

NOTICE OF MEETING



WATER, WASTE AND SEWER ADVISORY COMMITTEE MEETING

A Water, Waste and Sewer Advisory Committee Meeting of Byron Shire Council will be held as follows:

Venue	Conference Room, Station Street, Mullumbimby
Date	Thursday, 1 December 2016
Time	2.00pm

A handwritten signature in black ink, appearing to read 'Phil Holloway', is located in the bottom left area of the page.

Phil Holloway
Director Infrastructure Services

CONFLICT OF INTERESTS

What is a “Conflict of Interests” - A conflict of interests can be of two types:

Pecuniary - an interest that a person has in a matter because of a reasonable likelihood or expectation of appreciable financial gain or loss to the person or another person with whom the person is associated.

Non-pecuniary – a private or personal interest that a Council official has that does not amount to a pecuniary interest as defined in the Local Government Act (eg. A friendship, membership of an association, society or trade union or involvement or interest in an activity and may include an interest of a financial nature).

Remoteness – a person does not have a pecuniary interest in a matter if the interest is so remote or insignificant that it could not reasonably be regarded as likely to influence any decision the person might make in relation to a matter or if the interest is of a kind specified in Section 448 of the Local Government Act.

Who has a Pecuniary Interest? - a person has a pecuniary interest in a matter if the pecuniary interest is the interest of the person, or another person with whom the person is associated (see below).

Relatives, Partners - a person is taken to have a pecuniary interest in a matter if:

- The person's spouse or de facto partner or a relative of the person has a pecuniary interest in the matter, or
- The person, or a nominee, partners or employer of the person, is a member of a company or other body that has a pecuniary interest in the matter.

N.B. “Relative”, in relation to a person means any of the following:

- (a) the parent, grandparent, brother, sister, uncle, aunt, nephew, niece, lineal descends or adopted child of the person or of the person's spouse;
- (b) the spouse or de facto partners of the person or of a person referred to in paragraph (a)

No Interest in the Matter - however, a person is not taken to have a pecuniary interest in a matter:

- If the person is unaware of the relevant pecuniary interest of the spouse, de facto partner, relative or company or other body, or
- Just because the person is a member of, or is employed by, the Council.
- Just because the person is a member of, or a delegate of the Council to, a company or other body that has a pecuniary interest in the matter provided that the person has no beneficial interest in any shares of the company or body.

Disclosure and participation in meetings

- A Councillor or a member of a Council Committee who has a pecuniary interest in any matter with which the Council is concerned and who is present at a meeting of the Council or Committee at which the matter is being considered must disclose the nature of the interest to the meeting as soon as practicable.
- The Councillor or member must not be present at, or in sight of, the meeting of the Council or Committee:
 - (a) at any time during which the matter is being considered or discussed by the Council or Committee, or
 - (b) at any time during which the Council or Committee is voting on any question in relation to the matter.

No Knowledge - a person does not breach this Clause if the person did not know and could not reasonably be expected to have known that the matter under consideration at the meeting was a matter in which he or she had a pecuniary interest.

Participation in Meetings Despite Pecuniary Interest (S 452 Act)

A Councillor is not prevented from taking part in the consideration or discussion of, or from voting on, any of the matters/questions detailed in Section 452 of the Local Government Act.

Non-pecuniary Interests - Must be disclosed in meetings.

There are a broad range of options available for managing conflicts & the option chosen will depend on an assessment of the circumstances of the matter, the nature of the interest and the significance of the issue being dealt with. Non-pecuniary conflicts of interests must be dealt with in at least one of the following ways:

- It may be appropriate that no action be taken where the potential for conflict is minimal. However, Councillors should consider providing an explanation of why they consider a conflict does not exist.
- Limit involvement if practical (eg. Participate in discussion but not in decision making or vice-versa). Care needs to be taken when exercising this option.
- Remove the source of the conflict (eg. Relinquishing or divesting the personal interest that creates the conflict)
- Have no involvement by absenting yourself from and not taking part in any debate or voting on the issue as if the provisions in S451 of the Local Government Act apply (particularly if you have a significant non-pecuniary interest)

RECORDING OF VOTING ON PLANNING MATTERS

Clause 375A of the Local Government Act 1993 – Recording of voting on planning matters

- (1) In this section, **planning decision** means a decision made in the exercise of a function of a council under the Environmental Planning and Assessment Act 1979:
 - (a) including a decision relating to a development application, an environmental planning instrument, a development control plan or a development contribution plan under that Act, but
 - (b) not including the making of an order under Division 2A of Part 6 of that Act.
- (2) The general manager is required to keep a register containing, for each planning decision made at a meeting of the council or a council committee, the names of the councillors who supported the decision and the names of any councillors who opposed (or are taken to have opposed) the decision.
- (3) For the purpose of maintaining the register, a division is required to be called whenever a motion for a planning decision is put at a meeting of the council or a council committee.
- (4) Each decision recorded in the register is to be described in the register or identified in a manner that enables the description to be obtained from another publicly available document, and is to include the information required by the regulations.
- (5) This section extends to a meeting that is closed to the public.

BYRON SHIRE COUNCIL
WATER, WASTE AND SEWER ADVISORY COMMITTEE MEETING

BUSINESS OF MEETING

1. APOLOGIES

2. DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

3. ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 Water, Waste and Sewer Advisory Committee Meeting held on 2 June 2016

4. STAFF REPORTS

Infrastructure Services

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STAFF REPORTS - INFRASTRUCTURE SERVICES

Report No. 4.1 Strategic Business Plan Water Supply and Sewerage

Directorate: Infrastructure Services

Report Author: Peter Rees, Manager Utilities

File No: I2016/1205

Theme: Community Infrastructure
Water Supplies

Summary:

The Strategic Business Plan (SBP) addresses 3 elements of the Best-Practice Management of Water Supply and Sewerage Framework [Strategic Business Planning, Pricing and Drought Management].

The plan verifies the ongoing financial sustainability of the water supply and sewerage business.

RECOMMENDATION:

That the Committee note the report.

Attachments:

- 1 Strategic Business Plan for Water Supply and Sewerage Services 2016 Revision 1, E2016/90813 , page 6

Report

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 Strategic Business Plan (SBP) addresses 3 elements of the Best-Practice Management of Water Supply and Sewerage Framework [Strategic Business Planning, Pricing and Drought Management].

Demonstrated best-practice management is a pre-requisite for payment of a dividend from the surplus of a local government LWU's water supply and sewerage businesses.

Some key assumptions in the plan are:

- Byron Bay Sewage Treatment Plant upgrade to 10 ML/day average dry weather flow to commence in 2025.
- Ocean Shores Sewage Treatment Plant to be upgraded by transferring flows to Brunswick Valley Sewage Treatment Plant. This work to commence in 2020.
- The Brunswick Valley Plant be upgraded to accommodate the increased flows. The work to include wetlands and a storm overflow pond.
- The Total Residential Bill for Water Supply be reduced by 1.6% in 2017-18.
- The Total Residential Bill for Sewerage be reduced by 9% in 2017-18.

Financial Implications

Financial sustainability of the water supply and sewerage businesses is verified by the strategic business plan.

There is an opportunity to reduce the Total Residential Bills for both water supply and sewerage.

Statutory and Policy Compliance Implications

Compliance with the NSW Government's Best-Practice Management of Water Supply and Sewerage Guidelines, 2007.



Byron Shire Council

Strategic Business Plan for Water Supply and Sewerage Services

11 October 2016

EXECUTIVE SUMMARY

This Strategic Business Plan (SBP) addresses the management and operation of the Byron Shire Council (BSC) water supply and sewerage businesses.

BSC provides reticulated water supply services to the main towns and adjacent areas of Ocean Shores/New Brighton, South Golden Beach, Billinudgel, Brunswick Heads, Mullumbimby, Byron Bay, Suffolk Park and Bangalow. The Byron Shire water supply is comprised of five separate water supply systems serving these urban areas of the LGA.

Council has four sewerage systems serving the urban areas of Bangalow, Brunswick Valley (Brunswick Heads, Mullumbimby, Ocean Shores, New Brighton, South Golden Beach and Billinudgel) and Byron Bay/Suffolk Park.

Mission Statement

Council's water supply and sewerage mission is to:

Provide services and infrastructure that sustain, connect and integrate communities and infrastructure.

Operating Environment

As a local government owned business, a Local Water Utility (LWU) is subject to a number of legislative obligations. The operation of the water supply and sewerage schemes is driven by the following key requirements:

- Council's Integrated Planning and Reporting documents;
- The NSW Government Best-Practice Requirements for Water Supply and Sewerage;
- The adopted Levels of Service (LOS) documented in this SBP.

The LOS are the primary driving force for the water supply and sewerage businesses. They explicitly define the standards required from the water and sewerage systems and will largely shape Council's detailed operations, maintenance and capital works planning. Council's primary objective with water supply and sewerage services is to meet the adopted LOS summarised in Table 1 and Table 2.

Service Delivery

The majority of operational and maintenance tasks for the sewerage and water supply schemes are undertaken by Council's in-house staff. Most major capital works are contracted out, including design, construction and commissioning.

Customer Service

The customer service plan in this SBP covers the adopted LOS, determines the areas to be serviced, analyses demand management and sewer load management. It also establishes the pricing structure, determines customer satisfaction targets and establishes methods for customer and community involvement in decision making.

BYRON SHIRE COUNCIL

STRATEGIC BUSINESS PLAN

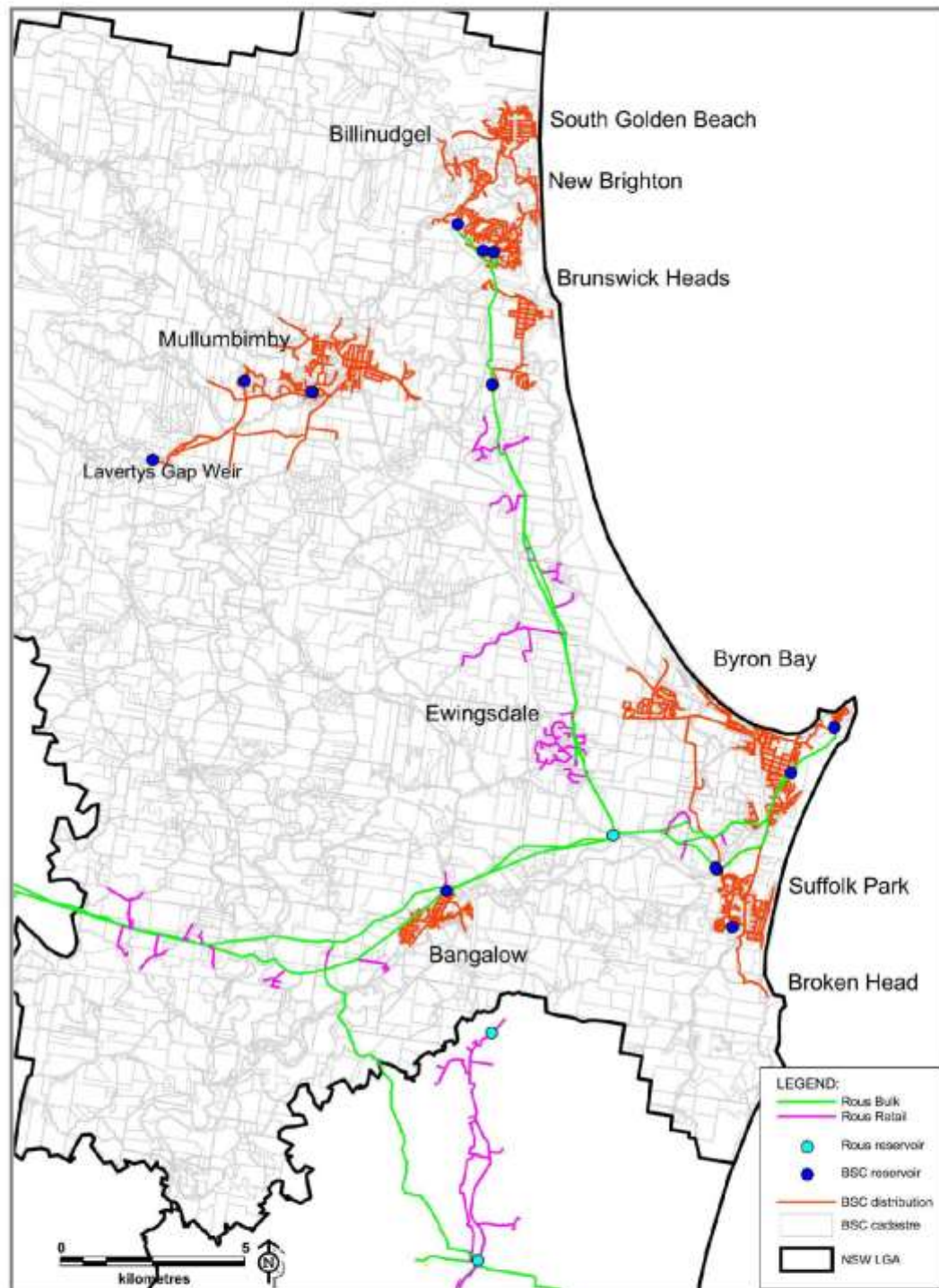


Figure 1: Rous County Council and BSC water supply networks in Byron Shire

Source: Hydrosphere Consulting (2016a)

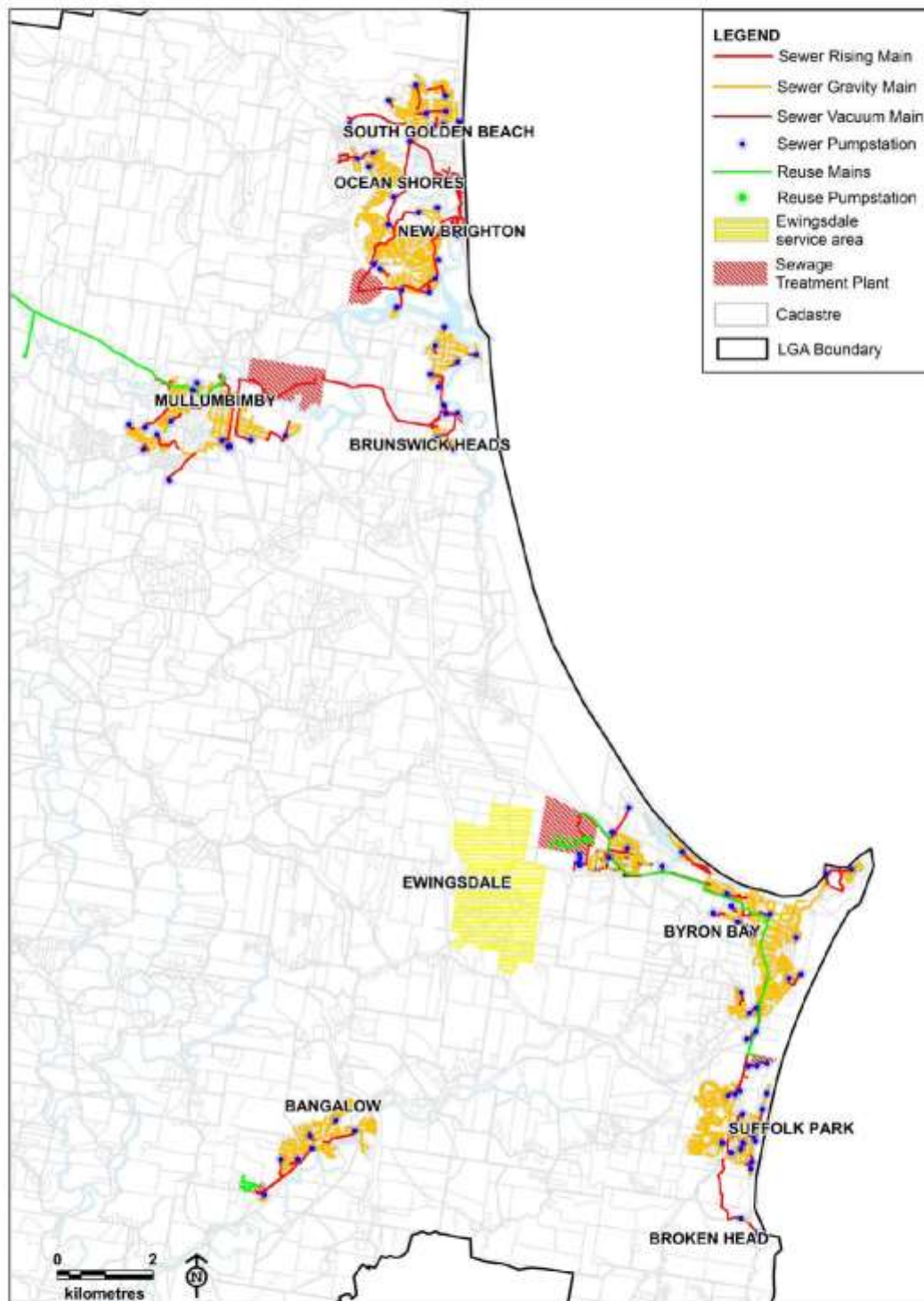


Figure 2: BSC sewerage schemes

Table 1: Water Supply Levels of Service

Description	Unit	Level of Service	
		Current Performance	Target
Social			
Water quality complaints	Per 1,000 properties	0.5	≤ 0.5
Service complaints	Per 1,000 properties	0.3	≤ 0.3
Average frequency of unplanned interruptions	Per 1,000 properties	14	≤ 14
Number of main breaks	Per 100 km	7	≤ 7
Total days lost	%	3.2	≤ 3.2
Environmental			
Average annual residential water supplied	kL per property	175	≤ 175
Real losses	L/service connection/day	80	≤ 80
Economic			
Operating cost	\$ per property	463	≤ 463
Management cost	\$ per property	127	≤ 127

Table 2: Sewerage Levels of Service

Description	Unit	Level of Service	
		Current Performance	Target
Social			
Odour complaints	Per 1,000 properties	2.1	≤ 2.1
Service complaints	Per 1,000 properties	2	≤ 2
Average duration of interruption	Minutes	60	≤ 60
Total days lost	%	3.9	≤ 3.9
Environmental			
Volume of sewage collected	kL per property	350	≤ 350
Percentage Effluent Reuse	%	13	≤ 13
Biosolids reuse	%	100	≤ 100
Sewer main breaks and chokes	Per 100 km of main	32	≤ 32
Sewer overflows to the environment	Per 100 km of main	0.8	≤ 0.8
Economic			
Operating cost	\$ per property	629	≤ 629
Management cost	\$ per property	173	≤ 173
Treatment cost	\$ per property	245	≤ 245
Pumping cost	\$ per property	134	≤ 134
Sewer main cost	\$ per property	45	≤ 45

Total Asset Management

Asset management plans for water and sewer assets have been prepared to demonstrate responsive management of water supply and sewer assets, compliance with regulatory requirements and to describe the expenditure required to maintain the current LOS.

BSC's asset register lists all water supply and sewerage assets with basic physical data (location, material, size, age and remaining useful life) and financial statistics (depreciation and current replacement cost) for each asset. The assets, their age and current replacement value are summarised in the Asset Management Plans. The condition profile of Council's assets is determined based on the age of the asset and design life. The plan encompasses all of Council assets and is referred to as a Service Plan.

The capital works programs consider the future growth expected within the Shire, the replacement of assets and the provision of works to improve the LOS currently provided to ensure the delivery of the LOS targets adopted by Council. The estimated capital investment over the next 30 years for water supply is \$37 million. About 50% of this amount is to serve growth. Approximately 47% of the expenditure is for renewal of existing assets with the remaining 2% for improving LOS. The estimated capital investment over the next 30 years for sewerage services is \$102 million. About 43% of this amount is for renewal of existing assets, 55% to service growth and the remainder is for improving LOS.

Work Force

The Work Force Plan identifies strategies to ensure staff levels and skills are adequate for the operation and management of the water supply and sewerage businesses.

Summary of Action Plan

This SBP has identified actions to address the issues identified in relation to management of the water supply and sewerage businesses. A summary of the objectives, performance targets and strategies is given in the following table.

Table 3: SBP Objectives, Performance Targets and Strategies

Key Result Area	Objective	Performance Target	Strategy
1 Levels of Service	Operation of the water supply and sewerage systems meets the adopted LOS which take into account financial implications, statutory/regulatory requirements, customer desires and industry standards.	100% compliance with the LOS.	Monitor and report on LOS being achieved. Address non-compliances. Review of adopted LOS.
2 Areas Serviced	Provide sewerage services to all areas where there are identified significant environmental and health risks, community desires and economic feasibility.	No environmental or public health impact caused by lack of water and sewerage services. No delay to planned development due to lack of water supply or sewerage services.	Extend services to new development in accordance with the LEP.

BYRON SHIRE COUNCIL

STRATEGIC BUSINESS PLAN

Key Result Area	Objective	Performance Target	Strategy
3	Demand Management	Efficient water use in all customer sectors. Average annual residential demand is less than 170 kL/residential property. Meters are no older than 10 years. Water losses are less than 10% of water supplied.	Implement best-practice demand management strategies. Review pricing annually. Manage pressure to reduce leakage.
4	Drought Management	Responsive, efficient and acceptable drought management strategies are implemented. A feasible emergency and drought management strategy is developed. Water supplies are "secure".	Prepare and implement sound drought management procedures.
5	Inflow and Infiltration	Effectively manage stormwater inflow and infiltration into the sewerage system. Reduce infiltration and inflows to economic levels. Identified sewer defects are repaired.	Monitor sewer flows and implement flow reduction measures. Complete sewer system repairs as part of renewal and maintenance programs.
6	Liquid Trade Waste (LTW)	Effective management of liquid trade waste. LTW services agreements are applied in accordance with the adopted Policy.	Implement LTW Policy. Inspect and enforce trade waste requirements.
7	Service Pricing	Pricing system is equitable and reflects the actual cost of service provision. Best-practice pricing structure is achieved.	Review and update tariffs and charges annually.
8	Customer and Community Involvement	Gain community ownership of major asset management decisions and ensure affordability and marketability of the project outcomes. All major projects and decisions are subject to a community consultation process.	Provide accurate information to the community to create awareness of the issues, receive community input into decision-making processes including willingness-to-pay for asset development and create a sense of community ownership.
9	Customer Satisfaction	Achieve a high level of customer satisfaction in water and sewerage services. The majority of customers are satisfied with Council water and sewerage services.	Communicate with customers and measure customer satisfaction.
10	Environmental Management	Water and sewerage activities are environmentally sustainable. Meet community expectations and legislative requirements.	Assess and manage environmental risks.
11	Operations	Operate the water supply and sewerage assets in a safe and cost-effective manner which meets the required LOS. Operations issues do not cause a failure to meet the LOS.	Operate the schemes in accordance with documented system procedures, rules and due diligence programs.
12	Maintenance	Maintain the water supply and sewerage assets in a cost-effective manner which meets the required LOS. Maintenance issues do not cause a failure to meet the LOS.	Maintain the schemes in accordance with documented procedures.

BYRON SHIRE COUNCIL

STRATEGIC BUSINESS PLAN

Key Result Area	Objective	Performance Target	Strategy
13 Capital Works	Adequate water supply and sewerage infrastructure is provided for present and future customers.	Infrastructure capacity and condition issues do not cause a failure to meet the LOS.	Review and implement the capital works programs.
14 Human Resources	Appropriate and qualified staff delivers the water supply and sewerage services in a safe manner.	Sufficient and adequately trained staff can provide the LOS. Zero WH&S incidents.	Ensure all staff training is up to date.
15 Financial Planning	Regularly prepare and implement a long term financial plan to provide required services.	Full cost recovery.	Review and update long-term financial plans and pricing.

Financial Planning

Thirty year financial plans have been developed for the water supply and sewerage businesses. The financial plans indicate the typical residential bills for water supply and sewerage.

It is recommended that Council consider reducing the water supply TRB by 1.6% in 2018 and maintaining the TRB at this level for the medium-term. The TRB in 2017/18 would be approximately \$629 p.a. when inflation is considered. The following figure shows the price path from 2018 in 2018\$.

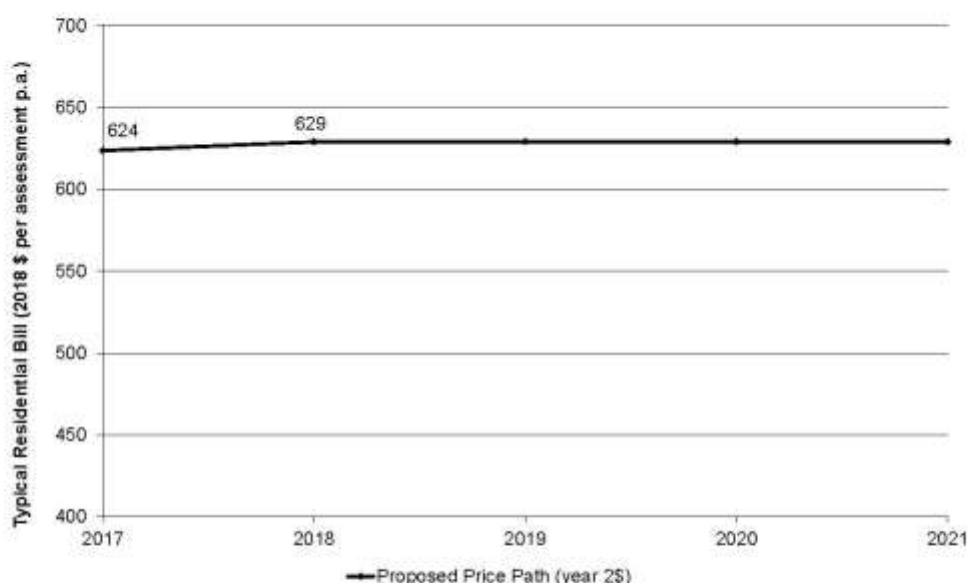


Figure 3: Proposed Water Supply Price Path

It is recommended that Council consider reducing the sewerage TRB by 9% in 2018 and maintaining the TRB at this level for the medium-term. The TRB in 2017/18 would be approximately \$1,047 p.a. when inflation is considered. The following figure shows the price path from 2018 in 2018\$.

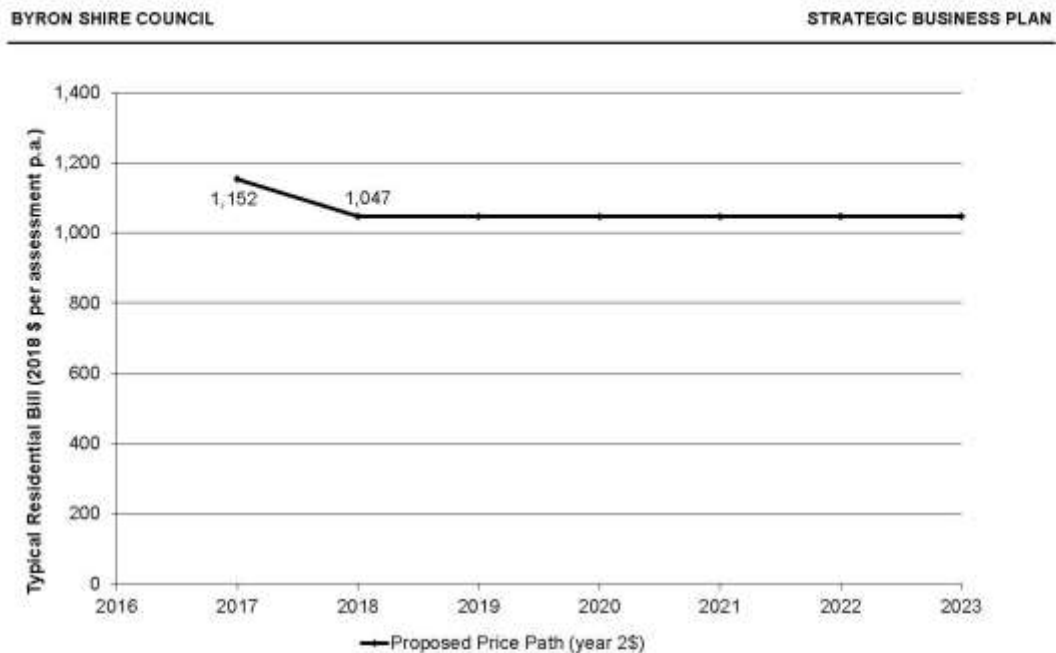


Figure 4: Proposed Sewerage Price Path

Council may elect to pay dividends from the water supply and/or sewer businesses to the General Fund. In order for BSC to make such payments, the price path will need to be increased to create a surplus that will enable dividend payment.

The TRBs should be checked and adjusted annually in accordance with changes to the CPI.

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1. INTRODUCTION

This Strategic Business Plan (SBP) sets out the long term plans for the development, operation, management and maintenance of the Byron Shire Council (BSC) water supply and sewerage schemes.

The SBP provides guidance for future management of the BSC water supply and sewerage businesses to:

- Focus attention on the key issues affecting the day to day operations of water supply and sewerage services;
- Demonstrate to stakeholders that the schemes are well managed;
- Identify the financial and other resources required to operate the services;
- Provide a long-term price path for services; and
- Provide information for Council's Resourcing Strategy as required for compliance with the Integrated Planning and Reporting Framework.

The development of this SBP has followed the process illustrated in Figure 5.

The SBP will be reviewed and updated every four years or eight years after the review of Council's Integrated Water Cycle Management (IWCM) Strategy. The Financial Plans will be reviewed annually as part of Council's annual budgets.

The SBP addresses the requirements of the Water Supply and Sewerage Strategic Business Planning and Financial Planning check list (July 2014) published by the NSW Office of Water (refer Appendix 1).

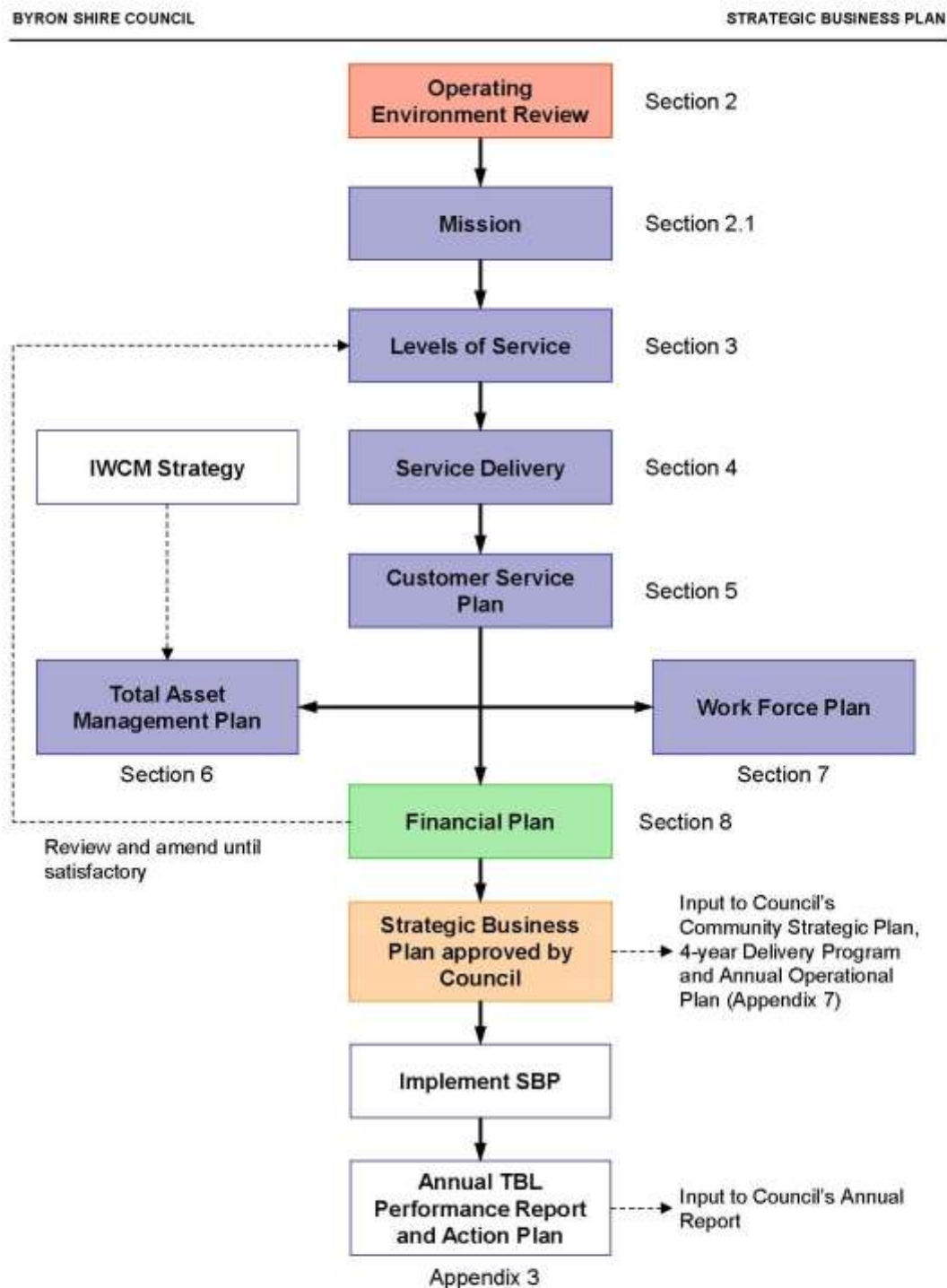


Figure 5: The Strategic Business Planning Process

1.1 Existing Water Supply Schemes

BSC provides reticulated water supply services to the main towns and adjacent areas of Ocean Shores, Brunswick Heads, Mullumbimby, Byron Bay, Suffolk Park and Bangalow. Plans of the water supply systems are included in Appendix 2.

The water supply for Mullumbimby is sourced from Lavertys Gap Weir, in the Wilsons River sub-catchment of the Richmond River and treated at the Mullumbimby WTP.

Council distributes water purchased from Rous County Council through four separate distribution systems:

- Bangalow;
- Brunswick Heads;
- Byron Bay including Suffolk Park; and
- Ocean Shores including New Brighton, South Golden Beach and Billinudgel.

In 2014/15 there were 9,774 residential properties and 1,446 non-residential properties connected to the BSC water supply systems. The water supply systems serve a permanent population of 20,700 people and a peak population of 35,200 people (DPI-Water, 2016a).

Rous County Council also supplies approximately 400 retail customers in Byron Shire with water directly from its trunk mains.

The water network in Byron Shire is shown on Figure 6.

1.1.1 Water Supply Development Projections

Growth projections for the water supply service areas are shown in the following table as the number of water supply equivalent tenements (ETs). These projections are from the 2015 to 2045, which is Council's current planning horizon.

Table 4: Growth Projections – Water Supply ETs

Year	Bangalow	Brunswick Heads	Byron Bay	Mullumbimby	Ocean Shores	All Areas	5 Year Growth p.a.
2015	843	1,105	6,703	1,861	2,833	13,345	2.0%
2020	1,079	1,305	7,722	2,122	3,039	15,267	2.9%
2025	1,365	1,534	8,641	2,295	3,172	17,007	2.3%
2030	1,451	1,670	9,411	2,511	3,259	18,863	1.5%
2035	1,644	1,816	10,268	2,701	3,378	19,807	1.6%
2040	1,908	1,984	11,461	2,930	3,535	21,817	2.0%
2045	2,216	2,168	12,567	3,144	3,679	23,773	1.8%

BYRON SHIRE COUNCIL

STRATEGIC BUSINESS PLAN

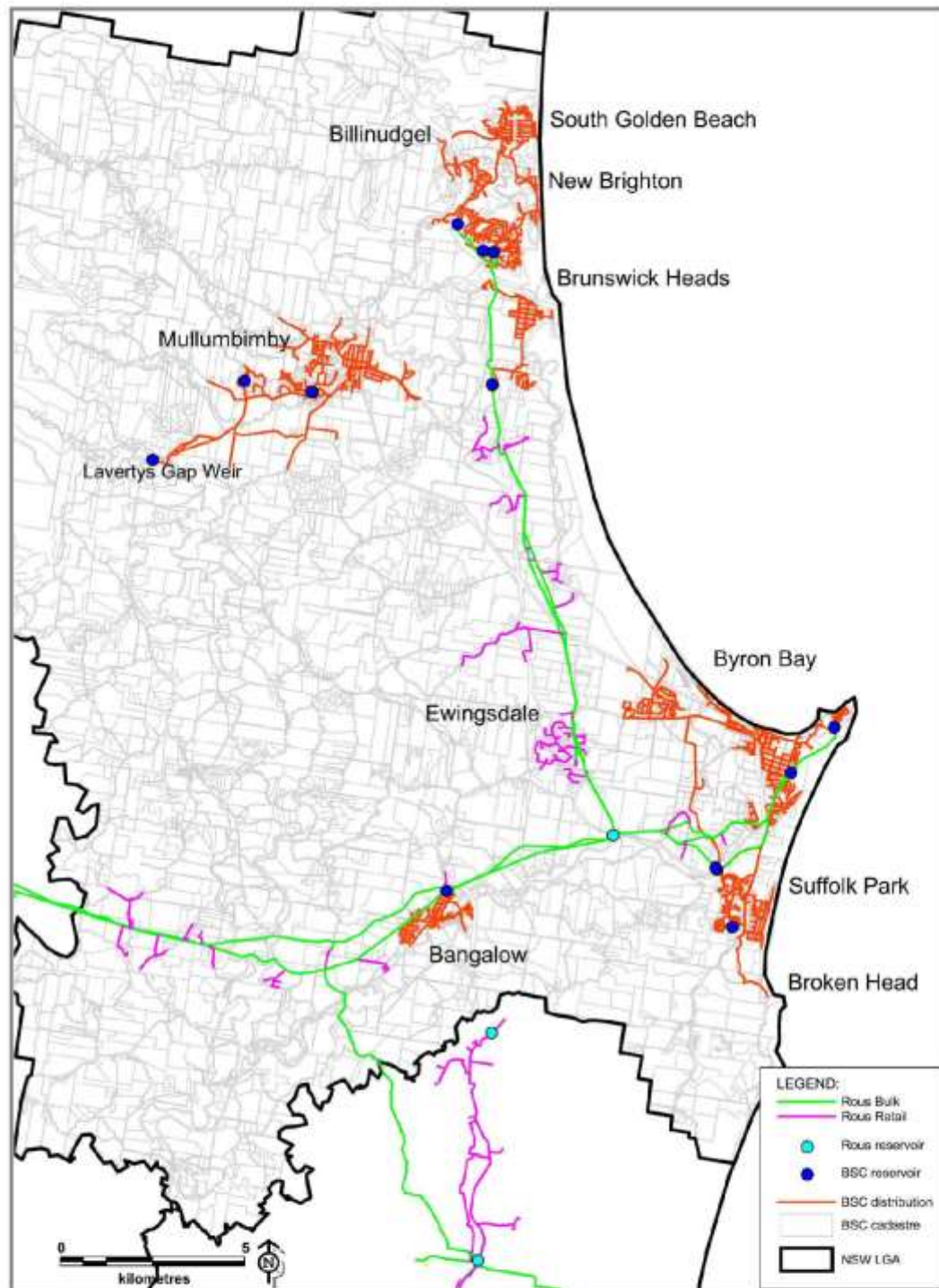


Figure 6: Rous County Council and BSC water supply networks in Byron Shire

Source: Hydrosphere Consulting (2016a)

1.2 Existing Sewerage Schemes

Council has four sewage treatment plants (STPs) at Bangalow, Ocean Shores, West Byron and Brunswick Heads serving the urban areas of Byron Shire. Plans of the sewerage systems are included in Appendix 2.

The Bangalow STP is a membrane bio-reactor that utilises biological activity for the treatment of the sewage followed by microfiltration through membranes as a final polishing process.

Sewage from the towns of Mullumbimby and Brunswick Heads is treated at the Brunswick Valley STP in Mullumbimby. The STP includes physical, chemical and biological treatment, including tertiary treatment in a 10 ha constructed wetland.

Ocean Shores STP currently serves the urban areas of Ocean Shores, New Brighton, South Golden Beach and Billinudgel. Council plans to redirect sewage from these catchments to be treated at the Brunswick Valley STP.

The West Byron STP serves the urban areas of Byron Bay and Suffolk Park. The STP was upgraded in 2005 to include constructed wetlands, recycled water irrigation of playing fields, golf courses and nurseries and beneficial reuse of biosolids.

The BSC sewerage schemes are shown on Figure 7.

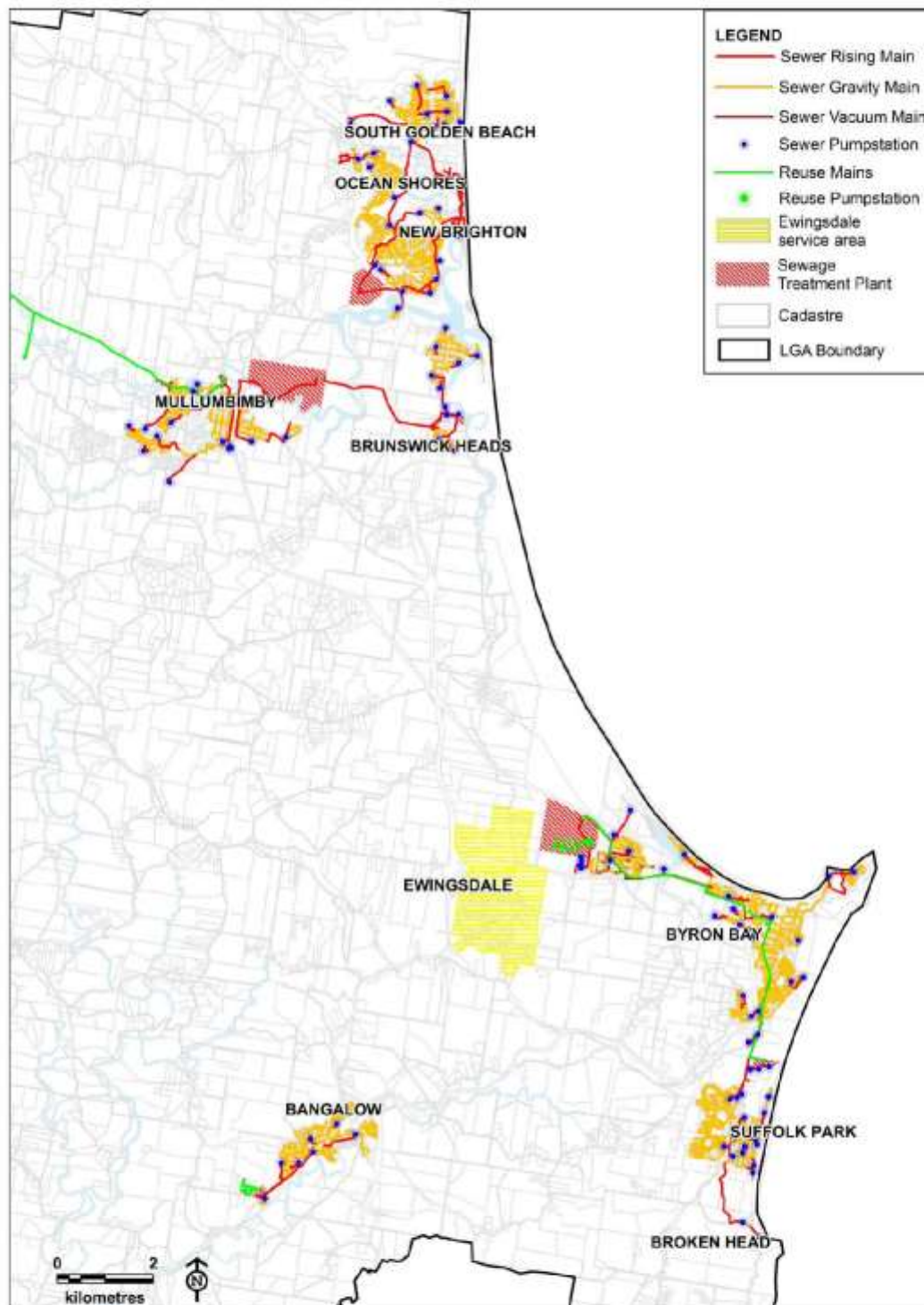
In 2014/15 there were 9,220 residential properties and 1,440 non-residential properties connected to the BSC sewerage systems. The sewerage systems serve a permanent population of 20,500 people and a peak population of 34,900 people (DPI-Water, 2016a).

1.2.1 Sewerage Development Projections

Growth projections for the sewerage service areas are shown in the following table as the number of sewerage equivalent tenements (ETs). These projections are from the 2015 to 2045, which is Council's current planning horizon.

Table 5: Growth Projections – Sewerage ETs

Year	Bangalow	Brunswick Heads	Byron Bay	Mullumbimby	Ocean Shores	All Areas	5 Year Growth p.a.
2015	843	1,028	6,319	1,541	2,848	15,148	1.8%
2020	1,079	1,213	8,471	1,771	3,055	18,574	4.5%
2025	1,365	1,433	9,417	1,918	3,189	20,672	2.3%
2030	1,451	1,561	10,669	2,109	3,276	22,736	2.0%
2035	1,644	1,696	12,168	2,269	3,395	25,138	2.1%
2040	1,908	1,850	12,886	2,466	3,553	26,980	1.5%
2045	2,216	2,021	13,793	2,645	3,698	29,038	1.5%



2. OPERATING ENVIRONMENT REVIEW

2.1 Mission Statement

Council's water supply and sewerage mission is to:

Provide services and infrastructure that sustain, connect and integrate communities and infrastructure.

2.2 Institutional Arrangements

2.2.1 Water Supply Agreement

Rous County Council supplies treated water to BSC. BSC is responsible for reticulating the water to customers within the bulk supply areas of the LGA.

A water supply agreement has been developed between Rous County Council and its constituent councils. This agreement has no fixed term and will continue until terminated. The purpose of the agreement is to define roles and responsibilities for the management of water supply within the area of operations of the five Councils. It is also intended to serve as a cooperative agreement to formalise the LOS and the working relationships between the Councils.

2.2.2 NOROC

BSC is a member of the Northern Rivers Regional Organisation of Councils (NOROC). The objectives of NOROC are to:

- Provide a forum and vehicle for cooperative action on issues of regional significance and concern to Local Government requiring advocacy and/or political representation;
- Act as an advocate for the region to the Commonwealth and NSW Governments to advance the interests of the region; and
- Seek from governments, financial assistance, legislative and/or policy changes and additional resources required by the region.

2.2.3 Northern Rivers Water Group

The Northern Rivers Water Group involves the General Managers, Directors and Water Managers of seven Local Water Utilities (LWUs) including Councils of Ballina Shire, Byron Shire, Lismore, Kyogle, Richmond Valley, Tweed Shire and Rous County Council. These Councils are all members of NOROC.

A Memorandum of Understanding (MoU) documents the aims of the Group:

- To provide a foundation for the development of co-operative partnership/s between the parties to deliver best practice water supply and sewerage services to the Northern Rivers region of NSW; and
- To optimise the sharing of resources (staff, equipment, materials, specialist knowledge and capabilities) and in the delivery of services.

The MoU has specific short term objectives to develop projects including:

- A regional drinking water management system incorporating an implementation strategy;
- A regional approach to water supply demand management;
- Agreed protocols and processes in effective sharing of resources ;

- A regional best-practice pricing strategy; and
- Operational objectives and methodologies for benchmarking across the region and across regional water utilities in New South Wales and across Australia.

The term of this MoU is two years with renewal from year to year. Each of the member councils is responsible for its own costs associated with participation, support and delivery of objectives. Each party will contribute an equal share to the costs associated with the resource sharing process.

2.2.4 Legislative Framework and Statutory/Regulatory Obligations

As a local government owned business, BSC is subject to a number of legislative obligations and requirements including:

- Key legislation:
 - *Local Government Act, 1993, and Local Government (General) Regulation 2005;*
 - *Environmental Planning and Assessment (EP&A) Act, 1979;*
 - *Water Management Act, 2000;*
 - *Water Act, 1912;*
 - *Protection of the Environment Operations (POEO) Act, 1997;*
 - *Public Health Act, 2010;*
 - *Fisheries Management Act, 1994;*
 - *Work Health and Safety Act 2011 and Regulation 2011;*
 - *Competition Policy including Competition Policy Reform Act, 1995;*
 - *Water Industry Competition Act, 2006;*
 - *Dam Safety Act, 2015;*
 - *Fluoridation of Public Water Supplies Act, 1957;*
 - *Independent Pricing and Regulatory Tribunal Act 1992;*
- Environmental Planning Instruments:
 - *SEPP Building Sustainability Index (BASIX), 2004;*
 - *State and Regional Development SEPP, 2011;*
 - *SEPP Infrastructure, 2007;*
 - *Eurobodalla LEP 2012;*
 - *Development Control Plans (DCPs);*
- Guidelines:
 - *Best Practice Management of Water Supply and Sewerage Guidelines;*
 - *Australian Drinking Water Guidelines (ADWG, 2011);*
 - *Australian Guidelines for Water Recycling (AGWR): Managing Health and Environmental Risks (2006);*
 - *NSW Interim Guidelines for Management of Private Recycle Schemes (2008);*

- ◊ *NSW Guidelines for Greywater Reuse in Sewered, Single Household Residential Premises (2008);*
- ◊ *Environmental Guidelines: Use and Disposal of Biosolids Products (2000);*
- ◊ *Environment and Health Protection Guidelines: On-site Sewage Management for Single Households (known as the 'Silver Book'), 1998;*
- ◊ *Managing Urban Stormwater: Soils and Construction Guidelines;*
- Water Act Extraction Licences; and
- Environment Protection Licences for sewerage schemes.

In general, more regulation, stringent enforcement and fewer subsidies from government are imposing a heavy burden on Council's management responsibilities and hence on its finances. In addition, recent government policies tend to transfer more regulatory responsibilities to Local Government that further burdens Council's limited resources.

2.2.5 Community Strategic Plan

The BSC *Community Strategic Plan 2022* is a 10 year vision which sets out the strategic direction which Council will follow in achieving the needs of the community. The community was involved in the preparation of this plan through discussions with Council about funding priorities, service levels, preserving local identity and to plan for a more sustainable future.

The plan's framework is built around 5 key themes: corporate management, economy, society and culture, environment, community infrastructure. Key community outcomes were developed for each theme from community desires for the future of Byron Shire. Aims, strategies and measures were set for each community outcome. The key community outcomes that are relevant to the water supply and sewerage businesses are:

- Corporate Management:
 - ◊ CM1 - Effective governance, business, project and financial management
 - ◊ CM2 - Informed and engaged community
 - ◊ CM3 - Effective partnerships with all levels of government
- Economy:
 - ◊ EC2 - A sustainable tourism industry that respects and promotes our natural environment and community values
- Environment:
 - ◊ EN1 - Protect and enhance the natural environment
 - ◊ EN2 - Sustainable towns, villages and rural settlements that: a) respect our natural environment, b) create an inclusive social environment and, c) integrate harmoniously with the character of local areas
- Community Infrastructure:
 - ◊ CI1 - Planning for the future
 - ◊ CI2 - Provision of essential services
 - ◊ CI3 - Renew and maintain existing infrastructure
 - ◊ CI4 - Develop new infrastructure

2.2.6 Organisation Structure

Council delivers services to the community through three departments and the General Manager's Office. Water and sewer services are provided through the Utilities Group of the Infrastructure Services department. The Water and Sewer Services organisation chart is shown in Figure 8.

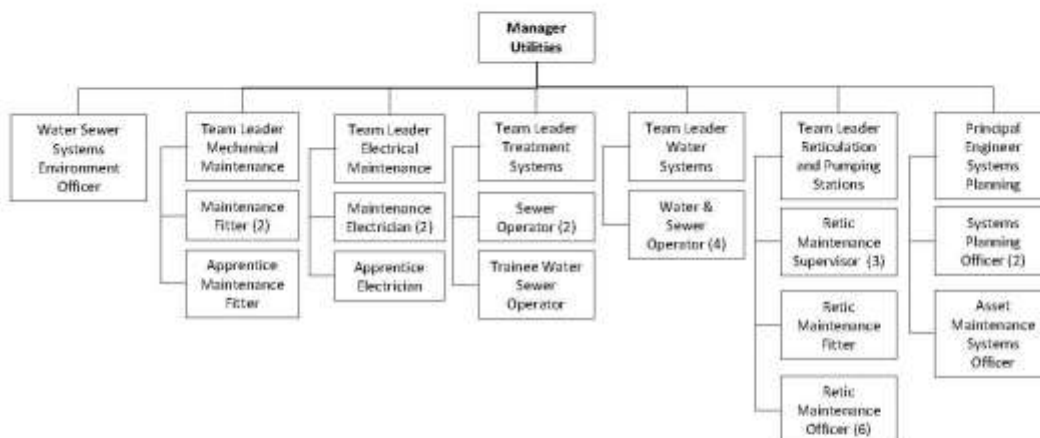


Figure 8: BSC Water and Sewer Services Organisation Chart

2.3 Situation Analysis

Compliance with the BSC's operating environment is reported through:

- Review of the IWCM Strategy and this SBP;
- EPL Annual returns;
- Review of the Drinking Water Management System (DWMS); and
- Annual Performance Indicator reporting.

BSC complies with all legislative and contractual requirements.

BSC generally complies with EPA sewerage system licences apart from occasional exceedances of pollutant concentration limits. Pollution reduction programs are being negotiated with NSW EPA.

2.3.1 Best-Practice Management

The NSW Government encourages best-practice by all NSW LWUs. The purpose of best-practice management is:

- To encourage the effective and efficient delivery of water supply and sewerage services; and
- To promote sustainable water conservation practices and water demand management throughout NSW.

Through the NSW Government's *Country Towns Water Supply and Sewerage Program*, sections 283 to 322 of the *Water Management Act 2000*, and sections 56 to 66 of the *Local Government Act 1993*, the Minister for Water is responsible for overseeing the performance of LWUs.

The *Best Practice Management of Water Supply and Sewerage Guidelines* (DWE, 2007) were prepared to encourage continuing improvement in performance and identify criteria for best practice management of water supply and sewerage.

In 2014/15 BSC has achieved 100% compliance with the Best-Practice Management (BPM) Guidelines as discussed in Table 6 and Table 7.

Table 6: 2014/15 Compliance with BPM Criteria: Water Supply

Criterion	Compliance	Comments
(1) Complete Current Strategic Business Plan and Financial Plan	Yes	This document
(2) Pricing (full cost-recovery, without significant cross subsidies)		
(2a) Complying Residential Charges	Yes	Revenue from residential usage charges is slightly below 75% of total residential revenue. Refer Section 5.5.
(2b) Complying non-Residential Charges	Yes	
(2c) DSP with Commercial Developer Charges	Yes	The DSP will be adopted in 2016.
(3) Complete Performance Reporting Form (by 15 September)	Yes	Completed
(4) Sound Water Conservation Implemented	Yes	Refer Section 5.2
(5) Sound Drought Management Implemented	Yes	Refer Section 5.3
(6) Integrated Water Cycle Management Strategy	Yes	A review of the IWCM Strategy will be undertaken in 2017. Refer Section 2.4.

Table 7: 2014/15 Compliance with BPM Criteria: Sewerage

Criterion	Compliance	Comments
(1) Complete Current Strategic Business Plan and Financial Plan	Yes	This document
(2) Pricing (full cost-recovery, without significant cross subsidies)		
(2a) Complying Residential Charges	Yes	Refer Section 5.5
(2b) Complying non-Residential Charges	Yes	
(2c) Complying Liquid Trade Waste Fees and Charges	Yes	Refer Section 5.5
(2d) DSP with Commercial Developer Charges	Yes	The DSP was adopted in 2016
(2e) Liquid trade waste approvals and policy	Yes	Liquid Trade Waste Policy adopted in 2006 and reviewed in 2014.
(3) Complete Performance Reporting Form (by 15 September)	Yes	Completed
(4) Integrated Water Cycle Management Strategy	Yes	A review of the IWCM Strategy will be undertaken in 2017. Refer Section 2.4.

2.3.2 Performance Monitoring

The NSW Office of Water collects and analyses performance data for water and sewerage schemes in NSW (Triple Bottom Line (TBL) reporting). Data is collated by BSC for submission to the Office of Water after each financial year. The data address utility characteristics, social, environmental and economic aspects of water supply and sewerage businesses. The performance reports for BSC water supply and sewerage (2014/15) are included in Appendix 3.

This SBP includes a review of BSC's performance as documented in the TBL reports. A summary of improvement actions is given below.

Table 8: Required TBL Improvement Actions - Sewerage

Indicator		Result (2014/15)	Ranking (2014/15) ¹	Comment/Action
9	Renewals expenditure	0.2% of current replacement cost of system assets	Low ranking (4, 5)	Asset renewal projects and projected expenditure have been reviewed as part of the development of this SBP and Financial Plan. The predicted result for 2016/17 is 0.4%.
18	Percent of sewage volume that complied	97% of sewage treated	Low ranking (4, 4)	Major upgrades of the Ocean Shores, Byron Bay and Bangalow sewage treatment systems are planned to address treatment performance.
19	Sewage treatment works compliant at all times	2 of 4	-	
21	Odour complaints	1.3 per 1,000 properties	Low ranking (4, 5)	
25	Total days lost	5.8%	Lowest ranking (5, 5)	One of Council's strategies to address several workforce issues is to make work health and safety the highest priority.
26	Volume of sewage collected	291 kL per property	Lowest ranking (5, 5)	Inflow and infiltration reduction strategies have been implemented. Demand management measures will be considered in the review of the IWCM Strategy.
50	Operating cost	\$680 per property	Lowest ranking (5, 5)	The relatively high operating cost is due to low development density, topography, 4 discrete schemes and economies of scale.
52	Treatment cost	\$296 per property	Lowest ranking (5, 5)	The STPs provide advanced secondary, tertiary and advanced tertiary treatment. Major upgrades of the Ocean Shores, Byron Bay and Bangalow sewage treatment systems are planned and modernised facilities will provide cost-efficiencies.
54	Pumping cost	\$114 per property	Lowest ranking (5, 5)	The relatively high pumping cost is due to low development density, topography and 4 discrete schemes.

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Indicator	Result (2014/15)	Ranking (2014/15) ¹	Comment/Action
55 Sewer main cost	\$102 per property	Lowest ranking (5, 5)	The relatively high pumping cost is due to low development density and 4 discrete schemes.
56 Capital expenditure	\$80 per property	Lowest ranking (5, 4)	The capital works program has been reviewed as part of the development of this SBP and Financial Plan.

1. (Ranking relative to similar size LWUs >10,000 connected properties, ranking relative to all LWUs in NSW). The rankings are based on quintile groupings, with the top 20% of LWUs for each indicator being ranked 1 and the bottom 20% being ranked 5 (e.g. LWUs in the range 40% to 60% are ranked 3).

Table 9: Required TBL Improvement Actions – Water Supply

Indicator	Result (2014/15)	Ranking (2014/15) ¹	Comment/Action
9 Renewals expenditure	0.2% of current replacement cost of system assets	Lowest ranking (5, 4)	Asset renewal projects and projected expenditure have been reviewed as part of the development of this SBP and Financial Plan. The predicted result for 2016/17 is 3.2%.
32 Total days lost	5.5%	Lowest ranking (5, 5)	One of Council's strategies to address several workforce issues is to make work health and safety the highest priority.
33 Average annual residential water supplied	180 kL/property	Low ranking (4, 2)	Byron Shire residents have slightly higher demand compared to other Councils in the region and the state. Demand management measures will be considered in the review of the IWCM Strategy.
49 Operating cost	\$482 per property	Low ranking (4, 2)	The relatively high operating cost is due to low development density, topography, 5 discrete schemes and economies of scale.
56 Capital expenditure	\$31 per property	Lowest ranking (5, 5)	RCC is responsible for a significant component of the capital expenditure.

1. (Ranking relative to similar size LWUs >10,000 connected properties, ranking relative to all LWUs in NSW). The rankings are based on quintile groupings, with the top 20% of LWUs for each indicator being ranked 1 and the bottom 20% being ranked 5 (e.g. LWUs in the range 40% to 60% are ranked 3).

2.3.3 Service Provision Review

An analysis of BSC's performance within each of the key result areas (refer Figure 5) is given in Table 10.

Table 10: Service Provision Review

Key Result Area	SBP Reference	Current Position	Future Position
Levels of Service	Section 3	The adopted LOS reflect the current performance of the water supply and sewerage systems.	The LOS will be reviewed as part of Council's ongoing asset management planning process.
Service delivery	Section 4	The majority of operations and maintenance activities are undertaken by Council's in-house staff. Most major capital works are contracted out, including design, construction and commissioning. Generally transport system design and construction work are undertaken by Council. Where considered beneficial, BSC identifies and implements opportunities for sharing of resources and utilising joint contracts with other parts of Council and with neighbouring water utilities.	No major changes to the method of service delivery are expected.
Areas serviced	Section 5.1	Water supply and sewerage services are currently provided to approximately 20,500 residents (70% of the LGA population). Small villages and rural areas rely on rainwater tanks, bore water supplies and on-site sewerage systems.	Water supply and sewerage services will be extended to new development areas adjacent to existing service areas as required.
Demand management	Section 5.2	Residential water demand (180 kL/property/a in 2014/15) is higher than the median of LWUs with > 10,000 properties (170 kL/property/a) and the average of all NSW LWUs (166 kL/property/a). Demand management strategies have been adopted.	Future demand is predicted to increase with population growth. Demand per connection is expected to decrease with current and future demand management initiatives.
Pricing and regulation of services	Section 5.5	Water supply and sewer tariffs have been reviewed as part of this SBP. Development servicing plans for water supply and sewerage were adopted in 2016. Best-practice trade waste pricing has been implemented.	The pricing structure will be reviewed on an annual basis to ensure full cost recovery.

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Key Result Area	SBP Reference	Current Position	Future Position
Customer/ community involvement	Section 5.6	BSC has adopted a Community Engagement Policy and Complaints Management Policy. BSC engages the community in decision making by using various communication channels that are relevant to residents and stakeholder groups.	Council will determine the need for community consultation and techniques to be used for each project as they arise.
Environment protection	Section 5.7	Compliance with the requirements of sewerage system environment protection licences is generally achieved. Environmental impacts of water supply and sewerage projects are considered in the development of asset management projects.	BSC will continue to maintain compliance with the sewerage system environment protection licences and ensure environmental sustainability of the water supply and sewerage schemes.
IWCM	Section 2.4	The IWCM Strategy was adopted in 2009. BSC has progressively implemented components of the IWCM strategy as well as ongoing strategic investigations.	A review of the IWCM Strategy will be undertaken in 2017.
Operation	Section 6	Water supply assets have a total value of \$91.5m (2015). Sewerage assets have a total value of \$203.5m (2015). Asset condition was assessed in 2012 as part of the asset revaluation. Operating procedures for the key water and sewer assets have been developed.	Asset management plans will be reviewed and updated in 2017. Assets will be progressively renewed in accordance with the capital renewal program.
Maintenance	Section 6.4	Corrective maintenance is undertaken following complaints and as identified during routine inspections and CCTV surveys.	Asset management plans will be reviewed and updated in 2017 with increased emphasis on scheduled maintenance.
Water Supply capital works	Section 6.5	BSC has developed a 30-year capital works program for water supply including renewals, works to improve LOS and growth works that is reviewed annually.	The capital works programs will be reviewed on an annual basis.
Sewerage capital works	Section 6.5	BSC has developed a 30-year capital works program for sewerage including renewals, works to improve LOS and growth works that is reviewed annually.	The capital works programs will be reviewed on an annual basis.
Work Force	Section 7	The BSC Utilities Group includes 36 FTE staff reporting to the Manager Utilities.	Workforce and training needs are reviewed on an annual basis.

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Key Result Area	SBP Reference	Current Position	Future Position
Finance	Section 8	<p>The BSC sewerage fund is financially stable with cash level of \$11.7 million and debt of \$50 million.</p> <p>The BSC water supply fund is financially stable with cash level of \$13.4 million and nil debt.</p> <p>Funding sources include annual water supply and sewerage customer charges, developer charges, loans and grants. A mixture of these sources is used to fund capital works. Developer charges and annual charges will generally fund works for growth. Government grants may be available for improving the LOS. Loans are required if sufficient cash is not available.</p>	Financial plans will be reviewed annually to ensure full cost recovery and financial sustainability.

2.4 Integrated Water Cycle Management

An IWCM Strategy was prepared in 2009. The adopted IWCM scenario included the following actions:

- Estuary and floodplain management planning – Belongil and Brunswick estuaries and Tallow Creek;
- Riparian zone rehabilitation;
- Road sealing;
- Sewerage system augmentation;
- Mullumbimby inflow and infiltration program;
- Rainwater tank incentives;
- Stormwater development controls;
- Urban Stormwater Management Plan;
- Emergency response planning;
- Stormwater quality improvements;
- On-site sewerage system management;
- Greywater reuse management;
- Catchment management planning;
- Water quality data management;
- Energy management planning;
- Effluent management strategy;
- Demand management; and
- Best-practice management.

The water supply and sewerage actions are progressively being implemented by BSC. A review of the IWCM Strategy will be undertaken in 2017 to address the strategic planning issues raised in this SBP including demand management, growth servicing and recycled water management.

Review of IWCM Assumptions

The review of the IWCM Strategy will confirm whether the actions in the IWCM Strategy have adequately addressed the identified issues. A review of the principal assumptions and risks underpinning the IWCM Strategy is given below:

Assumption 1 – potential unplanned increase in water demand due to a water intensive industry, large new development, etc.

No new large water users have been identified. A secure yield assessment for Mullumbimby water supply will be prepared once data on stream flows are available.

Assumption 2 – potential unexpected changes to existing water access/use licence regime

The *Water Sharing Plan for the Richmond River Area Unregulated, Regulated and Alluvial Water Sources* commenced in October 2010. The Mullumbimby water supply is part of the Bangalow Area Water Source. The licence entitlement is unchanged (545 ML/a).

Assumption 3 – significant potential changes to raw water quality and/or non-compliance with ADWG 2011

There is not expected to be any change in land use that would affect raw water quality. More intense storms due to climate change may impact on raw water quality in the future. Improvement actions have been identified in the DWMS to improve the response to changes in raw water quality.

Assumption 4 – unexpected major change in distribution system characteristics.

None identified. Deterioration of the distribution system assets is being addressed through the renewal program.

Assumption 5 – unexpected extension/provision of water service to a new area/urban centre.

Extension of services is undertaken to service growth as discussed in Section 5.1.

Assumption 6 – potential unexpected increase in sewage load due to industry, large development, etc.

No new industry or large development has been identified.

Assumption 7 – unexpected changes in sewage transport system characteristics.

None identified. Deterioration of the transport system assets is being addressed through the renewal program.

Assumption 8 – potential unexpected changes to existing sewerage management licence regime.

The EPA has not foreshadowed any changes to licence conditions apart from Pollution Reduction Programs to be negotiated with BSC.

Assumption 9 – unexpected extension/provision of sewerage service to new area/urban centre.

Identified extension of services is documented in Section 5.1.

2.5 Drinking Water Quality Management

A Drinking Water Management System (DWMS) was adopted in April 2012 to manage potable supply in Byron Shire. A review of the DWMS implementation was undertaken in 2014 and in September 2016.

(Huxley, 2016). Continuous improvement actions identified in the DWMS and the 2016 review are documented in the following table:

Table 11: Water Quality Improvement Actions

Action No	Item	Comments	Completion Date	Who is responsible
New Improvement Actions Identified 2016 DWMS Review				
1/2016	Reservoir Roof Maintenance Inspections frequency to change to 3 – 6 mthly from yearly	Council will Update CRM in-line with the scheduled annual maintenance due in Sept 2016	September 2016	Manager Utilities
2/2016	Scour reticulation mains	Council has submitted a Tender for the works	June 2017 (In progress)	Manager Utilities
3/2016	Continue planning process to remove the telecommunications towers from Reservoirs	Reservoir Sites Antenna ID Report completed SWMS completed Staff training completed	2018 (In progress)	Manager Utilities
In progress (2012 / 2014 DWMS)				
1	Update WASP database with the CCP monitoring limits and corrective actions	Council has engaged a consultant to work in-house to update WASP	January 2017	Manager Utilities
4	Include water quality monitoring of reticulated system: <ul style="list-style-type: none"> Left Bank distribution system Tongarra distribution system 	Council commenced monitoring Left Bank and Tongarra Reservoirs in 2014. Need reticulation monitoring from both reservoirs.	October 2016	Manager Utilities
Completed (2012 / 2014 DWMS)				
2	Council to expand water quality monitoring to include: <ul style="list-style-type: none"> Mullumbimby - Left Bank Reservoir Byron – Tongarra Reservoir 		Completed 2014	Manager Utilities
3	Review and update Drinking Water Quality Monitoring Plan (#1121196)		Completed 2014 / 2016	Manager Utilities
8	Visible emergency phone number to report incidences in the Wilson Creek Catchment e.g. signage, letter/magnet drop off		Completed 2015	Manager Utilities
12	Council to develop a response plan if weir fails (Drought Management Plan)		Completed 2014	Manager Utilities
13	Document a system to ensure appropriate operator training and education Document specific water operator qualification criteria to ensure consistency in approach		Completed 2014	Manager Utilities

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Action No	Item	Comments	Completion Date	Who is responsible
14	Council to endorse Draft Drinking Water Quality Policy		Completed 2014	Manager Utilities
15	Update Council Website with information on Drinking Water Management System		Completed 2014	Manager Utilities
16	Review Rous Water Supply Agreement (2008) in line with BSC revised monitoring regime		Completed 2014	Manager Utilities
17	Review trigger alarms targets for turbidity at the filters in response to the 2011 ADWG recommendation. Calculate C.t		Completed 2014	Manager Utilities
Ongoing (2012 / 2014 DWMS)				
6	Liaise with CMA on catchment improvement initiatives e.g. Septic systems; Agricultural practices; Riparian rehabilitation; Land clearing		Ongoing	Manager Utilities
7	Increase inspection of Onsite Sewage Management systems within Upper Wilsons Creek Catchment or close to weir / race		Ongoing	Manager Utilities
9	Update emergency contact details and protocols Annually and after any incidents or emergencies		Ongoing	Manager Utilities
11	Liaise with CMA on catchment improvement initiatives: Educate landholders on fertiliser use to reduce phosphorous in catchment Increase environmental flows in Wilsons River catchment		Ongoing	Manager Utilities
20	Review Operations Manual and Safe Work Method Statements to identify any procedural gaps that may exist in current operational practice. Review and finalise the Water and Sewer Planned Maintenance Manual Identify and adopt appropriate specifications for procurement of materials and services for Water Treatment Plant operations and engagement of consultants for water supply		Ongoing	Manager Utilities
Under consideration (2012 / 2014 DWMS)				
10	Preparation of Business Continuity Plan for BSC Water and Wastewater Services		Under consideration	Manager Utilities
18	Investigate the addition of the following parameters into the BSC monitoring regime: • Disinfection by-products • Radionuclides		Under consideration	Manager Utilities
19	In consultation with Rous Water, review sampling parameters reported to BSC at the inlet to each Reservoir. Currently free chlorine and pH are the only parameters reported.		Under consideration	Manager Utilities

Source: Huxley, J. (2016)

2.6 Risk Profile

Council holds all required insurances related to the water supply and sewerage businesses including buildings and contents, public liability, professional indemnity, Councillors and officers liability, motor vehicles, marine equipment, carriers liability, casual hirers liability, environmental impairment liability, fidelity guarantee, cyber liability and personal accident insurance.

3. LEVELS OF SERVICE

The LOS are the primary driving force for the water supply and sewerage businesses. They explicitly define the standards required from the water and sewerage systems and will largely shape Council's detailed operations, maintenance and capital works planning. The LOS are designed to reflect an optimisation of the desired service provision, what is affordable as well as the system capability. These considerations take into account legislative requirements, industry standards and customer demands. The desired LOS must be balanced against the cost of providing the service. Achieving the LOS is the primary objective. Minimum standards (regulatory requirements) apply for water quality, effluent discharge and biosolids management.

Council may need to revise the LOS in the future in accordance with customer demand and industry trends. The following issues may affect the LOS:

- LOS in the water industry have been generally rising. It is likely that in the future customers would be willing to pay for improved LOS;
- Council's intention is to provide the same LOS to all customers; and
- The majority of customers are likely to demand LOS comparable with those provided by other water authorities.

The LOS for water supply and sewerage are listed in Table 12 and Table 13. The LOS are targets that BSC aims to achieve and are not associated with a customer contract.

Table 12: Water Supply Levels of Service

Description	Unit	Level of Service	
		Current Performance	Target
Social			
Water quality complaints	Per 1,000 properties	0.5	≤ 0.5
Service complaints	Per 1,000 properties	0.3	≤ 0.3
Average frequency of unplanned interruptions	Per 1,000 properties	14	≤ 14
Number of main breaks	Per 100 km	7	≤ 7
Total days lost	%	3.2	≤ 3.2
Environmental			
Average annual residential water supplied	kL per property	175	≤ 175
Real losses	L/service connection/day	80	≤ 80
Economic			
Operating cost	\$ per property	463	≤ 463
Management cost	\$ per property	127	≤ 127

Table 13: Sewerage Levels of Service

Description	Unit	Level of Service	
		Current Performance	Target
Social			
Odour complaints	Per 1,000 properties	2.1	≤ 2.1
Service complaints	Per 1,000 properties	2	≤ 2
Average duration of interruption	Minutes	60	≤ 60
Total days lost	%	3.9	≤ 3.9
Environmental			
Volume of sewage collected	kL per property	350	≤ 350
Percentage Effluent Reuse	%	13	≤ 13
Biosolids reuse	%	100	≤ 100
Sewer main breaks and chokes	Per 100 km of main	32	≤ 32
Sewer overflows to the environment	Per 100 km of main	0.8	≤ 0.8
Economic			
Operating cost	\$ per property	629	≤ 629
Management cost	\$ per property	173	≤ 173
Treatment cost	\$ per property	245	≤ 245
Pumping cost	\$ per property	134	≤ 134
Sewer main cost	\$ per property	45	≤ 45

Objective 1 – Levels of Service

Objective
Operation of the water supply and sewerage systems meets or exceeds the adopted LOS which take into account financial implications, statutory/regulatory requirements, customer desires and industry standards.
Performance Target
100% compliance with the LOS.
Strategy
Monitor and report on LOS being achieved. Address non-compliances. Review of adopted LOS.

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No.	Action	Responsibility	Timing	Cost (\$k)
1.1	Review the LOS.	MU	Sept 2017 and annually.	Included in budget
1.2	Report to Council on compliance with licence STP requirements.	MU	Monthly	Included in budget
1.3	Compile performance indicator (TBL) data.	MU	By September each year	Included in budget
1.4	Develop actions plans in response to TBL Performance Reports in accordance with best-practice requirements and report to Council.	MU	Within 3 months of receipt of TBL Performance Reports	Included in budget

MU: Manager Utilities

4. SERVICE DELIVERY

The service delivery strategy is the means BSC uses to provide or deliver service to its customers. It applies to all three main areas of asset management: operations, maintenance and capital works. It also has significant implications for customer service, human resources and the financial plan. This section outlines options for the delivery of water supply and sewerage services.

The delivery of BSC water supply and sewerage services is the responsibility of the Manager Utilities. Further discussion is provided in the Work Force Plan in Section 7.

In implementing asset management actions such as major capital projects, Council examines the project specific service delivery options and selects the appropriate delivery method for the project.

4.1 In-House Resources and External Contracts

The majority of operational and maintenance tasks for the sewerage and water supply schemes are undertaken by Council's in-house staff. General maintenance activities such as clearing blockages and pump station cleaning are carried out by the operators. The number of services contracted out by Council has been gradually increasing, particularly in areas where specialist services are required. Council intends to contract out work where it is the most effective service delivery option.

Most major capital works are contracted out including design, construction and commissioning. Council uses its own labour force for minor capital works items such as manhole construction and minor pipe extensions. Generally system design and construction and general mains work are undertaken by Council. Most strategic planning, asset management and specialist design services are undertaken by external consultants due to the lack of in-house engineering capacity.

Design and construction for major capital projects identified in this SBP will be undertaken by external contractors.

4.2 Resource Sharing

Where considered beneficial, BSC identifies and implements opportunities for sharing of resources and utilising joint contracts with other parts of Council and with neighbouring water utilities including:

- NOROC;
- Northern Rivers Water Group;
- Government and local government programs where appropriate benchmarking data will result; and
- Rous County Council Liaison Committee.

The Northern Rivers councils have developed the Northern Rivers Local Government Development Design and Construction Manuals. This resource sharing initiative has provided uniform development standards for the region via a clear and comprehensive set of requirements for development infrastructure design and construction.

4.3 Private Sector Investment

Due to the small scale of the planned new assets for BSC, the attraction and participation of private investors appears to be unlikely. Therefore Council does not perceive the opportunity for any private sector investment/ownership in the near future.

5. CUSTOMER SERVICE PLAN

5.1 Areas Serviced

The existing water supply and sewerage schemes are discussed in Section 1. BSC provides water supply and sewerage services to the majority of the urban areas, except for those customers which are connected to the Rous County Council retail supply.

There are approximately 3,500 rural properties in the LGA not connected to a Council water supply or reticulated sewerage system. These properties generally rely on rainwater tanks, groundwater supplies and on-site sewage treatment usually in the form of septic tanks and absorption trenches. Water supply and sewerage services in the rural areas appear to be adequate. BSC is currently investigating the feasibility of transferring Rous County Council's existing retail customers in Byron Shire to BSC.

The BSC on-site sewage management (OSSM) Strategy provides a framework for the management of OSSM systems within the Byron Shire. Council inspects all existing OSSM systems on the basis of their environmental and health risks. Council also approves the installation of all new on-site sewage management systems and those requiring upgrades.

The water supply and sewerage services in the LGA are listed in Table 14.

Table 14: Water Supply and Sewerage Services in Byron Shire

Town/Village	2016 Population (approx.)	Current Water Supplies	Current sewerage facilities
Byron Bay/Suffolk Park	10,000	BSC town water apart from 43 Rous County Council retail customers	BSC sewerage
Ewingsdale	560	Rous County Council retail supply	On-site sewerage systems
Bangalow	1,550	BSC town water apart from 46 Rous County Council retail customers	BSC sewerage
Mullumbimby	3,400	BSC town water apart from 24 Rous County Council retail customers	BSC sewerage apart from 20 unserviced customers (Left Bank Road)
Brunswick Heads	2,200	BSC town water apart from 31 Rous County Council retail customers	BSC sewerage
Ocean Shores/South Golden Beach	5,700	BSC town water	BSC sewerage
Rural north	4,800	Private supplies apart from 77 Rous County Council retail customers	On-site sewerage systems
Rural south	3,500	Private supplies apart from 132 Rous County Council retail customers	On-site sewerage systems

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Council has identified the following future land release areas which will be serviced by Council's existing water supply and sewerage systems:

- Byron Bay:
 - Elements – 1,000 ET by 2041
 - Habitat – 150 ET by 2026
 - Ewingsdale – 1,350 ET by 2031 (sewer only)
 - Mercato - 300 ET
- Bangalow:
 - South of Lismore Road – 30 ET by 2021
 - Rankin Drive – 75 ET by 2026
- Mullumbimby:
 - Tuckerroo – 470 ET by 2041
 - Industrial Estate – 20 ET by 2021
- Brunswick Heads:
 - Bayside – 300 ET by 2031
- Ocean Shores:
 - Roundhouse – 20 ET by 2021
 - Palmer Avenue – 70 ET by 2041.

A new development at West Byron (approximately 1,700 ET by 2041) will also require extension of water and sewerage services by either Council or the private developer.

Objective 2 – Areas Serviced

Objective				
Provide sewerage services to new development and unserviced urban areas where there are identified significant environmental and health risks, community desires and economic feasibility.				
Performance Target				
No environmental or public health impact caused by lack of water and sewerage services. No delay to planned development due to lack of water supply or sewerage services.				
Strategy				
Extend services to new development in accordance with the LEP.				
No.	Action	Responsibility	Timing	Cost (\$k)
2.1	Identify growth areas and develop plans for servicing them	PE	Ongoing	Included in budget
2.2	Monitor performance of septic tanks, and review the health and environmental impact	BSC Environmental Health Unit	Ongoing	Included in budget

PE - Principal Engineer Systems Planning

5.2 Water Supply Demand

Rous County Council is responsible for preparing and implementing a regional demand management strategy while other councils manage water demand in accordance with local demand management plans. BSC continuously works with Rous County Council to progress key demand management priorities. Rous County Council provides rebates to its customers as well as education programs.

BSC has prepared the Mullumbimby Demand Management Plan (2009/10) which incorporates an ongoing partnership with Rous County Council to implement demand management programs. Some of the water conservation measures are:

- BSC has implemented a range of engineering measures including: pressure reduction, flow modulation, planned maintenance, targeted asset replacement, and meter replacement which has reduced the unaccounted for water (UFW) in Mullumbimby from over 20% down to 7%;
- The installation of rainwater tanks in urban areas is encouraged through installation subsidies and reductions in the fixed water access charge;
- BSC has also provided a budget to support programs that encourage the community to purchase and install water efficient technology for indoor plumbing and appliances and also water efficient garden products; and
- Education programs.

UFW in both Byron and Mullumbimby have been assessed by BSC and have reduced to less than 10% as a result of leakage management actions implemented.

The draft BSC Water Asset Management Plan (2012) states that "the baseline demand in the Shire is anticipated to grow by 26% over the 30 year planning period (in comparison to a population growth of 41%)". The impact of the demand management program documented in the IWCM Strategy will be to reduce total demand by 10% in the Byron (bulk) supply area and 9% in Mullumbimby. Peak day demands will be reduced by approximately 3% in both supply areas. The most significant reductions in future demand will come from BASIX. This reflects the assumption that much of the demand management work has already been initiated and is reflected in the demand reductions already achieved.

Water demand monitoring is essential for efficient management of a water supply business and for efficient use of water resources. BSC collects and monitors data on bulk water production, customer consumption and open space consumption for each water supply scheme.

The average Shire-wide BSC residential demand in 2014/15 was 180 kL/residential property with a five-year average of 173 kL/residential property. Demand data from the NSW Water Supply and Sewerage Performance Monitoring Reports are given in Figure 9.

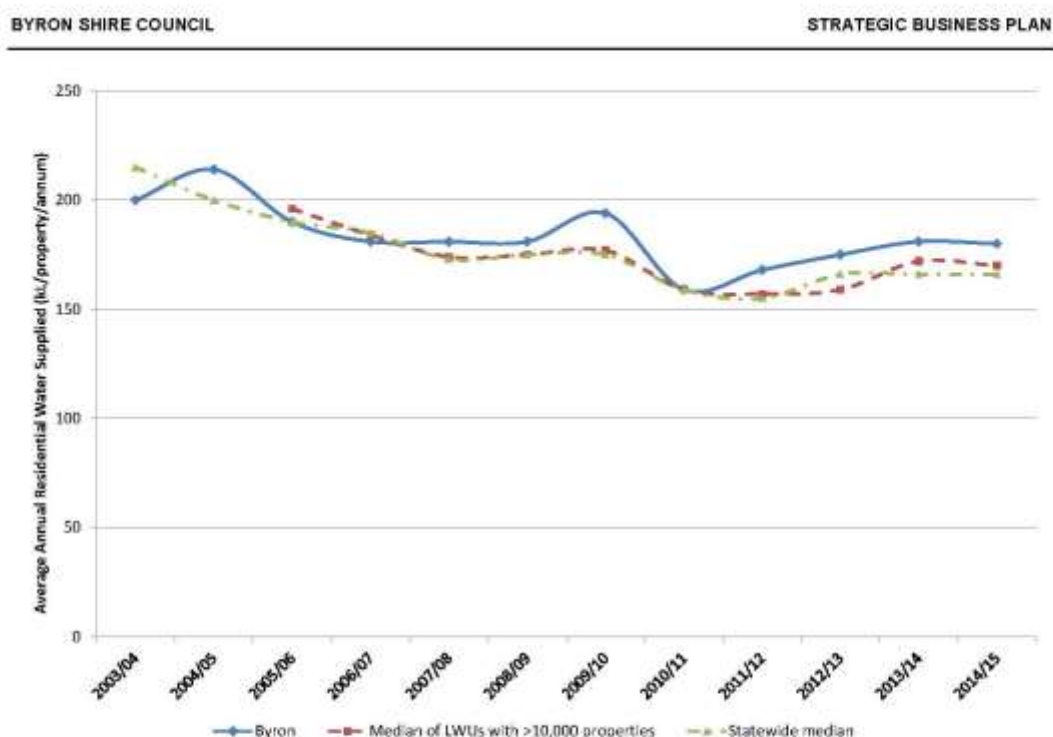


Figure 9: Residential Water Demand

A comparison of average residential water demand with other councils in the region is given below. Byron Shire residents have slightly higher demand compared to other councils in the region and the state.

Table 15: Comparison of Average Residential Water Demand in the Region (2014/15)

LWU	No. of water supply connected properties	Average Residential Water Supplied (kL/property/a)
Byron	11,220	180
Ballina	14,360	181
Lismore	14,320	155
Richmond Valley	7,140	172
Tweed	32,240	178
Median of NSW LWUs with >10,000 properties		170
NSW State Median		166

Source: NSW Office of Water (2016b)

The National Performance Reporting Framework classifies water losses in the distribution system as either apparent losses (unauthorised consumption, retail metering errors) or real losses (leakage and overflows from mains, service reservoirs and service connections prior to customer meters). Non-revenue water (NRW) includes the water lost through unknown leakage, meter inaccuracies, theft, water provided for fire-fighting, known and unavoidable leakage, use of unmetered standpipes plus water lost during emergency and planned maintenance of water mains. This is equivalent to the total sourced potable water less the water sold to customers. The "real losses" represent a wasted resource, reduce the effective capacity of a water supply system and may result in unnecessary operating costs (DPI Water, 2016b).

The NSW Benchmarking Report (DPI Water, 2016b) provides data on real losses. Real losses for Byron LWU are reported as 50 L/d/connection or 2.2 kL/km/d in 2014/15 with NRW reported as 67 L/d/connection which is comparable to other water utilities of a similar size.

Waste metering was undertaken in Byron Shire in 2015. Council also participated in the Regional NSW Water Loss Management Program in 2010 with estimated savings of 88 ML/a.

No further opportunities for leakage reduction have been identified. BSC has implemented a water meter replacement program to replace ageing meters and reduce errors in monitoring consumption. Demand management measures will be considered in the review of the IWCM Strategy.

Objective 3 – Demand Management

Objective				
Efficient water use in all customer sectors.				
Performance Target				
Average annual residential demand is less than 170 kL/residential property.				
Meters are no older than 10 years.				
Water losses are less than 10% of water supplied.				
Strategy				
Implement best-practice demand management strategies.				
Review pricing annually.				
Manage pressure to reduce leakage.				
No.	Action	Responsibility	Timing	Cost (\$k)
3.1	Continue to implement regional demand management programs	MU	Ongoing	Included in budget
3.2	Continue leakage monitoring and investigate pressure management	PE	Ongoing	Included in budget
3.3	Continue meter replacement program	MU	Ongoing	Included in budget
3.4	Review and update IWCM Strategy including opportunities for effluent recycling	PE	2017	\$160,000
3.5	Review and update water demand projections as part of IWCM Strategy	PE	2017	Included in budget

MU – Manager Utilities

PE - Principal Engineer Systems Planning

5.3 Drought Management

The Rous Water Regional Water Supply Drought Management Plan (Hydrosphere Consulting, 2016b) documents a regional restriction regime that applies to all customers served by the Rous County Council regional water supply. The 2016 regional plan reviews and updates the 2009 Rous Regional Water Supply Regional Water Management Strategy. This new regional approach aims to ensure consistency and community acceptance and therefore improve the success of drought management in the region. The water restrictions triggers contained within the 2016 Plan are based on the Rous County Council water system (i.e. Rocky Creek Dam storage level). The local water supplies managed by councils in the region (Mullumbimby, Wardell, Nimbin and Casino) may adopt triggers for the introduction of water restrictions developed for their

specific water sources/storages. Councils may apply this new regional restriction regime to their local supplies and this is the preferred approach to ensure a consistent drought management process across the region.

Prior to the review of the regional drought management approach, BSC prepared a revised Mullumbimby Drought Management Plan (HydroScience, 2014). According to the Plan, restrictions in Mullumbimby will be introduced based on the water level and inflows in Lavery's Gap Weir. The Mullumbimby Drought Management Plan also refers to the water restriction protocol in the now superseded 2009 regional regime.

The existing plan provides:

- The drought strategy including targets, triggers, alternative supply options, water restrictions and drought management actions;
- Monitoring requirements during droughts; and
- Consultation actions for public and government engagement.

The level in Lavery's Gap weir, WTP production and water quality are monitored for the Mullumbimby water supply. A stream flow gauge has been installed in the weir pond and will be used to monitor flow over the weir and water level in the weir.

A review of Mullumbimby water supply data and drought management arrangements is provided in Appendix 4.

The current secure yield of Lavery's Gap Weir is reported as 480 ML/a based on the 5/10/20 rule (MWH, 2009). Council will determine the secure yield of Mullumbimby water supply in accordance with the current security of supply methodology (5/10/10 rule - duration of restrictions does not exceed 5% of the time, frequency of restrictions does not exceed 10% of years and severity of restrictions does not exceed 10%) once sufficient stream flow data are available.

BSC will review the Mullumbimby Drought Management Plan to ensure consistency with the regional restriction regime. Restriction triggers will also be reviewed at this time. Whilst it is difficult to improve on the current protocol without reliable measurements of flow over the weir and water level, water restrictions may need to be introduced prior to relying on weir storage as the weir storage is small.

Objective 4 – Drought Management

Objective
Responsive, efficient and acceptable drought management strategies are implemented.
Performance Target
A feasible emergency and drought management strategy is developed. Water supplies are "secure".
Strategy
Prepare and implement sound drought management procedures.

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No.	Action	Responsibility	Timing	Cost (\$k)
4.1	Implement the Regional Drought Management Plan	MU	Ongoing	Included in budget
4.2	Secure yield analysis for Mullumbimby water supply	MU	2020	\$30,000
4.3	Review and update Mullumbimby Drought Management Plan	MU	2017	\$10,000

MU – Manager Utilities

5.4 Sewer Load Management

Reducing hydraulic and biochemical loading on the system can:

- Effectively prolong the life of the existing assets;
- Defer new works programs;
- Make treatment processes more effective;
- Reduce siltation in the system and reduce pump wear;
- Reduce operation costs; and
- Improve environmental performance.

Ten years after commencement of an inflow and infiltration program, the Mullumbimby sewage reticulation system shows recurrent problems with respect to inflow and infiltration into the system during wet weather. In 2007 BSC prepared an inflow and Infiltration Programme Integrated Strategy with the objective to identify the causes of this issue and develop a plan to reduce the inflow and infiltration into Mullumbimby reticulation system. Council installed flow measurement devices in the Mullumbimby sewer system in early 2015 and undertakes maintenance actions to reduce wet weather sewer flows.

Issues with load management may occur due to liquid trade waste discharges, stormwater or ground water infiltration. The primary strategies for reducing inflow and infiltration are:

- Education of plumbers and general public regarding illegal connections;
- Inspection of sewers to find damaged areas;
- Smoke testing and CCTV to find illegal connections; and
- Sewer re-lining.

Trade wastes are the sewerage generated by commercial and industrial properties. Where a property generates high levels of pollutants, it is required to pre-treat the waste to a domestic 'strength'. Approvals have been implemented and charges are levied on all trade waste discharges based on Council's *Liquid Trade Waste Policy*.

Objective 5 – Inflow and Infiltration

Objective				
Effectively manage stormwater inflow and infiltration into the sewerage system.				
Performance Target				
Reduce infiltration and inflows to economic levels. Identified sewer defects are repaired.				
Strategy				
Monitor sewer flows and implement flow reduction measures. Complete sewer system repairs as part of renewal and maintenance programs.				
No.	Action	Responsibility	Timing	Cost (\$k)
5.1	Continue inflow and infiltration reduction program in Mullumbimby.	TLRP	Ongoing	Included in budget

TLRP – Team Leader Reticulation and Pump Stations

Objective 6 – Liquid Trade Waste

Objective				
Effective management of liquid trade waste.				
Performance Target				
LTW services agreements are applied in accordance with the adopted Policy.				
Strategy				
Implement LTW Policy. Inspect and enforce trade waste requirements.				
No.	Action	Responsibility	Timing	Cost (\$k)
6.1	Continue implementation of trade waste policy	MU	Ongoing	Included in budget

PE - Principal Engineer Systems Planning

5.5 Service Pricing

Council's tariff structure addresses the following general principles:

- Resource allocation: pricing which properly reflects the costs of providing the service and promotes efficient investment in water supply and sewerage infrastructure;
- Equity: the user pays principle (it is considered equitable that people pay for the cost of the services they use);
- Financial: provision of adequate and predictable funding to meet operating costs and future capital works;
- Customers: provision of service of desired quality and reliability at a fair and reasonable price;
- Community service obligations: provision of services to pensioners, disadvantaged groups, and general community amenities consistent with Council policy; and
- Simplicity: a pricing structure that is easy to administer and is understood by customers.

Council is required to comply with the Best Practice Management Guidelines (refer Section 2.3.1) which stipulate the types of tariffs and developer charges required to comply with best practice pricing. A summary of current compliance is included in Table 17.

Data on residential water supply and sewerage charges throughout the region from the Council Revenue Policies are presented in Table 18. Water supply pricing in Byron Shire is the median of the water utilities in the region. Sewerage pricing is significantly higher than the other water utilities in the region (23% higher than average).

Table 16: Water Supply and Sewerage Charges – 2016/17

Water Supply Consumption Charges		
Residential customers	Usage Charge (c/kL) (first 450kL)	247
	(> 450kL)	370
	Typical Residential Bill (\$/assessment) based on 180 kL/residential property/a	624
Non-residential customers	Usage Charge (c/kL) all	365
Water Supply Access Charge (\$)		
All Water Services	Vacant land	90
	20mm	179
	25mm	280
	32mm	459
	40mm	716
	50mm	1,119
	65mm	1,891
	80mm	2,864
	100mm	4,475
	Strata unit	179
	Fire service	238
Water Supply Developer Charge		
Mullumbimby (\$/ET)		12,775
Rous County Council bulk supply areas (\$/ET)		3,529

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Sewerage Charges (\$)	
AC + SDF x UC x C where: SDF = sewerage discharge factor (0.75 for residential properties and variable for non-residential properties), AC = access charge based on size of water service, UC = sewerage usage charge (\$2.47 per kL) and C = water consumption (kL)	
Sewerage Access Charges, AC (\$)	
Residential, strata units and non-residential 20mm	819
Vacant land	410
25mm (residential multi-occupancy and non-residential)	1,280
32mm (residential multi-occupancy and non-residential)	2,097
40mm (residential multi-occupancy and non-residential)	3,276
50mm (residential multi-occupancy and non-residential)	5,119
65mm (residential multi-occupancy and non-residential)	8,651
80mm (residential multi-occupancy and non-residential)	13,104
100mm (residential multi-occupancy and non-residential)	20,475
Residential and non-residential sewer pods (New Brighton/Billinudgel)	794
Typical residential bill (based on 180 kL/residential property/a)	\$1,152
Sewerage Developer Charges	
All areas (\$/ET)	13,147

Trade Waste Charges TW = A + C x UC x TWDF		
Where: C = Customer's annual water consumption (kL)		
TWDF = Trade waste discharge factor		
A - Annual charge (\$)	No approval required	31
	Category 1	153
	Category 2 and 2S	255
	Category 3	429
UC - Usage charge (\$/kL)	Compliant	2.24
	Non-compliant	3.70

Table 17: Compliance with Best-Practice Pricing Requirements

Component	BPM Indicator	Compliance
Water Supply Tariff	Appropriate water usage charge/kL based on long-run marginal cost.	✓
	Access charge relative to a customer's capacity requirements.	✓
	No land value based charges (i.e. rates).	✓
	Any large increases in non-residential customer bills phased in over 5 years.	✓
	To encourage water conservation, high water consuming residential customers should be subjected to a step price increase (expressed as an "excess water charge") of at least 50% for incremental usage above a specified threshold. This threshold should not exceed 450 kL/a per household.	✓
	At least 75% of residential revenue generated through usage charges.	✗ Residential revenue from usage charges was 73% of residential bills in 2014/15 and 74% in 2013/14.
Sewerage Tariff	Appropriate residential tariff.	✓
	No land value based charges (i.e. rates).	✓
	Non-residential: Two-part tariff, appropriate sewer usage charge/kL, access charge that is reflective of the cost of providing these sewerage services, any large increases in non-residential customer bills phased in over 5 years.	✓
Liquid Trade Waste	Annual trade waste fee for all liquid trade waste dischargers	✓
	Trade waste usage charge for dischargers with prescribed pre-treatment	✓
	Excess mass charges for large dischargers and industrial waste	✓
	Liquid Trade Waste approvals issued	✓
	Liquid Trade Waste Policy adopted and implemented	✓
Developer Charges	Development Servicing Plan (DSP) in accordance with Developer Charges Guidelines, with commercial developer charges	✓ DSPs were adopted in 2016

Table 18: Comparison of residential water supply and sewerage tariffs in the region (2016/17)

LWU	Fixed charge (\$ p.a.)	Usage Charge Step 1 (c/kL)	Water Supply TRB (\$ per assessment p.a.)	Sewerage TRB (\$ per assessment p.a.)
Byron	179.00	247.00	624.00	1,152.00
Tweed	166.45	285.00	679.45	805.45
Ballina	200.00	214.00	585.00	925.00
Lismore	248.32	341.00	862.12	855.00
Richmond Valley	139.00	212.00	520.60	934.00
Median of region	179.00	247.00	624.00	925.00
Average of region	186.55	259.80	654.23	934.29

* Water Supply TRB is calculated assuming consumption is 180 kL/a although this is not the average consumption for all areas.

Objective 7 – Service Pricing

Objective				
Pricing system is equitable and reflects the actual cost of service provision.				
Performance Target				
Best-practice pricing structure is achieved.				
Strategy				
Review and update tariffs and charges annually.				
No.	Action	Responsibility	Timing	Cost (\$k)
7.1	Obtain feedback on pricing structure through public exhibition of Revenue Policy	MU	Annually	Included in budget
7.2	Annual review of tariff structure and best-practice compliance.	MU	Annually	Included in budget
7.3	Review and update Financial Plans as part of IWCM Strategy	MU	2017	Included in budget

MU: Manager Utilities

5.6 Customer and Community Involvement

Effective communication provides a strong foundation upon which Council can develop and maintain the community's assets. If aligned with Council's operating goals and plans, effective communication can increase the speed at which these goals are achieved.

BSC is committed to achieving high level of customer satisfaction through:

- Consistently delivering the LOS;
- Continuous communication, informing the customers on issues that affect the service and the price; and
- Investigating and resolving complaints about water and sewer systems and services.

The following main customer involvement principles apply:

- Customers need to be appropriately involved in, and aware of the water supply and sewerage scheme development and overall operation; and
- The level of satisfaction is expected to be higher when customers are involved in the decision-making.

Council is committed to consulting the water supply and sewerage customers regularly to keep them informed of current developments and to get feedback on major projects.

Consultation regarding pricing of water and sewerage services will be undertaken through the annual public exhibition of the revenue policy.

In October 2013, BSC sought to examine community attitudes and perceptions towards current and future services and facilities provided by Council. Water supply and sewerage services in the Shire were ranked as high importance and high satisfaction by the community and were found to be one of Council's core strengths. Sewage management services were found to be a significant driver of overall satisfaction with Council (Micromex Research, 2013).

BSC's 2015 Community Engagement Policy aims to:

1. Confirm Council's commitment to conducting quality consultation and its willingness to actively engage the community in decision making processes;
2. Clarify the role Council will take to engage residents in decision making;
3. Provide clarity for staff undertaking consultation and increase their capacity to effectively engage with residents;
4. Provide opportunities for public participating in Council activities and processes that are transparent, accountable and accessible to the community;
5. Strengthen trust between Council and the community and build confidence in Council's ability to plan and make decisions that will respond to present and future needs;
6. Create an organisational culture in which community engagement processes are delivered in a context of best practice and good governance;
7. Develop a framework that ensures a consistent approach is undertaken across all service areas of Council in relation to proposals and projects requiring community consultation; and
8. Ensure that Council meets its statutory obligations concerning community engagement.

BSC engages the community in decision making by using varied communication channels that are relevant to residents and stakeholder groups, such as Community E-news, Twitter and Facebook social media, fact sheets and FAQ's updated regularly on Council's website, community engagement events.

BSC's 2011 Complaints Management Policy outlines the system for dealing with complaints submitted or referred to Council.

Data on water supply and sewerage complaints data are given in Section 6.3.2.

Objective 8 – Customer and Community Involvement

Objective				
Gain community ownership of major asset management decisions and ensure affordability and marketability of the project outcomes.				
Performance Target				
All major projects and decisions are subject to a community consultation process.				
Strategy				
Provide accurate information to the community to create awareness of the issues, receive community input into decision-making processes including willingness-to-pay for asset development and create a sense of community ownership.				
No.	Action	Responsibility	Timing	Cost (\$k)
8.1	Include community consultation as part of the planning process on significant projects.	MU	Ongoing	Included in budget

MU: Manager Utilities

Objective 9 – Customer Satisfaction

Objective				
Achieve a high level of customer satisfaction in water and sewerage services.				
Performance Target				
The majority of customers are satisfied with Council water and sewerage services.				
Strategy				
Communicate with customers and measure customer satisfaction.				
No.	Action	Responsibility	Timing	Cost (\$k)
7.1	Communicate important initiatives with customers.	MU	As required	Included in budget
7.2	Include questions in customer surveys to determine satisfaction with water and sewerage services.	GM	As required	Included in budget
7.3	Advertise SBP and invite submissions.	MU	October 2016	Included in budget

MU: Manager Utilities

GM: General Manager

5.7 Environment Protection and Sustainable Development

Council holds Environmental Protection Licences for the sewerage systems. Compliance with the requirements of these licences is generally achieved. Pollution Reduction Programs (PRPs) are attached to the Environmental Protection Licences if required to address any non-compliances. Council will actively pursue the implementation of these PRPs in order that the environmental objectives are achieved.

The NSW Environmental Protection Authority (EPA) issued a notice under the *Protection of the Environment Administration Act 1991* to all NSW councils early in 2012, requiring each council to develop a Pollution Incident Response Management Plan (PIRMP) for each licence held. BSC has prepared PIRMPs for the

licensed treatment works in accordance with the Environmental Guidelines: *Preparation of Pollution Incident Response Management Plans*. The purpose of the PIRMP is to provide a vehicle for identifying potential pollution incidents, understanding and evaluating the likelihood of occurrence, identification of mitigation techniques and a "who to advise" register.

Staff and contractor training in environmental management is undertaken for all treatment plant operations and field work.

Approximately 15% of sewage treated is recycled for agricultural uses and irrigation of playing fields and the Byron Bowling Club (DPI-Water, 2016b).

Pre-construction planning is undertaken for all asset development including environmental assessment where required to identify and address any environmental issues associated with the projects.

Brunswick, Mullumbimby and South Byron STP have been decommissioned and the sites require rehabilitation in accordance with the Contaminated Land Management Act 1997 (CLM Act) and State Environmental Planning Policy (SEPP) No. 55 - Remediation of Land and the Managing Land Contamination.

Council's recent environmental management achievements include:

- Re-establishment of the Belongil Swamp Drainage Union;
- Extension of the recycled water scheme for use in the Byron Bay CBD/sports fields/parks;
- The Main Arm recycled scheme for farm irrigation; and
- Ebb-tide treated effluent discharge system from Brunswick Valley STP.

Objective 10 – Environmental Management

Objective				
Water and sewerage activities are environmentally sustainable				
Performance Target				
Meet community expectations and legislative requirements				
Strategy				
Assess and manage environmental risks				
No.	Action	Responsibility	Timing	Cost (\$k)
10.1	Report on compliance with Environment Protection Licences	MU	Annual	Included in budget
10.2	Publish pollution monitoring data on Council's website	MU	Annual	Included in budget

MU: Manager Utilities

6. 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 LOS at the least cost while still satisfying statutory and regulatory requirements. The key elements of a total asset management approach are:

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

The Total Asset Management Plan components are shown in Figure 10 and discussed below.

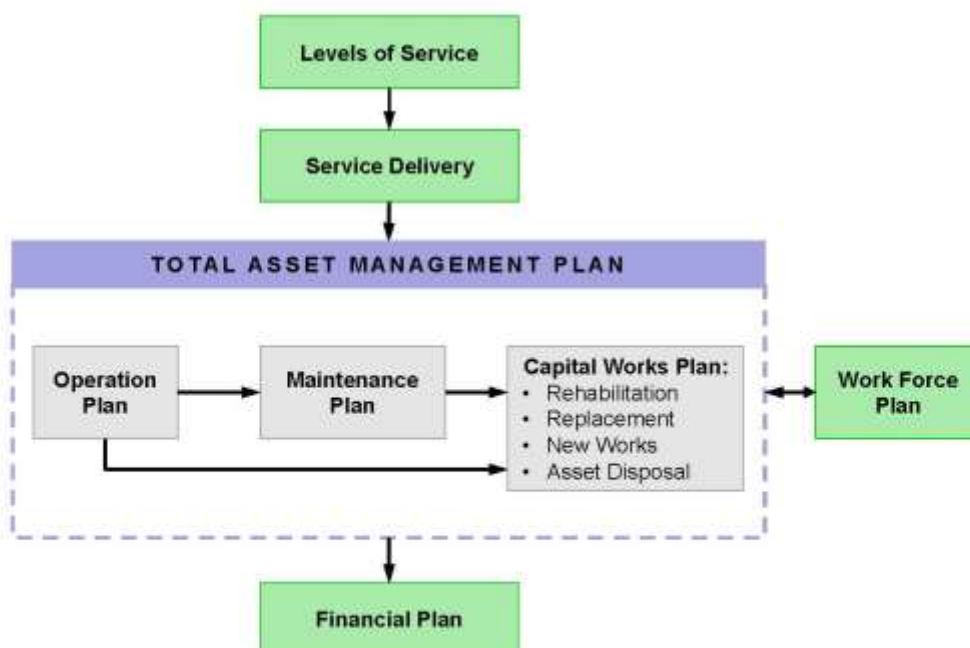


Figure 10: Total Asset Management Plan components

6.1 BSC Asset Management Systems

Draft asset management plans for water and sewer assets were prepared in 2012 to demonstrate responsive management of water supply and sewer assets, compliance with regulatory requirements and to describe the expenditure required to maintain the current LOS.

Currently Council uses ArcMap GIS to hold asset spatial data and asset register data. The condition, type, dimensions and age are held with spatial data in the GIS and are available to all staff via Geocortex. This database and spatial information used in conjunction with the inspection and maintenance information facilitates:

- A network inventory for pipelines and related assets;
- Asset condition rating;
- Data management, and the ability to produce reports to present asset inventory and assessment information; and

- Asset accounting reporting capabilities.

Using the proprietary software, H₂OMap, Council has developed water and sewer reticulation models that take into account the projected 30-year growth period for demand. Council is now able to use this information to develop a 30-year capital works program for the rehabilitation and expansion of its water assets.

BSC's asset register lists all water supply and sewerage assets with basic physical data (location, material, size, age and remaining useful life) and financial statistics (depreciation and current replacement cost) for each asset. The assets, their age and current replacement value are summarised in the Asset Management Plans.

The condition profile of Council's assets is determined based on the age of the asset and design life.

The asset management plan encompasses all of Council assets and is referred to as a Service Plan.

BSC has prepared a Wastewater Management System (HydroScience, 2016) in accordance with the framework for management of recycled water quality and use: a structured risk-based approach as set out in the *Australian Guidelines for Water Recycling - Managing Health and Environmental Risks* (Phase 1), 2006 (AGWR). The 12 element framework for management of recycled water quality set out in the AGWR provides a structured risk-based approach to recycled water management. This framework has been adopted for the Wastewater Management System addressing sewerage systems, treatment systems and recycled water management systems.

6.2 Operation and Maintenance Expenditure

Water supply and sewerage operation, maintenance and administration (OMA) cost data are given in Table 19. BSC's OMA costs are generally higher than other LWUs of similar size.

Table 19: Water Supply and Sewerage OMA Costs

Cost Indicator	2012/13	2013/14	2014/15	2014/15 Median ¹
Water supply OMA cost (\$ per property)	463	479	482	423
Water supply OMA cost (c per kL)	154	93	91	131
Sewerage OMA cost (\$ per property)	629	652	680	447
Sewerage OMA cost (c per kL)	171	217	234	197

Source: DPI-Water (2016b)

1. NSW LWUs with >10,000 properties.

6.3 Operation Plan

The purpose of the Operation Plan is to ensure that the service objectives are achieved at the least cost and that the impact of any breakdowns or outages is minimised.

6.3.1 Asset Condition Data

Asset condition issues can be identified through reported asset failures. Relevant condition data and indicators from the NSW Office of Water Benchmarking Reports are given in Table 20.

Table 20: Asset Performance Indicators

Indicator	2012/13	2013/14	2014/15	2014/15 Median ¹
Water main breaks (per 100km of main)	7	9	9	7
Sewer main breaks and chokes (per 100km of main)	32	11	11	43
Sewer overflows (per 100km of main)	9	2	6	9

Source: DPI-Water (2016b)

1. NSW LWUs with >10,000 properties.

6.3.2 Operations Analysis

BSC prepared a Drinking Water Management System in accordance with the ADWG in 2013 (refer Section 2.5). A review of the DWMS implementation was undertaken in September 2016 (Huxley, 2016). The review resulted in additional improvement actions to address water quality and asset management issues.

Performance indicators are summarised in the following tables. No boil water alerts were required in the last 3 years.

Table 21: Water Supply Health and Levels of Service Indicators

Indicators	2012/13	2013/14	2014/15	2014/15 Median ¹
Physical	100	98	100	Not reported
Chemical	100	100	100	Not reported
Microbiological	100	100	100	Not reported
Water quality complaints (per 1,000 properties)	0.5	1	2	2
Water Service Complaints (per 1,000 properties)	0	0	0	5
Unplanned interruptions (per 1,000 properties)	14	14	13	16
Drought water restrictions (% of time)	0	0	0	0

Source: DPI-Water (2016b)

1. NSW LWUs with >10,000 properties.

Table 22: Sewerage Environmental and Levels of Service Indicators

Indicators	2012/13	2013/14	2014/15	2014/15 Median ¹
Compliance with BOD conditions in licences (%)	100	100	100	100
Compliance with SS conditions in licences (%)	100	100	100	98
Sewage treated that was compliant (%)	88	97	97	100
Odour complaints (per 1,000 properties)	2.1	3.7	1.3	0.8
Service complaints (per 1,000 properties)	2	4	1	5

Source: DPI-Water (2016b)

1. NSW LWUs with >10,000 properties.

Planned asset renewal and regular maintenance can help Council achieve a more sustainable outcome and reduce the impact on the environment. Renewal of assets prior to failure will also reduce the effect these failed assets have on the environment. Consequently it is important that a planned maintenance regime is continuously implemented. BSC has committed significant budgets for asset renewals. This is likely to improve the performance of the system and reduce break down maintenance.

The redirection of the Ocean Shores sewerage catchments to Brunswick Valley STP will result in virtually no increase in operating costs. The upgrade of Mullumbimby WTP beyond 2040 is likely to result in increased capital costs over the long term.

6.3.3 Due Diligence

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. BSC's due diligence actions are discussed in the following sections.

Risk Management

The likelihood and consequence of failure of the water supply and sewerage assets is determined as part of capital investment planning (Section 6.3.1).

Emergency Response Procedures

Pollution Incident Response Management Plans have been prepared for all premises with environment protection licenses in accordance with the *Protection of the Environment Legislation Amendment Act 2011*.

Climate Change

Council is committed to protecting future generations from the effects of climate change and has made a number of resolutions to aid the Council staff's ability to reinforce that the changes in climate need to be considered when completing all of Council's business. The Asset Management Plan documents the likely climate change outcomes which may affect Council's water supply assets and some potential consequences due to these changes.

Standard Operating Procedures

BSC utilises the standard operating procedures and technical guidelines published by the Water Directorate as well as a sewage pumping station operation manual and operation and maintenance manuals developed as part of asset upgrades.

6.3.4 Workplace Health and Safety

As stated in BSC 2012 *Workforce Plan*, one of Council's strategies to address several workforce issues is to make work health and safety the highest priority. Workplace health and safety audits are conducted for the WTPs and STPs and all identified issues have been actioned. Audits of all Council assets and facilities will be conducted on a bi-annual basis.

Objective 11 – Operations

Objective
Operate the water supply and sewerage assets in a safe and cost-effective manner which meets the required LOS.
Performance Target
Operations issues do not cause a failure to meet the LOS.
Strategy
Operate the schemes in accordance with documented system procedures, rules and due diligence programs.

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No.	Action	Responsibility	Timing	Cost (\$k)
11.1	Bi-annual WHS audits for all water and sewer facilities.	MU	Bi-annual	Included in budget
11.2	Implement DWMS improvement actions.	MU	Ongoing	Included in budget
11.4	Review and update Asset Management Plans.	MU	Dec 2016	Included in budget

MU: Manager Utilities

6.4 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 undertaken 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.

Maintenance activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance. Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, etc. This work generally falls below the capital/maintenance threshold.

At present maintenance expenditures are not captured separately between reactive, planned and cyclic maintenance. The majority of the maintenance work is planned and cyclic with minor works being reactive in nature. Existing maintenance expenditure levels are considered to be adequate to meet current service levels.

Maintenance activities are documented in the Asset Management Plans.

Objective 12 – Maintenance

Objective				
Maintain the water supply and sewerage assets in a cost-effective manner which meets the required LOS.				
Performance Target				
Maintenance issues do not cause a failure to meet the LOS.				
Strategy				
Maintain the schemes in accordance with documented procedures.				
No.	Action	Responsibility	Timing	Cost (\$k)
12.1	Review Maintenance Program to confirm the ability to meet LOS.	MU	Annual	Included in budget

MU: Manager Utilities

6.5 Capital Works Plan

The purpose of the Capital Works Plan is to document the anticipated future capital works requirements and expenditures to meet the LOS and provide a basis for financial planning and capital budgeting.

In 2010 Council developed a process for development of the water supply capital works program. A draft manual has been developed to document this process. The methodology detailed in the Manual describes the use of asset performance data to assist in the grading of the condition of assets. The Manual provides the basis for determining what performance data should be recorded and how it is referenced for assessing asset condition and for reporting against the KPIs. The risk based renewal forecasting model documented in the Manual only includes structural condition and performance failure modes for pipeline assets. System capacity and hydraulic analysis is assessed as part of the growth investment stream and other modes of failure are not covered by the Manual.

In 2012 Council undertook a lifecycle management assessment of its assets. This assessment is based on the total lifecycle analyses, including age, capacity to supply LOS, performance and asset valuation analyses. The assessment is done to ensure the assets are operated and maintained appropriately in order to deliver the LOS adopted. The outcome of that analysis was a reviewed and updated capital works program. Council updates its 30-year capital works programs annually.

The capital works programs consider the future growth expected within the Shire, the replacement of assets considered in poor or critical condition (from the risk assessment included in the asset management plan) and the provision of works to improve the LOS currently provided to ensure the delivery of the LOS targets adopted by Council. The estimated capital investment over the next 30 years for water supply is \$37 million. About 50% of this amount is to serve growth. Approximately 47% of the expenditure is for renewal of existing assets with the remaining 2% for improving levels of service (Figure 11). The estimated capital investment over the next 30 years for sewerage services is \$102 million. About 43% of this amount is for renewal of existing assets, 55% to service growth and the remainder is for improving LOS (Figure 12).

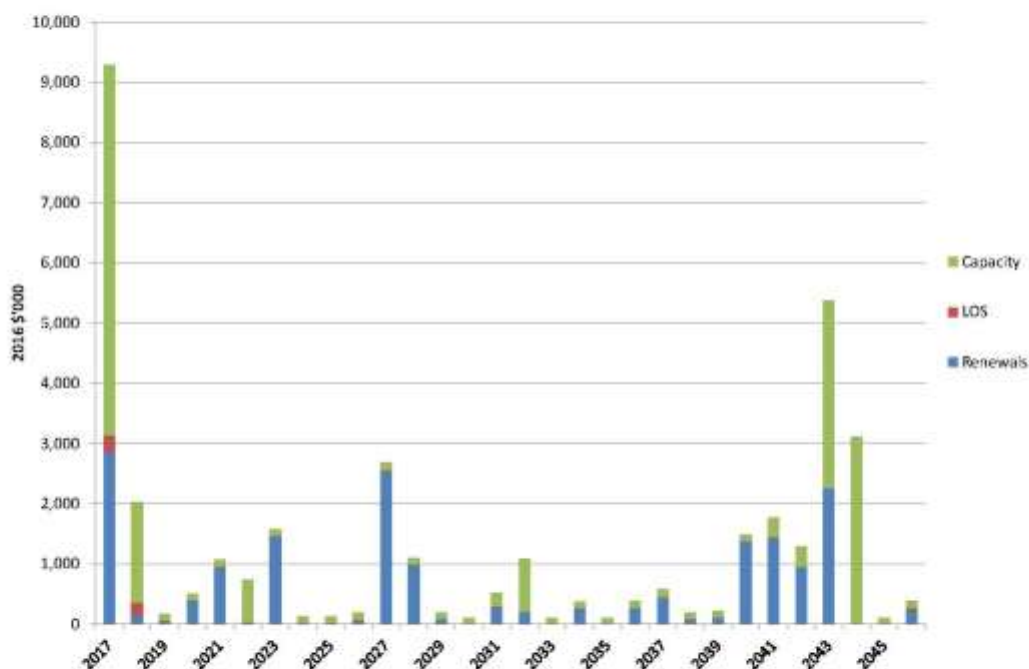


Figure 11: Capital Works Program – Water Supply

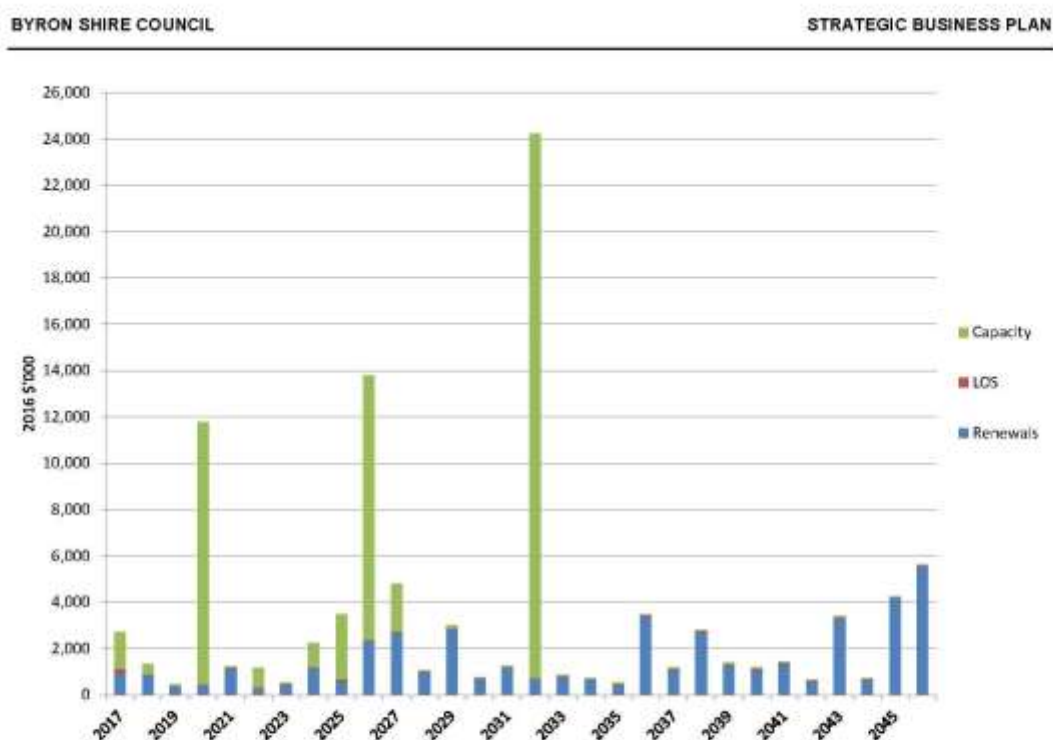


Figure 12: Capital Works Program – Sewerage

6.5.1 Asset Renewal

Asset renewal projects and projected expenditure have been reviewed as part of the development of this SBP and Financial Plan (refer Appendix 5). Asset renewal projects are funded through annual customer charges.

Table 23: Renewal projects - Sewerage

Project	Expenditure 2017-2026 (\$k)
Bangalow STP renewals	679
Brunswick Valley STP renewals	303
Byron Bay STP renewals	963
Pipeline renewals	1,843
SPS renewals	4,533

Table 24: Renewal projects – Water Supply

Project	Expenditure 2017-2026 (\$k)
Meter replacement program	200
Reservoir renewals	6,541
Pump station renewals	488
Treatment plant renewals	4,591

6.5.2 Asset Upgrades

Asset upgrade projects and projected expenditure have been reviewed as part of the development of this SBP and Financial Plan (refer Appendix 5). Major projects include the transfer of Ocean Shore sewage to Brunswick Valley STP for treatment and upgrade of Brunswick Valley STP (2020) and longer-term upgrade of the STP in 2032. Byron Bay STP will be upgraded between 2024 and 2027. New reservoirs will be constructed at Bangalow and Coopers Shoot in 2017. Mullumbimby WTP will be upgraded in 2044.

Asset upgrade projects are funded through a combination of developer charges, annual customer charges and loans.

Table 25: Upgrade projects - Sewerage

Project	Expenditure 2017-2026 (\$k)
Safety upgrades	200
Telemetry system upgrades	50
Bangalow STP upgrades	1,108
Byron Bay STP upgrades	14,908
Pipeline upgrades	844
Pump station upgrades	415
Ocean Shores transfer to Brunswick Valley STP	11,310

Table 26: Upgrade projects – Water Supply

Project	Expenditure 2017-2026 (\$k)
Safety upgrades	300
Telemetry system upgrades	300
New Bangalow Reservoir	1,000
New Coopers Shoot Reservoir	3,500
Pump station upgrades	208
Mullumbimby WTP upgrade	6,500

Objective 13 – Capital Works

Objective				
Adequate water supply and sewerage infrastructure is provided for present and future customers.				
Performance Target				
Infrastructure capacity and condition issues do not cause a failure to meet the LOS.				
Strategy				
Review and implement the capital works programs.				
No.	Action	Responsibility	Timing	Cost (\$k)
13.1	Review capital works program annually.	MU	March each year	Included in budget

MU: Manager Utilities

7. Work Force Plan

The water and sewer services organisation structure is given in Section 2.2.5. The organisational structure is designed to provide for the efficient and effective delivery of services, while at the same time ensuring that there is a distinction between the regulatory and operational functions of the Council.

The Director of Infrastructure Services is responsible for the Utilities group and reports directly to the General Manager of Council.

The functions of the Utilities group include water supply, sewerage and recycling. This group is responsible for planning, managing and operating the systems and assets which provide these services.

BSC adopted a Workforce Plan in June 2012. The Workforce Plan is the link between Council's business strategies and people plans. The Workforce plan is a 10-year strategy that seeks to ensure Council has the right number of people with the right skills in the right jobs at the right time, now and in the future. The plan outlines the workforce and demographic trends which will present significant long-term implications for the future labour supply for Council. The strategies that Council aims to use to address the issues include:

- Developing the organisation by monitoring staff engagement, improving internal communication and implementing process improvement tools;
- Developing employees by undertaking an organisation wide capability assessment, improving the performance planning and review system and making staff development a priority;
- Attraction, retention and satisfaction of employees by updating recruitment strategies, reviewing induction processes, implementing flexible working arrangements, investigating leave initiatives, developing and implementing retirement strategies;
- Address the health and wellbeing of the workforce by making work health and safety the highest priority, introducing lifestyle, health and wellbeing initiatives, developing fitness for work programs and reviewing and implementing strategies to reduce reliance on manual labour.

Objective 14 – Human Resources

Objective				
Appropriate and qualified staff delivers the water supply and sewerage services in a safe manner.				
Performance Target				
Sufficient and adequately trained staff can provide the LOS. Zero WH&S incidents.				
Strategy				
Ensure all staff training is up to date.				
No.	Action	Responsibility	Timing	Cost (\$k)
14.1	Staff training and competency reviews	MU	Annual	Included in budget

MU: Manager Utilities

8. Financial Plan

The purpose of the financial plans is to enable Council to determine the revenue needed to meet the LOS over the long term, adopt funding strategies and effectively manage the cash flow.

Legislation requires separate accounting for water supply and sewerage services and elimination of cross subsidy with other Council activities. Dividends may be paid from the water supply and sewerage funds to the general funds, subject to compliance with best-practice management requirements.

Recurrent operating costs are covered by the annual water supply and sewerage charges. Capital funds are drawn from the following four sources:

- Developer charges;
- Annual charges;
- Government grants; and
- Borrowings.

The income and expenditure of the water supply and the sewerage business have been projected for 30 years. A financial model using FINMOD was prepared to develop a funding strategy and to forecast the charges that BSC will need to levy on its customers to fund the delivery of the LOS. The financial plans are included in Appendix 6.

The financial modelling provides an indication of the relative cost to BSC and its customers of the water supply and sewerage services. The main output of the financial plan is the typical residential bill (TRB) which is defined as the annual bill paid by a customer who is not a pensioner and not a vacant lot and uses the average water demand.

The purpose of the modelling is to identify the lowest TRB that will enable Council to fund the operation, maintenance and administration expenses and the capital investment of the schemes. The TRB is used as a measure of affordability and sets the price path Council needs to set in order to meet the LOS. Council will develop a tariff structure that will provide this income.

Objective 15 – Financial Planning

Objective				
Regularly prepare and implement a long term financial plan to provide required services.				
Performance Target				
Full cost recovery.				
Strategy				
Review and update long-term financial plans and pricing.				
No.	Action	Responsibility	Timing	Cost (\$k)
15.1	Review and update long-term financial plan and tariff structure.	MU	Annually	Included in budget

MU: Manager Utilities

REFERENCES

- BSC (2011) *Complaints Management Policy 3.22*
- BSC (2012) *Workforce Plan 2012-2016*
- BSC (2015) *Community Engagement Policy 15/005*
- DPI-Water (2016a) *2014-15 NSW Water Supply and Sewerage Performance Monitoring Report*
- DPI-Water (2016b) *2014-15 NSW Water Supply and Sewerage Benchmarking Report*
- Huxley, J. (2016) *Byron Shire Council Drinking Water Management System Internal Review Report*, January 2014 – June 2016.
- HydroScience Consulting (2014) *Mullumbimby Drought Management Plan*
- HydroScience Consulting (2015) *Draft Strategic Business Plan for Water Supply and Sewerage Services*. Rev 3 July 2015
- HydroScience Consulting (2016) *Byron Shire Council Wastewater Management System*. Rev 3 February 2016
- Hydrosphere Consulting (2016a) *Byron Shire Council - Rationalisation of the Retail Water Supply Customer Network – Issues Paper*
- Hydrosphere Consulting (2016b) *Rous Water Regional Water Supply Drought Management Plan*
- Micromex Research (2013) *Byron Shire Council Community Research*
- MWH (2009) *Byron Shire Council Integrated Water Cycle Management Plan*

**APPENDIX 1: STRATEGIC BUSINESS PLAN – CHECK LIST (NSW OFFICE
OF WATER, 2014)**

Table 27: Strategic Business Plan – Check List Requirements

Outcome Achieved	Section in this Document
<i>Strategic Business Plan</i>	
1. Executive Summary Covers all major issues, main actions, a summary of the Financial Plan Report, price path and a 30-year projection of the Typical Residential Bill in Year 25. Includes a plan of the system.	Executive Summary
2. Operating Environment Review A. Includes the mission statement with regard to your water supply and sewerage services B. All principal issues are addressed with appropriate strategy, actions and performance indicators in the Strategic Business Plan. C. A compliance monitoring and reporting system is in place. D. The regulatory and contractual compliance requirements have been identified. E. Includes all issues from an operating environment compliance situation analysis F. Includes a business and insurable risk profile analysis and a summary of the insurance policies.	Section 2
3. Performance Monitoring A. LWU's latest TBL Performance Report and Action Plan included. B. In addition to addressing any areas of under-performance, the Action Plan 'closes the planning loop' with the utility's financial plan by: <ul style="list-style-type: none"> Comparing the Typical Residential Bill (TRB) with the projection in the financial plan and documenting any necessary corrective action for implementation by the LWU. Reporting results for the financial year for the key actions set out in the utility's strategic business plan or IWCM strategy, whichever is the more recent. 	Appendix 3 Section 2.3.2
4. Levels of Service (LOS) A. Are clear, meaningful and measurable B. Target LOS has been identified. These LOS are also to be used in the IWCM Strategy, Water Cycle Analysis and Projection and Development Servicing Plan. C. Includes all issues from a LOS situation analysis D. 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 3
5. Service Delivery A. Overall service delivery options examined and conclusions reported. B. Includes examination of project specific service delivery options for the measures included in the Total Asset Management Plan (TAMP). C. The utility is cognisant of 'demand risk' and avoids investing in assets which may become redundant, 'stranded' or oversized, e.g. as a result of a developer obtaining approval to provide water supply and/or sewerage services to a large release area (under the <i>Water Industry Competition Act 1994</i>).	Sections 4 and 5.1,

BYRON SHIRE COUNCIL		STRATEGIC BUSINESS PLAN	
Outcome Achieved		Section in this Document	
6. Customer Service Plan Business objectives developed for each key result area:			
6.1 Unserved Areas A. All unserved towns and villages listed showing the population, whether the present facilities are satisfactory and the priority ranking of each town/village for option implementation from the IWCM Strategy. B. Proposals for serving unserved towns and villages are included and discussed in your LWU's strategic business plan and capital works program.		Section 5.1	
6.2 Regulation and Pricing of Water Supply, Sewerage and Trade Waste A. Full Cost Recovery Full cost recovery for each of the water supply and sewerage businesses. The total annual revenue should be consistent with the financial plan. This generally results in a positive economic real rate of return (ERRR).		Section 5.5	
B. Water Supply: Residential Pay-for-use: appropriate water usage charge/kL with no water allowance; independent of land value. At least 75% of residential revenue from water usage charges.			
C. Sewerage: Residential Uniform annual sewerage bill per residential property, independent of land value.			
D. Water Supply: Non-Residential Two-part tariff with appropriate water usage charge/kL and access charge.			
E. Sewerage: Non-Residential Two-part tariff with appropriate sewer usage charge/kL and sewer discharge factor.			
F. Liquid Trade Waste Pricing Appropriate trade waste fees and charges adopted and implemented for all liquid trade waste dischargers. Appropriate trade waste usage charge implemented for dischargers with prescribed pre-treatment. Excess mass charges and non-compliance excess mass charges implemented for large dischargers and industrial waste.		Section 5.4, 5.5	
G. Trade Waste Regulation Policy and Approvals Trade Waste Regulation Policy implemented. Trade waste approval issued to each liquid trade waste discharger. Annual report provided to NSW Office of Water listing all of the trade waste dischargers approved by Council for the year			
H. Developer Charges Development Servicing Plan with commercial developer charges; disclosure of any cross-subsidies		Section 5.5	
I. Dual Water Supplies LWUs with a dual water supply i.e. 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		Not required	

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STRATEGIC BUSINESS PLAN

Outcome Achieved	Section in this Document
6.3 Environmental Management Summary of LWU's Environmental Management achievements is included.	Section 5.7
6.4 Water Cycle Analysis and Projection A. Includes a summary of the adopted water conservation program and the key assumptions underpinning the program measures. B. For utilities with 4,000 or more connected properties, has 75%/25% split been achieved with water tariff? C. Water & sewer pricing of all customer categories is best-practice, if not implement best-practice requirements.	Sections 5.2 and Section 5.5
Also include review of the key assumptions and commentary on its current status. Report outcomes in the strategic business plan. Address matters such as: D. Is bulk water extraction and production metered and recorded daily? If not, implement daily metering and recording. E. Do all free standing residential premises have separate meters? If not, implement F. Do all free standing and multi-unit residential developments (both strata and non-strata) built after July 2007 have separate meters? If not, implement, where cost effective. G. Utilities are strongly encouraged to separately meter all new free standing and multi-unit residential and non-residential developments. In addition to encouraging efficient use of water services, this facilitates fair water supply, sewerage and trade waste pricing. Such metering is recommended by the August 2011 Productivity Commission Report No.55 (www.pc.gov.au). H. Is customer water consumption billed at least three times a year? If not, implement. I. Are all your LWU's premises (e.g., parks, ovals, toilets, cemetery, etc.) metered and billed? If not, implement. J. Review the effectiveness of the adopted demand management measures and summarise the outcomes and planned corrective actions. K. Review the effectiveness of any leakage reduction program undertaken and summarise the outcome and the planned corrective actions. L. Review the effectiveness of any sewer flow management program undertaken and summarise the outcome and the planned corrective actions M. Briefly review the demographic projection and update as appropriate. N. A scheme specific data collection and monitoring system and plan is in place. O. Review and update the adopted water cycle projection (water demands and sewer flows and loads) as appropriate	Yes Yes Yes Yes Yes Section 5.2 Section 5.2 Section 5.4 Sections 1.1 and 1.2 Yes To be undertaken as part of next review of the IWCW Strategy

BYRON SHIRE COUNCIL	STRATEGIC BUSINESS PLAN
Outcome Achieved	Section in this Document
<p>6.5 Integrated Water Cycle Management (IWCM)</p> <p>A. Includes a summary of the adopted IWCM scenario and the principal assumptions/risks underpinning the scenario</p> <p>Also include review of the principal assumptions and risks underpinning the IWCM Strategy and report outcomes in the strategic business plan. Address matters such as:</p> <p>B. Assumption 1 – potential unplanned increase in water demand due to a water intensive industry, large new development, etc.</p> <p>C. Assumption 2 – potential unexpected changes to existing water access/use licence regime.</p> <p>D. Assumption 3 – significant potential changes to raw water quality and/or non-compliance with ADWG 2011.</p> <p>E. Assumption 4 – unexpected major change in distribution system characteristics.</p> <p>F. Assumption 5 – unexpected extension/provision of water service to a new area/urban centre.</p> <p>G. Assumption 6 – potential unexpected increase in sewage load due to industry, large development, etc.</p> <p>H. Assumption 7 – unexpected changes in sewage transport system characteristics.</p> <p>I. Assumption 8 – potential unexpected changes to existing sewerage management licence regime.</p> <p>J. Assumption 9 – unexpected extension/provision of sewerage service to new area/urban centre.</p>	Section 2.4
<p>6.6 Drought Management</p> <p>A. Are all water supply sources suitably monitored (e.g. level, flow, relevant water quality) and recorded? If not, implement suitable monitoring and recording.</p> <p>B. Includes a graph of the water demand over time with super-imposed restriction periods, storage/ground water level and relevant climatic data since the last SBP Update.</p> <p>C. Includes a summary of water supply system performance since the last SBP Update and any management/emergency response actions undertaken.</p> <p>D. Review the adopted drought management plan, especially the schedule of trigger points for drought water restrictions and the level of water restrictions, and the associated measures. Update where warranted and include as an Appendix.</p>	Section 5.3 Appendix 4
<p>6.7 Drinking Water Management System</p> <p>A. Includes a Report on the complete review of your Drinking Water Management Systems.</p> <p>B. The update items identified in the Report are included in the SBP with appropriate actions and performance indicators.</p> <p>C. Community involvement and consultation has been undertaken</p>	Section 2.5
<p>6.8 Community Involvement</p> <p>Includes a summary of community involvement completed since the last SBP Update</p>	Section 5.6

BYRON SHIRE COUNCIL

STRATEGIC BUSINESS PLAN

Outcome Achieved	Section in this Document
<p>6.9 Work Health & Safety</p> <p>A. Includes a summary of LWU's work health and safety achievements against the adopted performance indicators.</p> <p>B. Includes a summary of completed audits and any planned corrective actions to achieve target</p>	Section 6.3.4
<p>6.10 Other Risk Management Measures</p> <p>Summary of other risk management measures implemented by your LWU.</p>	Section 6.3.3
<p>7. Total Asset Management Plan (TAMP)</p> <p>A. Summary of changes required to operation and maintenance (O & M) procedures (e.g. to operate new facilities) are reported, including impact on OMA (operation, maintenance and administration) expenditures.</p>	Section 6
<p>B. Summary of outstanding Development Consent Conditions relating to capital works projects identified and reported, including impact on costs.</p>	None
<p>C. Asset register completed and is up to date and the assets are valued in accordance with Reference 16.</p>	Section 6.1
<p>D. Summary of best-practice operation plan is included. Also report:</p> <ul style="list-style-type: none"> 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. Any 'boil water alerts' issued in the last 18 months, the corrective action implemented and whether it was successful. Whether the requirements of Circular LWU 18 of June 2014 have been addressed in order to assure the safety of your drinking water supplies. 	Section 6.3.2 Section 2.5
<p>E. Summary of best-practice maintenance plan is included. Also report your LWU's implementation of any NSW Office of Water section 61 recommendations (<i>Local Government Act 1993</i>) for corrective action with respect to water and sewage treatment works, dams, water recycling systems or biosolids recycling systems.</p>	Section 6.4
<p>F. Review and update the existing TAMP in your IWC Strategy/SBP. New TAMP to show your LWU's 30-year capital works program which nominates each proposed project and its annual capital expenditure, including an evidence-based cost-effective asset renewals plan. TAMP is integrated with the strategic business plan to meet the target levels of service. Disclosure of the funding required for each of growth, improved standards and renewals is required for each project.</p> <p>TAMP has been updated in accordance with Items 6.4 and 6.5.</p>	Section 6.5
<p>G. All major projects in the TAMP are discussed in the SBP and are consistent with the adopted IWC Scenario and business objectives</p>	Yes
<p>8. Work Force Plan</p> <p>Organisation Chart is included.</p> <p>Work force requirements to meet the needs of TAMP, including items 6.4 to 6.7 have been incorporated.</p>	Sections 2.2.6 and 7

BYRON SHIRE COUNCIL		STRATEGIC BUSINESS PLAN
Outcome Achieved	Section in this Document	
<p>9. Input to Council's Integrated Planning and Reporting (IPR)</p> <p>Provide water supply and sewerage inputs to your Council's:</p> <ul style="list-style-type: none"> • Community Strategic Plan • 4-year Delivery Plan • Annual Operating Plan • Annual Report. 	Appendix 7	
<p>10. Financial Plan Objective</p> <p>A. The financial plan includes all foreseeable costs and income and achieves the lowest uniform level of stable typical residential bill (in Year 25) to meet the levels of service negotiated with the community.</p> <p>B. Long-term financial sustainability is demonstrated to comply with National Competition Policy and the National Water Initiative.</p>	Appendix 6	
<p>11. Financial Model</p> <p>LWUs using the FINMOD software for their financial plan have used the latest version (FINMOD 2.1 or FINMOD 4.0)</p>	Yes	
<p>12. Timeframe</p> <p>The financial plan covers a period of 30 years in accordance with the IWCMI Strategy.</p>	Yes	
<p>13. Growth and Number of Assessments</p> <p>A. Input accurate numbers of existing residential and non-residential assessments from the water cycle analysis and projection.</p> <p>B. New assessments for backlog water supply or sewerage projects are included in the growth projections.</p> <p>C. Growth projection input into your LWU's financial planning is consistent with the demographic and water cycle analysis and projections and SBP document</p>	Appendix 6	
<p>14. Interest Rates</p> <p>Appropriate values have been used. Such rates in July 2014 were:</p> <ul style="list-style-type: none"> • Inflation 2.5% pa • Investment 5.5% pa • Borrowing 6.5% pa 	Yes	
<p>15. Grants</p> <p>No capital works grants under the CTWSS program are assumed after about 2016/17.</p>	None	
<p>Forecast Data</p> <p>16. A. Forecast data, such as future operation, maintenance and administration (OMA) costs and the income split (between the annual residential revenue and the annual non-residential revenue), have been carefully considered as part of the LWU's total asset management planning (refer to Item 7 on page 10).</p>	Appendix 6	
<p>B. Increases or reductions to OMA costs have been discussed in the SBP document</p>	Section 6.2	
<p>17. Residential Bills</p> <p>The financial plan must provide a 30-year projection of Typical Residential Bills in Year 25.</p>	Appendix 6	

BYRON SHIRE COUNCIL

STRATEGIC BUSINESS PLAN

Outcome Achieved	Section in this Document
<p>18. Results</p> <p>The input data, key output graphs and the full projected results and the annual financial statements (i.e. Income Statement, Balance Sheet and Cash Flow Statement) are included for the preferred case. Results are presented in Year 2 dollars (i.e. not in inflated dollars).</p>	Appendix 6
<p>19. Sensitivity Analysis</p> <p>A. Sensitivity Analysis has been carried out and results are included.</p> <p>B. A description of the cases analysed, and the reasons for their selection have been included in the SBP document</p>	Appendix 6
<p>20. Financial Plan Report and Price Path</p> <p>A. Financial Plan Report prepared to document your financial planning.</p> <p>B. Price path adopted for the typical residential bill over the next 4 years in Year 2\$. This provides some price certainty to your LWU's customers</p>	Appendix 6

APPENDIX 2: PLANS

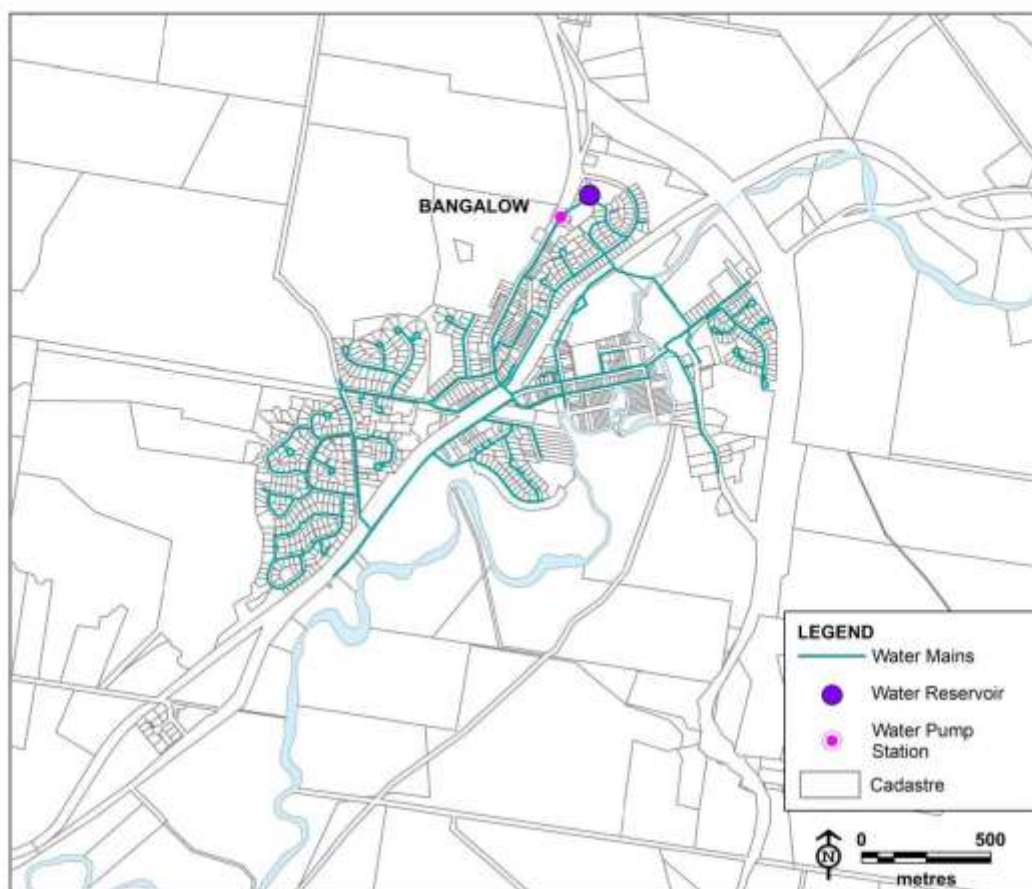


Figure 13: Bangalow Water Supply System

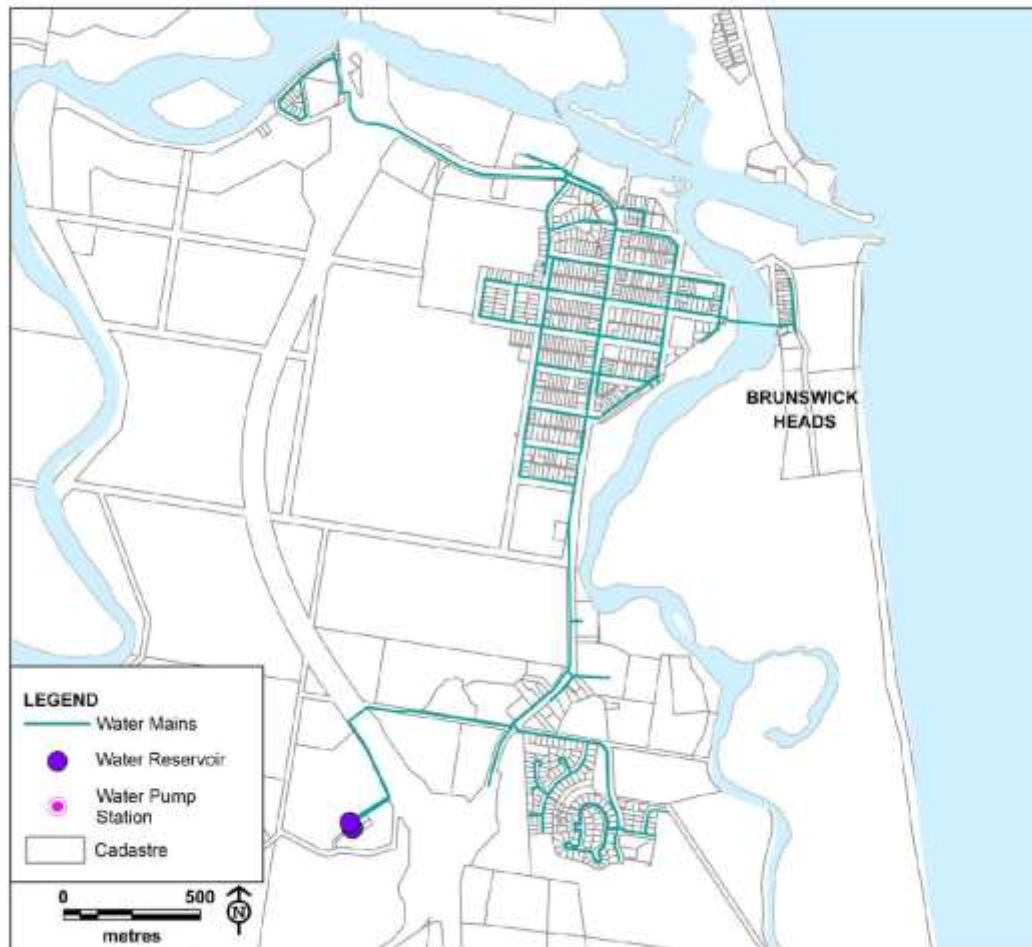


Figure 14: Brunswick Heads Water Supply System

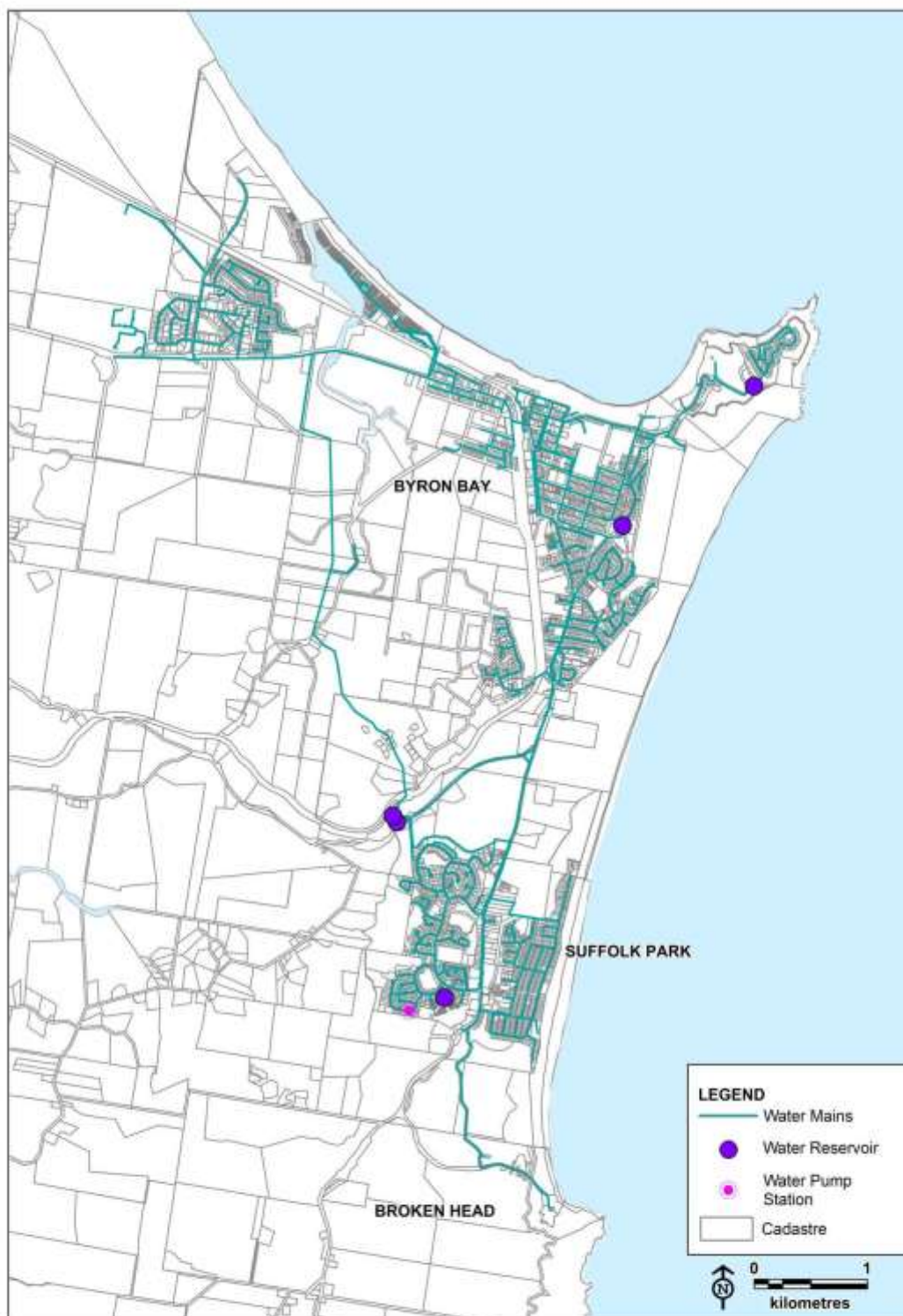


Figure 15: Byron Bay/Suffolk Park Water Supply System

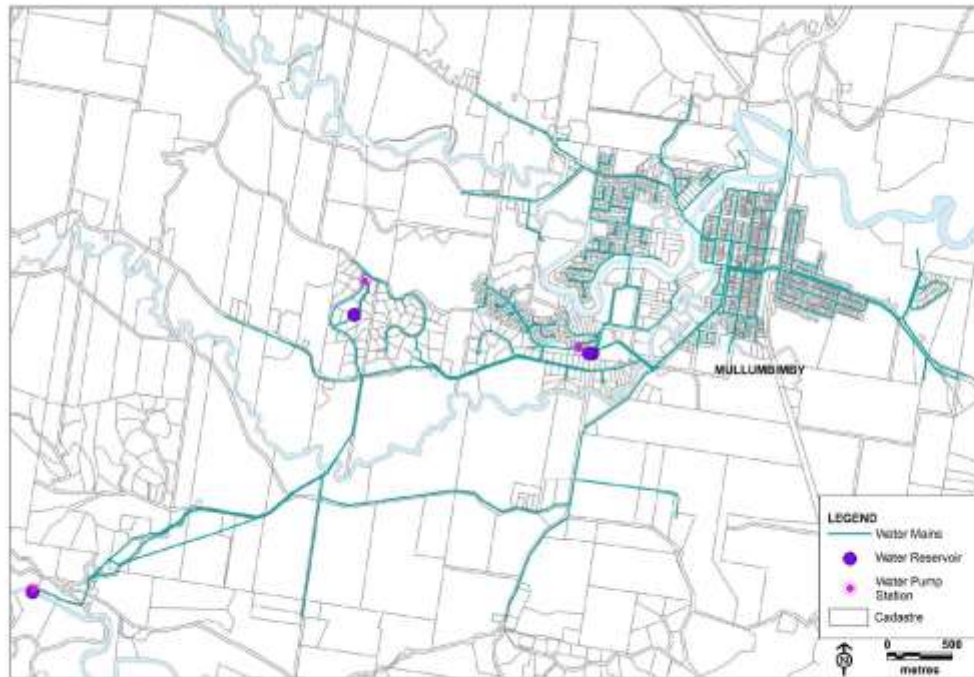


Figure 16: Mullumbimby Water Supply System

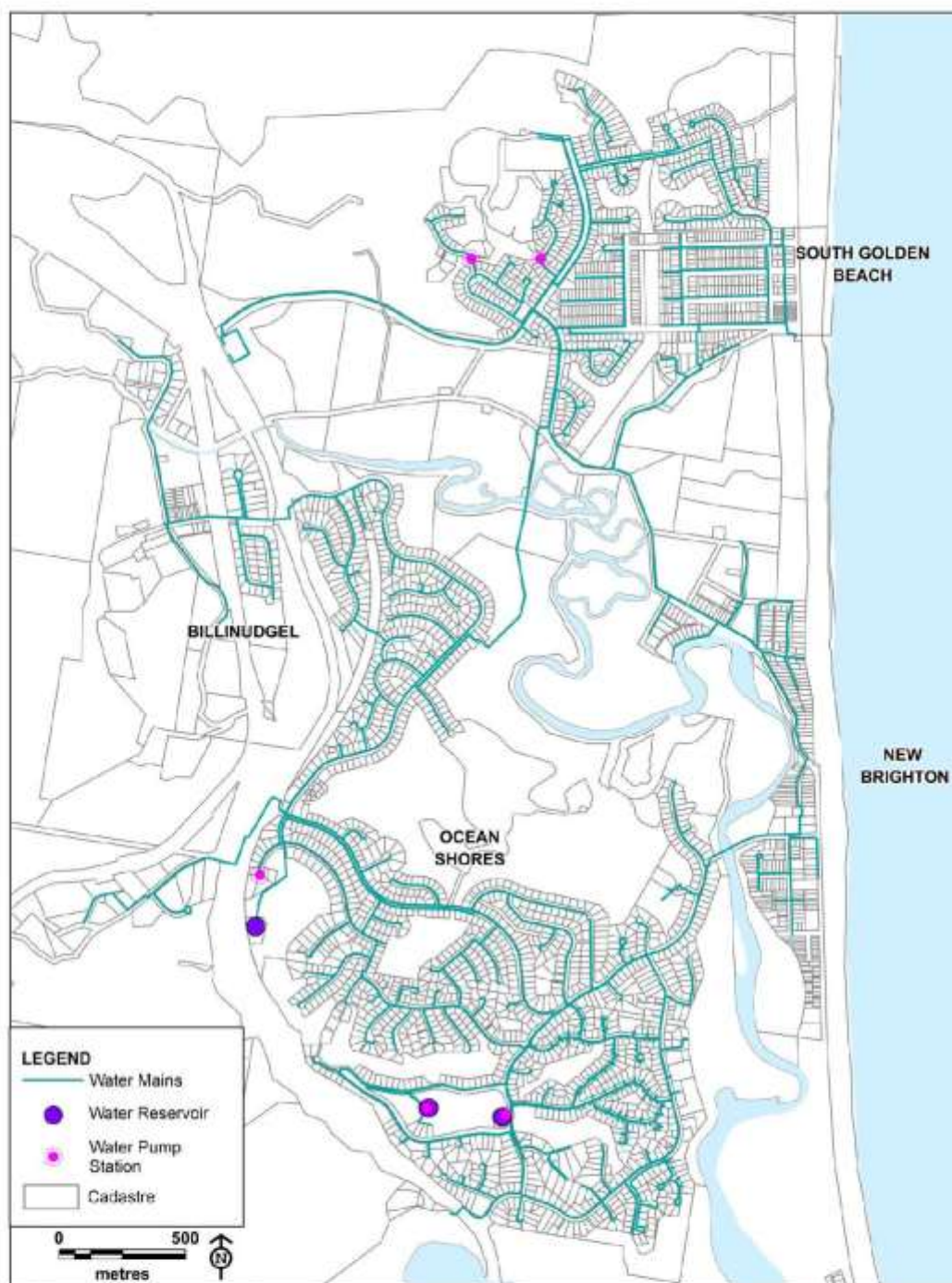


Figure 17: Ocean Shores/New Brighton/South Golden Beach/Billinudgel Water Supply System

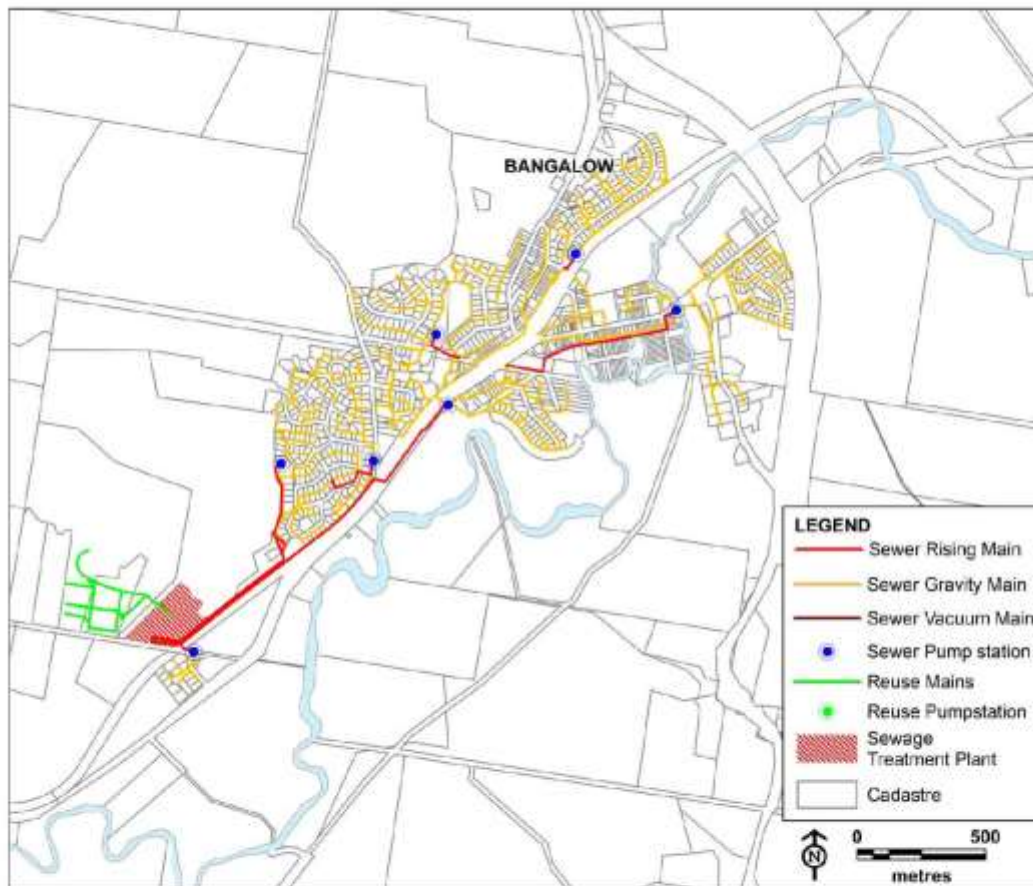


Figure 18: Bangalow Sewerage System

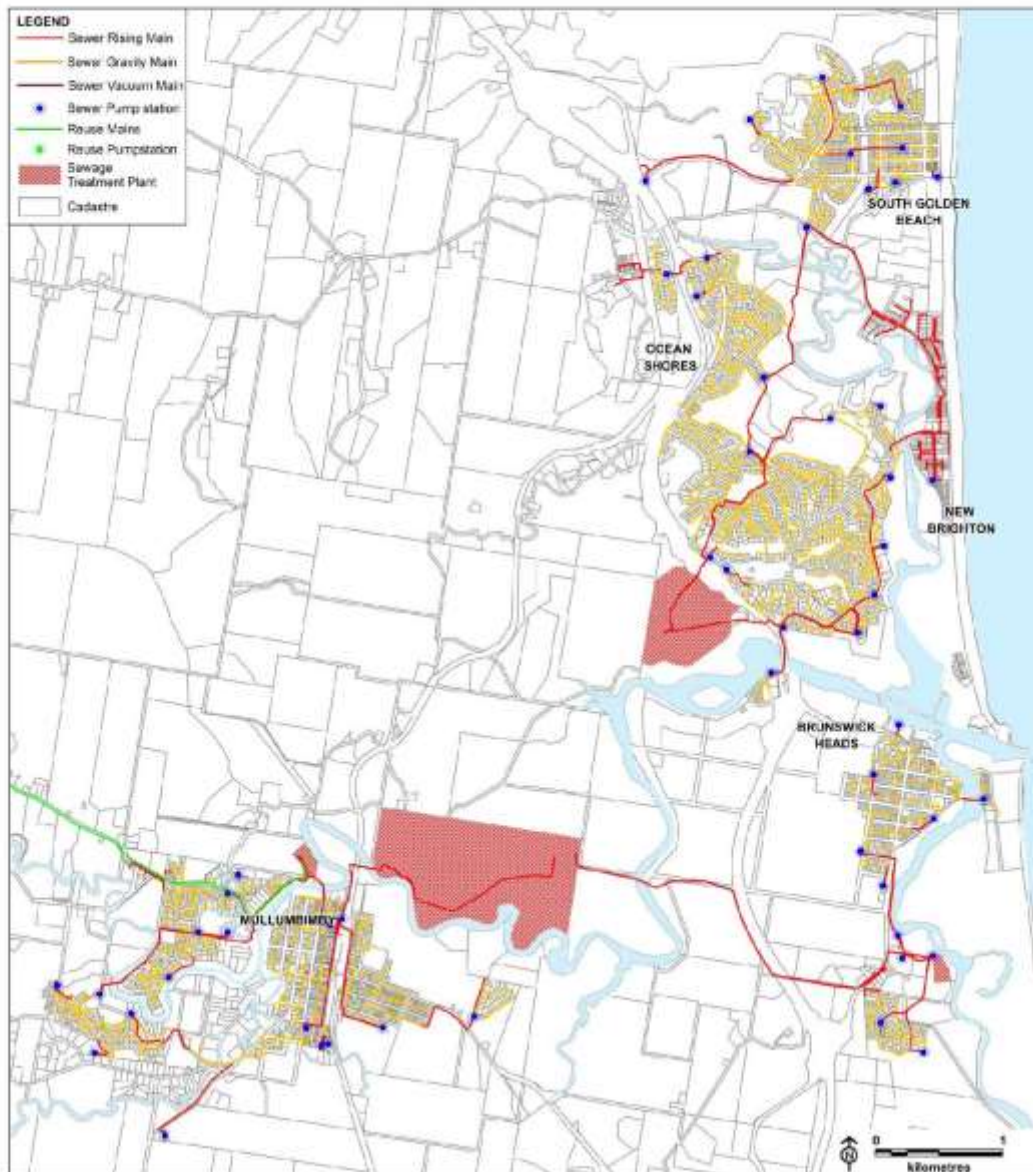


Figure 19: Brunswick Valley Sewerage System

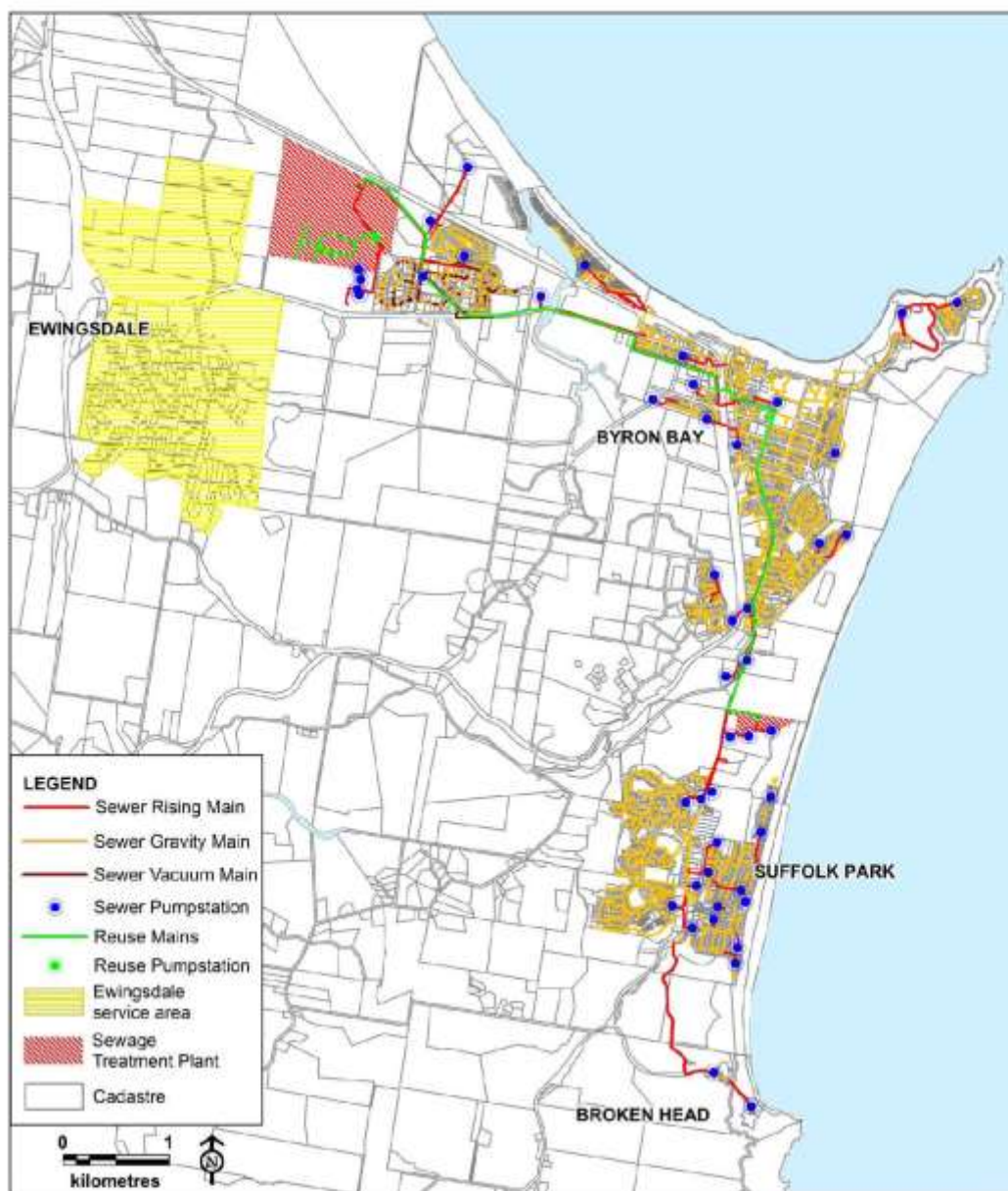


Figure 20: Byron Bay/Suffolk Park Sewerage System

APPENDIX 3: 2014/15 TRIPLE BOTTOM LINE PERFORMANCE REPORTS

BYRON SHIRE COUNCIL

STAFF REPORTS - INFRASTRUCTURE SERVICES

4.2

Byron Shire Council TBL Water Supply Performance 2014-15

WATER SUPPLY SYSTEM - Byron Shire Council serves a population of 20,700 (11,220 connected properties). Byron Council is a reticulator with 85% of its supply comprising a fully treated bulk water supply provided by Rous County Council. Water is drawn from Rocky Creek to supply Byron Bay, Bangalow, Brunswick Heads and Ocean Shores. Mullumbimby is supplied from its own water treatment works at Laverly's Gap. The water supply network comprises 1 direct filtration works (2.9 ML/d), 12 service reservoirs (24 ML), 4 pumping stations, 3.9 ML/d delivery capacity into the distribution system, 53 km of transfer and trunk mains and 186 km of reticulation. Byron Shire Council is a reticulator with 70% of its supply provided by Rous Water.

PERFORMANCE - Byron Shire Council achieved 100% implementation of the outcomes required by the NSW BPM Framework. The 2015-16 typical residential bill was \$612 which was close to the statewide median of \$593 (Indicator 14). The economic real rate of return was similar to the statewide median (Indicator 43). The operating cost (OMA) per property was \$482 which was above the statewide median of \$400 (Indicator 49). Water quality complaints were less than the statewide median of 3 (Indicator 25). Compliance was achieved for microbiological water quality (100% of the population, 2 of 2 zones compliant), chemical water quality and physical water quality. There were no failures of the chlorination system or the treatment system. Byron Shire Council reported no water supply public health incidents. Current replacement cost of system assets was \$52M (\$7,800 per assessment). Cash and investments were \$13.4M, debt was nil and revenue was \$8.9M (excluding capital works grants).

IMPLEMENTATION OF OUTCOMES REQUIRED BY THE NSW BEST-PRACTICE MANAGEMENT (BPM) FRAMEWORK

(1) Complete Current Strategic Business Plan & Financial Plan	YES ⁽¹⁾	(3) Sound water conservation implemented	YES
(2) (2a) Pricing - Full Cost Recovery, without significant cross subsidies	Yes	(4) Sound drought management implemented	YES
(2b) Pricing - Appropriate Residential Charges	Yes	(5) Complete performance reporting (by 15 September)	YES
(2c) Pricing - Appropriate Non-residential Charges	Yes	(6) Integrated water cycle management strategy	YESC ⁽¹⁾
(2d) Pricing - DSP with Commercial Developer Charges	Yes		100%

TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS

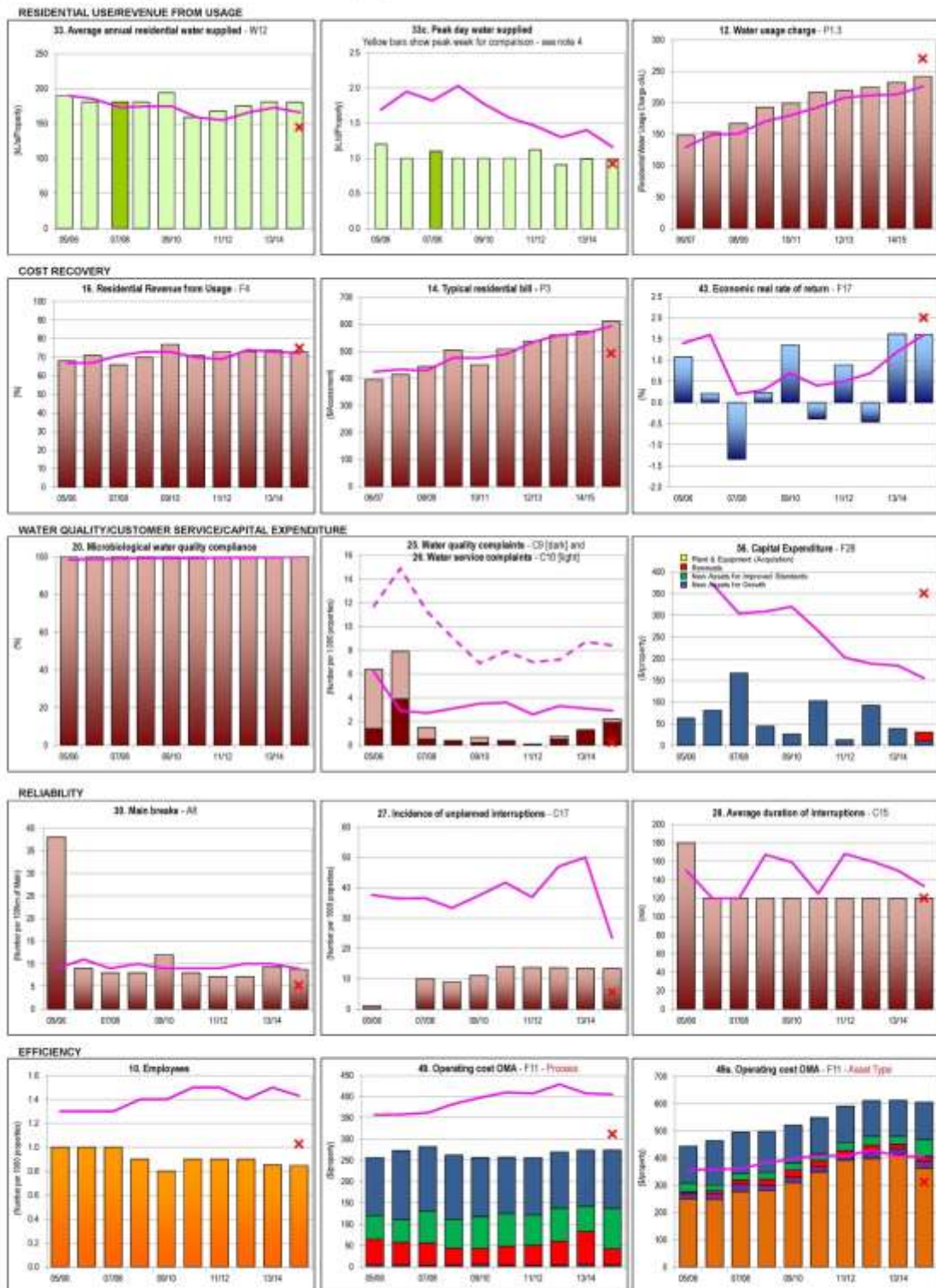
Category	Indicator	Unit	Result	Ranking	Statewide Median	National Median
UTILITY CHARACTERISTICS	C1 1 Population served:	20700				
	C4 2 Number of connected properties:	11220				
	3 Residential connected properties (% of total)		67		92	
	4 New residences connected to water supply (%)		2.6	1	1.1	
	A3 5 Properties served per kilometre of water main		47		31	34
	6 Rainfall (% of median annual rainfall)		114	3	116	
	W11 7 Total urban water supplied at master meters (ML)		3,380		7,000	9,000
	8 Peak week to average consumption (%)				141	
	9 Renewals expenditure (% of current replacement cost of system assets)		0.2	5	0.4	
	10 Employees per 1000 properties		0.8	1	1.4	
SOCIAL CHARGES/BILLS	P1 Residential tariff structure for 2015-16: inclining block, independent of land value, access charge \$175					
	P13 12a Residential water usage charge for 2014-15 for usage <450 kL (c/kL)		232	2	213	185
	12b Residential water usage charge for 2015-16 for usage <450 kL (c/kL)		242	2	226	
	P3 14a Typical residential bill for 2014-15 (\$/assessment)		574	3	566	\$68
	14b Typical residential bill for 2015-16 (\$/assessment)		612	4	593	
	15 Typical developer charge for 2015-16 (\$/equivalent tenement)		3,500	4	5,900	
	F4 16 Residential revenue from usage charges (% of residential bills)		73	2	72	66
	F5 17 Revenue per property - water (\$/property)		790	4	827	881
	18 Water Supply Coverage (% of Urban Population with reticulated WS)		99.5	3	99.5	
	18a Risk based Drinking Water Management System (DWMS)?		Yes			
SOCIAL HEALTH	19 Physical compliance achieved? Note 11		Yes	1	1	
	19a Chemical compliance achieved? Note 11		Yes	1	1	
	H4 19b % population with chemical compliance		100	1	100	
	20 Microbiological (E. coli) compliance achieved? Note 11		Yes	1	1	
	H3 20a % population with microbiological compliance		100	1	100	100
SERVICE LEVELS	C9 25 Water quality complaints per 1000 properties		1	3	3	2
	C10 26 Water service complaints per 1000 properties		0.3	2	1	0.5
	C17 27 Incidence of unplanned interruptions per 1000 properties		13	2	3	24
	C18 28 Average duration of interruption (min)		120	1	2	133
	A6 30 Number of water main breaks per 100 km of water main		9	3	9	13
	31 Drought water restrictions (% of time)		0	1	1	0
	32 Total days lost (%)		5.5	5	5	2.9
ENVIRONMENTAL INFRASTRUCTURE SUSTAINMENT	W12 33 Average annual residential water supplied - STATEWIDE (kL/property)		180	4	2	186
	33a Average annual residential water supplied - COASTAL LWUs (kL/property)		180	5	4	150
	33b Average annual residential water supplied - INLAND LWUs (kL/property)					225
	A10 34 Real losses (leakage) (L/service connection/day)		50	2	2	60
	35 Energy consumption per Megalitre (kWh/Mt hours)		37	1	1	700
	36 Renewable energy consumption (% of total energy consumption)					9
	E12 36a Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 properties)		170	1	1	410
	42 Current replacement cost per assessment (\$)		7,600	5	5	16,400
ECONOMIC FINANCE	F17 43 Economic real rate of return - Water (%)		1.6	2	2	1.6
	44 Return on assets - Water (%)		2.1	2	2	1.0
	F22 45 Net Debt to equity - WS & Sge (%)		14	1	1	11
	F23 46 Interest cover - WS & Sge		2	1	1	4
	47 Loan payment per property - Water (\$)		37	3	3	69
	F24 47b Net profit after tax - WS & Sge (\$'000)		2,760	3	1	2340
ECONOMIC EFFICIENCY	48 Operating cost (OMA) per 100km of main (\$'000)		1,280	3	3	1,320
	F11 49 Operating cost (OMA) per property (\$/prop) Note 9		482	4	2	400
	50 Operating cost (OMA) per kilolitre (cents)		91	1	2	129
	51 Management cost (\$/prop)		137	2	2	141
	52 Treatment cost (\$/prop)		27	1	1	58
	53 Pumping cost (\$/prop)					31
	54 Energy cost (\$/prop)					18
	55 Water main cost (\$/prop)		61	2	2	74
	F26 56 Capital Expenditure (\$/prop)		31	5	5	155

NOTES:

- Col 2 rankings are on a % of LWUs basis - best reveals performance compared to similar sized LWUs (ie. Col 1 is compared with LWUs with >10,000 properties).
- Col 3 rankings are on a % of LWUs basis - best reveals performance compared to all LWUs (ie. Col 1 is compared with all LWUs).
- Col 4 (Statewide Median) is on a % of connected properties basis - best reveals statewide performance (gives due weight to larger LWUs & reduces effect of smaller LWUs).
- Col 5 (National Median) is the median value for the 76 utilities reporting water supply performance in the National Performance Report 2014-15 (www.bom.gov.au).
- LWUs are required to annually review key projections & actions in the later of their IWCMS Strategy and financial plan and their Strategic Business Plan and to annually 'roll forward', review and update their 30-year total asset management plan (TAMP) and 30-year financial plan.
- Byron Shire Council is a reticulator - costs include operating costs. Water harvesting and water treatment are provided by Rous County Council.
- 2015-16 Non-residential Tariff: Access Charge based on Service Connection* (40mm: \$700), Two Part Tariff: Usage Charge 260c/kL.
- Non-residential water supplied was 31% of potable water supplied excluding non-revenue water.
- Non-residential revenue was 30% of annual rates and charges, indicating fair pricing of services between the residential and non-residential sectors.
- Operating cost (OMA) per property was \$482, including \$209 for bulk supply. Other components were: management (\$137), operation (\$95), maintenance (\$37) & chemical (\$5).
- Rehabilitations included 0.4% of water mains, 1.0% of service connections and 5.3% of water meters. Renewals expenditure was \$93,000/100km of main.
- Compliance with ADWG 2011 for drinking water quality is shown as "Yes" if compliance has been achieved (Indicators 19, 19a & 20).
- Byron Shire Council has 4 fully qualified water treatment operators who meet the requirements of the National Certification Framework.
- As Byron Shire Council's strategic business plan and financial plan are over 4 years old, it needs to prepare a 30-year IWCMS Strategy and financial plan in accordance with the July 2014 IWCMS Check List (www.water.nsw.gov.au).

Byron Shire Council TBL Water Supply Performance (page 2) 2014-15

(Results shown for 10 years together with Statewide Median and 2014-15 Top 20%)



NOTES:

- Costs are in Jan 2015\$ except for graphs 12 and 14, which are in Jan 2016\$.
- Microbiological water quality compliance 1999-03 to 2003-04 was on the basis of 1996 NHMRC/ARMCANZ Australian Drinking Water Guidelines for E. coli; from 2004-06 to 2010-11 compliance was on the basis of the 2004 NHMRC/ARMCANZ Australian Drinking Water Guidelines (ADWG) and for 2011-12 to 2014-15 compliance was on the basis of the 2011 ADWG.
- Indicators 33 and 33a - Green shading of bars shows % of time Drought Water Restrictions applied in each year.
- Indicator 33a - Yellow bars show Peak Week Water Supplied for comparison with Peak Day Water Supplied shown in green.

LEGEND

State Median for all years (purple line)
 Top 20% for 2014-15 (red X)

0 - 20% (light green)
 30-50% (medium green)
 >50% of time (dark green)

BYRON SHIRE COUNCIL

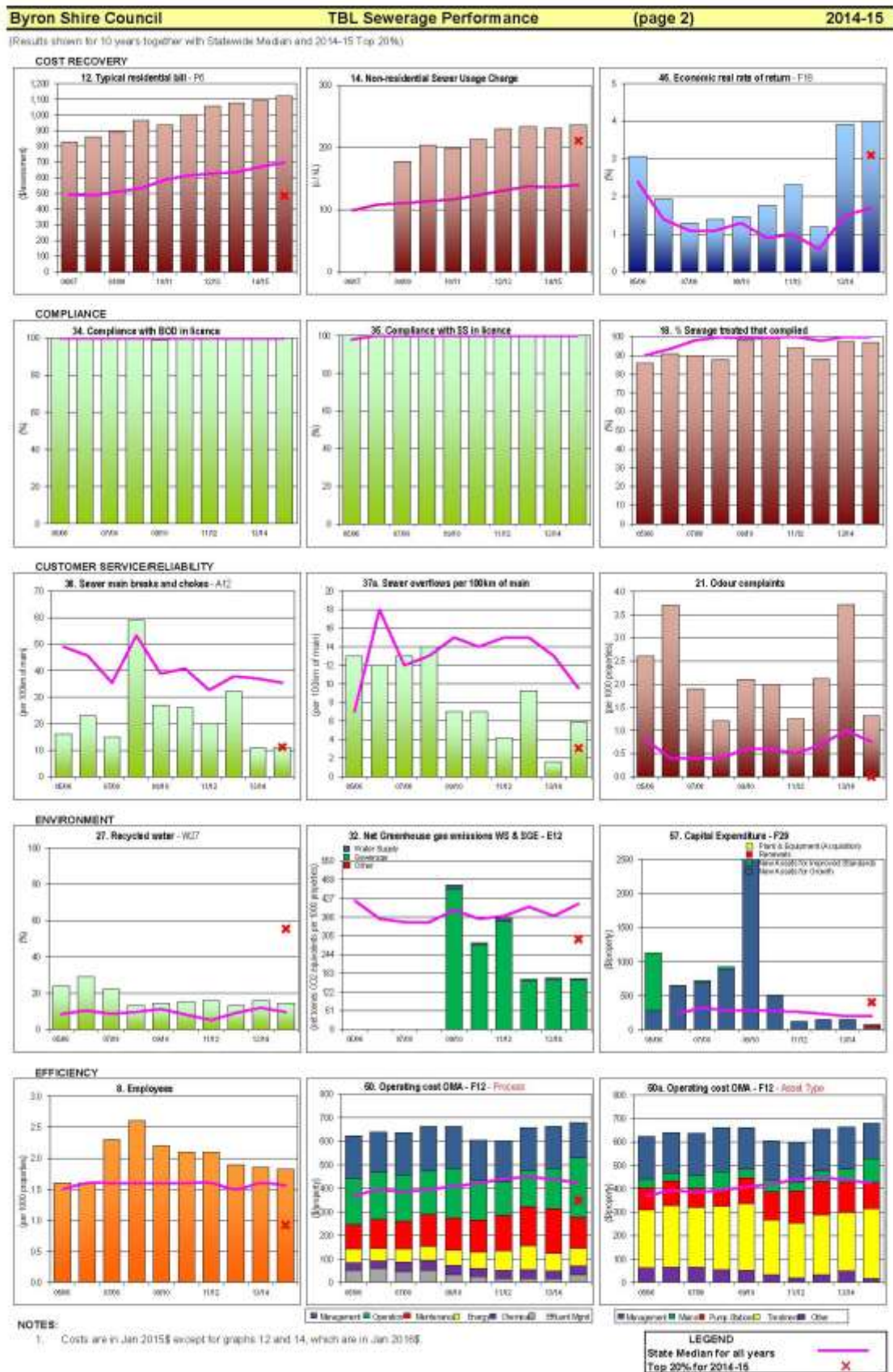
STAFF REPORTS - INFRASTRUCTURE SERVICES

4.2

Byron Shire Council		TBL Sewerage Performance		2014-15					
<p>SEWERAGE SYSTEM - Byron Shire Council serves a population of 20,500 (10,660 connected properties) and has 4 sewage treatment works providing advanced secondary, tertiary and advanced tertiary treatment. The system comprises 57,000 EP treatment capacity (Intermittent Extended Aeration (Activated Sludge), Biological Nutrient Removal and Membrane Biological Reduction), 81 pumping stations (65 ML/d), 73 km of rising mains and 176 km of gravity trunk mains and reticulation. 14% of effluent was recycled (Indicator 27) and the treated effluent is discharged to land and river.</p> <p>PERFORMANCE - Residential growth for 2014-15 was 2.7% which is higher than the statewide median. Byron Shire Council achieved 100% implementation of the outcomes required by the NSW BPM Framework. The 2015-16 typical residential bill was \$1121 which was well above the statewide median of \$657 (Indicator 12). The economic real rate of return was 4% which was greater than the statewide median (Indicator 48). The operating cost per property (OMA) was \$680 which was well above the statewide median of \$420 (Indicator 50). Sewage odour complaints were above the statewide median of 0.8 (Indicator 21). Byron Council reported no public health incidents. Council did not comply with the Ammonia, P requirements of the environmental regulator for effluent discharge. The current replacement cost of system assets was \$204M (\$19,300 per assessment), cash and investments were \$12M, debt was \$60M and revenue was \$16.3M (excluding capital works grants).</p>									
IMPLEMENTATION OF OUTCOMES REQUIRED BY THE NSW BEST-PRACTICE MANAGEMENT (BPM) FRAMEWORK									
(1) Complete current strategic business plan & financial plan		YES ¹	(2e) Pricing - DSP with commercial developer charges	Yes					
(2) (2a) Pricing - Full Cost Recovery without significant cross subsidies		Yes	(2f) Pricing - Liquid trade waste approvals & policy	Yes					
(2c) Pricing - Appropriate Residential Charges		Yes	(3) Complete performance reporting (by 15 September)	YES					
(2c) Pricing - Appropriate Non-Residential Charges		Yes	(4) Integrated water cycle management strategy	YESC ¹¹					
(2d) Pricing - Appropriate Trade Waste Fees and Charges		Yes	IMPLEMENTATION OF ALL OUTCOMES						
			100%						
TRIPLE BOTTOM LINE (TBL) PERFORMANCE INDICATORS									
UN		RM	LWU	RANKING	MEDIANS				
			RESULT	Properties	Statewide				
UTILITY	05	1 Population served: 20,500							
	06	2 Number of connected properties: 10,660	Number of assessments: 11,100						
	07	3 Number of residential connected properties: 9,220							
	08	4 New residences connected to sewerage (%)	%	2.7	1	1.0			
	09	5 Properties served per kilometre of main	Properties	42	1	38	40		
	10	6 Volume of sewage collected (ML)	ML	3,038	4	5,200	5,540		
	11	7 Renewals expenditure (% of current replacement cost of system assets)	%	0.2	4	0.5			
	12	8 Employees per 1000 properties	per 1,000 prop	1.8	3	1.6			
SOCIAL	F4	Description of residential tariff structure: access charge/prop with \$177 c/L usage charge, independent of land value							
	11a	11a Residential access charge for 2014-15 (\$/assessment)	\$	2014-15	790	4	5	659	620
	11b	11b Residential access charge for 2015-16 (\$/assessment)	\$	2015-16	602	4	5	697	
	12a	12a Typical residential bill for 2014-15 (\$/assessment)	\$	2014-15	1093	6	5	669	667
	12b	12b Typical residential bill for 2015-16 (\$/assessment)	\$	2015-16	1121	5	5	697	
	13	13 Typical developer charge for 2015-16 (\$/equivalent tenement)	\$	2015-16	13,150	1	1	5,100	
	14	14 Non-residential sewer usage charge (c/L)	c/L	236	2	1	150		
	15	15 Revenue per property - Sge (\$)	\$/prop	1530	1	1	882	947	
	16	16 Sewerage Coverage (% of Urban Population with Reticulated Sge Service)	%	99.6	1	1	97.9		
	17	17 Percent of sewage treated to a tertiary level (%)	%	100	1	1	97	91	
ENVIRONMENTAL	21	21 Odour complaints per 1000 properties	per 1,000 prop	1.3	4	5	0.8		
	22	22 Service complaints - sewerage per 1000 properties	per 1,000 prop	1.3	1	1	6	1	
	23a	23a Average sewerage interruption (minutes)	min	80	1	1	95	102	
	24	24 Total days lost (%)	%	5.6	6	5	3.1		
	26	26 Volume of sewage collected per property (ML)	ML/prop	291	5	5	238	214	
	26a	26a Total recycled water supplied (ML)	ML	440	4	2	520	1,580	
ECONOMIC	27	27 Recycled water (% of effluent recycled)	%	54	3	2	10	16	
	28	28 Biosolids reuse (%)	%	100	1	1	100	100	
	30	30 Energy consumption - sewerage (kWh/ML)	kWh/ML	1,114	6	5	790		
	31	31 Renewable energy consumption (% of total energy consumption)	%	1	1	1	0		
	32	32 Net greenhouse gas emissions - WS & Sge (net tonnes CO2 equivalents per 1000 properties)	t CO2e	170	1	1	410	393	
	33	33 90th Percentile licence limits for effluent discharge: BOD: 10 mg/L; SS: 15 mg/L; Total N: 10 mg/L; Total P: 0.5 mg/L							
	34	34 Compliance with BOD in licence (%)	%	100	1	1	100		
	35	35 Compliance with SS in licence (%)	%	100	1	1	100		
	36	36 Sewer main breaks and chokes (per 100 km of main)	per 100km/main	11	1	1	35	17	
	37a	37a Sewer overflows (per 100 km of main)	per 100km/main	6	2	3	10		
37b	37b Sewer overflows reported to environmental regulator (per 100km of main)	per 100km/main	2.0	5	4	0.9	0.5		
38	38 Non res & trade waste % of total sge volume	%	33	1	1	20			
ECONOMIC	43	43 Revenue from non-residential plus trade waste charges (% of total revenue)	%	26	1	1	18		
	44	44 Revenue from trade waste charges (% of total revenue)	%	3.4	2	1	2.0		
	46	46 Economic real rate of return - Sge (%)	%	4.0	1	1	1.7	3.0	
	46a	46a Return on assets - Sge (%)	%	1.6	3	2	1.3		
	46a	46a Loan payment per property - Sge (\$)	\$/prop	409	1	1	110		
	48b	48b Net profit after tax - WS & Sge (\$'000)	\$'000	2,760	3	1	2340	7,620	
	48	48 Operating cost (OMA) per 100 km of main (\$'000)	\$'000	2,660	5	5	1,720		
	50	50 Operating cost (OMA) per property (\$) (Note 9)	\$/prop	680	5	5	420	400	
	51	51 Operating cost (OMA) per ML (cents)	c/L	234	5	4	193		
	52	52 Management cost per property (\$)	\$/prop	149	2	3	160		
ECONOMIC	53	53 Treatment cost per property (\$)	\$/prop	296	5	5	145		
	54	54 Pumping cost per property (\$)	\$/prop	114	5	5	67		
	55	55 Energy cost per property (\$)	\$/prop	75	5	5	35		
	56	56 Sewer main cost per property (\$)	\$/prop	102	5	5	51		
	57	57 Capital Expenditure per property - Sewerage (\$)	\$/prop	60	5	4	204	217	

NOTES:

- Col 2 rankings are on a % of LWUs basis - best reveals performance compared to similar sized LWUs (ie. Col 1 is compared with LWUs with > 10,000 properties).
- Col 3 rankings are on a % of LWUs basis - best reveals performance compared to all LWUs (ie. Col 1 is compared with all LWUs). - see attachment
- Col 4 (Statewide Median) is on a % of connected properties basis - best reveals statewide performance (gives due weight to larger LWUs & reduces effect of smaller LWUs).
- Col 5 (National Median) is the median value for the 75 utilities reporting sewerage performance in the National Performance Report 2014-15 (www.bom.gov.au).
- LWUs are required to annually review key projections & actions in the later of their IWCM Strategy and financial plan and their Strategic Business Plan and to annually 'roll forward, review and update their 30-year total asset management plan (TAMP) and 30-year financial plan.
- Non-residential access charge - \$802, proportional to square of size of service connection. Sewer usage charge - 236 c/L.
- Non-residential and trade waste volume was 33% of total sewage collected.
- Non-residential revenue was 28% of revenue from access, usage & trade waste charges, indicating fair pricing of services between the residential and non-residential sectors.
- Compliance with Total N in Licence was 100%. Compliance with Total P in Licence was 98%.
- Operating cost (OMA)/property was \$680. Components were: management (\$149), operation (\$256), maintenance (\$128), energy (\$75), chemical (\$38) & effluent/biosolids (\$32).
- Renewals expenditure was \$153,000/100km of main.
- As Byron Shire Council's strategic business plan and financial plan are over 4 years old, it needs to prepare a 30-year IWCM Strategy and financial plan in accordance with the July 2014 IWCM Check List (www.water.nsw.gov.au).



APPENDIX 4: MULLUMBIMBY WATER SUPPLY DROUGHT MANAGEMENT

History of Restrictions in Mullumbimby

Restrictions were imposed in Mullumbimby during the droughts of 2002/03 and 2006/07 as shown in Table 28.

Table 28: History of Mullumbimby Restrictions

Restriction Level	Date Commenced	Date Finished	Number of Days
3	16/08/2002	5/10/2002	50
4	5/10/2002	1/02/2003	119
5	1/02/2003	9/03/2003	38
4	9/03/2003	15/03/2003	6
3	9/03/2003	10/05/2003	62
1	15/10/2003	21/01/2004	98
1	12/07/2004	6/09/2004	56
3	6/09/2004	18/10/2004	42
4	18/10/2004	25/10/2004	7
1	25/10/2004	28/05/2005	215
1	20/07/2007	15/12/2007	148

Mullumbimby Demand during Restrictions

Figure 21 provides historical demand (Mullumbimby WTP water production data) from 1996 to 2013 (documented in the 2014 Mullumbimby Drought Management Plan).

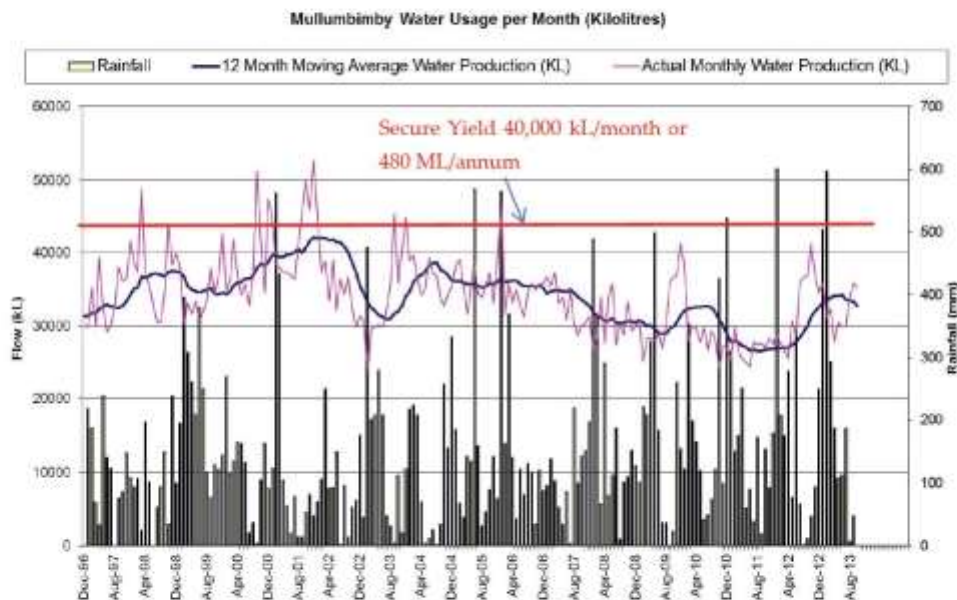


Figure 21: Historical Water Production Data

Source: HydroScience (2014)

Figure 22 shows historical Lavery's Gap weir levels from 2002 to 2004 showing periods of water restrictions and rainfall as documented in the 2014 Mullumbimby Drought Management Plan. During the 2002-2003 drought Level 3, 4 and 5 water restrictions appeared to be effective in reducing demand to below average levels. Weir levels fluctuated over this period responding to rainfall and demand but overall continued to drop until significant rainfall occurred in February 2003. With the lifting of water restrictions, demand initially increased to above average levels before returning to average.

Figure 23 provides weir levels superimposed with water demand, restriction periods and rainfall from 2006-2015. Figure 24 provides the same data for the Level 1 water restriction period in 2007, which lasted for 148 days. The 2007 restriction period was not triggered by Lavery's Gap weir level but implemented to be consistent with the Rous County Council restrictions applying to other parts of the Byron Shire. Despite a period of low rainfall in the month prior, water level is at the top of the weir when Level 1 water restrictions are introduced. Demand initially increases during the first week of Level 1 water restrictions. While it is common to see an initial increase in demand following the introduction of water restrictions, very low rainfall during this month was also a likely factor, increasing the demand for water. Demand decreases as Level 1 restrictions continue into the second week and weir levels drop following a prolonged dry period. Rainfall in late August 2007 fills the weir however restrictions remain in place. Demand fluctuates as Level 1 restrictions remain in place, with peaks in demand associated with periods of low or no rainfall. Overall, demand is generally slightly lower than average demand levels indicating Level 1 restrictions had some impact on reducing water use.

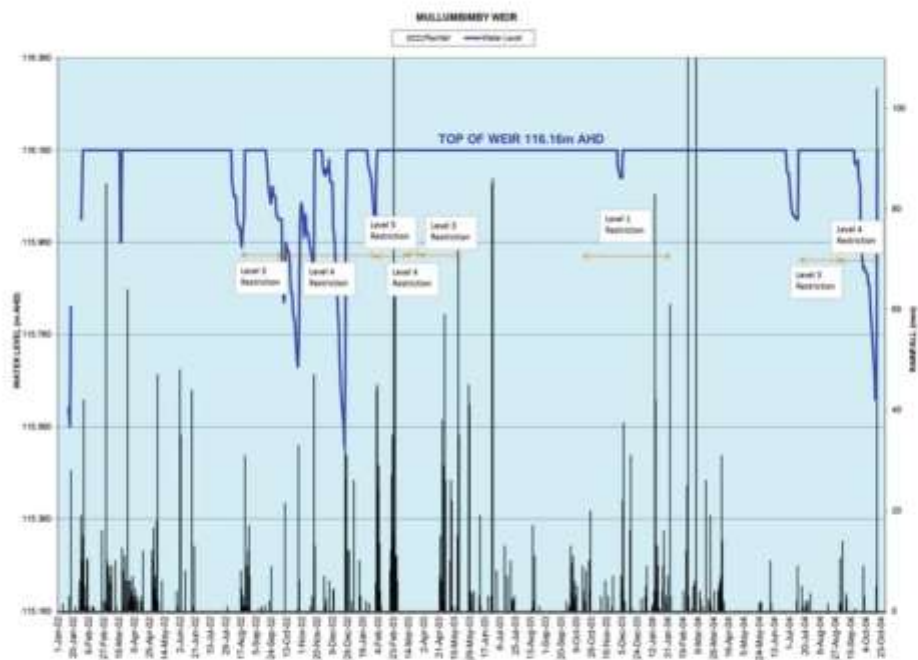


Figure 22: Historical Lavertys Gap Weir Levels from 2002 to 2004 showing periods of Water Restrictions and Rainfall

Source: HydroScience (2014)

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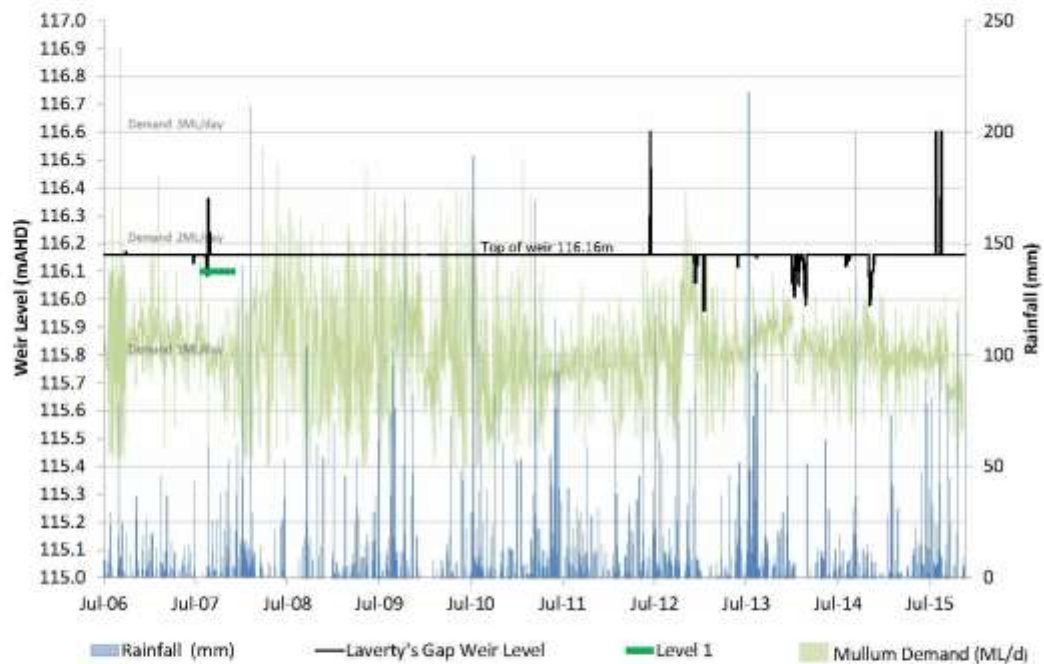


Figure 23: Laverlys Gap Weir Level, Water Production, Restriction Periods and Rainfall 2006-2015

Raw data provided by BSC and rainfall data obtained from SILO (2016)

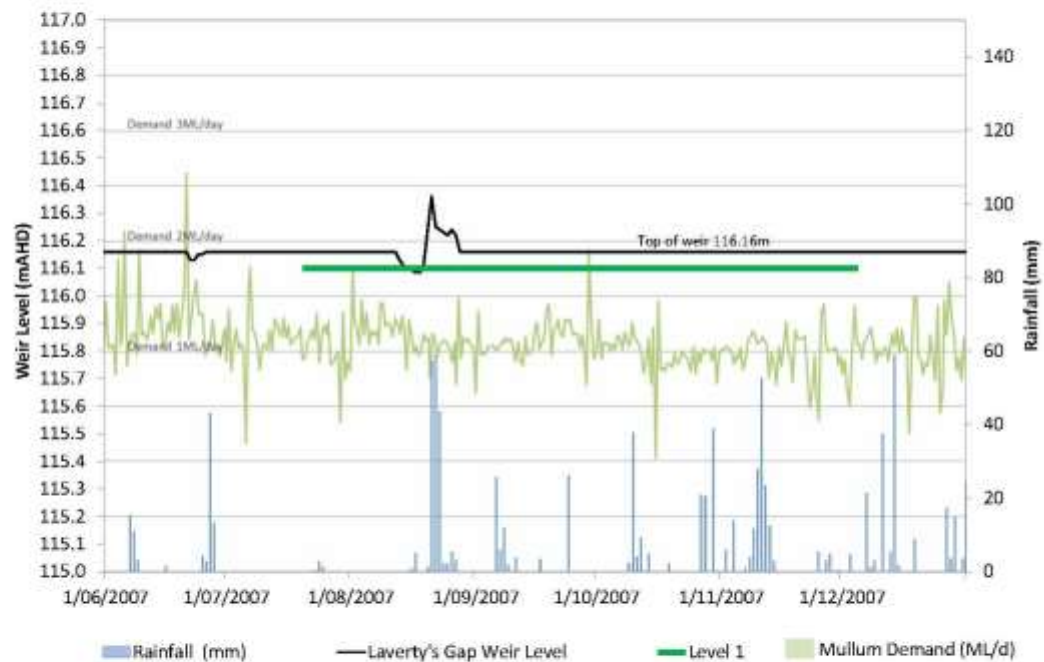


Figure 24: Laverlys Gap Weir Level, Water Demand, Restriction Periods and Rainfall 2007

Raw data provided by BSC and rainfall data obtained from SILO (2016)

APPENDIX 5: 30 YEAR CAPITAL WORKS PROGRAMS

BYRON SHIRE
STAFF REPORTS - INFRASTRUCTURE SERVICES

4.2

Technical drawing of a mechanical assembly, likely a pump or motor component. The drawing includes a title block on the left with text in Chinese and English, and a large grid of dimensions and tolerances on the right. The dimensions are given in millimeters (mm) and inches (in). The drawing is oriented vertically on the page.

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Item	Category	Location	Priority	Status	Comments
1	Infrastructure	Byron Bay	High	Open	Assessment of road condition for Section 1A.
2	Infrastructure	Byron Bay	Medium	Open	Review of drainage system for Section 2B.
3	Infrastructure	Byron Bay	Low	Open	Investigate options for pedestrian crossing at Section 3C.
4	Infrastructure	Byron Bay	High	Open	Assess need for additional lighting on Section 4D.
5	Infrastructure	Byron Bay	Medium	Open	Review of signage for Section 5E.
6	Infrastructure	Byron Bay	Low	Open	Investigate options for bicycle lanes on Section 6F.
7	Infrastructure	Byron Bay	High	Open	Assess need for additional drainage on Section 7G.
8	Infrastructure	Byron Bay	Medium	Open	Review of road markings for Section 8H.
9	Infrastructure	Byron Bay	Low	Open	Investigate options for additional parking spaces on Section 9I.
10	Infrastructure	Byron Bay	High	Open	Assess need for additional safety barriers on Section 10J.

Item	Category	Location	Priority	Status	Comments
11	Infrastructure	Byron Bay	Medium	Open	Review of road condition for Section 11A.
12	Infrastructure	Byron Bay	Low	Open	Investigate options for additional drainage on Section 12B.
13	Infrastructure	Byron Bay	High	Open	Assess need for additional lighting on Section 13C.
14	Infrastructure	Byron Bay	Medium	Open	Review of signage for Section 14D.
15	Infrastructure	Byron Bay	Low	Open	Investigate options for bicycle lanes on Section 15E.
16	Infrastructure	Byron Bay	High	Open	Assess need for additional drainage on Section 16F.
17	Infrastructure	Byron Bay	Medium	Open	Review of road markings for Section 17G.
18	Infrastructure	Byron Bay	Low	Open	Investigate options for additional parking spaces on Section 18H.
19	Infrastructure	Byron Bay	High	Open	Assess need for additional safety barriers on Section 19I.
20	Infrastructure	Byron Bay	Medium	Open	Review of road condition for Section 20J.
21	Infrastructure	Byron Bay	Low	Open	Investigate options for additional drainage on Section 21A.
22	Infrastructure	Byron Bay	High	Open	Assess need for additional lighting on Section 22B.
23	Infrastructure	Byron Bay	Medium	Open	Review of signage for Section 23C.
24	Infrastructure	Byron Bay	Low	Open	Investigate options for bicycle lanes on Section 24D.
25	Infrastructure	Byron Bay	High	Open	Assess need for additional drainage on Section 25E.
26	Infrastructure	Byron Bay	Medium	Open	Review of road markings for Section 26F.
27	Infrastructure	Byron Bay	Low	Open	Investigate options for additional parking spaces on Section 27G.
28	Infrastructure	Byron Bay	High	Open	Assess need for additional safety barriers on Section 28H.
29	Infrastructure	Byron Bay	Medium	Open	Review of road condition for Section 29I.
30	Infrastructure	Byron Bay	Low	Open	Investigate options for additional drainage on Section 30J.

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A large, empty sheet of graph paper with a grid of small squares. The grid is composed of horizontal and vertical lines forming a uniform pattern of squares across the entire page.

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APPENDIX 6: LONG-TERM FINANCIAL PLANS

Appendix 6: Long-Term Financial Plans – Water Supply and Sewerage

A1. INTRODUCTION

This report documents the outcomes of the financial analysis of the BSC Water Supply and Sewerage Funds. The aim of this report is to provide information to BSC on the required revenue to be recovered through residential bills. The financial analysis results will also be used to develop a medium term price path for BSC customers in terms of the typical residential bill (TRB) for water supply and sewerage.

A2. OVERVIEW OF FINANCIAL PLANNING

The objectives of financial planning are to recognise the full life cycle costs of service provision and determine appropriate funding strategies to ensure that services remain affordable in the long term. A 30 year planning horizon has been adopted for the modelling of BSC water supply and sewerage businesses. Taking a long-term view highlights the current impact of future actions, and allows financial peaks and troughs to be smoothed out to give a consistent pricing policy.

The aim of financial modelling is to:

- Meet the funding requirements of the capital works program and other life-cycle costs associated with each system's assets;
- Ensure an appropriate level of cash and liquidity; and
- Provide forecasts of sustainable annual residential bills over the long term.

A3. METHODOLOGY

A financial model was developed for the BSC water supply and sewerage funds using FINMOD, the financial planning software developed by DEUS (now NSW Office of Water) for use by non-metropolitan water utilities. The model is used to forecast income streams and projected expenditure.

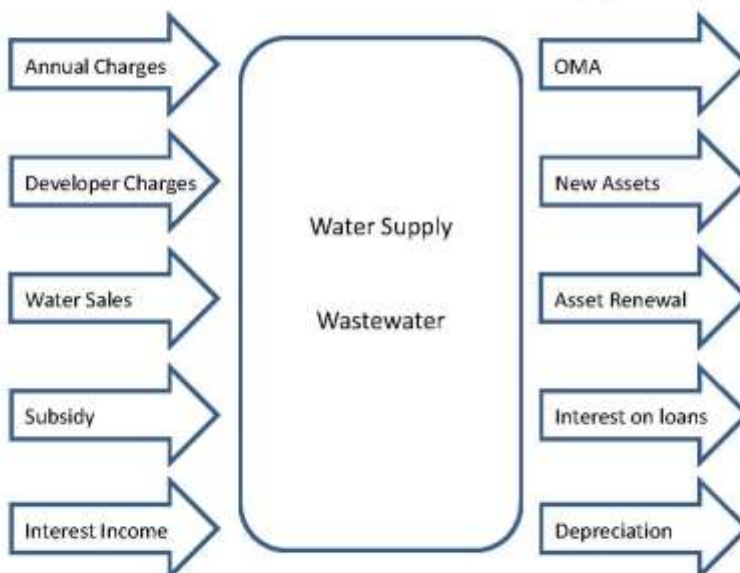


Figure A1: Elements of Financial Modelling

Capital works programs provide a guide for estimating long term capital costs. It is accepted that the level of confidence in capital works projections decreases with time from the present. However it is important to identify future commitments as accurately as possible.

A4. DATA AND ASSUMPTIONS

Base data utilised in the financial models are summarised in the following table.

Table A1: Input Data (2015/16\$)

Item	Data Used	
Historical data	Historical financial statements for 2013/14 and 2014/15	
Financial data (30 years)	Inflation 2.5%, Borrowing interest rate 6.5%, Investment interest rate 5.5%	
Term of new loans	20 years	
Assessments/Bills	Water Supply	Sewerage
Residential assessments (2014/15)	10,217	9,862
Non-residential assessments (2014/15)	1,499	1,450
Growth rate – Residential assessments	1.9 % p.a. (30 year average)	2.1 % p.a. (30 year average)
Growth rate – Non-residential assessments	1.9 % p.a. (30 year average)	2.1 % p.a. (30 year average)
2015/16 TRB per assessment	\$611 (based on average residential demand of 180 kL/a)	\$1,121
2016/17 TRB per assessment	\$611 (based on average residential demand of 180 kL/a)	\$1,121
2015/16 typical residential developer charge (estimated from actual developer charges and proportion of growth in each DSP area)	\$4,678 per assessment	\$13,147 per assessment
Developer charges (adopted in 2016)	\$1,787 per ET (weighted average)	\$9,988 per ET (weighted average)
Revenue split – residential revenue	69.7%	74.1%
Revenue split – non-residential revenue	30.1%	25.6%
30 year capital works program (to 2046)	\$37.0 m (refer Appendix 5)	\$102.1 m (refer Appendix 5)
Capital works grants	None expected	
Operation, maintenance and administration (OMA) costs	\$7.06 m p.a.	\$7.38 m p.a.
Additional expenditure from SBP actions	IWCM Strategy: \$80 k (2017-2018) Mullumbimby secure yield assessment: \$30 k (2020) Review Drought Plan: \$10 k (2017)	IWCM Strategy: \$80 k (2017-2018)
Additional revenue	-	Income from sale of assets: Valances Road STP land sale: \$2.8 m (2018) Bangalow STP subdivision and land: \$0.5 m (2018)
Balance Sheet (2014/15)	Water Supply	Sewerage
Cash	\$13.396 m	\$11.694 m

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Item	Data Used	
Debt	-	\$50.132 m
Replacement cost of system assets	\$91.54 m	\$203.52 m

A5. MODEL OUTPUTS

The financial modelling provides an indication of the relative cost to BSC and its customers of the water supply and sewerage services. The main output of the financial plan is the typical residential bill (TRB). The TRB is defined as the annual bill paid by a customer who is not a pensioner and not a vacant lot and uses the average water demand.

The purpose of the modelling is to identify the lowest TRB that will enable Council to fund the operation, maintenance and administration expenses and the capital investment of the schemes. The TRB is used as a measure of affordability and sets the price path Council needs to set in order to meet the LOS. Council will develop a tariff structure that will provide this income.

FINMOD provides detailed financial statements for each scheme. The financial statements for the Base Cases are included in the appendices to this document. Sensitivity analysis cases have been developed to identify the impact of different variables on the TRB (refer below).

The financial outcomes (e.g. TRB, borrowings and cash and investment) are shown in 2015/16 dollars. The figures shown in this plan need to be adjusted annually for inflation.

A5.1 Base Cases

Base cases were developed for the water supply and sewerage financial models. The base case was developed by finding the combination of funding from internal and external sources (i.e. loans) that gives a stable TRB.

Where possible, the capital works programs and recurrent expenditure are funded through existing cash levels which are determined by the amount of income generated from bills. Where planned expenditure exceeds the available cash levels, loans are required. The level of borrowing can be adjusted with resulting changes in the TRB to suit BSC's requirements. For example, additional borrowing in the short to medium term can reduce the required TRB in later years.

A minimum cash level of \$3.3m for sewerage and \$1.8m for water has been maintained for the funds (approximately 20% of annual turnover).

Any significant increase in TRB required to fund the works would be phased-in over 3-4 years to limit the impact of cost increases.

A5.1.1 Water Supply

The modelling indicates that Council can maintain the water supply TRB at the current level of \$611 per assessment over the next four years. High levels of cash are accumulated throughout the long-term which suggests that the TRB may be able to be reduced. This does not take account of the results of the sensitivity analysis.

The projected TRB and cash and investments associated with the base case financial projection for water supply are shown in the following figure. The base case includes nil borrowing.

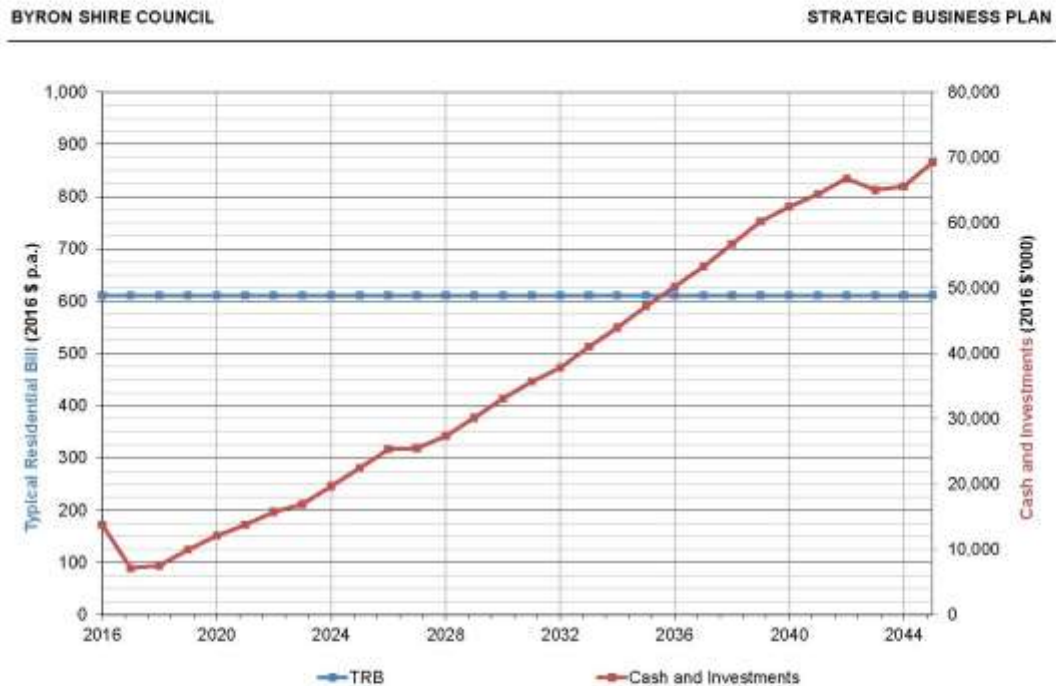


Figure A2: Water Supply TRB and Cash and Investments – Base Case

Note: The long-term cash levels and TRB required are dependent on future unidentified expenses and therefore there is limited confidence in results beyond ten years.

A5.1.2 Sewerage

The modelling indicates that Council can maintain the sewerage TRB at the current level over the next four years. High levels of cash are accumulated throughout the long-term which suggests that the TRB may be able to be reduced. This does not take account of the results of the sensitivity analysis.

The projected TRB, levels of borrowing and cash and investments associated with the base case financial projection for sewerage are shown in the following figure. The base case includes no new loans.

BYRON SHIRE COUNCIL

STRATEGIC BUSINESS PLAN

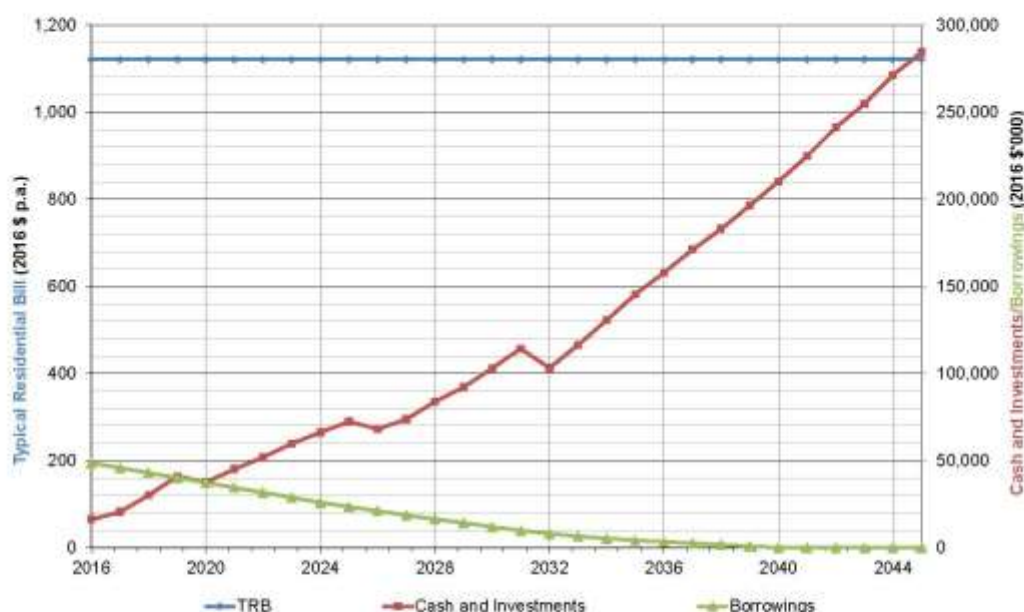


Figure A3: Sewerage TRB, Cash and Investments and Borrowing – Base Case

Note: The long-term cash levels and TRB required are dependent on future unidentified expenses and therefore there is limited confidence in results beyond ten years.

A6. SENSITIVITY ANALYSIS

BSC will adopt a medium term price path to provide certainty to its customers. Prior to selection of the TRB to be adopted, it is necessary to undertake a sensitivity analysis to determine the impact of various parameters on the TRB. Relevant parameters include:

- Increase in capital costs;
- Lower rate of population growth; and
- Increase in bulk water supply charges (water supply only).

Interest rates assumptions have not been varied for the sensitivity analysis as there are no new loans required.

Each of the cases can be described as a variation of the base case. One parameter is varied between the preferred case and the sensitivity cases. Depending on the results of the sensitivity analysis, the required TRB is selected from the most likely set of financial conditions. Whilst the preferred scenarios are defined as the most likely, there is still a significant level of uncertainty as to the future conditions that will affect the financial status of the water supply businesses and the subsequent bills. Council should set price paths higher than the base case in order to allow for some of this uncertainty, and reduce the need to increase the price path in the following year.

The sensitivity analysis is summarised in the following table.

Table A2: Sensitivity Analysis

Case	Description	TRB and loans for next 5 years (2016 \$ per assessment)	
		Water Supply	Sewerage
1. Base Case	Input data as above.	2016/17: \$611 2017/18: no change No new loans	2016/17: \$1,121 2017/18: no change No new loans
2. Higher capital costs	Capital costs are increased by 10% over 30 years	No change.	No change.
3. Lower Growth	Growth is halved	No change in TRB. A loan of \$1.5 million would be required in 2044.	No change.
4. Increase in bulk water supply charges	5% p.a. increase in bulk water supply charges from 2021 for 4 years	No change.	N/A

A6.1 Sensitivity Analysis - Water Supply

The following figure shows the resulting cash and investments for each of the water supply sensitivity cases. There is no change in the water supply TRB or borrowings (until year 2044) for the sensitivity cases.

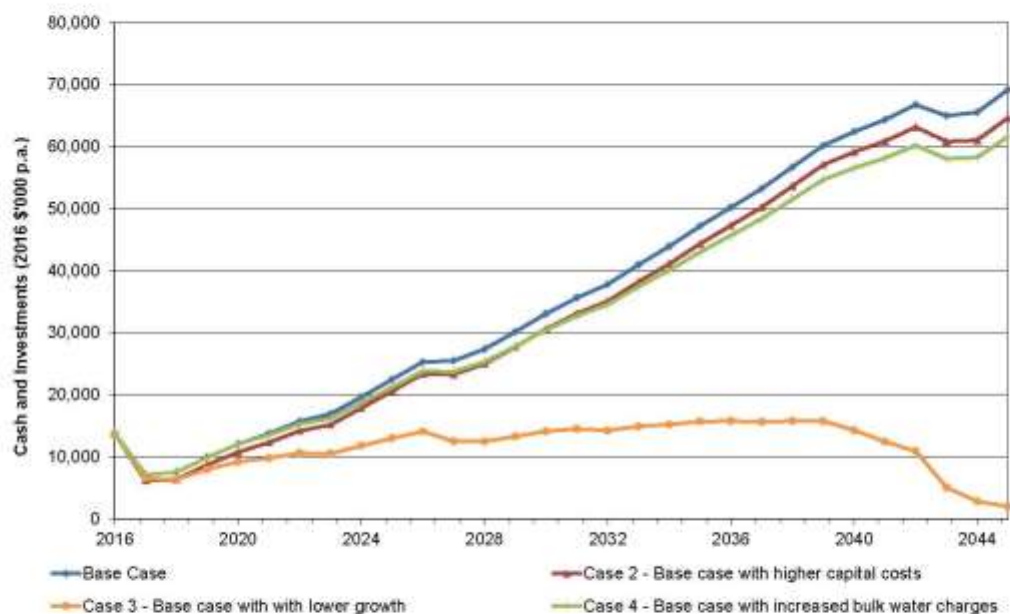


Figure A4: Water Supply Cash and Investments - Sensitivity Analysis

If Council maintains the water supply TRB at the current level, significant levels of cash will accumulate. While a lower growth rate will impact the cash levels over the longer term, there appears to be sufficient cash to enable a decrease in the TRB while still providing some flexibility to increase expenditure if required. As discussed in Section 5.5 of the SBP, water supply pricing is at an appropriate level when compared to pricing in the region (the median water supply price). While the best-practice requirements for usage charge

revenue are substantially achieved (residential revenue from usage charges was 73% of residential bills in 2014/15 and 74% in 2013/14 compared to the best-practice requirement of 75%), there may be some flexibility to reduce the water supply access charge. It is not recommended that the usage charge is reduced due to the need to continue to achieve demand management through pricing. An additional water supply case (case 5) was modelled based on case 3 (lower growth), assuming a reduction in water supply TRB of \$10 p.a. (2016\$) from 2017/18. The cash levels are still sufficient over the long-term with loans of \$7.5 million from 2043. The following figure shows the TRB and cash and investments for case 5 and case 3.

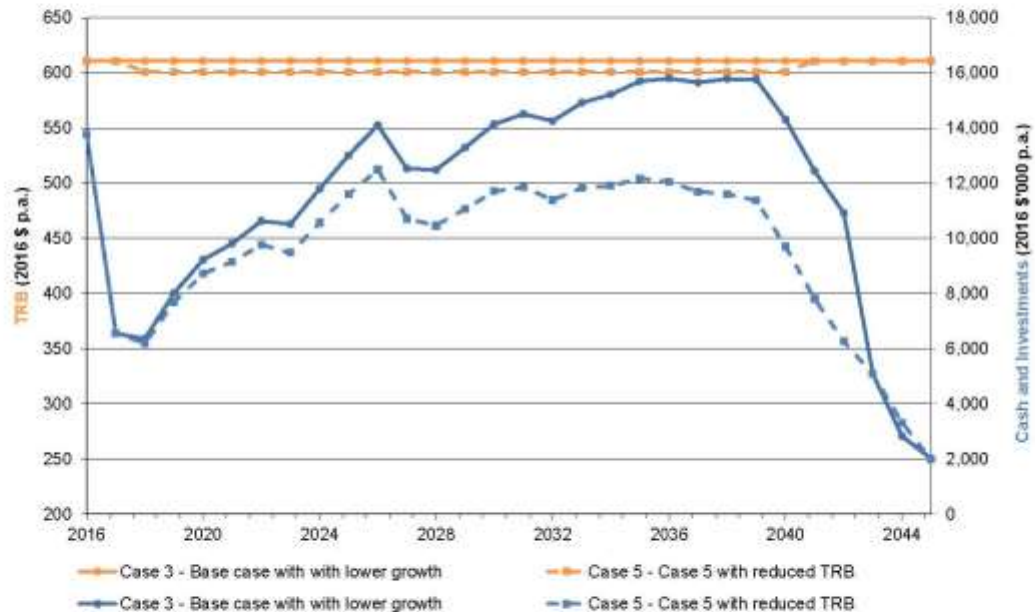


Figure A5: Water Supply Case 3 and Case 5 (reduced TRB)

A6.2 Sensitivity Analysis - Sewerage

The following figure shows the resulting cash and investments for each of the sewerage sensitivity cases. There is no change in the water supply TRB or borrowings for the sensitivity cases.

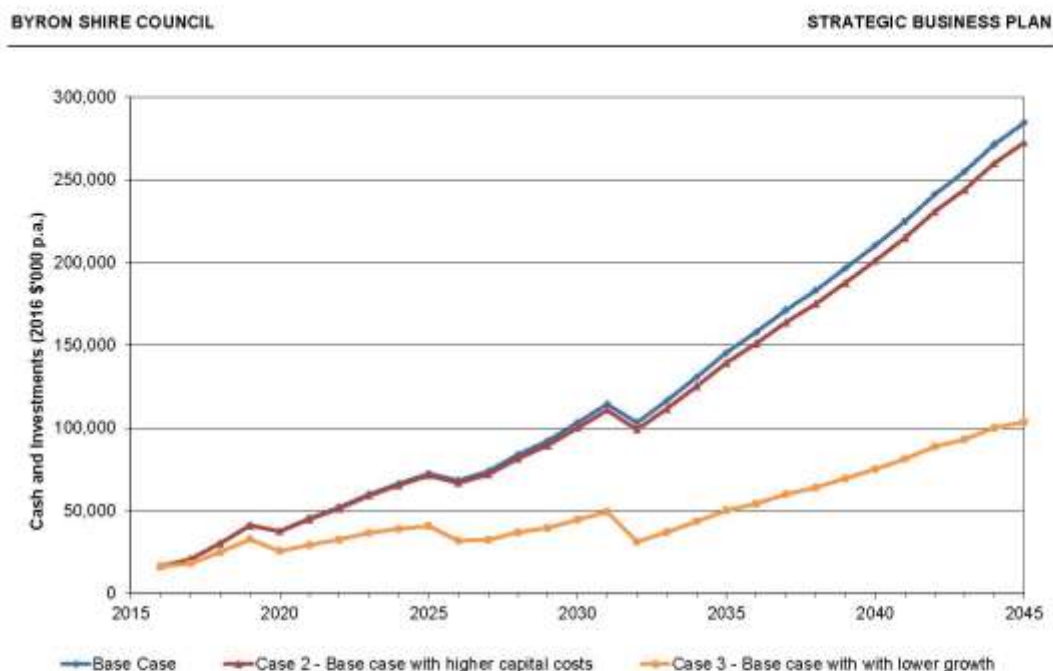


Figure A6: Sewerage Cash and Investments - Sensitivity Analysis

Similar to the water supply fund, if Council maintains the sewerage TRB at the current level, significant levels of cash will accumulate. While a lower growth rate will slightly impact the cash levels over the longer term, there appears to be sufficient cash to enable a decrease in the TRB while still providing some flexibility to increase expenditure if required. As discussed in Section 5.5 of the SBP, BSC sewerage pricing is high when compared to pricing in the region (23% higher than average). An additional sewerage case (case 5) was modelled based on case 3 (lower growth), assuming a reduction in sewerage TRB of \$100 p.a. (2016\$) from 2017/18. The cash levels are still sufficient over the long-term (minimum cash level of \$4.5 million in 2032) with no new loans required. Reducing the TRB further would require new loans around 2032.

The following figure shows the TRB and cash and investments for case 5 and case 3.

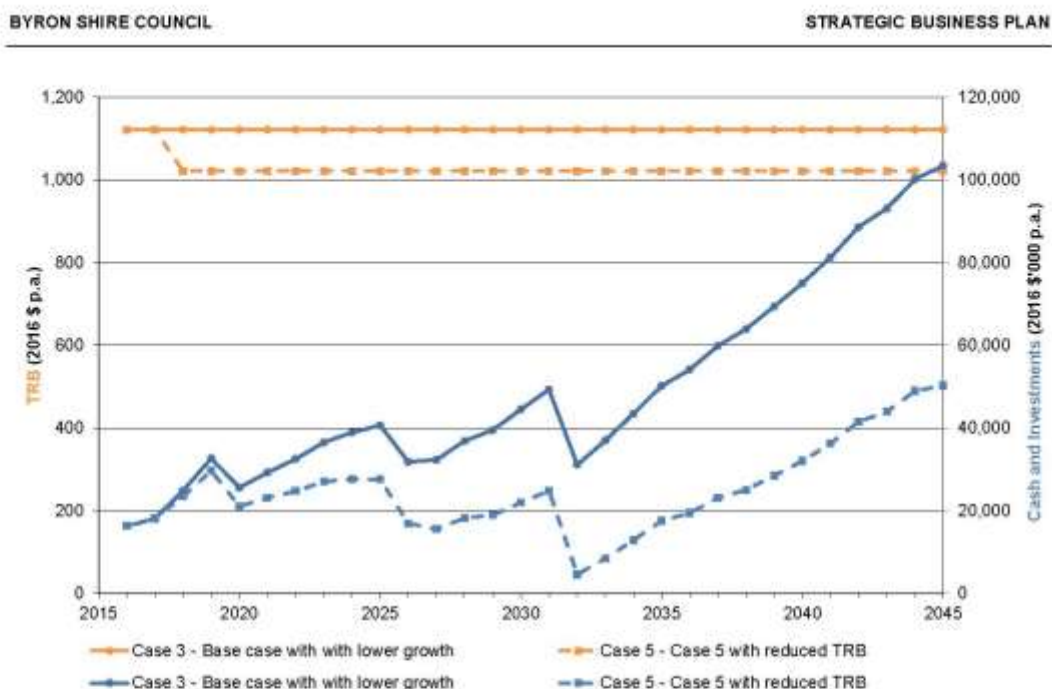


Figure A7: Sewerage Case 3 and Case 5 (reduced TRB)

A7. PROPOSED PRICE PATHS

There is a significant level of uncertainty as to the future conditions that will affect the financial status of the water and sewerage businesses and the subsequent bills. Council should set price paths which allow for some of this uncertainty and reduce the need to change the price path every year.

Council may elect to pay dividends from the water supply and/or sewerage businesses to the General Fund. In order for Council to make such payments, the price path will need to be increased to create a surplus that will enable dividend payment.

The TRBs should be checked and adjusted annually in accordance with changes to the CPI.

A7.1 Proposed Water Supply Price Path

It is recommended that Council consider reducing the water supply TRB by 1.6% in 2018 and maintaining the TRB at this level for the medium-term. The TRB in 2017/18 would be approximately \$629 p.a. when inflation is considered. The following figure shows the price path from 2018 in 2018\$.

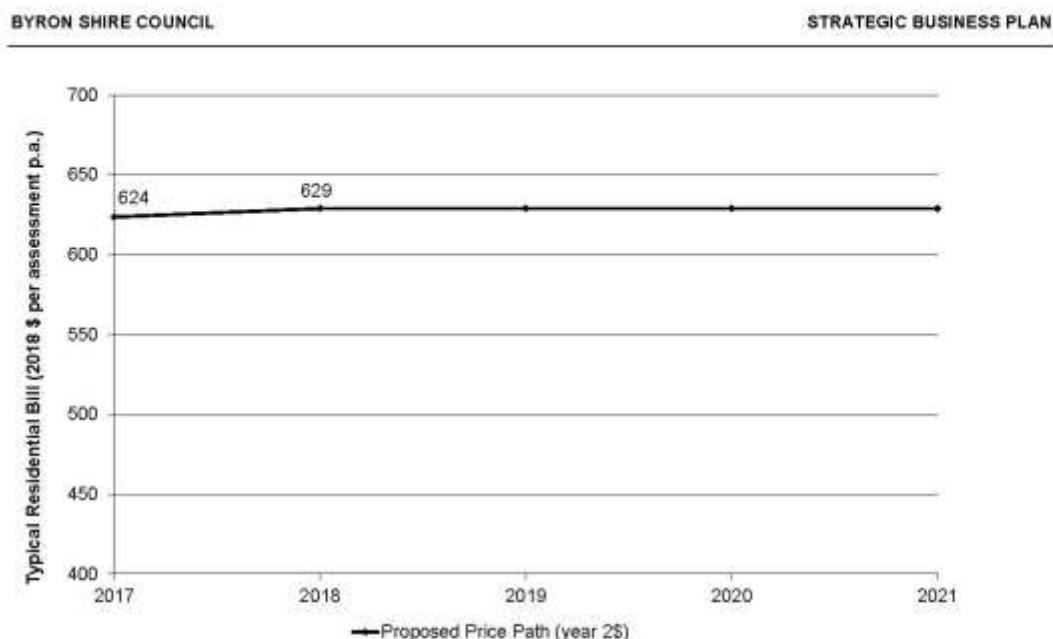


Figure A8: Proposed Water Supply Price Path

A7.2 Proposed Sewerage Price Path

It is recommended that Council consider reducing the sewerage TRB by 9% in 2018 and maintaining the TRB at this level for the medium-term. The TRB in 2017/18 would be approximately \$1,047 p.a. when inflation is considered. The following figure shows the price path from 2018 in 2018\$.

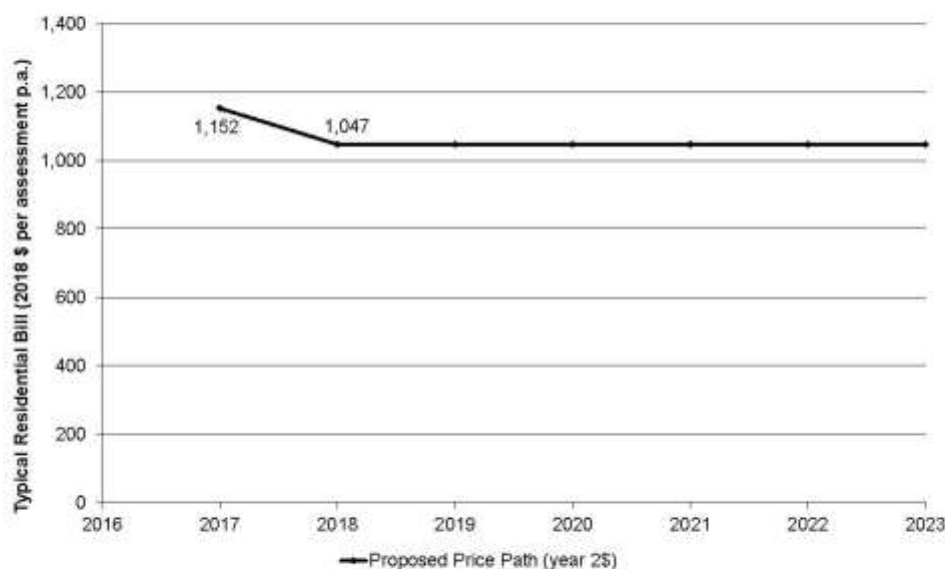


Figure A9: Proposed Sewerage Price Path

Future changes due to uncontrollable variables such as interest rates, growth rates, energy costs etc. may be significant. Thus, the financial models must be revisited regularly and the data updated to avoid a potential shortfall.

Attachment 1: FINMOD Base Case Reports

4.2

Byron Water Supply : Base Case 2016

Cashflow Statement

FENMOD

Byron Shire Council

	2010-10	2011-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	
Expenditure from Operating Activities																										
Depreciation																										
Assets and Computers	670	682	634	587	560	10 362	10 340	100 1	10 011	1 436	1 124	1 454	1 817	1 773	1 822	12 428	12 317	12 231	12 744	12 281	11 871	10 421	11 741	14 022	14 028	
Interest Income	710	660	302	387	643	629	585	154	301	104	109	107	1284	1308	1263	7 819	1308	1323	10 716	11 811	13 817	17 718	17 017	18 018	18 016	
Other Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grants	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Contributions	1 187	581	840	396	641	640	520	520	520	520	520	378	377	377	371	330	463	463	460	460	460	460	460	460	460	
Total Expenditure from Operating Activities	15742	16024	16480	15700	11161	11816	11607	11865	12362	12894	12911	12865	16187	17202	17202	12376	16386	16843	16020	16116	16386	16816	16202	16811	16816	
Depreciation																										
Management	1711	1674	1618	1591	2015	2030	2282	2126	2188	2211	2259	2288	2718	2768	2760	2270	2418	2493	2482	2558	2574	2576	2578	2728	2768	2765
Operational Assets (MCC-10)	6300	6680	6777	6880	6840	6737	6229	6494	6581	6726	6618	6551	7123	7120	7121	7409	7444	7181	7003	7013	7402	7121	6218	6420	6622	
Interest Expenditure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Expenditure	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
Total Expenditure from Operating Activities	7344	7604	7594	7607	6077	6487	6028	6013	6060	6140	6047	6040	6700	6701	6701	6670	6710	6710	6636	6647	6660	6664	6707	6704	6704	6706
Net Cash from Operating Activities																										
	3386	3378	3364	3374	3388	3348	3362	3318	3379	3435	3471	3507	3567	3604	3598	3580	3496	3517	3530	3474	3456	3450	3450	3		
Expenditure from Investing Activities																										
Depreciation																										
Assets from Operating of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Depreciation																										
Assets from Operating of Assets	2075	1084	3030	171	100	1376	762	1079	120	130	146	1063	1138	1407	1307	321	1507	1707	1704	110	107	1078	108	130	1400	
Net Cash from Investing Activities	2075	1084	2930	171	100	1376	762	1079	120	130	146	1063	1138	1407	1307	321	1507	1707	1704	110	107	1078	108	130	1400	
Expenditure from Financing Activities																										
Depreciation																										
Assets from Financing	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Depreciation																										
Assets from Financing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Net Cash from Financing Activities	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Net Cash																										
	2075	4214	871	2384	2778	1868	2228	1888	3740	2266	2219	224	2466	2468	2476	3210	4107	3588	4294	4158	4088	4071	4002	3888		
Current Year Cash																										
Year 10 Investment (MCC-10)	12388	13462	8865	3863	11776	14712	10308	38618	38618	27929	38618	38618	28682	28682	28673	32281	36708	36671	32895	42212	46384	46384	50324	50324	50324	
Year 10 Investment (MCC-10)	13719	13720	7927	3867	12374	16747	10711	16028	16028	13872	26298	26298	26298	26298	26298	30668	30668	30668	43088	43088	43088	47128	50324	50324	50324	
Current Year Cash																										
Interest Income for Year 10 (MCC-10)	6	6420	3861	178	132	144	727	118	118	118	146	136	132	118	130	284	381	132	118	118	146	138	118	118	130	
Interest Income for Year 10 (MCC-10)	2074	1384	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Interest Income for Year 10 (MCC-10)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						

4.2

Downloaded from <http://ajphaphysocpharm.sagepub.com/> at 11:06 11 September 2014

Downloaded from <http://ajphaphysocpharm.sagepub.com/> at 11:06 11 September 2014

Byron Water Supply : Base Case 2016
Historical Operating Statement

FINMOD
 Byron Shire Council

	2015/16	2014/15
EXPENSES		
Management Expenses	1454	1534
Administration	1254	1344
Depreciation and Amortisation	329	380
Operation and Maintenance Expenses	5267	5537
Distribution Expenses	458	1870
Manufacturing Expenses	500	518
Interest Costs	34	51
Financial Costs	3117	3730
Depreciation	7179	7300
Depreciation Assets	7179	7300
Plant & Equipment		
Interest Expenses	34	51
Other Expenses	105	91
TOTAL EXPENSES	9896	9296
REVENUES		
Rates & Service Availability Charges	4747	4975
Rates	3423	3454
Other Revenue	909	411
Grant Income	6059	5881
Grant of Water (Commercial)	3007	3000
Grant of Water (Non-Commercial)	3052	2881
Other Income	17	30
Interest Income	271	280
Other Revenue	345	301
Grants	19	34
Grants for Development Assets		
Financial Assets Available	19	34
Other Grants		
Contributions	723	737
Development Charges	655	615
Development Financial Assets		
Other Contributions	68	122
TOTAL REVENUES	9790	9235
GRAND TOTAL DEFICIT	1066	661
GRAND TOTAL DEFICIT (After Grants for Asset of Capital)	1066	661

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Byron Water Supply : Base Case 2016
Historical Statement of Financial Position

FINMOD
 Byron Shire Council

	2015/16	2014/15
ASSETS		
Land and Infrastructure	12438	12200
Reserves	1000	1000
Property, Plant & Equipment	89018	86779
Depreciation Assets	16064	15715
Plant & Equipment		
Other Assets		
TOTAL ASSETS	94456	91988
LIABILITIES		
Bank Overdraft		
Loans	240	0
Provisions		
TOTAL LIABILITIES	240	0
NET ASSET POSITION	94216	91988
EQUITY		
Accumulated Operating Surplus	10264	17183
Grant Reserves	11206	15807
TOTAL EQUITY	21470	32990
LIABILITIES TO OPERATING ASSETS		
Current Replacement Cost	89018	86779
Long-Term Replacement Cost	24127	23855
Without Bank Overdraft	10264	15807

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BYRON SHIRE COUNCIL

STAFF REPORTS - INFRASTRUCTURE SERVICES

4.2

Byron Water Supply : Base Case 2016

FINMOD
Byron Shire Council

Base Forecast Data

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
FINMOD DATA																									
Initial Rate - Current (%)	3.50	3.60	3.69	3.81	3.90	3.98	4.07	4.16	4.25	4.34	4.43	4.52	4.61	4.70	4.79	4.88	4.97	5.06	5.15	5.24	5.33	5.42	5.51	5.60	5.69
Refinancing Rate - Liquid Assets (%)	3.50	3.60	3.69	3.81	3.90	3.98	4.07	4.16	4.25	4.34	4.43	4.52	4.61	4.70	4.79	4.88	4.97	5.06	5.15	5.24	5.33	5.42	5.51	5.60	5.69
Working Capital Expenditure (M\$)	4.00	4.00	4.18	4.30	4.40	4.50	4.60	4.70	4.80	4.90	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	6.00	6.10	6.20	6.30	6.40
Debt-to-Equity Ratio (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FINMOD DATA - FINANCIAL																									
Operating Income	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Income	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Operating Expenses	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Expenses	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Assets	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Assets	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Operating Liabilities	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Liabilities	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Byron Water Supply : Base Case 2016

FINMOD
Byron Shire Council

Base Forecast Data

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
FINMOD DATA - FINANCIAL																									
Operating Income	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Income	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Operating Expenses	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Expenses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Expenses	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net Income	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Assets	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Assets	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Operating Liabilities	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Non-Operating Liabilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Liabilities	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Byron Water Supply : Base Case 2016		FINMOD Byron Shire Council	
Revised/Additional Forecast Data			
2016-16	2016-17	2017-18	2018-19
2019-20	2020-21	2021-22	2022-23
2023-24	2024-25	2025-26	2026-27
2027-28	2028-29	2029-30	2030-31
2031-32	2032-33	2033-34	2034-35
2035-36	2036-37	2037-38	2038-39
2039-40			

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Byron Water Supply : Base Case 2016

FINMOD
Byron Shire Council

STANDARD LOAN PAYMENT SCHEDULE

(\$'000,000)	2016-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
2017-18 Financial Year			0	8	8	0	8	8	8	8	8	8	8	8	8	0	0	8	8	8	8	8	8	8	8
Interest			0	8	8	0	8	8	8	8	8	8	8	8	8	0	0	8	8	8	8	8	8	8	8
2019-20 Financial Year				8	8	0	8	8	8	8	8	8	8	8	8	0	0	8	8	8	8	8	8	8	8
Interest				8	8	0	8	8	8	8	8	8	8	8	8	0	0	8	8	8	8	8	8	8	8
2020-21 Financial Year																									
Interest																									
Total Financial Year	8	7	0	0	8	8	0	8	8	8	8	8	8	8	8	0	0	0	8	8	8	8	8	8	8
Capital Repayment		8	0	0	8	8	0	8	8	8	8	8	8	8	8	0	0	0	8	8	8	8	8	8	8

FINMOD 12/2020/2016 Values in \$'000,000 Page 7

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FINMOD
Byron Shire Council

	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2044-45
Industrial Sector - General (%)	1.50	0.10	0.00	0.00	0.00	0.00	0.00
Industrial Sector - Capital Goods (%)	2.50	2.50	2.00	2.00	2.00	2.00	0.00
Non-Financial Industrial Firms (%)	0.55	0.15	0.00	0.00	0.00	0.00	0.00
Form of New Finance General	30	30	30	30	30	30	30
Investment Industrial Firms (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Financial Sector - Household (%)	2.00	2.17	1.80	1.00	1.00	1.00	1.00
Investment Corporate and Governmental Residential (2019-20 to)	400	100	100	100	100	100	100
Industrial Sector - Capital Goods (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Private and Corporation (to 2020) (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Residential (%)	210	0.00	0.00	0.00	0.00	1.00	0.00
Residential (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-Financial Industrial Firms	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Market Cost - Investment	100	100	100	100	100	100	100
Bank Equity Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bank Cost Ratio Investment	100	100	100	100	100	100	100
Financial Sector Cost of Finance (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Capital (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Non-Financial (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bank Service Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Investment Residential (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cost of Financial Ratio (2019-20)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Form	Number	Page
Form	Number	Page

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FINMOD
Byron Shire Council

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Table 2

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Byron Sewer : Base Case 2016

Statement of Financial Position

FIN3624

Byron Shire Council

	2016-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
Total net investments	15,243	2359	39138	41262	37561	40160	51026	59193	66201	72360	81136	91708	103721	107007	114561	121949	129300	136627	143926	151200	157450	163678	169893	176097	182290
Investments	2009	2174	2239	2200	3861	2417	2205	2081	3003	3089	2159	2108	3383	2012	1870	3819	3703	3771	3244	3075	3107	3470	3473	3918	3950
Property, Plant & Equipment	140009	427717	1420718	142658	149264	149940	149744	143319	142189	147055	150460	150779	151919	152907	147417	144854	151173	151428	155009	156900	159464	161980	162946	147507	144801
Plant & Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL ASSETS	146610	175478	176187	146607	161201	160889	161060	138366	137482	147869	152928	152969	153796	154969	147438	146222	152186	151437	156466	157796	159464	161980	162946	147507	144801
LIABILITIES																									
Borrowings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Borrowings	240	240	240	241	245	244	246	248	301	297	312	325	329	379	360	347	382	385	372	389	388	394	394	422	400
Borrowings	49256	49242	43861	40916	37561	34960	21000	30021	35007	33360	21107	48164	39442	14158	11915	6873	8863	4471	6276	4262	3388	2774	1749	834	4
Provisions	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL LIABILITIES	49256	49242	43861	40916	37561	34960	21000	30021	35007	33360	21107	48164	39442	14158	11915	6873	8863	4471	6276	4262	3388	2774	1749	834	4
NET ASSETS/SHAREHOLDERS	117778	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RESERVE																									
Accumulated Operating Expense	49126	48867	47820	46861	45802	44743	43684	42625	41566	40507	39448	38389	37330	36271	35212	34153	33094	32035	30976	29917	28858	27799	26740	25681	24622
Accumulated Operating Expense	3249	3489	3729	3969	4209	4449	4689	4929	5169	5409	5649	5889	6129	6369	6609	6849	7089	7329	7569	7809	8049	8289	8529	8769	9009
TOTAL EQUITY	117778	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LIABILITIES TO SHARERS																									
Current Investment Fund	39906	31088	23169	21090	22269	22440	22084	22349	23494	22449	22889	24394	24119	24100	24449	24419	24919	24919	24919	24919	24919	24919	24919	24919	24919
Long-Term Investment Fund	85328	82519	84119	84884	85649	86414	87179	87944	88709	89474	90239	91004	91769	92534	93299	94064	94829	95594	96359	97124	97889	98654	99419	100184	100949
Other Investment Fund	14838	14773	14708	14643	14578	14513	14448	14383	14318	14253	14188	14123	14058	13993	13928	13863	13798	13733	13668	13603	13538	13473	13408	13343	13278

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Byron Shire Council

Byron Shire Council

Form	Signature
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Byron Shire Council

Byron Shire Council

From	To
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1999年12月15日

Table 1

Byron Sewer : Base Case 2016
Historical Statement of Financial Position

FINMOD
 Byron Shire Council

	2015/16	2016/17
Assets and Liabilities		
Assets	820	11894
Liabilities	209	3885
Equity		
Equity (From all sources)	14700	14802
Equity (From all sources)	14700	14802
Equity (From all sources)		
Other Assets		
TOTAL ASSETS	14820	14802
LIABILITIES		
Liabilities	209	3885
Liabilities	209	3885
Liabilities		
TOTAL LIABILITIES	209	3885
NET ASSETS	14611	10917
Equity		
Equity (From all sources)	14700	14802
Equity (From all sources)	14700	14802
Equity (From all sources)		
TOTAL EQUITY	14700	14802
Other Assets		
Other Assets	18800	30000
Other Assets	18800	30000
Other Assets		
TOTAL OTHER ASSETS	18800	30000

FINMOD
 2015/16

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Byron Sewer : Base Case 2016
Base Forecast Data

FINMOD
 Byron Shire Council

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40
Forecast Data																									
Assets	820	880	940	1000	1060	1120	1180	1240	1300	1360	1420	1480	1540	1600	1660	1720	1780	1840	1900	1960	2020	2080	2140	2200	2260
Liabilities	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209
Equity																									
Equity (From all sources)	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
Equity (From all sources)	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
Equity (From all sources)																									
TOTAL ASSETS	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820	14820
LIABILITIES																									
Liabilities	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209
Liabilities	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209
Liabilities																									
TOTAL LIABILITIES	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209
NET ASSETS	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611	14611
Equity																									
Equity (From all sources)	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
Equity (From all sources)	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
Equity (From all sources)																									
TOTAL EQUITY	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700	14700
Other Assets																									
Other Assets	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800
Other Assets	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800
Other Assets																									
TOTAL OTHER ASSETS	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800	18800

FINMOD
 2015/16

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BYRON SHIRE COUNCIL

STAFF REPORTS - INFRASTRUCTURE SERVICES

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Byron Sewer : Base Case 2016

Base Forecast Data

FINMOD
Byron Shire Council

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
Base Case Forecast Data (Values in \$'000's)																									
Estimated CapEx Program - Present	1000	1400	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Present	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Base Case Forecast Data (Values in \$'000's)																									
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated OpEx Program - Future (2020-2039)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Estimated CapEx Program - Future (2020-2039)	1000																								

FINMOD
Byron Shire Council

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Byron Sewer : Base Case 2016

Revised/Additional Forecast Data

FINMOD
Byron Shire Council

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40
CRW - Revenue Overview (Values in \$'000's)																									
Interpretation:	1472	1628	1618	1631	1661	1733	1770	1818	1868	1900	1918	1908	1881	1852	1801	1719	1715	1724	1718	1704	1674	1634	1618	1604	1596
Revenue:	1025	1181	1173	1181	1212	1266	1306	1346	1386	1406	1426	1416	1391	1362	1311	1229	1234	1234	1224	1204	1174	1158	1144	1130	1122
Expensing and Expenses:	158	267	238	218	223	263	238	248	248	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
Revenue:	342	384	407	378	387	404	392	421	428	438	448	458	468	478	488	498	507	517	526	536	546	556	566	576	586
Expensing and Expenses:	3707	3733	3418	3584	3553	3707	3680	3646	3624	3614	3610	3610	3610	3610	3610	3610	3610	3610	3610	3610	3610	3610	3610	3610	3610
Revenue:	3529	3902	3922	3926	3936	3982	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988	3988
Revenue and Expenses:	1407	1465	1584	1590	1645	1687	1733	1768	1804	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818
Revenue:	1421	1477	1577	1573	1628	1670	1717	1758	1788	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818	1818
Expensing and Expenses:	508	580	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588
Revenue:	3272	3827	3870	371	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341
Expensing and Expenses:	428	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484	484
Revenue:	421	476	481	488	481	481	481	481	481	481	481	481	481	481	481	481	481	481	481	481	481	481	481	481	481
Expensing and Expenses:	445	491	471	483	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488
Revenue:	348	388	387	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	407	460	423	541	550	571	586	581	518	528	537	551	589	579	582	571	734	741	754	758	758	758	758	758	758
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRW - Revenue Overview (Values in \$'000's)																									
Interpretation:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
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Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547	1550	1553	1556	1559	1562	1565	1568
Expensing and Expenses:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Revenue:	1007	1444	1474	1487	1495	1502	1508	1511	1517	1521	1524	1528	1531	1534	1538	1541	1544	1547							

FINMOD
Byron Shire Council

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Time 2008/05/20 10:00:00 Page 1

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Byron Sewer : Base Case 2016
Summary Report of Assumptions and Results

FINMOD
 Byron Shire Council

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Initial Investment - General (M)	1.50	2.00	2.50	2.50	2.50	2.50	2.50
Initial Investment - Capital Works (M)	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Operating/Maintenance Costs (M)	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Cost of New Loans (p.a.)	30	30	30	30	30	30	30
Residual Investment (M)	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Capital Cost - Residual (M)	2.04	2.18	2.31	2.30	2.30	2.30	2.30
Operating Charges per Assessment - Residual (2012-13 to 18)	1.110	0.808	0.666	0.666	0.666	0.666	0.666
Subsidised Income (p.a. of Residual (M)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Income on Acquisition of Residual (M)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue Cost	0.00	0.00	0.00	0.00	0.00	1.00	4.17
Revenue (M)	0.00	0.17	0.37	0.20	0.10	0.20	1.00
Net Income/Outstanding (M)	-60.00	37.34	19.03	11.32	4.20	0.00	0.00
Revenue Cost - Assessment	104	104	104	104	104	104	104
Net Equity (M)	0.01	0.22	0.35	0.01	0.01	0.00	0.00
Net Cost (M) Assessment	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue Cost (M) of Residual (M)	4.55	5.18	5.87	5.40	5.17	5.10	5.10
Revenue Cost (M)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Income (M)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Service Cost	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Revenue Residual (M)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Capital Residual (M)	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FINMOD

17/08/2016

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**APPENDIX 7: INPUT TO INTEGRATED PLANNING AND REPORTING
PROCESS**

The Integrated Planning and Reporting (IPR) framework was introduced by the NSW Government in October 2009 to improve all NSW councils' long-term community, financial and asset planning. In response BSC has developed the following strategic plans:

- Community Strategic Plan 2022;
- Resourcing Strategy including Long-term Financial Plan, Asset Management Strategy and Workforce Management Plan;
- Four Year Delivery Program;
- One Year Operational Plan; and
- Annual Reports.

This SBP is Council's Resourcing Strategy for water supply and sewerage.

Outcomes from this SBP will be considered for inclusion in the next review of BSC's Community Strategic Plan. Key actions from this SBP will also be considered for inclusion in BSC's Delivery Program and Operational Plan.

Following implementation of the actions from this SBP, BSC's annual report will include the following:

- Compliance with best-practice requirements;
- Compliance with ADWG requirements;
- Significant investment in water supply and sewerage system renewals;
- Status of major projects; and
- Other key achievements.

Report No. 4.2 Main Arm Recycled Water Scheme Expansion Possibilities

Directorate: Infrastructure Services

Report Author: Peter Rees, Manager Utilities

File No: I2016/1206

Theme: Community Infrastructure

Sewerage Services

5

10 **Summary:**

This report discusses the issues associated with possible expansion opportunities of the Main Arm Recycled Water Scheme.

- 15 Council's experience with the Byron bay Recycled Water Scheme indicates wetlands can be a significant and cost effective recycled water user. Construction of wetlands at the Brunswick Valley STP were a part of the original scope but deferred due to budget constraints.

RECOMMENDATION:

That the Committee note the report.

20

Report

Council are seeking to identify future options to maximise the beneficial use of recycled water from the Brunswick Valley STP, and minimise discharge into the Brunswick River.

Council have been exploring further interest for recycled water use for a number of years and are currently considering more in-depth investigations to increase recycled water use from the Brunswick Valley STP. Experience with both the Byron Bay Urban Recycled Water Scheme (BBURWS) and MARWS in the fifteen years has provided valuable hindsight to draw upon for future direction.

The Main Arm Recycled Water Scheme (MARWS) was developed with an estimated usage of 219 ML – 657 ML per year between two users. Since the scheme commenced in 2007 between 45 ML (2013) and 204 ML (2007) of recycled water has been applied for agricultural use on these two properties. Since the commission of the Brunswick Valley STP in 2011, an average of 50 ML annually has been recycled for irrigation purposes. The reduction of volume used from the original design is due to a number of factors including: high rainfall reducing the requirement for irrigation; and one of the two users failing to use their minimum requirements as per the User Agreement. To support recipients to use higher volumes of recycled water for their farming enterprises, Council paid the electrical pumping costs for the first five years of the scheme as per the User Agreement. It is roughly estimated that the cost of pumping is around \$210 per ML. Therefore electrical pumping cost will be approximately \$10,000 to \$110,000 depending on the volume of recycled water applied annually (calculated for 50 ML to 500 ML respectively). Council's experience and inquiries to date:

- Has NOT identified any significant irrigators / users along the current pipeline route for expansion of the MARWS (Main Arm)
- Has NOT identified any significant / high water use industry for recycled water use in Mullumbimby
- Recognise sporting fields and/or public toilet flushing in Mullumbimby would NOT use significant volumes of recycled water. The soils in Mullumbimby do not have the infiltration capacity of the Byron sporting fields, which will reduce the volume of recycled water sustainably applied. Nor does Mullumbimby have the tourism to support public toilet connections. It is believed these options could only achieve minimal recycled water use from the Brunswick Valley STP

To achieve Council's aim to maximise recycled water use, then it is recommended that Council proactively consider long term projects that will see high volumes of recycled water used. Reliance on local farmers or low volume uses such as sporting field irrigation will not see significant volumes of discharge diverted from the local water ways.

A number of other councils in NSW manage a recycled water scheme to achieve 100% recycled water. To ensure the long term sustainability of the STP discharge strategy, these councils have purchased land and lease out the property for farming operations to suitable users. Two examples of Councils that have purchased land to lease for agricultural purposes as part of their recycled water strategy are provided below. Both these Councils manage STP discharges to achieve EPA Licence requirements and 100% recycled water use, with the exception of wet weather releases.

Tamworth Regional Council (TSC)

TRC developed a recycled water scheme that aims to beneficially reuse 100% of the treated effluent produced from the Westdale STP (ADWF 12 ML/day). To ensure the long term sustainability of the scheme, TRC purchased a property to lease for irrigation purposes. The Tamworth Effluent Reuse Farm (ERF) has a total area of 1490 ha, under which 600 ha is currently actively irrigated. The ERF and the irrigation infrastructure are owned and operated by TRC. There is a formal legally binding agreement between TCR and the Leaseholder.

Nambucca Shire Council (NSC)

NSC has developed a recycled water scheme for the Bowraville Sewage Treatment Plant (STP). NSC operates the Bowraville STP (ADWF 200 kL/day) to achieve 100% recycled water reuse. In order to ensure the long term sustainability of recycled water use, NSC purchased a property in the 1990s as part of their STP discharge operations.

NSC owns the 45ha recycled water farm, which is managed through a lease arrangement and User Agreement.

For Further Consideration

The following points are recommended for consideration:

- Undertake an Investigation Study to identify potential large scale use of the recycled water. There is a considerable area of land around the Brunswick Valley STP (owned by Council) that could be investigated for recycled water application. For example:
 - Constructed Wetlands – for the treatment and transpiration of treated effluent. Experience at the Byron Bay STP has identified constructed wetlands as being a significant water user
 - Biofuels Production – investigations of suitable crops for the production of biochar/biofuels. This will also support the Byron Shire Low Carbon Strategy (2014) initiatives and the communities desire for alternate energy production
 - ‘Mop Crop’ technology was previously trailed at the Bangalow STP for the production of hemp material due to the high water requirement
- It is not recommended Council consider paying the recipient pumping costs as part of Councils effluent management operations. While this may encourage recipients to maximise their use of recycled water, it will create a precedent for all recycled water users in the Shire which will have the potential to divert funds from the expansion of other schemes such as wetlands.

Financial Implications

Nil

Statutory and Policy Compliance Implications

Nil

Report No. 4.3 **Resource Recovery Current State of Play**
Directorate: Infrastructure Services
Report Author: Lloyd Isaacson, Team Leader Resource Recovery and Quarry
File No: I2016/1256
5 **Theme:** Community Infrastructure
 Waste and Recycling Services

Summary:

10 A presentation to advise the Committee of current and recent Resource Recovery projects will be presented to the Committee.

RECOMMENDATION:

That the Water, Sewer and Waste Advisory Committee note the presentation on current and recent Resource Recovery projects.

Attachments:

- 15 1 WWSAC December 2016 meeting_ Resource Recovery Branch – Current State of Play PDF,
 E2016/102564 , page 135

Report

A presentation to advise the Committee of current and recent Resource Recovery projects will be presented to the Committee.

5

Financial Implications

N/A

10

Statutory and Policy Compliance Implications

N/A

Resource Recovery Branch – Current State of Play

Water Waste and Sewer Advisory
Committee Meeting December 2016



Traditional home of
the Bundjalung people



Introduction

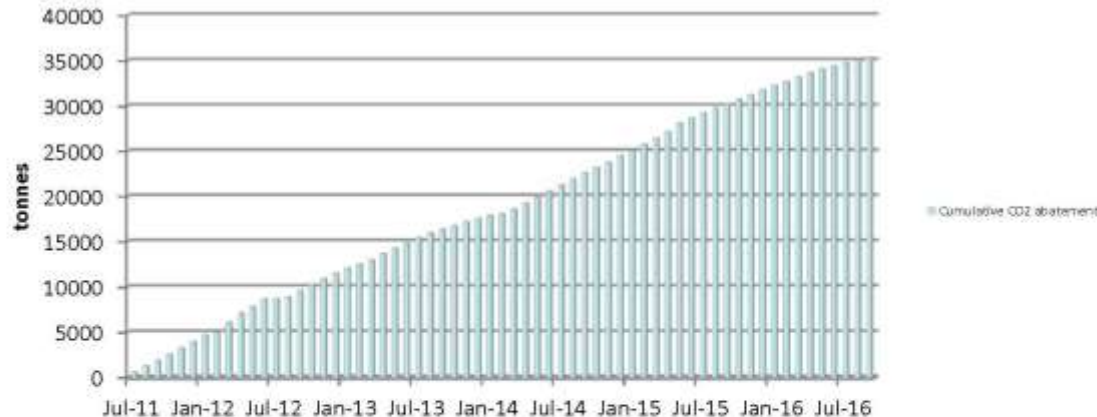
- **What we've done**
 - Implementation of the 2012-2015 Waste Management Strategy
- **Where we are currently**
 - Current Government Direction and Changes in the Waste Industry
- **Where we're going**



What We've done: Deliver WMS 2012-2015

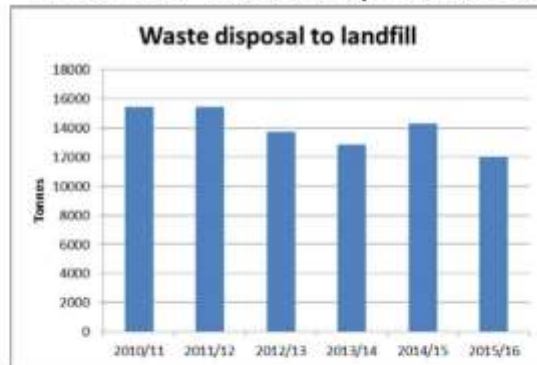
- Program 1: Infrastructure and Asset Management
 - Key Action: Upgrade of Myocum LFG System
 - Gain approval and maintained participation in Fed Govt's Carbon Farming Initiative
 - 15,355 Australian Carbon Credit Units generated - sold for \$

Monthly Cumulative CO₂e abatement



What We've done: Deliver WMS 2012-2015

- **High Level Strategy Objectives**
 - Resource Conservation
 - Resource Recovery
 - Resource Depletion
 - Environmental Conservation
- **High Level Strategy Targets**
 - Hold total waste disposal to landfill to 2010/11 volumes.



» NOTE: Does not include commercial waste from private contractors or material used for landfilling operations

- **Increase recovery and utilisation of materials from municipal sector from 40% (2011/12) to 66% (NSW State Target).**
 - 2015/16 municipal recovery rate = 67%



What We've done: Deliver WMS 2012-2015 – Program Areas

- Program 1: Infrastructure and Asset Management
 - Key Action: Public Place Bin Enclosure Maintenance and Renewal

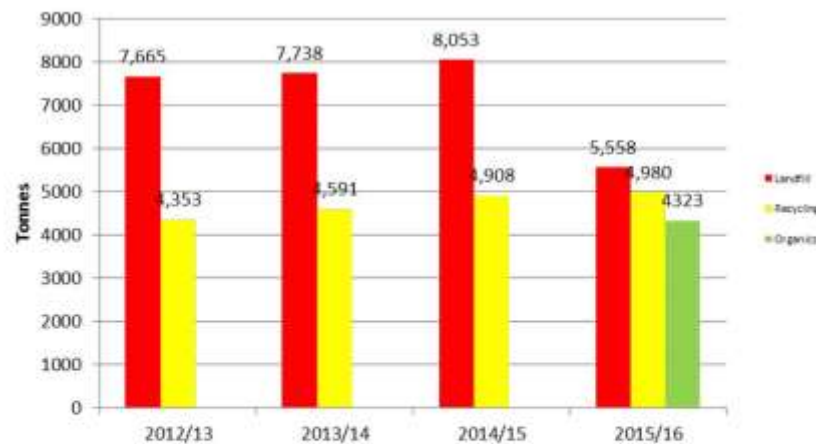


What We've done: Deliver WMS

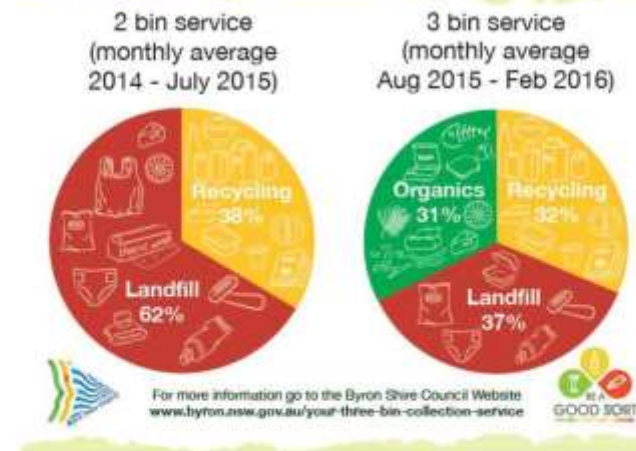
2012-2015

- Program 2: Best Value Waste and Recycling Collection Services
 - Key Action: Introduce an organic kerbside collection service

Kerbside Landfill and Resource Recovery Annual Tonnages



Byron Shire's kerbside resource recovery rates before and after organics service



Byron Shire Council

www.byron.nsw.gov.au



What We've done: Deliver WMS

2012-2015

- Program 3: Strategic Partnerships
 - Key Action: Participate and continue membership in North East Waste Forum



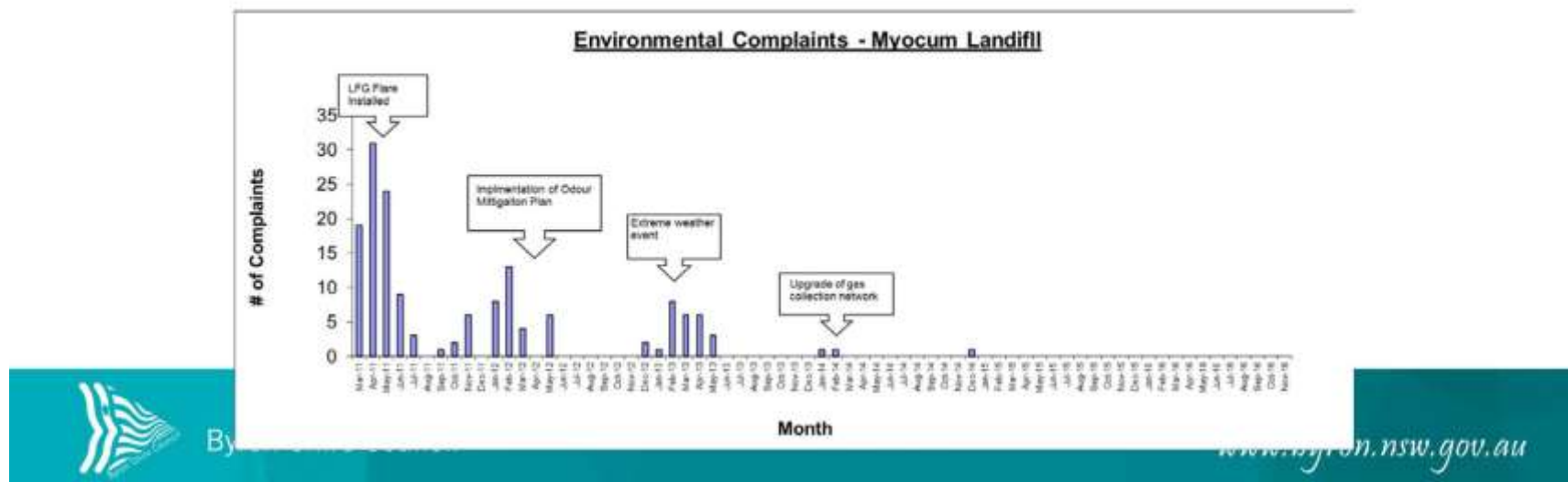
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What We've done: Deliver WMS

2012-2015

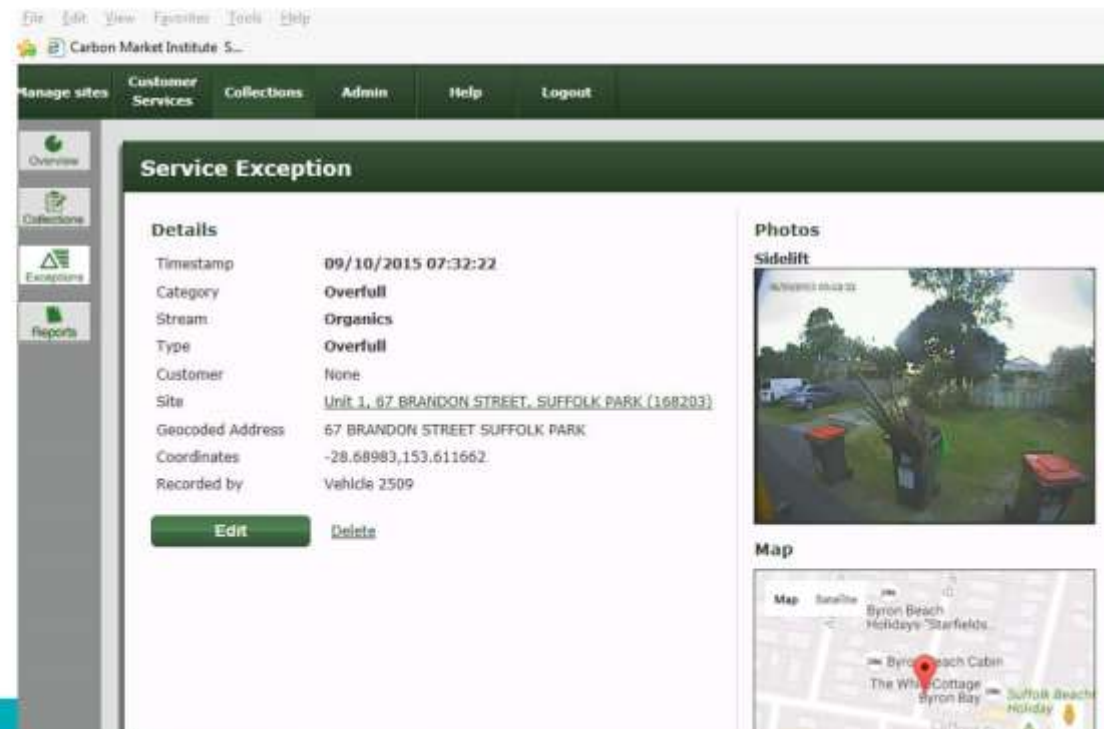
- Program 4: Legislation Regulation and Policy
 - Action: Lobby for reform to Waste Management Legislation and Regulations
 - Lobbying resulting in influencing the revised POEO Waste Regs with significant implications for Council operations (ability to transport to SE QLD and Maintain funding eligibility)
 - Action: Myocum Landfill Environmental Management System



What We've done: Deliver WMS

2012-2015

- Program 5: Business and Operational Improvement
 - Action: Data Management Systems



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What We've done: Deliver WMS

2012-2015

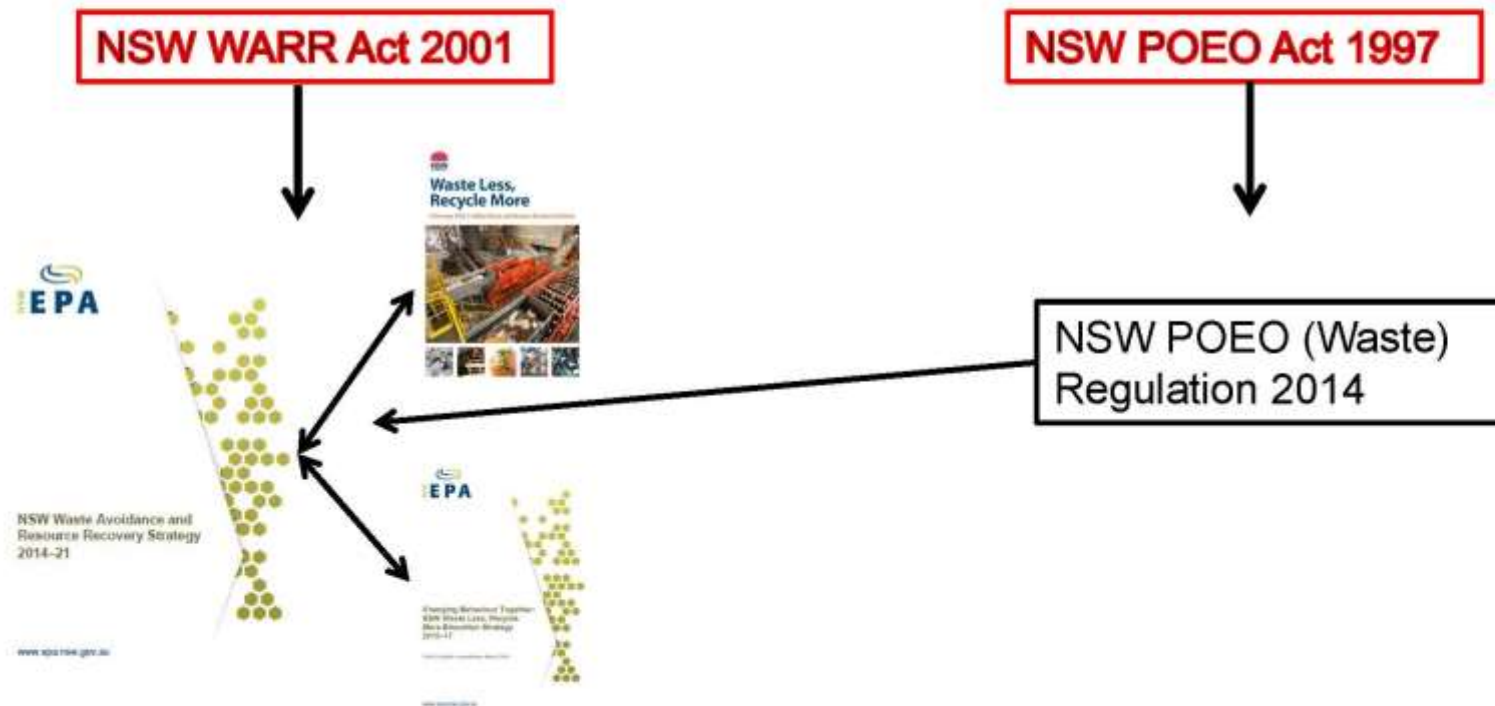
- Program 6: Communication, Education and Behavioral Change



Byron Shire Council

Where we are currently – influencing factors

State Government Direction – legislative context



Byron Shire Council

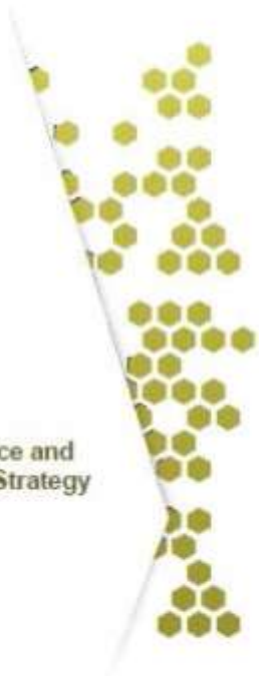
www.byron.nsw.gov.au

Where we are currently – influencing factors



NSW Waste Avoidance and
Resource Recovery Strategy
2014–21

www.epa.nsw.gov.au



- 6 “Key Result Areas”
 - Avoid and reduce waste generation
 - Increase recycling
 - Divert more waste from landfill
 - Manage problem wastes better
 - Reduce litter
 - Reduce illegal dumping



Byron Shire Council

www.byron.nsw.gov.au



Where we are going – strategic direction

- Integrated Waste Avoidance and Resource Recovery Strategy
 - Shift from “waste” mentality to resource
 - Significant advancements in R&D and Technology for RR infrastructure
 - Shift away from landfill investment/infrastructure
 - State Government support and direction
 - Legislation – CDS, Regulation Reviews
 - Waste Less Recycle More 2nd Funding Package
 - Council received approx \$1.5 million support from round 1
 - Education and Communication Strategy to facilitate implementation
 - Developed by end 2016/17 FY – WWSAC input critical





Where we are going – current key projects

- Byron Resource Recovery Centre (BRRC) Master plan and associated upgrade
- Biohub Project
- “Dirty Dozen” Recycling Campaign



Questions?



Byron Shire Council

www.byron.nsw.gov.au