 98).
15.3. Input to Council’s Delivery Program and Annual Operation Plan

Examples of water and sewerage inputs to Council’s 4-year Delivery Program and Annual Operational Plan are available on pages 106 to 117 of the Shoalhaven City Council Delivery Program and Operational Plan (www.shoalhaven.nsw.gov.au). Capital works projects are shown on page 170 to 180 of the Delivery Program.

The required 4-year projections of the Income Statement, Balance Sheet and Cash Flow Statement can be readily exported from the projected annual financial statements in your water supply and sewerage financial plans.

15.4. Input to Council’s Annual Report

After analysis of your utility’s annual TBL Performance Report and preparation of your Action Plan to council, in section 14.3 above, you should prepare the inputs to your utility’s Annual Report for each of water supply and sewerage. This input should be included in Appendix A of your Strategic Business Plan and should include the following for each of water supply and sewerage:

- Level (%) of compliance with Best-Practice Management requirements
- Whether your water supply complied with ADWG in the financial year for microbiological\textsuperscript{41}, chemical and physical water quality.
- Areas of good/improved performance
- Areas your utility is now working on to improve performance
- Report results for the financial year of the key actions set out in your strategic business plan
- Other key achievements

\textsuperscript{41} In addition to meeting the ADWG requirements for the number of samples tested (refer to page 201 of Reference 8 on page 97), ADWG requirements are:
- Microbiological compliance (health related) requires that at least 98% of samples detected no E.coli.
- Chemical compliance (health related) requires that at least 95% of samples complied with the guideline values.
- Physical compliance (aesthetic) requires that at least 50% of samples complied with the guideline values.
16. References


REFERENCES


A Local Government Integrated Planning and Reporting 2010 Requirements

The main requirements of the Local Government Integrated Planning and Reporting Framework 2010 for the 10-year Community Strategic Plan, 4-year Delivery Program, Annual Operational and Annual Report are summarised below. Refer also to section 1.3 on page 4.

A1 Community Strategic Plan
- Minimum 10 years.
- Identifies main priorities and aspirations for the future.
- Establishes strategic objectives and strategies to achieve those objectives that address social, environmental, economic and civic leadership issues identified by the community.
- Expected levels of service.
- Give due regard to the State Plan and other relevant state and regional plans.
- Include a community vision statement.

A2 Resourcing Strategy
Sets out what a council will do over the next 10 years to address the community’s main priorities in the Community Strategic Plan. Council determines its Resourcing Strategy following:
- Total Asset Management Planning;
- Work Force Planning; and
- Long Term Financial Planning (FP).

A3 Delivery Program
- Directly addresses the objectives and strategies of the Community Strategic Plan.
- Identifies principal activities council will undertake over the next four years.
- Identifies principal activities to be undertaken within available resources.
- Provides financial estimates for the 4 year period.
- Considers priorities and expected level of service in the Community Strategic Plan.

A4 Operational Plan
- Outlines the activities to be undertaken each year as part of the Delivery Program.
- Prepared as a sub-plan of the Delivery Program.
- Includes Statement of Revenue Policy – fees and charges, pricing methodology, proposed borrowings.
- Detailed budget for activities to be undertaken in the year.
A5 Annual Report

A report to the community which outlines council’s achievements in implementing the Delivery Program and the effectiveness of the principal activities undertaken in achieving the objectives in the Community Strategic Plan.
B NSW Performance Indicators and 2008/09 Benchmarks

The following results are reported for Tables 1 and 2 of the 2008-09 NSW Benchmarking Report.

B1 Water Supply

<table>
<thead>
<tr>
<th>Utility Characteristics</th>
<th>20%</th>
<th>Median</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Assessments (% of total)</td>
<td>95</td>
<td>92</td>
<td>88</td>
</tr>
<tr>
<td>New Residential Dwellings Connected to Water Supply (%)</td>
<td>1.5</td>
<td>0.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Properties Served per km of Main</td>
<td>53</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td>Rainfall (% of average annual rainfall)</td>
<td>150</td>
<td>115</td>
<td>80</td>
</tr>
<tr>
<td>Total Urban Water Supplied (at Master Meters - ML)</td>
<td>15,800</td>
<td>6,300</td>
<td>2,700</td>
</tr>
<tr>
<td>Peak Week to Average Consumption (%)</td>
<td>130</td>
<td>145</td>
<td>205</td>
</tr>
<tr>
<td>Renewals Expenditure (% of current replacement cost of system assets)</td>
<td>0.8</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Employees (employees per 1000 properties)</td>
<td>1.2</td>
<td>1.4</td>
<td>2.0</td>
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</table>

**Social - Charges/Bills (2009/10)**

<table>
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<th>2009/10</th>
<th>2008/09</th>
<th>2007/08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Water Usage Charge (c/kL)</td>
<td>190</td>
<td>150</td>
<td>100</td>
</tr>
<tr>
<td>Residential Access Charge ($/assessment)</td>
<td>90</td>
<td>120</td>
<td>230</td>
</tr>
<tr>
<td>Typical Residential Bill ($/assessment)</td>
<td>340</td>
<td>430</td>
<td>520</td>
</tr>
<tr>
<td>Typical Developer Charge ($/equivalent tenement)</td>
<td>7,500</td>
<td>4,600</td>
<td>2,700</td>
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**Social - Health**

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<tr>
<th>Social Health</th>
<th>2009/10</th>
<th>2008/09</th>
<th>2007/08</th>
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</thead>
<tbody>
<tr>
<td>Urban Population without Reticulated Water Supply (%)</td>
<td>0</td>
<td>0.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Physical Water Quality Compliance (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Chemical Water Quality Compliance (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Microbiological (E. coli) Water Quality Compliance (%)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Percent Population with Microbiological Compliance</td>
<td>100</td>
<td>100</td>
<td>100</td>
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**Social - Levels of Service**

<table>
<thead>
<tr>
<th>Social Levels of Service</th>
<th>2009/10</th>
<th>2008/09</th>
<th>2007/08</th>
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<tbody>
<tr>
<td>Water Quality Complaints (per 1000 properties)</td>
<td>0</td>
<td>3</td>
<td>8.7</td>
</tr>
<tr>
<td>Water Service Complaints (per 1000 properties)</td>
<td>1</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>Customer Interruption Frequency (per 1000 properties)</td>
<td>9</td>
<td>33</td>
<td>114</td>
</tr>
<tr>
<td>Average Duration of Interruption (minutes)</td>
<td>120</td>
<td>167</td>
<td>230</td>
</tr>
<tr>
<td>Number of Main Breaks (per 100 km of mains)</td>
<td>5</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Drought Water Restrictions (% of time)</td>
<td>0</td>
<td>55</td>
<td>100</td>
</tr>
<tr>
<td>Total Days Lost (%)</td>
<td>0.1</td>
<td>2.2</td>
<td>3.3</td>
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**Environmental**

<table>
<thead>
<tr>
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<th>2009/10</th>
<th>2008/09</th>
<th>2007/08</th>
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</thead>
<tbody>
<tr>
<td>Average Annual Residential Supplied (kL/property)</td>
<td>140</td>
<td>175</td>
<td>260</td>
</tr>
<tr>
<td>Average Annual Residential Supplied COASTAL (kL/property)</td>
<td>140</td>
<td>150</td>
<td>180</td>
</tr>
<tr>
<td>Average Annual Residential Supplied INLAND (kL/property)</td>
<td>207</td>
<td>245</td>
<td>360</td>
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<tr>
<td>Real Loss (leakage) (L/service connection/day)</td>
<td>40</td>
<td>60</td>
<td>105</td>
</tr>
<tr>
<td>Energy Consumption (kWh/ML)</td>
<td>380</td>
<td>640</td>
<td>860</td>
</tr>
<tr>
<td>Renewable Energy Consumption (% of Total Energy)</td>
<td>48</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Net Greenhouse Gas Emissions - WS &amp; Sge (net tonnes CO2 - equivalents/1000props)</td>
<td>190</td>
<td>340</td>
<td>440</td>
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**Economic - Financial**

<table>
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<tr>
<th></th>
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<tbody>
<tr>
<td>Revenue per property - Water ($)</td>
<td>731</td>
<td>578</td>
<td>448</td>
</tr>
<tr>
<td>Residential Revenue from Usage Charges (% of total rates and charges)</td>
<td>75</td>
<td>73</td>
<td>60</td>
</tr>
<tr>
<td>Current Replacement Cost per Assessment ($)</td>
<td>15,180</td>
<td>11,900</td>
<td>9,300</td>
</tr>
<tr>
<td>Economic Real Rate of Return (%)</td>
<td>1.9</td>
<td>0.3</td>
<td>-0.6</td>
</tr>
<tr>
<td>Return on Assets (%)</td>
<td>1.6</td>
<td>-0.1</td>
<td>-1.2</td>
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<tr>
<td>Net Debt to Equity (%)</td>
<td>12</td>
<td>0</td>
<td>-7</td>
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<tr>
<td>Interest Cover</td>
<td>1100</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Loan Payment ($)</td>
<td>150</td>
<td>52</td>
<td>0</td>
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<tr>
<td>Net Profit After Tax Ratio - WS &amp; Sge (%)</td>
<td>13</td>
<td>0</td>
<td>-21</td>
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<tr>
<td>Net Profit After Tax - WS &amp; Sge ($)</td>
<td>1889</td>
<td>-173</td>
<td>-3963</td>
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**Economic - Efficiency**

<table>
<thead>
<tr>
<th>Economic Efficiency</th>
<th>2009/10</th>
<th>2008/09</th>
<th>2007/08</th>
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</thead>
<tbody>
<tr>
<td>Operating Cost (OMA) per 100 km of Main ($/kmkm)</td>
<td>780</td>
<td>1,070</td>
<td>1,785</td>
</tr>
<tr>
<td>Operating Cost (OMA) per property ($/property)</td>
<td>280</td>
<td>330</td>
<td>420</td>
</tr>
<tr>
<td>Operating Cost (OMA) per KL (c/kL)</td>
<td>79</td>
<td>111</td>
<td>149</td>
</tr>
<tr>
<td>Management Cost ($/property)</td>
<td>102</td>
<td>127</td>
<td>152</td>
</tr>
<tr>
<td>Treatment Cost ($/property)</td>
<td>21</td>
<td>35</td>
<td>98</td>
</tr>
<tr>
<td>Pumping Cost ($/property)</td>
<td>13</td>
<td>29</td>
<td>49</td>
</tr>
<tr>
<td>Energy Cost ($/property)</td>
<td>7</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Water Main Cost ($/property)</td>
<td>36</td>
<td>51</td>
<td>95</td>
</tr>
<tr>
<td>Capital Expenditure - Water Supply ($/property)</td>
<td>452</td>
<td>266</td>
<td>110</td>
</tr>
</tbody>
</table>

Notes:
1. 20% top 20% of properties
   Median (50%) median of properties (Statewide)
   80% bottom 20% of properties
2. The above non-metropolitan NSW performance indicators are on a percentage of connected properties basis which is the most appropriate basis for judging Statewide performance by giving due weight to larger councils and reducing the effect of smaller LWUs.
# B2 Sewerage

## Utility Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>20%</th>
<th>Median (50%)</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Assessments (% of Total)</td>
<td>90</td>
<td>93</td>
<td>95</td>
</tr>
<tr>
<td>New Residential Dwellings Connected to Sewerage (%)</td>
<td>1.5</td>
<td>0.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Properties Served per km of Main</td>
<td>49</td>
<td>40</td>
<td>34</td>
</tr>
<tr>
<td>Volume of Sewage Collected (ML)</td>
<td>13,300</td>
<td>4,600</td>
<td>1,400</td>
</tr>
<tr>
<td>Renewals Expenditure (% of current replacement cost of system assets)</td>
<td>0.4</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Employees (per 1000 properties)</td>
<td>1.3</td>
<td>1.6</td>
<td>2</td>
</tr>
</tbody>
</table>

## Social - Charges/Bills (2009/10)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>20%</th>
<th>Median (50%)</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Access Charge ($/assessment)</td>
<td>400</td>
<td>470</td>
<td>600</td>
</tr>
<tr>
<td>Typical Residential Bill ($/assessment)</td>
<td>400</td>
<td>470</td>
<td>605</td>
</tr>
<tr>
<td>Typical Developer Charge ($/equivalent tenement)</td>
<td>7,490</td>
<td>3,900</td>
<td>2,530</td>
</tr>
</tbody>
</table>

## Social - Health

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>20%</th>
<th>Median (50%)</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Properties without Reticulated Sewerage Service (%)</td>
<td>0.4</td>
<td>3.9</td>
<td>7.4</td>
</tr>
<tr>
<td>Percent of sewage treated to a tertiary level (%)</td>
<td>100</td>
<td>88</td>
<td>8</td>
</tr>
<tr>
<td>Percent of sewage volume treated that was compliant (%)</td>
<td>100</td>
<td>100</td>
<td>84</td>
</tr>
</tbody>
</table>

## Environmental

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>20%</th>
<th>Median (50%)</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of Sewage Collected per property (kL)</td>
<td>305</td>
<td>230</td>
<td>180</td>
</tr>
<tr>
<td>Total recycled water supplied (ML)</td>
<td>1,770</td>
<td>320</td>
<td>120</td>
</tr>
<tr>
<td>Effluent Reclaimed for Recycling (% of total effluent)</td>
<td>45</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Biosolids Reuse (%)</td>
<td>100</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>Energy Consumption (KWh/ML)</td>
<td>520</td>
<td>710</td>
<td>1,020</td>
</tr>
<tr>
<td>Renewable Energy Consumption (% of total energy consumption)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Net greenhouse gas emissions - WS &amp; Sge (net tonnes CO2 equivalents per 1000 properties)</td>
<td>170</td>
<td>350</td>
<td>390</td>
</tr>
</tbody>
</table>

## 90 Percentile Licence Limits for Effluent Discharge:

- BOD 35 mg/L
- SS 40 mg/L
- Total N 25 mg/L
- Total P 5 mg/L

## Social - Levels of Service

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>20%</th>
<th>Median (50%)</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour Complaints (per 1000 properties)</td>
<td>0.0</td>
<td>0.4</td>
<td>1.2</td>
</tr>
<tr>
<td>Service Complaints (per 1000 properties)</td>
<td>3</td>
<td>12</td>
<td>27</td>
</tr>
<tr>
<td>Average Duration of Interruptions (min)</td>
<td>60</td>
<td>116</td>
<td>146</td>
</tr>
<tr>
<td>Total Days Lost</td>
<td>0</td>
<td>2.4</td>
<td>3.5</td>
</tr>
</tbody>
</table>

## Economic - Financial

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>20%</th>
<th>Median (50%)</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue per property - Sge ($)</td>
<td>821</td>
<td>650</td>
<td>444</td>
</tr>
<tr>
<td>Revenue from Non-residential and Trade Waste Charges (% of total rates &amp; charges)</td>
<td>26</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Revenue from Trade Waste Charges (% of total rates &amp; charges)</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Current Replacement Cost per assessment ($)</td>
<td>16,200</td>
<td>12,300</td>
<td>9,200</td>
</tr>
<tr>
<td>Economic Real Rate of Return (%)</td>
<td>2.1</td>
<td>1.1</td>
<td>-0.4</td>
</tr>
<tr>
<td>Return on Assets (%)</td>
<td>1.4</td>
<td>0.5</td>
<td>-1.0</td>
</tr>
<tr>
<td>Net Debt to Equity (%)</td>
<td>10</td>
<td>0</td>
<td>-5</td>
</tr>
<tr>
<td>Interest Cover</td>
<td>&gt;100</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Loan Payment ($/property)</td>
<td>158</td>
<td>55</td>
<td>6</td>
</tr>
<tr>
<td>Net Profit After Tax Ratio WS &amp; Sge (%)</td>
<td>13</td>
<td>0</td>
<td>-21</td>
</tr>
</tbody>
</table>

## Economic - Efficiency

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>20%</th>
<th>Median (50%)</th>
<th>80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Cost (OMA) per 100 km of Main ($/km)</td>
<td>1,110</td>
<td>1,380</td>
<td>1,540</td>
</tr>
<tr>
<td>Operating Cost (OMA) per property ($/property)</td>
<td>280</td>
<td>340</td>
<td>410</td>
</tr>
<tr>
<td>Operating Cost (OMA) per kL (c/kL)</td>
<td>115</td>
<td>145</td>
<td>191</td>
</tr>
<tr>
<td>Management Cost ($/property)</td>
<td>80</td>
<td>123</td>
<td>150</td>
</tr>
<tr>
<td>Treatment Cost ($/property)</td>
<td>73</td>
<td>108</td>
<td>138</td>
</tr>
<tr>
<td>Pumping Cost ($/property)</td>
<td>20</td>
<td>50</td>
<td>70</td>
</tr>
<tr>
<td>Energy Cost ($/property)</td>
<td>16</td>
<td>20</td>
<td>32</td>
</tr>
<tr>
<td>Sewer Main Cost ($/property)</td>
<td>30</td>
<td>40</td>
<td>55</td>
</tr>
<tr>
<td>Capital Expenditure ($/property)</td>
<td>834</td>
<td>248</td>
<td>107</td>
</tr>
</tbody>
</table>

## Notes:

1. **20% top 20% of properties**
   - Median (50%) median of properties (Statewide)
   - 80% bottom 20% of properties
2. The above non-metropolitan NSW performance indicators are on a percentage of connected properties basis which is the most appropriate basis for judging Statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs.
C Feedback on LWU Strategic Business Plans

The following feedback is provided as a result of an independent expert review of the quality and effectiveness of a series of Strategic Business Plans prepared by NSW local water utilities (LWUs).

Most LWU Strategic Business Plans are a comprehensive attempt by the utility to identify the long term water supply or sewerage needs of its area and to develop capital works and financial plans which will allow the utility to meet these needs whilst satisfying all other associated external requirements.

The NSW local water utilities are commended for the quality of their Strategic Business Plan, which are a great leap forward over the previous situation where there had been only limited interaction between the engineering and accounting areas of LWUs, and sometimes uncoordinated consideration of engineering, financing and environmental etc. issues.

Few public sector (or even private sector) organisations have the clarity of goal setting and control over the future of their businesses through development of total asset management plans and sound financial strategies.

Some comments on particular elements of LWU Strategic Business Plans are provided below:

C1 Total Asset Management Plan

Many Strategic Business Plans have not seemed to appreciate the vital link between the total asset management plan and the customer service plan.

Strategic Business Plans have generally not dealt sufficiently with operation analysis (section 10.1.3 on page 59) which takes the customer service plan (section 9 on page 41) and existing asset configuration and condition together with existing operation and maintenance practices as starting points and develops proposals for new operation, maintenance and capital works plans to meet customer service plan requirements at least life cycle cost. This matter is addressed in the NSW Water and Sewerage Asset Management Guidelines, 2011 (Reference 3 on page 97).

Strategic Business Plans need to critically review existing operation and maintenance practices and costs eg. by comparison with peers and analysis of trends in the annual NSW Performance Monitoring System. Refer to Tables 13 and 18 of the 2008-09 NSW Water Supply and Sewerage Benchmarking Report (Reference 8 on page 97) which provide disaggregated benchmarking data for this purpose.

C2 Financial Plan

Utilities need to develop a strategy that results in the lowest level of typical residential bills in current dollars over the long term in order to achieve inter-generational equity and avoid overcharging existing residents.

Utilities should also carry out sensitivity analysis (section 8.3 on page 62 of the FINMOD User Manual - Reference 4 on page 97) and implement a 4-year price path (section 8.2.3 on page 59 of the FINMOD User Manual) along the lines of the most suitable option in the financial plan.

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42 These matters are addressed in Check List on page 119 of Appendix F.
C3 Unserviced Areas

Strategic Business Plans must address the present position and planning for unsewered areas and areas not provided with a reticulated public water supply. In this regard, the Strategic Business Plan should provide:

- a list of unserviced towns and villages, and for each town, the population and whether the present facilities are satisfactory for the present population and any proposed growth (eg. on-site sewage management systems in the case of sewerage, or rainwater tanks in the case of water supply) [Item 6.1 of Check List in Appendix F on page 119].

- any proposals for serving unsatisfactory towns or villages (eg. upgrading of existing on-site systems or development of "low cost" reticulated sewerage systems). These proposals should be included in your utility’s financial plan.

- a brief statement of the effectiveness of on-site sewage management systems outside urban areas and your utility’s monitoring and improvement program in regard to these.

C4 Updates

Utilities should update their financial plan annually following publication of each year’s annual financial statements [Item 20 of Check List in Appendix F on page 125]. A brief report to Council should be provided on the annual update of your financial plan. An example report is provided at Appendix H on page 131. The strategic business plan must be updated after a period of 4 years [Check List in Appendix F on page 119].
D Overview of the NSW Financial Planning Model (FINMOD)

Note: This overview broadly updates a paper presented to the 1999 Conference of the Local Government Auditors Association of NSW by Sam Samra, Senior Manager Water Utility Performance, NSW Office of Water, and Gidi Azar, General Manager, Hydroscience Australia.

D1 Introduction

Under the NSW Local Government Integrated Planning and Reporting Framework 2010 (Reference 10 and 11 on page 97), each NSW council is required to prepare and implement a 10 year Community Strategic Plan, which includes a total asset management plan and financial plan for its operations. Financial Planning is a cornerstone of the strategic business planning process as it enables Council to negotiate with its customers a balance between levels of service and the resulting Typical Residential Bill.43

A long-term financial plan brings together all the financial aspects of a local water utility’s water supply and sewerage services, and is essential to demonstrate the impact of operational expenditures and proposed capital works on the utility’s Typical Residential Bill.

NSW Councils are required to comply with Australian Accounting Standard AAS27 Financial Reporting By Local Governments that applies to the preparation of general purpose financial reports by councils.

In consultation with NSW councils, the NSW Office of Water has developed a financial modelling software package (FINMOD) to enable councils to carry out long term projections of their income statement, balance sheet and cashflow statement. This is a proven model and the NSW utilities have been successfully using this model since 1995 for developing long-term financial plans for their water supply and sewerage businesses. 89% of the NSW utilities had completed a sound 20 to 30 year strategic business plan and financial plan by 2009 (Reference 7 on page 97).

FINMOD is based on full accrual accounting principles and complies with AAS 27 reporting standards.

An independent review of FINMOD by Coopers and Lybrand in December 1994 found that it was a very powerful tool for modelling council water supply and sewerage businesses and recommended some improvements. These improvements and suggestions by councils to make the model more user friendly were incorporated in the 1996 version.

Councils’ strategic business planning for water supply and sewerage, including long term financial plans has been commended by IPART in its 1996 Review of Pricing Principles for Local Water Authorities (Reference 5 on page 97).

The principal lessons from councils’ water supply and sewerage financial planning to date is the need for a partnership approach involving both the council’s finance and engineering professionals to develop an appropriate long-term financial plan and that the plan must include at least a 20-year projection of the required Typical Residential Bills in current dollars.

43 The Typical Residential bill (TRB) is the principal indicator of the overall cost of a water supply or sewerage system and is the bill paid by a residential customer using the utility’s average annual residential water supplied.
Summary

Operating system  Windows
Additional software None
Services covered Water supply and sewerage

Main features

- Long term projection of income statement, balance sheet and cashflow statement.
- Complies with AAS 27 reporting standards and based on special schedules 3 to 6.
- Projection of Typical Residential Bill and other performance indicators (current dollars).
- Provides graphs for all variables.
- Can handle standard loans (credit foncier) and structured loans.
- Can compare results of different scenarios (cases)
- User-friendly, ‘windows feel’ and functionality
- High quality graphs which can be exported.
- Can import / export data.
- Generates National Competition Policy reports to demonstrate long-term financial sustainability of the business.
- Can link two systems (to show combined water supply and sewerage results).

D2 FINMOD Overview

FINMOD has full Windows functionality and is controlled by a series of menus and input screens with buttons to activate the commands/functions.

Using the input data on growth, capital works investments, operation and maintenance costs and income from developer charges, the model calculates the income required from annual access and usage charges, and thus the required Typical Residential Bill each financial year.

D2.1 Results

FINMOD presents results in both report and graphical formats.

Reports

The following reports are available:

- Typical Residential Bill and other Performance Indicators
- Summary of Assumptions and Results
- Income Statement
- Balance Sheet
- Cash Flow Statement
Graphs

Graphs are the most effective means of reviewing projections and are available for all calculated results, performance indicators and most input variables.

Figure 13 is an example of a FINMOD graph showing the capital works program and No. of assessments for a large regional sewerage utility on the basis of moderate levels of service. Figure 14 on page 108 shows a comparison of the required Typical Residential Bill for 3 levels of service.

Figure 15 on page 108 shows the cash and investments and the borrowing outstanding on the basis of moderate levels of service.

Figure 13 Capital Works (09/10$) and No. of Assessments – Moderate Levels of Service
Figure 14 Typical Residential Bill (09/10$)

Figure 15 Borrowing Outstanding & Cash and Investments (09/10$) – Moderate Levels of Service
D2.2 Input

To produce the projected results, FINMOD requires historical data from Special Schedules 3 to 6 (see below) and the following input data in Year 1 dollars (1st forecast year).

Historical Data

Income Statement and Balance Sheet for the two most recent financial years. FINMOD is based on Special Schedule Nos 3 to 6 - water supply and sewerage financial statements in the Local Government Code of Accounting Practice and Financial Reporting (www.dlg.nsw.gov.au).

Input Data

This comprises the following:

- Existing number of assessments and future growth of assessments.
- Capital works program
- Financial data including inflation rate, borrowing and investment interest rates, loan period and operating cost factors.
- Typical developer charges per lot
- Loan payment schedule for existing loans.
- Expenditure for plant and equipment.
- Revaluation and depreciation of existing fixed assets.

Revised/Additional Forecast Data

Although FINMOD has a number of inbuilt defaults values, it is strongly recommended that the user examine these, and over-ride them with values appropriate on the basis of the total asset management plan and customer service plan for his/her case. Overrides may be input for each of the following:

- Operation, maintenance and administration (OMA) costs, miscellaneous expenses and miscellaneous income.
- Income from developer charges.
- Pensioner rebate.
- Income split ratio (between residential charges and non-residential charges)
- Structured loans (low start loans).
- New loan payments (only to be used where the user has elected not to use the standard Credit foncier loans).

D2.3 Funding New Capital Works

After applying any grants for acquisition of assets, the specified funding from internal sources (annual income and accumulated cash and investments), the model obtains the remainder of funds (if any) required for capital works by borrowing. The model then calculates the annual principal and interest payments using the interest rate and loan period input by the user.
D2.4 Usage

The case development screen (shown in Figure 16 on page 111) provides two graphs, a grid with the main input variables and results, a selection box for selecting cases and selection boxes for plotting variables.

The user views the graphs, and specifies each year the amounts in current dollars to be used from internal sources for capital works and the Typical Residential Bill. FINMOD calculates any new loans required each year (Section D2.3) and the resulting cash and investments; and displays the results on the graphs. The user reviews the level of cash and investments each year and adjusts the Typical Residential Bill and/or the internal funding, in order to determine the lowest Typical Residential Bill which will provide a satisfactory level of cash and investments each year.

The above analysis has determined the required Typical Residential Bill for the total asset management plan and work force plan considered. The user can then determine the required Typical Residential Bills for other levels of service using the strategic business planning process shown in section D4 on page 112. Example results for 3 levels of service are shown in Figure 14 on page 108. Refer also to Figure 11 on page 81.

By repeating the above analysis for a number of levels of service under consideration, the utility and its community can identify the levels of service which provide them with the best value for money.

D2.5 Scenario Analysis

As noted in section D2.4 FINMOD is a powerful tool for a water utility to compare a range of scenarios (cases), answer ‘what if’ questions and to determine appropriate levels of service.

After creating the first case, the user can copy this to create a new case. The user can then change one or more variables (eg. capital works program, growth projections) to examine the impact these will have on the Typical Residential Bill and other performance indicators.

Multiple cases can be presented graphically to allow easy comparison of the results, as shown in Figure 14 on page 108.

D3 Conclusion

The NSW Financial Planning Model provides water utilities with a powerful and user-friendly tool for long-term financial planning to enable them to determine the most affordable levels of service and the associated total asset management plans. The utilities are thus able demonstrate the long-term financial sustainability for their water supply and sewerage businesses.

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44 Due to the lack of economies of scale / absence of proximate water sources, small water supply and sewerage systems typically require high Typical Residential Bills, which may be mitigated by government financial assistance towards the capital cost of backlog infrastructure. Refer to Handbook for Affordable Water Supply and Sewerage for Small Communities, Urban Water Research Association of Australia/Agriculture and Resource Management Council of Australia and New Zealand, 1999 (Reference 6 on page 97).
Figure 16 Case development screen sample
D4 Strategic Business Planning Process

The strategic business plans for each of Council's businesses, such as water supply, sewerage, stormwater, parks and gardens, form the basis for Council's Community Strategic Plan. The strategic business planning process is described in the diagram below.

Long term financial modelling is a key element in the strategic planning process. It enables Council to communicate to its stakeholders how different levels of service affect the required Typical Residential Bill. An example of the required Typical Residential Bills for a number of levels of service is shown in Figure 14 on page 108.

- includes stakeholders, existing service provision and unserviced towns.
- a concise statement of the role of business and key factors guiding action.
- the primary driving force for capital and operating expenditure of the business.
- the means to provide services to customers.
- covers areas serviced, pricing and regulation of services, demand management, customer and community involvement, environmental protection and sustainable development.
- covers operation, maintenance and capital works.
- indicates required Typical Residential Bill and annual income in current (Year 2) dollars. Enables Council to negotiate with its customers a balance between levels of service and the resulting Bill.

Council adopts and implements the strategic business plan. Provides input to Council's Community Strategic Plan, Delivery Program and Operational Plan.

* These plans reflect proposed the levels of service and define the required capital, operation and maintenance expenditures.
E Legislative Framework

The following is intended to provide a brief overview of the legislative framework within which you carry out your water supply and sewerage activities. This overview is not intended to provide a definitive statement of all legislative requirements. Local water utility personnel should acquaint themselves with the requirements of the various Acts.

E1 Local Government Act 1993

The main purpose of the Local Government Act 1993 is to provide the legal framework for an effective, efficient, environmentally responsible, and open system of Local Government in NSW.

The Act is, in the main, administered by the Minister for Local Government, but the Minister for Primary Industries has significant powers under the Act for water, sewerage and drainage.

The Act confers service functions on Councils. These include the provision, management and operation of water supply and sewerage works and facilities. The Act provides Councils with broad power to carry out their functions, and a "Council may do all such things as are supplemented or incidental to, or consequential on, the exercise of its functions" (section 23 of the Act).

Some particular parts of the Act relating to water supply and sewerage are:

- Section 64 - developer charges (Under this section of the new Act, a Council may use the relevant provisions of the Water Management Act 2000 to obtain water supply and sewerage developer charges. The provisions of Section 94 of the Environmental Planning and Assessment Act are no longer available to Councils for obtaining water supply and sewerage developer contributions.);
- Section 68 - Council approval of plumbing works and trade waste discharges; and
- Sections 634-651 - water supply, sewerage and drainage offences.

The role of the Minister for Primary Industries in regard to water supply, sewerage and drainage is covered in Sections 56-66. The Minister's role is generally along the lines of Part XIV of the 1919 Act, and it includes matters such as construction of works, hand over and vesting of work, approval of dams and treatment works, directions to Councils concerning dams and treatment works, action during emergencies, and the appointment of an administrator.

The NSW Office of Water provides section 60 approvals to council proposals to construct a dam, water or sewage treatment works and for effluent and biosolids reuse.

The NSW Office of Water carries out section 61 inspections of LWU dams and water and sewage treatment works.

The NSW Office of Water provides concurrence to Council liquid trade waste approvals under section 90(2) of the Act and clause 28 of the Local Government (General) Regulation 2005.

Councils provide an approval to applications to discharge trade waste to their sewerage system under section 68 of the Local Government Act. Conditions of approval are imposed under clause 32 of the Local Government (General) Regulation 2005.
E2 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment (EP&A) Act was enacted in 1979, and amended by the Environmental Planning and Assessment (Amendment) Act (1985). The Act is the principal planning instrument in NSW, and it specifies the environmental considerations required in all development activities. It also governs the procedures of all proposals that have an effect on the environment. Its objectives are to encourage the proper management of natural and man-made resources, the orderly use of land, the provision of services, and the protection of the environment.

The Act is administered by the Minister for Planning.

The Act requires that all proposals, activities, and functions which are investigated, designed, planned, constructed, and operated by Councils should be studied during all stages for their environmental impact on the basis of scale, location, and performance.

Environmental studies are to be undertaken concurrently with the technical or planning investigations. The findings of environmental studies should be reported initially in Reviews of Environmental Factors (REF), which indicate the need for further studies, their extent and depth, and the degree of public or other involvement required. The REF can often be used for consents or approvals. A Council can give consents for a development as prescribed in Local Environmental Plans (LEP) when the Council are the consent authorities (Part IV of the EP&A Act).

An Environmental Impact Statement (EIS) is a comprehensive report compiled from extensive studies. An EIS is required for:

- designated developments (Part IV of the EP&A Act);
- projects which affect the environment significantly (Part V of the EP&A Act); and
- when designated by a State Environmental Planning Policy or in an LEP.

E3 Catchment Management Act 1989

The objects of this Act include:

- to co-ordinate policies, programs, and activities as they relate to total catchment management;
- to achieve active community participation in natural resource management;
- to identify and rectify natural resource degradation;
- to promote the sustainable use of natural resources; and
- to provide stable and productive soil, high quality water and protective and productive soil and vegetation cover within each of the State's water catchments.

E4 Soil Conservation Act 1938

The object of the Soil Conservation Act is the conservation of soil resources and farm water resources and the mitigation of erosion and land degradation.

The Act is administered by the Minister for Land and Water Conservation.

Under Section 21C of the Act, a Council is required to protect land along prescribed streams and to prevent any destruction of trees and soil erosion on protected land. The same section of the Act specifies the rules for any person or occupier or any protected land from ringbarking, cutting down, felling, poisoning of, or otherwise destroying, vegetation or trees.
Section 21 D of the Act requires that the land owner or occupier must obtain an authority before damaging or destroying trees between the banks or within 20 metres of the banks of a prescribed stream. Public Works is responsible for preparing inspection reports for sites downstream of the tidal limit.

Section 22 of the act outlines requirements for preservation of proclaimed works and catchment areas.

**E5 Public Health Act 2010**

The Public Health Act 2010 replaced the Public Health Act 1991. The main objectives of the Public Health Act 2010 are:

- to promote, protect and improve public health,
- to control the risks to public health,
- to promote the control of infectious diseases, and
- to prevent the spread of infectious diseases.

The Act recognises the role of local government in protecting public health. Under the Act, a local government authority has the responsibility to take appropriate measures to ensure compliance with the requirements of this Act in relation to public swimming pools and spa pools, regulated systems and premises on which skin penetration procedures are carried out. A local government authority has the responsibility of appointing authorised officers to enable it to exercise its functions under this Act and ensuring that its authorised officers duly exercise their functions under this Act.

Part 3 Division 1 of the Act includes the provisions in respect to safety measures for drinking water.

The Minister for Health has the power to take actions and to issue directions, as the Minister considers necessary:

- to restrict or prevent the use of unsafe water that is likely to be a risk to public health, and
- to bring unsafe water to such a condition that it is no longer unsafe water.

The Director General has the power to direct a supplier of drinking water to carry out testing and produce information in relation to the treatment and quality of drinking water.

The Chief Health Officer has the responsibility for determining the necessity for a boil water advice and additional information or correction or retraction of such advice, by a supplier of drinking water for the drinking water it supplies. The Chief Health Officer may also prepare advice concerning public health risks or boil water advice, and provide the advice to the drinking water supplier.

According to the Clause 25 of the Act a supplier of drinking water must establish and adhere to a quality assurance program that complies with the requirements prescribe by the regulations.

The regulations are yet to be enacted.

**E6 Fluoridation of Public Water Supplies Act 1957**

This Act covers addition of fluoride to a public water supply by a water utility.

The Act is administered by the Minister for Health.

Under the Act, approval of NSW Health is required in order that a Council can add fluoride to a water supply.
The NSW Office of Water provides assistance to NSW Health in the training of authorised officers to operate fluoridation plants and conducts pre-commissioning inspections of fluoridation plants to confirm they have met the requirement of the NSW Fluoridation Code of Practice.

E7 Dams Safety Act 1978

The Dams Safety Act constitutes the Dams Safety Committee and imposes, on the Committee, functions relating to the safety of certain dams. The functions of the Committee include the following:

- Maintain a surveillance of prescribed dams;
- Investigate the location, design, and construction of prescribed dams;
- Obtain information and keep records on matters relating to the safety of dams;
- Formulate measures to ensure the safety of dams; and
- Report to the Minister in relation to the safety of prescribed dams;

The Act is administered by the Minister for Primary Industries.

Under the Dams Safety Act, the Dams Safety Committee may require the owner of a prescribed dam to:

- Make observations, take measurements and keep records in regard to such dams; and
- Furnish the committee with such information;

Local water utilities have obligations and responsibility for the safety of dams under their jurisdiction. Among other matters, local water utilities are required to prepare a five-yearly Dam Surveillance Report for their dams.

E8 Water Act 1912

This Act is being progressively phased out and replaced by the Water Management Act 2000, but some provisions are still in force.

The Water Act covers matters such as water rights, licences and water allocations.

It is necessary under this Act for the Council to obtain a licence for a work for the purpose of:

- Water conservation, irrigation, water supply or drainage;
- Prevention of inundation of land and overflow of water thereon; and
- Changing the course of the river.

E9 Independent Pricing and Regulatory Tribunal Act 1992

The Independent Pricing and Regulatory Tribunal Act establishes the Independent Pricing and Regulatory Tribunal and enables the Tribunal to determine and advise on prices and pricing policy for government monopoly services. A government monopoly service is a service supplied by a government agency (which may include a local government council) and declared by the regulations, or the Minister, to be a government monopoly service.

The Tribunal conducts investigations and makes reports to the Minister on the determination of the maximum price and on a periodic review of pricing policies for services applied by these agencies specified in Schedule 1 to the Act. Schedule 1 presently includes Sydney Water Corporation, Hunter Water Corporation, Water Supply Authorities, including Gosford City Council, Wyong Shire Council, State Water (Fish River Water Supply) and Country Energy (Broken Hill). The Tribunal may also
conduct investigations and make reports for any government monopoly service, at the request of the
Minister, whether or not it is supplied by a government agency specified in Schedule 1.

E10 Water Management Act 2000

The Water Management Act 2000 is the key NSW water legislation for the sustainable management of
water. The Act promotes the sharing of responsibility for the sustainable and efficient use of water
between the NSW Government and water users.

The Act provides a legal basis for water planning, the allocation of water resources and water access
technologies.

The main tool the Act provides for managing the NSW water resources are water sharing plans. The
plans for each catchment set out the rules for the sharing of water between water users and the
environment in rules for the trading of water.

Chapter 6 of the Act provides for the constitution, construction, operation and charging regimes for
major water utilities and local water utilities.

Section 305 of the Act provides water utilities with a mechanism to control development in relation to
water services through the provision of a “certificate of compliance”.

Section 306 of the Act enables water supply authorities and local water utilities, through a cross
reference to section 64 of the Local Government Act 1993, to levy developer charges towards the cost
of water infrastructure required for serving development.

The Act is administered by the Minister for Primary Industries and the Minister for Finance and
Services.


The POEO Act introduces a holistic approach to protecting the environment, changing from pollution
control legislation to environment protection legislation.

The Act enables the NSW Government to set out explicit protection of the environment policies (PEPs)
involving environmental standards, goals, protocols and guidelines.

Key features of the Act are as follows:

- Single licensing arrangement relating to air pollution, water pollution, noise pollution and
  waste management;
- EPA issues licences and is the regulatory authority for scheduled activities specified in
  Schedule 1 of the Act;
- Local councils are the regulatory authorities for non-scheduled activities except activities
  undertaken by a public authorities;
- EPA can issue licences to regulate water pollution from a non-scheduled activity therefore
  becomes the regulating authority;
- Environment protection notices that can be issued by appropriate regulatory authorities;
- The Act includes an offence regime and may involve heavy penalties and or gaol.
- The Act includes civil enforcement provisions for third parties.

The Act is administered by Department of Environment, Climate Change and Water.
The POEO Act is a powerful tool for regulation of sewerage and trade waste by local water utilities and facilitating compliance with the utility’s conditions of approval for liquid trade waste discharges to the sewerage system.

Councils may issue a penalty notice under section 222 of the Act to a discharger who fails to obtain an approval to discharge trade waste to the council’s sewerage system or who fails to comply with the conditions of the council’s approval. In addition, section 123 of the Act may be used to sue a discharger causing major damage to the council’s sewerage system or to the environment.

### E12 Water Industry Competition Act 2006

The objectives of the Act and supporting regulations are to encourage competition in the water industry and to foster innovative recycling projects and dynamic efficiency in the provision of water and wastewater services.

Increasing competition in the metropolitan water market and water recycling are key actions in the NSW Government’s Metropolitan Water Plan and State Plan.

The Act provides for the matters such as:

- the establishment of a new licensing regime for private sector providers of reticulated drinking water, recycled water and sewerage services;
- the establishment of a third-party access regime for water and sewerage infrastructure;
- provisions for a licensed network operator to construct or remove water industry infrastructure;
- provisions to authorise IPART to undertake regulatory functions in certain parts of the Act.

Key aspects of General Regulation include:

- ensuring new entrants and the public water utilities face similar obligations, where like services are provided
- strict licensing rules to ensure that drinking water meets Australian standards, that recycled water is ‘fit for purpose’ and that all services are delivered in a safe, reliable manner with minimal environmental impacts
- provisions to prevent retailers from disconnecting small customers for non-payment of debt and to require the implementation of NSW Government social policies, such as pensioner rebates.
F Strategic Business Planning and Financial Planning Check List

Water Supply and Sewerage:
Strategic Business Planning & Financial Planning Check List – May 2011

The strategic business plan is a Local Water Utility’s (LWU’s) peak planning document for its water supply and sewerage businesses.

This check list is essentially a road map and has been prepared to assist LWUs to quickly address the issues in a sound business plan and financial plan. LWUs need to address each item in this check list, which is based on Appendix A of the Best-Practice Management of Water Supply and Sewerage Management Guidelines, 2007.

A current strategic business plan and financial plan is one which has been prepared or updated within the last 4 years. Each LWU should update its financial plans annually (Item 20 on page 125) and should prepare an annual Action Plan to Council in accordance with Item 3 on page 120.

References used in this check list are shown on page 126.

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45 In accordance with page 19 of the Planning and Reporting Manual for local government in NSW 2010, water supply and sewerage strategic business plans prepared by a county council must also give due regard to the Community Strategic Plans of the constituent councils and must be developed in consultation with the constituent councils.

In addition, Clause 219 (2) of the Local Government (General) Regulation 2005.indicates:

‘Following an ordinary election of councillors of the constituent councils of a county council, the county council must review the business activity strategic plan before 30 June following the election. The council may endorse the existing plan, endorse amendments to the existing plan or develop and endorse a new business activity strategic plan, as appropriate to ensure that the council has a business activity strategic plan covering at least the next 10 years.’

The water supply and/or sewerage county council’s 20 to 30-year strategic business plan is the county council’s business activity strategic plan with respect to Clause 219 (2).
<table>
<thead>
<tr>
<th>Topic</th>
<th>Outcome Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Executive Summary</td>
<td>□ Covers all major issues, main actions, price path and at least a 20-year projection of the Typical Residential Bill in Year 2$.</td>
</tr>
<tr>
<td></td>
<td>□ Includes a <strong>plan</strong> of the system.</td>
</tr>
<tr>
<td>2. Operating Environment Review</td>
<td>□ All <strong>principal issues</strong> identified are <strong>addressed</strong> in the Strategic Business Plan.</td>
</tr>
<tr>
<td></td>
<td>□ As noted on page 19 of Reference 3, in addition to addressing any areas of under-performance, the Action Plan ‘closes the planning loop’ with the utility’s strategic business plan by:</td>
</tr>
<tr>
<td></td>
<td>• Comparing the Typical Residential Bill (TRB) with the projection in the strategic business plan and documenting any necessary corrective action for implementation by the LWU.</td>
</tr>
<tr>
<td></td>
<td>• Reporting results for the financial year for the key actions set out in the utility’s strategic business plan.</td>
</tr>
<tr>
<td></td>
<td>□ Are <strong>clear, meaningful and measurable</strong>.</td>
</tr>
<tr>
<td></td>
<td>□ A compliance monitoring and reporting system is in place.</td>
</tr>
<tr>
<td></td>
<td>□ Target LOS have been identified.</td>
</tr>
<tr>
<td></td>
<td>□ Community consultation is essential on the proposed levels of service* (LOS) in order to negotiate an appropriate balance between LOS and the resulting Typical Residential Bill (section 12.4 on page 85). Refer also to Items 16, 18 and 19 on page 124.</td>
</tr>
<tr>
<td></td>
<td>* As noted in section 7.2 on page 35, LOS refer only to operational levels of service such as aesthetic drinking water quality (eg. colour – refer to section 12.1 on page 81), water pressure, response times etc.</td>
</tr>
<tr>
<td></td>
<td>Regulatory requirements such as complying with your utility’s sewage treatment works licence and dam safety and occupational health and safety requirements cannot be negotiated down by a water utility. Similarly utilities must meet the health related aspects of the Australia Drinking Water Guidelines 2004 (ADWG) such as microbiological and chemical water quality compliance (refer to section 7.1.1 on page 31).</td>
</tr>
<tr>
<td>4. Levels of Service (LOS)</td>
<td>□ Options examined and conclusions reported.</td>
</tr>
<tr>
<td>5. Service Delivery</td>
<td></td>
</tr>
</tbody>
</table>
# Strategic Business Plan – Check List

<table>
<thead>
<tr>
<th>Topic</th>
<th>Outcome Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Customer Service Plan</td>
<td></td>
</tr>
<tr>
<td>6.1 Unserviced Areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Business objectives</strong> developed for each key result area.</td>
</tr>
<tr>
<td></td>
<td><strong>All serviced and unserviced towns and villages</strong> listed showing the population and whether the present facilities are satisfactory.</td>
</tr>
<tr>
<td></td>
<td>Proposals for serving unserviced towns are included and discussed in the business plan and financial plan.</td>
</tr>
<tr>
<td>6.2 Regulation and Pricing of Water Supply, Sewerage and Trade Waste</td>
<td></td>
</tr>
<tr>
<td>A. Full Cost Recovery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Full cost recovery for each of the water supply and sewerage businesses (Reference 4, page 7). The total annual income should be consistent with the financial plan in Item 10. This generally results in a positive economic real rate of return (ERRR).</td>
</tr>
<tr>
<td>B. Water Supply: Residential</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pay-for-use: appropriate water usage charge/kL with no water allowance; independent of land value.</td>
</tr>
<tr>
<td></td>
<td>At least 75% of residential revenue for water usage charges [for utilities with 4,000 or more connected properties].</td>
</tr>
<tr>
<td></td>
<td>At least 50% of residential revenue from water usage charges [for utilities with under 4,000 connected properties].</td>
</tr>
<tr>
<td>C. Sewerage: Residential</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uniform annual sewerage bill per residential property, independent of land value (Reference 4, page 28).</td>
</tr>
<tr>
<td>D. Water Supply: Non-Residential</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Two-part tariff with appropriate water usage charge/kL and access charge.</td>
</tr>
<tr>
<td>E. Sewerage: Non-Residential</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Two-part tariff with appropriate sewer usage charge/kL and sewer discharge factor. Access charge reflective of the cost of providing these sewerage services.</td>
</tr>
<tr>
<td>F. Liquid Trade Waste Pricing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appropriate trade waste fees and charges for all liquid trade waste dischargers (Reference 4, page 30).</td>
</tr>
<tr>
<td></td>
<td>Trade waste usage charge for dischargers with prescribed pre-treatment (Reference 4, page 34).</td>
</tr>
<tr>
<td></td>
<td>Excess mass charges for large dischargers and industrial waste (Reference 4, page 36).</td>
</tr>
<tr>
<td>G. Trade Waste Regulation Policy and Approvals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trade Waste Regulation Policy in accordance with Reference 5 adopted. Trade waste approval issued to each liquid trade waste discharger (Reference 5).</td>
</tr>
<tr>
<td>H. Developer Charges</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Development Servicing Plan+ with commercial developer charges; disclosure of any cross-subsidies (Reference 6, page iv).</td>
</tr>
<tr>
<td></td>
<td>LWUs with a growth of under 5 lots/a exempted.</td>
</tr>
</tbody>
</table>
## Strategic Business Plan – Check List

<table>
<thead>
<tr>
<th>Topic</th>
<th>Outcome Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dual Water Supplies</td>
<td>□ LWUs with a dual water supply ie. a potable reticulated water supply for indoor uses and a separate non-potable supply reticulated for outdoor uses to over 50% of their residential customers need to comply with element 2(g) of Criterion 2 in Table 1 on page 25 of the Best-Practice Management Guidelines (Reference 14).</td>
</tr>
<tr>
<td>6.3 Environmental Management</td>
<td>□ Summary of LWU’s Environmental Management achievements is included.</td>
</tr>
<tr>
<td>6.4 Integrated Water Cycle</td>
<td>□ Summary of integrated water cycle management is included.</td>
</tr>
<tr>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>6.5 Demand Management</td>
<td>□ Summary of LWU’s demand management is included.</td>
</tr>
<tr>
<td>6.6 Drought Management</td>
<td>□ Summary of LWU’s drought management is included.</td>
</tr>
<tr>
<td>6.7 Drinking Water Quality</td>
<td>□ Summary of LWU’s drinking water quality management is included.</td>
</tr>
<tr>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>6.8 Community Consultation</td>
<td>□ Summary of community consultation is included.</td>
</tr>
<tr>
<td>6.9 Occupational Health &amp; Safety</td>
<td>□ Summary of LWU’s occupational health and safety achievements is included.</td>
</tr>
<tr>
<td>6.10 Other Risk Management</td>
<td>□ Summary of other risk management measures implemented by your LWU</td>
</tr>
<tr>
<td>Measures</td>
<td></td>
</tr>
<tr>
<td>7. Total Asset Management Plan</td>
<td>□ Summary of changes required to O &amp; M procedures (eg. to operate new facilities) are reported, including impact on OMA expenditures.</td>
</tr>
<tr>
<td></td>
<td>□ Asset register completed (Reference 13) and assets are valued in accordance with Reference 15.</td>
</tr>
<tr>
<td></td>
<td>□ Summary of best-practice operation plan is included (Reference 13). Also report:</td>
</tr>
<tr>
<td></td>
<td>- Whether you failed to achieve microbiological compliance with ADWG in either of the last 2 financial years, the corrective action implemented and whether it was successful (refer to Item 1 on page 31).</td>
</tr>
<tr>
<td></td>
<td>- Any ‘boil water alerts’ issued in the last 18 months, the corrective action implemented and whether it was successful (refer to Item 3 on page 31).</td>
</tr>
<tr>
<td></td>
<td>□ Summary of best-practice maintenance plan is included. Also report your LWU’s implementation of any NSW Office of Water section 61 recommendations for corrective action with respect to water and sewage treatment works and dams.</td>
</tr>
<tr>
<td></td>
<td>□ Capital works program included showing a tabulation of proposed annual expenditure for each project, including cost-effective asset renewals. Capital works program is integrated with the strategic business plan to meet the target levels of service. Template is available from NOW.</td>
</tr>
<tr>
<td></td>
<td>□ All major projects in the capital works program are discussed in the SBP and are consistent with the business objectives.</td>
</tr>
</tbody>
</table>
# Financial Plan – Check List

<table>
<thead>
<tr>
<th>Topic</th>
<th>Outcome Achieved</th>
</tr>
</thead>
</table>
| 9. Objective | ☐ The financial plan includes all foreseeable costs and income and achieves the lowest uniform level of stable typical residential bills (in Year 2$) to meet the levels of service negotiated with the community.  
☐ Long-term financial sustainability is demonstrated to comply with National Competition Policy and the National Water Initiative. |
| 10. Financial Model | ☐ LWUs using the FINMOD software for their financial plan have used the latest version (FINMOD 2.1 or FINMOD 4.0). |
| 11. Timeframe | ☐ The financial plan covers a period of at least 20 years. |
| 12. Growth and Number of Assessments | ☐ Input accurate numbers of existing residential and non-residential assessments.  
☐ New assessments for backlog water supply or sewerage projects are included in the growth projections.  
☐ Growth projections input into your LWU's financial planning are consistent with the SBP document. |
| 13. Interest Rates | ☐ Appropriate values have been used. Such rates in March 2011 were:  
Inflation 2.5% pa  
Investment 5.5% pa  
Borrowing 6.5% pa |
| 14. Grants | ☐ No capital works grants are assumed after about 2015/16. |
### Financial Plan – Check List

<table>
<thead>
<tr>
<th>Topic</th>
<th>Outcome Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Forecast Data</td>
<td>□ Forecast data, such as future operation, maintenance and administration (OMA) costs and the income split (between annual residential income and annual non-residential income), have been carefully considered as part of the LWU's total asset management planning.</td>
</tr>
<tr>
<td></td>
<td>Common errors are</td>
</tr>
<tr>
<td></td>
<td>• Neglecting to include increases in operation and maintenance costs associated with proposed capital works such as backlog sewerage or new water and sewage treatment works.</td>
</tr>
<tr>
<td></td>
<td>• Neglecting to make appropriate provision for dividend and tax-equivalent payments (excluding income tax).</td>
</tr>
<tr>
<td></td>
<td>• Neglecting to include future increases in non-residential water supply and sewerage income as a result of removing existing cross-subsidies.</td>
</tr>
<tr>
<td></td>
<td>• Neglecting to include future increases in trade waste income from introducing appropriate trade waste fees and charges for all liquid trade waste dischargers.</td>
</tr>
<tr>
<td></td>
<td>• Neglecting to include future commercial developer charges.</td>
</tr>
<tr>
<td></td>
<td>• Neglecting to include the cost of actions in the SBP.</td>
</tr>
<tr>
<td></td>
<td>□ Increases or reductions to OMA costs have been discussed in the SBP document.</td>
</tr>
<tr>
<td>16. Residential Bills</td>
<td>□ The financial plan must provide at least a 20-year projection of Typical Residential Bills in Year 2$.</td>
</tr>
<tr>
<td>17. Results</td>
<td>□ The input data, key output graphs and the full projected results and the annual financial statements (ie. Income Statement, Balance Sheet and Cash Flow Statement) are included for the preferred case. Results are presented in Year 2 dollars (ie. not inflated dollars).</td>
</tr>
<tr>
<td>18. Sensitivity Analysis</td>
<td>□ Sensitivity Analysis (section 8.3 of the FINMOD User Manual) has been carried out and results are included.</td>
</tr>
<tr>
<td></td>
<td>□ A description of the cases analysed, and the reasons for their selection have been included in the SBP document.</td>
</tr>
</tbody>
</table>
19. Financial Plan Report and Price Path

- Financial Plan Report prepared to document your financial planning (example report provided in Appendix E of the FINMOD User Manual - Reference 2).

- Price path adopted for the typical residential bill over the next 4 years in Year 2$. This provides some price certainty to the LWU’s customers.

20. Annual Update of Financial Plan

- Following the annual review of your TBL Performance Report (Item 3 on page 120), you should review and update your total asset management plan and your long-term financial plan.

- Prepare a brief report to Council on your update of the financial plan (example at Appendix H on page 131).
REFERENCES*


NOTES

1. Full achievement of the required outcome for Item 6.2G is required for meeting the trade waste policy requirements in Table 1 on page 24 of the *Best-Practice Management Guidelines*.

2. LWUs with a dual water supply need to comply with ‘I’ of Item 6.2 in order to meet the requirements in element 2(g) of Criterion 2 in Table 1 on page 25 of the *Best-Practice Management Guidelines*.

3. For further information, assistance and copies of the reference documents, please contact Sam Samra, Senior Manager Water Utility Performance on 8281 7435 or Sam.Samra@water.nsw.gov.au

4. LWUs should continue to email (Sam.Samra@water.nsw.gov.au) or forward a copy of their completed strategic business plan and financial plan to NOW:

   Senior Manager Water Utility Performance
   NSW Office of Water
   Level 18
   227 Elizabeth Street
   Sydney  NSW  2000

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G TBL Performance Reports and Action Plans – Understanding and Using Your Report

G1 Introduction

This appendix has been prepared to assist Councillors with their Council’s 2009-10 Triple Bottom Line (TBL) Performance Reports for water supply and sewerage. It will also help the Water and Sewerage Manager prepare a sound Action Plan to Council. Action plans should include a strategy for addressing any areas of under-performance. A sample Action Plan is shown on page 62 of the 2009-10 NSW Performance Monitoring Report. The NSW Office of Water prepares the annual TBL report for each Local Water Utility’s water supply business and for its sewerage business together with an Action Plan template for completion by the Water and Sewerage Manager. A copy of the TBL report is also provided to IPART.

The TBL reports show your LWU’s key performance indicators (column 1), your ranking compared to other LWUs in your size range (column 2) and your ranking relative to all NSW LWUs (column 3). Column 4 shows the Statewide medians which are calculated from the 50 percentile result for all connected properties (statewide). This best reveals Statewide performance by giving due weight to larger LWUs and reducing the effect of smaller LWUs.

There are four size ranges: > 10,000, 3,000 to 10,000, 1,500 to 3,000 and 200 to 1,500 connected properties. Rankings shown in Columns 2 and 3 of the TBL Report are based on the top 20% of LWUs for each indicator being ranked 1 and the bottom 20% being ranked 5 (LWUs in the range 40% to 60% are ranked 3).

G2 Factors Impacting on Performance

When comparing reported performance with other utilities, LWUs should take account of the wide range of factors which can impact on effectiveness and efficiency of a business. An indicator with a low ranking may not necessarily imply poor performance, for example, water supply business efficiencies and effectiveness are functions of:

- **Number of connected properties** - there are significant economies of scale for large LWUs,
- **Type of services provided** - eg. whether the LWU provides a full water supply system or whether is a reticulator or bulk supplier,
- **Provision of bulk storage and/or long transfer systems** - these costs are not incurred by LWUs relying on groundwater or those receiving a regulated supply from a State Water dam.
- **Regional topography and soil types** affects pumping costs, frequency of main breaks and useful life,
- **Regional rainfall and evaporation**,
- **Water quality at the source** – for example, a good quality groundwater will require minimal water treatment,
- **Standard of nutrient removal facilities** at the sewage treatment works,

An understanding of such factors is essential for valid interpretation of performance data. Utilities are encouraged to compare and contrast their performance with other LWUs having similar characteristics. Further factors to assist your LWU in its assessment of performance are listed below.
G2.1 UTILITY CHARACTERISTICS

- **Properties served per km** – lower density of urban development significantly increases the infrastructure cost, particularly for those LWUs with very low densities (i.e. < 20 properties per km).

- **Renewals** – each LWU should ensure that its Typical Residential Bill (see below) is adequate and consistent with the projection in its 30 year strategic business plan to ensure it is raising sufficient revenue for developing, maintaining and renewing the required infrastructure. It should also examine its total asset management policy and ensure that the necessary funds are directed to maintenance and renewals.

- **Employees per 1000 properties** – this is a good indicator of operating and management costs (see page 130).

G2.2 SOCIAL FACTORS - Affordability

- **Typical Residential Bill (TRB)** – is the principal indicator of the overall cost of a water supply or sewerage system (it is the annual bill paid by a residential customer using the utility’s average annual residential water supplied). The main element of the TRB is the operating cost (OMA – operation, maintenance and administration). The TRB should be consistent with the projection in your LWU’s 30 year strategic business plan.

- **Residential Water Usage Charge (c/kL)** – Highest charges are automatically ranked “1” and lowest charges as “5”. These rankings however, should be compared with your TRB and whether your LWU is achieving full cost recovery, and the required residential revenue from water usage charges, in which case a low water usage charge may be a good result.

  Please note that Circular LWU 11 of March 2011 has removed the need for LWUs to use inclining block tariffs. In addition, the NSW Government encourages LWUs to use a two-part tariff with a uniform water usage charge per kL for all water use (see page 4 of the 2009-10 NSW Performance Monitoring Report).

G2.3 SOCIAL FACTORS - Health

- **Risk based drinking water quality management plan** – each LWU should develop and implement such a drinking water quality management plan on a priority basis (tools and assistance are available from the NSW Office of Water - see page 7 of the 2009-10 NSW Performance Monitoring Report).

- **Microbiological water quality compliance (%)** – This is the most important water supply health indicator and all LWUs should aim for a value of 100%. LWUs with less than 98% do not comply with the Australian Drinking Water Guidelines, 2004 and must develop and implement a corrective strategy (see page 7 of the 2009-10 NSW Performance Monitoring Report). If your LWU failed to achieve microbiological compliance in either of the last 2 financial years, the corrective action implemented and whether it was successful must be reported in your LWU’s annual Action Plan to Council.

- **‘Boil water alerts’** – if your LWU has issued any ‘boil water alerts’ in the last 18 months, the corrective action implemented and whether it was successful must be reported in your LWU’s annual Action Plan to Council.

  Assistance is available to your LWU from your NSW Office of Water Regional Water and Sewerage Inspector (page 34 of the 2009-10 NSW Benchmarking Report).
G2.4 SOCIAL FACTORS - Customer Service

- **Water quality complaints** – water quality may depend for example, on whether the supply is unfiltered, good quality groundwater or whether a fully treated supply is provided.

- **Odour complaints** – This is an important indicator of the effectiveness of sewage treatment and transfer. LWUs with a high number of complaints (ranking of 5) should investigate the reasons for the complaints, including past performance, as indicated in page two of their TBL Report.

- **Number of water main breaks** – water mains with a high incidence of breaks (say treble the statewide median) may indicate that renewals are required.

G2.5 ENVIRONMENTAL FACTORS

- **Average annual residential water supplied** – is influenced by the number of connected properties, geographic location, climate, strength of the utility’s pricing signals (NWI Indicator F4 – percent of residential revenue from usage charges – see G2.6 below) and the presence of drought water restrictions. Inland LWUs have significantly higher residential water supplied due to their hotter and drier climate and the use of evaporative air coolers. The weighted median value for inland LWUs was 252kL/connected property (percentage of connected properties basis). The weighted median for coastal LWUs was 150kL/property.

- **Real Losses (Leakage)** – At present, many LWUs do not have sufficient data to determine the true extent of leakage in their system (refer note 8 on page 25 of the 2009-10 NSW Performance Monitoring Report). It is strongly recommended that each LWU undertake a reservoir drop test or detailed waste metering, with the assistance of a leakage control specialist, such as the LGA & SA and Water Directorate, Water Loss Program (Ian Maggs on 9242 4127).

- **Sewer main chokes and collapses** – sections of sewer main with a high incidence of chokes and collapses (say treble the statewide median) require close attention.

- **Sewer overflows to the environment** – are untreated sewage spills and may increase during wet weather due to infiltration of sewage mains and flooding. They do not include discharges or overflows contained within emergency storages.

G2.6 ECONOMIC FACTORS - Financial

- **Residential revenue from usage charges (%)** – The Best Practice Management Guidelines 2007 require LWUs with 4,000 or more properties to raise at least 75% of residential revenue from water usage charges, while LWUs with fewer than 4,000 properties, including LWUs with a dual supply must raise at least 50% of residential revenue from usage charges. The strategic benefits of providing such strong pricing signals are highlighted on page 5 of the NSW Performance Monitoring Report.

- **Economic real rate of return (ERRR)** – reflects the rate of return from operating activities (ie. excluding interest income, grants for acquisition of assets and gain/loss on disposal of assets). Water and sewerage charges should be sufficiently high to achieve full cost recovery. All LWUs should aim to achieve a positive EERRR. LWUs which have met all the Best-Practice Management requirements are encouraged to pay an ‘efficiency dividend’ from the surplus of their water and sewerage businesses to the Council’s general revenue (see page 11 of the NSW Performance Monitoring Report). Refer also to Circular LWU 11 of March 2011.
- **Net Debt to equity** – LWUs facing significant capital investment are encouraged to make greater use of borrowings to reduce their TRB. This avoids unfairly burdening existing customers and facilitates inter-generational equity (see page 12 of the *NSW Performance Monitoring Report*).

- **Loan payment ($/property)** – A high loan payment per property indicates a relatively high capital cost per property, recent construction of significant capital works or use of short-term loans. 20-year loans are generally optimal (see page 12 of the *NSW Performance Monitoring Report*).

- **Interest cover** – this ratio provides an indicator of the LWU’s ability to meet interest commitments. The interest cover is nil for a business incurring a loss. As a general guide, an interest cover >2 is a good interest cover position. This should be considered in conjunction with the comment on making greater use of borrowings for capital investment.

- **Net profit after tax (NPAT) ratio** – this is NPAT divided by the revenue. LWUs should have a positive NPAT ratio. LWUs facing major capital expenditure for expanding system capacity may need a relatively high value for this indicator in order to help fund this investment.

**G2.7 ECONOMIC FACTORS - Efficiency**

**Operating cost** (OMA – operation, maintenance and administration) per property is a prime indicator of the performance of an LWU. The **components of operating cost** are:

- **Management cost** – includes administration, engineering and supervision and is typically almost 40% of the total operating cost. The number of employees per 1,000 properties can be a useful indicator of the operating and management costs and hence the efficiency of an LWU. LWUs with a number of separate water supply schemes and those with smaller water or sewage treatment works will need a higher level of employees per 1000 properties in order to effectively manage their systems.

- **Treatment cost (water)** – is dependent on the type and quality of the water source and the types of treatment used. In addition, there are great economies of scale for the operation of larger water treatment works (ie. facilities involving at least filtration and disinfection).

- **Treatment cost (sewage)** – is dependent on type of treatment and discharge requirements. Where the discharge licence conditions are stringent involving for example, a low level of phosphorus, treatment costs will be high. There are significant economies of scale for operation of larger treatment works.

- **Pumping cost (water)** – is influenced by topography and distance to the water source. For example, Country Energy and Goldenfields Water have a high pumping cost due to the distance required to pump from the water source, while Fish River Water Supply is almost a fully gravitational supply, with negligible pumping costs. For water supply, there are significant economies of scale in pumping cost per connected property.
H Example Annual Update of Financial Plan

1. Purpose
Update your LWU’s financial plan on the basis of your latest annual financial statements [2009/10 financial year as at April 2011] and asset management plan and report to Council whether the 4-year price path approved by Council in June 2008 remains satisfactory.

2. Background
Example – say the water supply 4-year price path approved by Council in June 2008 involved a Typical Residential Bill of $563/assessment for 2009/10 [2009/10$].
For 2.5% pa inflation this amounts to $577 in 2010/11$
$592 in 2011/12$
$606 in 2012/13$

3. Results of updated financial Plan

![Figure 17 Water Supply Capital Works and Growth](image)

**Figure 17** Water Supply Capital Works and Growth
4. Review

Figure 18 has determined the minimum required TRB next year as $585/assessment (2011/12$) on the basis of the updated financial statements and asset management plan.

As the required TRB of $585/assessment does not exceed the approved price path of $592/assessment (2011/12$), the price path remains satisfactory and Council can continue to set next year’s TRB (commencing July 2011) on the basis of the price path.

However, if the financial analysis had shown that the minimum required TRB is say $635/assessment\(^{46}\), Council would need to respond to this information and increase next year’s TRB accordingly.

\(^{46}\) Such an outcome could be due to an unforeseen problem – eg.

- A significant increase to capex.
- A significant increase to opex.
- A significant reduction to income.
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