# Notice of Meeting

# Water and Sewer Advisory Committee Meeting

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

| | |
|---|---|
| **Venue** | **Conference Room, Station Street, Mullumbimby** |
| **Date** | **Thursday, 17 August 2023** |
| **Time** | **4.30pm** |

Phil Holloway
Director Infrastructure Services

*I2023/1204*
*Distributed 10/08/23*

BYRON SHIRE COUNCIL

## 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 Code of Conduct for Councillors (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 the Code of Conduct for Councillors.

**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.

**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 of the provisions in the Code of Conduct (particularly if you have a significant non-pecuniary interest)

**Committee members are reminded that they should declare and manage all conflicts of interest in respect of any matter on this Agenda, in accordance with the Code of Conduct.**

## 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 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.

## OATH AND AFFIRMATION FOR COUNCILLORS

Councillors are reminded of the oath of office or affirmation of office made at or before their first meeting of the council in accordance with Clause 233A of the Local Government Act 1993. This includes undertaking the duties of the office of councillor in the best interests of the people of Byron Shire and the Byron Shire Council and faithfully and impartially carrying out the functions, powers, authorities and discretions vested under the Act or any other Act to the best of one's ability and judgment.

# BYRON SHIRE COUNCIL

## BUSINESS OF MEETING

## ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

# Report No. 3.1 Adoption of Minutes from Previous Meeting

**Directorate:** Infrastructure Services

**Report Author:** Dominika Tomanek, Executive Assistant Infrastructure Services

**File No:** I2023/1168

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**RECOMMENDATION:**

**That the minutes of the Water and Sewer Advisory Committee Meeting held on 15 June 2023 be confirmed.**

**Attachments:**

1 Minutes 15/06/2023 Water and Sewer Advisory Committee, I2023/935 , page 8

# Report

The attachment to this report provides the minutes of the Water and Sewer Advisory Committee Meeting of 15 June 2023 .

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**Report to Council**

The minutes to be reported to Council on 24 August 2023.

# Minutes of Meeting

# Water and Sewer Advisory Committee Meeting

| | |
|---|---|
| **Venue** | **Conference Room, Station Street, Mullumbimby** |
| **Date** | **Thursday, 15 June 2023** |
| **Time** | **11.30am** |

BYRON SHIRE COUNCIL

## BYRON SHIRE COUNCIL

WATER AND SEWER ADVISORY COMMITTEE MEETING MINUTES 15 JUNE 2023

**Minutes of the Water and Sewer Advisory Committee Meeting held on Thursday, 15 June 2023**

**File No:** I2023/935

PRESENT: Cr C Coorey, Cr D Dey

Staff: Phil Holloway (Director Infrastructure Services)

Kimberley van Soest (Minute Taker)

Cameron Clark (Manager Utilities)

Community: Ben Fawcett, , Elia Hauge, Bruce Clarke, David Fligelman

*Cr Coorey (Chair) opened the meeting at 11:36am and acknowledged that the meeting was being held on Bundjalung Country.*

ATTENDANCE VIA AUDIO-VISUAL LINK:

APOLOGIES: Cr S Ndiaye, Cr M Lyon

DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

David Fligelman declared a perceived non-pecuniary interest in Report 4.1. The nature of the interest being that his consulting company is currently engaged in development of a Potable Reuse Investigation Study for Rous County Council.

Ben Fawcett declared a non-pecuniary interest in Report 4. The nature of the interest being that his residence is close to the Laverty's Gap Weir.

## BYRON SHIRE COUNCIL

WATER AND SEWER ADVISORY COMMITTEE MEETING MINUTES 15 JUNE 2023

### ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

**Report No. 3.1 Adoption of Minutes from Previous Meeting**
**File No:** I2023/798

**Committee Recommendation:**

**That the minutes of the Water and Sewer Advisory Committee Meeting held on 30 March 2023 be confirmed.**

(Dey/Coorey)

*The recommendation was put to the vote and declared carried*

*Note: The minutes of the meeting held on 30 March 2023 were noted, and the Committee Recommendations adopted by Council, at the Ordinary Meeting held on 27 April 2023.*

BUSINESS ARISING FROM PREVIOUS MINUTES

There was no business arising from previous minutes.

## BYRON SHIRE COUNCIL

WATER AND SEWER ADVISORY COMMITTEE MEETING MINUTES 15 JUNE 2023

### STAFF REPORTS - INFRASTRUCTURE SERVICES

**Report No. 4.1** **Byron Shire Council Future Water Strategy**
**File No:** I2023/899

**Committee Recommendation:**

That the Committee advise Council, further to its Resolution 23-120 of 27 April 2023:-

1. to note that the workshop with Rous County Council (RCC) representatives was held on 18 May 2023.
2. to proceed with the investigation as outlined in parts 7 and 8 of the Council Resolution 23-120.
3. to inform the public via a press release or similar, that Council is looking into the capacity of Lavertys Gap to provide Mullumbimby's future water supply.

Attachment 1 (E2023/57221); Attachment 2 (E2023/57213).

(Dey/Coorey)

*The recommendation was put to the vote and declared carried unanimously.*
*David Fligelman has opted not to vote in accordance with his conflict of interest.*

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**Report No. 4.2** **Utilities Operational Update Report**
**File No:** I2023/900

**Committee Recommendation:**

**That the Committee notes the report**

(Fligelman/Hauge)

*The recommendation was put to the vote and declared carried.*

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*There being no further business the meeting concluded at 1:39pm.*

## STAFF REPORTS - INFRASTRUCTURE SERVICES

# Report No. 4.1 Intergrated Water Cycle Management and Strategic Business Plan

**Directorate:** Infrastructure Services

**Report Author:** Cameron Clark, Manager Works

**File No:** I2023/1179

## Summary:

The WWASAC requested an update on the development of the Integrated Water Cycle Management (IWCM) Strategy.

This report discusses the history of IWCM in Byron Shire, the NSW Government's new regulatory assurance framework and Council's strategic planning for water supply and sewerage.

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**RECOMMENDATION:**

**That the Water and Sewer Advisory Committee note the report.**

# Report

History of IWCM Development

The Byron IWCM Strategy adopted in 2009 was prepared in accordance with the 2004 IWCM Guidelines (now superseded). The 2009 IWCM development included:

- A 2006 IWCM Concept Study providing the context for urban water services and identifying urban water cycle issues.

- A Strategy Plan - development of a long-term strategy containing actions to address the urban water cycle issues. The plan was developed considering the outcomes of a number of management scenarios (different bundles of actions).

As part of the development of the 2009 IWCM Strategy, catchment, water resource and urban issues were identified through a review of existing background information as well as discussions with BSC staff, regulatory authorities and stakeholder consultation. Stakeholder consultation was undertaken to ensure that stakeholders contributed to the definition of water cycle management issues and the identification of potential solutions. This was achieved through the formation of a Project Reference Group (PRG) which included representatives from BSC, government agencies, local organisations and the community.

Each of the IWCM scenarios was assessed in the 2009 IWCM Strategy to identify a preferred scenario for implementation. The different scenarios were assessed on their economic, social and environmental outcomes. The preferred scenario adopted in 2009 set out a list of strategic actions to improve the management of the identified water cycle issues over a 30-year planning horizon. Council has implemented many of the actions from the adopted IWCM scenario.

A draft Water Supply and Sewerage Strategic Plan was prepared in 2017 to provide a review and update of the 2009 IWCM Strategy. Some of the issues identified in the 2009 IWCM Strategy and draft 2017 Strategic Plan have now been resolved.

In 2022, Council commenced a review and update of the IWCM Strategy in accordance with the NSW Government's best-practice management framework which had been streamlined with checklists for IWCM Strategies and Strategic Business Plans. The checklist posed significant data requirements which required significant Council resources. Council was progressively collecting this data as resources permitted.

## Key issues

### New Regulatory Assurance Framework

In mid-2022, the NSW Government (Department of Planning and Environment, DPE) released a new regulatory and assurance framework for local water utilities which represents a significant change to how the activities of local water utilities have been reviewed and regulated in the past. An IWCM Strategy is no longer part of the "best-practice" framework.

Under its assurance role, DPE establishes what outcomes it expects effective, evidence-based strategic planning to achieve and assesses whether a local water utility's strategic planning achieves these outcomes to a reasonable standard. While DPE sets expectations for the outcomes that strategic planning needs to achieve to be effective and evidence-based, Councils can decide what approach to take to meet them. For effective, evidence-based strategic planning to occur, DPE expects Council to achieve the following outcomes to a reasonable standard:

- **Understanding service needs:**

  - What are customers' needs, values, and preferences?

  - What current and future demands are placed on water supply and sewerage systems?

  - How will the local water utility consider and address objectives, priorities and evidence of other relevant state or regional strategic planning, including the NSW Water Strategy and regional water strategies?

- **Understanding water security:**

  - What is the local water utility's access to current and potential water supply sources?

  - How will the local water utility address current and future risks around continuity and reliability of access to water supply sources?

- **Understanding water quality:**

  - How will the local water utility address current and future water quality risks in its supply systems?

  - How will the local water utility meet relevant regulatory standards, such as on drinking water quality management?

- **Understanding environmental impacts:**

  - How will the local water utility address current and future environmental impact risks in its sewerage systems?

  - How will the local water utility meet relevant regulatory standards, such as licence requirements set by the environmental regulator?

- **Understanding system capacity, capability and efficiency:**

  - What is the capacity and capability of systems to deliver water (and future capacity and capability needs)?

  - What is the capacity and capability of its systems to collect and treat sewerage (and future capacity and capability needs)?

  - How will the local water utility consider water efficiency in its systems?

- **Understanding other key risks and challenges:**

o How will the local water utility address other key risks in its systems now and into the future?

o How will the local water utility meet relevant regulatory standards (for example, such as on dam safety)?

o How has the local water utility considered climate risks?

o How is the local water utility planning for drought?

o How is the local water utility planning and preparing for incidents, emergencies, and extreme events and ensuring continuity of service?

- **Understanding solutions to deliver services:**

o How are options for delivering services and managing risks analysed?

o How are supply and demand side options for water supply identified and evaluated?

o How are assets managed over their life cycle to ensure service levels are met?

o How are the preparedness and resilience management during extreme events considered?

- **Understanding resourcing needs:**

o What resourcing is needed to deliver services and manage risks?

o What are the life-cycle costs of managing assets?

o What are the technical and operational skills needed to deliver services and manage risks?

o How does the local water utility do workforce planning?

- **Understanding revenue sources:**

o What are the revenue sources available to fund the delivery of services?

o What is the customers' ability to pay for services?

o What is the customers' willingness to pay for services?

- **Make and implement sound strategic decisions:**

o Based on its understanding of, and adequate consideration of, service needs, risks, and resources, how does the utility set service levels and efficient revenue requirements for providing services over an adequate forward period to capture asset lifecycle?

o How are customers engaged in decision-making and informed of choices between service levels, risks, and cost?

o How does the local water utility ensure its long-term financial sustainability, including managing unexpected financial shocks in future periods without having to introduce substantial or socially destabilising revenue or expenditure adjustments??

o How does the utility implement service levels and monitor, and report on, performance to understand if it is meeting service levels and managing risks?

- **Implement sound pricing and prudent financial management:**

o How does the utility set and structure its water supply and sewerage pricing to recover its revenue requirement, promote efficient use of water, and achieve equitable and affordable pricing and intergenerational equity?

o How does the utility implement a cost-reflective and consumption-based tariff structure and long-term stable price path?

o How does the utility set appropriate developer charges to recover the infrastructure cost of servicing growth?

o How does the utility consider payment of tax equivalents and dividends?

o How does the utility consider affordable access to essential water services for all customers?

o How does the utility ‘ring-fence’ the water supply and sewer business fund from council’s general-purpose fund?

- **Promote integrated water cycle management:**

o How are urban water cycle outcomes including water security, public health, environmental and urban amenity and liveability identified, achieved and funded?

o How does the utility consider opportunities and methods to increase resource efficiency and recovery in urban water management?

o How is the local water utility supporting customers to increase water literacy and support water efficiency measures?

DPE will consider that a reasonable standard for each outcome is met if Council considers and addresses an outcome in a way that is:

- Sufficient – underpinned by evidence-based analysis that supports the conclusions reached

- Appropriate – underpinned by relevant departmental guidance and industry standard approaches to conduct planning and reach conclusions

- Robust – underpinned by evidence that draws on appropriate sources and recognises and rebuts potential alternative interpretations.

Councils can opt-in to the framework at any time. Effective, evidence-based strategic planning is required to be confirmed by DPE before payment of a dividend to Council from the surplus of the council's water supply and/or sewerage business. Where DPE or other NSW Government agency is providing funding for water supply or sewerage works or providing approval under Section 60 of the Local Government Act, a cost effectiveness and value-for-money assessment would be completed separately as part of that funding decision. This would consider Council's strategic planning outcomes as related to the particular project.

## Options

### Council's Water Supply and Sewerage Strategic Planning

Council has always worked towards effective, evidence-based strategic planning that is sufficient, appropriate and robust as reflected in the new regulatory framework. Council undertakes the necessary strategic planning for the delivery of Council water supply and sewerage services to ensure that all water security, water quality and sewage management needs and risks relating to BSC's town water supply and sewerage systems are addressed for future planning. This includes levels of service and associated investment priorities, asset management objectives and strategies as well as the resources required.

The strategic planning covers a wide range of issues. Council will pull together the other more specific studies/projects and develop an implementation strategy and financial plan to deliver the preferred strategies to address each component. The issues are largely known and Council has already commenced investigations and options development to address them.

In some cases, the strategy to address issues has already been adopted or recommended (with further investigation and targeted consultation being undertaken separately as part of those projects).

Key strategic planning areas are:

- Mullumbimby water supply security.
- Ocean Shores STP capacity.
- Water recycling.
- Demand management – apart from Mullumbimby, the water supply areas are addressed through the Rous regional demand management plan. If Mullumbimby is connected to the regional supply, Mullumbimby is likely to be included in a similar way.
- Emerging issues such as coastal hazards/climate change adaptation – most investigations are being undertaken through Council's coastal management program development. Council will identify water/ sewer assets at risk and potential options which

are expected to be addressed through Council's asset renewal program and asset management planning.

- Sewerage system master planning.
- Other operational issues such as sewer inflow/infiltration.

## 5 Next steps

Council has generally achieved, or has processes in place to achieve effective, evidence-based strategic planning in accordance with the DPE framework and these activities will continue to be undertaken as a normal part of Council's water and sewerage businesses. The decision to opt-in to the DPE regulatory process will be made considering any requirement for external funding and payment of dividends.

Council staff will continue to liaise with the Committee as part of the strategic planning.

# Strategic Considerations

## Community Strategic Plan and Operational Plan

| CSP Objective | CSP Strategy | DP Action | Code | OP Activity |
|---|---|---|---|---|
| 5: Connected Infrastructure | 5.5: Provide continuous and sustainable water and sewerage management | 5.5.2: Wastewater management - Manage effluent in an ecologically sustainable way that ensures public health and protects and enhances the natural environment | 5.5.2.13 | Review Strategic Business Plan / Integrated Water Cycle Management Strategy |

## Financial Considerations

IWCM and SBP is a minimum criterion for grant funding. Therefore, no adopted IWCM and SBP impacts the opportunity for Council to obtain grant funding.

## Consultation and Engagement

# Report No. 4.2 Utilities Operational Plan Report

**Directorate:** Infrastructure Services

**Report Author:** Cameron Clark, Manager Works

**File No:** I2023/1189

## Summary:

This report summaries the performance of Utilities Department delivery for May-July 2023.

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**RECOMMENDATION:**

**That the Water and Sewer Advisory Committee notes the report.**

# Report

# DRINKING WATER QUALITY

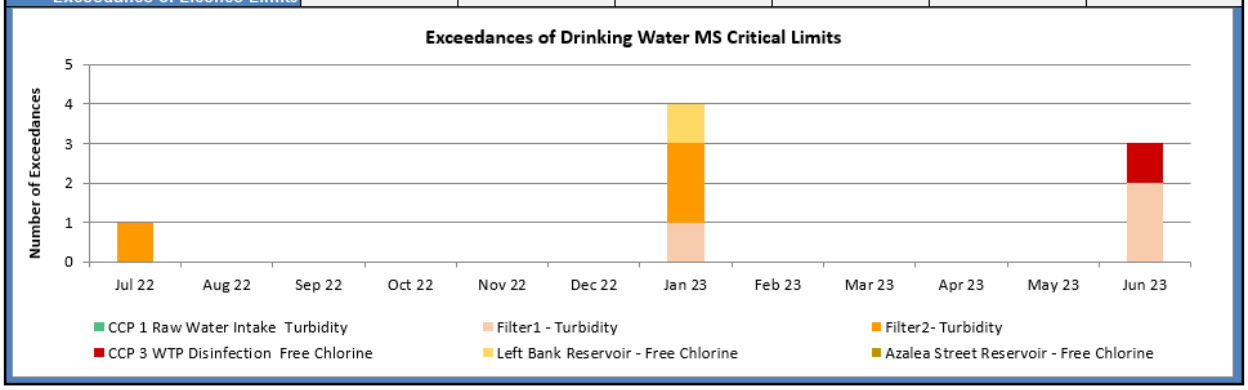
In May 2023 there were zero (0) critical limit exceedances at Mullumbimby WTP.

In June 2023 there were three (3) critical limit exceedances at Mullumbimby WTP. These are described below.

**Mullumbimby Drinking Water - Critical Control Point - Quality Compliance**

**12 Months to Jun 2023**

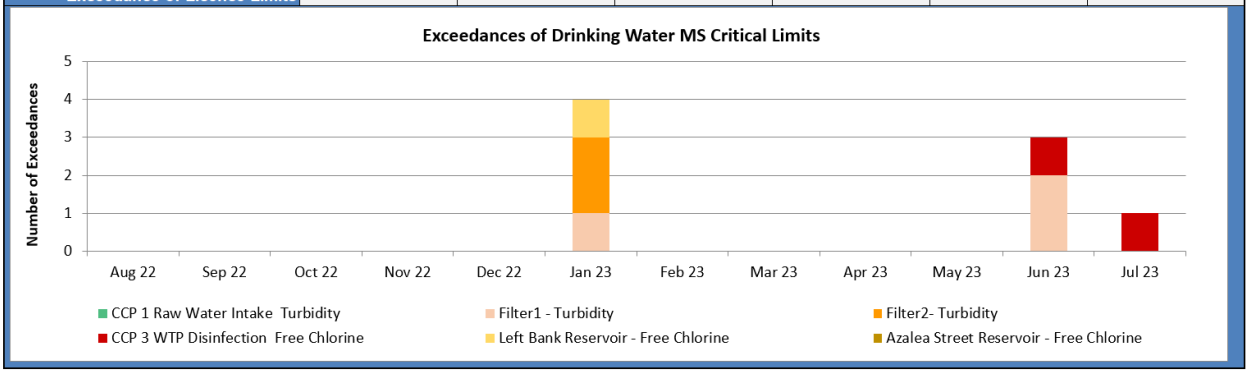
| | CCP 1 Raw Water Intake | CCP 2 WTP Filtration | | CCP 3 WTP Disinfection | CCP 4 Reservoirs | |
|---|---|---|---|---|---|---|
| | | | | | Free Chlorine | |
| | Turbidity | Filter1 - Turbidity | Filter2- Turbidity | Free Chlorine | Left Bank Reservoir - Free Chlorine | Azalea Street Reservoir - Free Chlorine |
| Number Exceedances | 0 | 3 | 3 | 1 | 1 | 0 |
| Number of Samples in Period | 365 | 365 | 365 | 365 | 50 | 50 |
| Percentage of Samples in Exceedance of Licence Limits | 0.0% | 0.8% | 0.8% | 0.3% | 2.0% | 0.0% |




From: WaterOutlook > Reports > Special > MONTHLY UTILITIES REPORTS > UTILITIES REPORT - Mullumbimby Drinking Water Quality

In July 2023 there was one (1) critical limit exceedances at Mullumbimby WTP. These are described below.

| Mullumbimby Drinking Water - Critical Control Point - Quality Compliance<br>12 Months to Jul 2023 | | | | | | |
|---|---|---|---|---|---|---|
| | CCP 1 Raw Water Intake | CCP 2 WTP Filtration | | CCP 3 WTP Disinfection | CCP 4 Reservoirs | |
| | | | | | Free Chlorine | |
| | Turbidity | Filter1 - Turbidity | Filter2- Turbidity | Free Chlorine | Left Bank Reservoir - Free Chlorine | Azalea Street Reservoir - Free Chlorine |
| Number Exceedances | 0 | 3 | 2 | 2 | 1 | 0 |
| Number of Samples in Period | 365 | 365 | 365 | 365 | 50 | 50 |
| Percentage of Samples in Exceedance of Licence Limits | 0.0% | 0.8% | 0.5% | 0.5% | 2.0% | 0.0% |




From: WaterOutlook > Reports > Special > MONTHLY UTILITIES REPORTS > UTILITIES REPORT - Mullumbimby Drinking Water Quality

| CRITICAL LIMIT EXCEEDANCES<br>Mullumbimby Drinking Water Supply Critical Control Points (CCPs)<br>12 Months to April 2023 | | | | |
|---|---|---|---|---|
| Date Occurred | Description | Description and Cause of Issue | Action Taken to Remedy Situation | Action Taken to Prevent Reoccurrence |
| 5/1/23 to 6/1/23 | Turbidity Exceedance ‘<br><br>Filter 1 & 2 (3 exceedances) | Rainfall event on the 5 Jan 2023 raised the Turbidity in plant process between 6 and 7 Jan 2023 (Filter 1 exceeded on one day and Filter 2 exceeded on both days, see plots below). The finished water on both days had Turbidity of < 0.75 NTU which is within acceptable limits, therefore no impact on supply. | Jar testing and Chemical dosing corrections undertaken throughout. Treated water returned to < 0.23 NTU by 8 Jan 2023. | Continued monitoring of raw water turbidity and filter turbidity. |
| 11/1/23 – 15/1/23 | Chlorine Residual at Left Bank Reservoir = | Free Chlorine Residual result during weekly sample collection and testing on 11 Jan 2023 was found to be 0.19mg/L at Left Bank | The other Reservoir in Mullumbimby had filled then Left Bank Reservoir inlet valve was returned to normal operations. This happened | When Reservoirs are isolated. Check Chlorine trends and if trending |

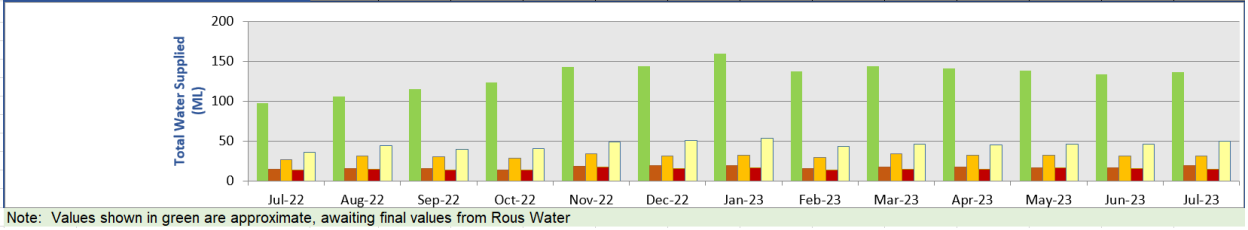
| | | | | |
|---|---|---|---|---|
| | 0.19mg/L | Reservoir outlet.<br><br>The cause of this issue was the Reservoir filling had been isolated since 6th Jan 2023. During this time of no fresh water entering the Reservoir and the high ambient temperatures the chlorine residual slowly trended lower. | on 15 Jan 2023. During this fill 44% of the volume was filled with fresh filtered chlorinated water from the water treatment plant. After this Left Bank Reservoir Free Chlorine Residual was sampled as 0.75mg/L on 18 Jan 2023 | downwards dose with sodium hypo to keep level within our set parameters. |
| 14/6/23 & 15/6/23 | Turbidity Exceedance<br>'<br><br>Filter 1 = 0.54 MTU & 0.94 NTU | Inline turbidity Instrument on Filter 1 found to be reading incorrectly on the 14/6/23. | The instrument was calibrated on 15/6/23 and readings returned to within operational limits. | Maintain regular calibration schedule of instruments and continue daily reads. |
| 29/6/23 | Chlorine Residual at CCP3 = 0.83mg/L | Issue with dosing system | SCADA alarm alerted operator who was able to rectify in a timely manner. | |
| 12/7/23 | Chlorine Residual at CCP3 = 0.93mg/L | Incident report not available, at this time. | | |

## Public Health Reportable Events

There were no water quality reportable events in the May, June and July 2023.

### Shire Water Consumption

| | Monthly Total Water Supplied (ML) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Suburb / Month | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
| Byron Bay | 97.8 | 106.0 | 115.3 | 123.3 | 142.8 | 144.1 | 159.4 | 136.9 | 144.0 | 141.3 | 137.9 | 133.5 | 136.2 |
| Brunswick Heads | 15.0 | 15.7 | 15.1 | 14.1 | 18.1 | 18.8 | 19.3 | 15.3 | 17.0 | 17.4 | 16.5 | 16.0 | 19.3 |
| Mullumbimby | 26.5 | 31.4 | 30.5 | 28.4 | 34.1 | 31.3 | 32.4 | 29.8 | 34.0 | 32.3 | 32.1 | 31.5 | 31.7 |
| Bangalow | 13.5 | 14.1 | 13.7 | 14.0 | 17.7 | 15.8 | 16.2 | 13.9 | 14.5 | 14.2 | 16.1 | 15.1 | 15.0 |
| Ocean Shores | 35.9 | 44.0 | 40.0 | 40.7 | 48.5 | 50.8 | 53.3 | 43.5 | 45.9 | 45.1 | 46.4 | 45.7 | 50.2 |
| **Total Water Supplied** | **188.7** | **211.3** | **214.5** | **220.4** | **261.2** | **260.8** | **280.7** | **239.3** | **255.5** | **250.4** | **249.1** | **241.8** | **252.5** |

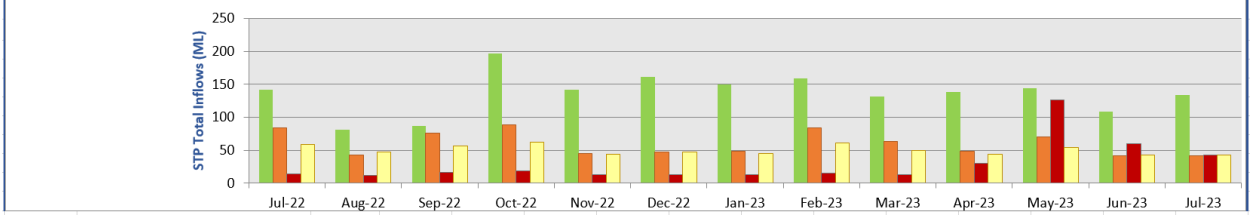



Note: Values shown in green are approximate, awaiting final values from Rous Water

5 From: WaterOutlook > Reports > Special > MONTHLY UTILITIES REPORTS > UTILITIES REPORT - Water Usage and STP Inflows Summary

# STP INFLOWS

| STP | Month | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Monthly Total STP Inflows (ML) | | | | | | | | | | | | |
| | Byron Bay STP | 142.2 | 80.9 | 86.4 | 196.5 | 142.3 | 161.8 | 149.8 | 159.5 | 131.5 | 138.2 | 143.6 | 108.7 | 133.6 |
| | Brunswick Valley STP | 84.0 | 43.1 | 76.4 | 89.1 | 44.9 | 47.0 | 48.3 | 84.1 | 63.5 | 48.7 | 70.6 | 41.3 | 41.8 |
| | Bangalow STP | 14.3 | 12.2 | 16.5 | 19.0 | 13.3 | 13.2 | 13.0 | 15.0 | 13.0 | 29.8 | 126.1 | 59.8 | 42.5 |
| | Ocean Shores STP | 58.3 | 47.0 | 56.3 | 62.1 | 44.1 | 47.6 | 45.6 | 61.3 | 49.4 | 43.7 | 54.3 | 42.5 | 42.5 |
| | **Total STP Inflows** | **298.7** | **183.2** | **235.7** | **366.6** | **244.6** | **269.7** | **256.7** | **319.9** | **257.3** | **260.4** | **394.7** | **252.2** | **260.3** |

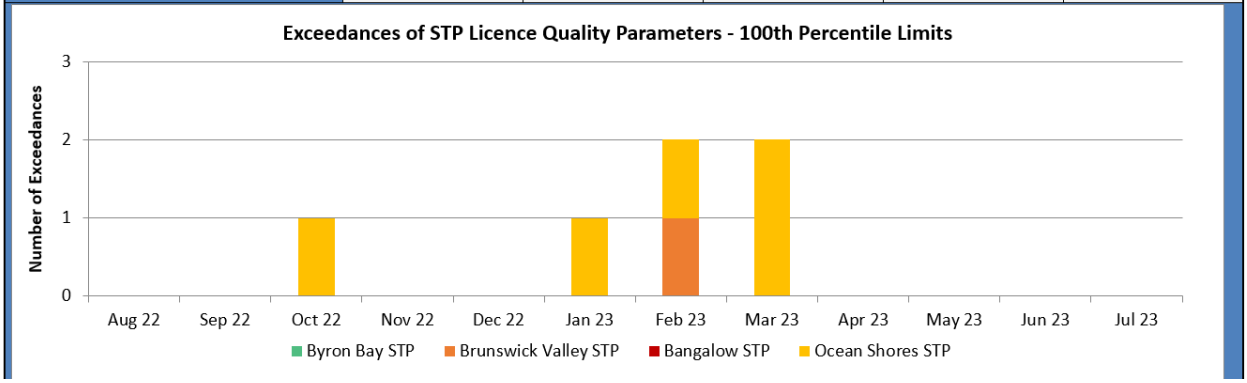



*From: WaterOutlook > Reports > Special > MONTHLY UTILITIES REPORTS > UTILITIES REPORT - Water Usage and STP Inflows Summary*

## 5 STP Performance

There were zero (0) STP licence 100 percentile limit exceedances in May, June and July 2023.

| STP Licence Limit Exceedances (Treated Water Quality) - Last 12 Months<br>Aug 2022 - Jul 2023 | Byron Bay STP | Brunswick Valley STP | Bangalow STP | Ocean Shores STP | ALL STPs |
|---|---|---|---|---|---|
| 100% Percentile Exceedances | 0 | 1 | 0 | 5 | 6 |
| 90% Percentile Exceedances | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 1 | 0 | 6 | 7 |
| Number of Samples in Period | 234 | 209 | 201 | 214 | 858 |
| Percentage of Samples in Exceedance of Licence Limits | 0.0% | 0.5% | 0.0% | 2.3% | 0.7% |




| STP 100th PERCENTILE LICENCE LIMIT EXCEEDENCES<br>(TREATED WATER QUALITY)<br>12 Months to May 2023 | | | | |
|---|---|---|---|---|
| Date Occurred | Description | Description and Cause of Issue | Action Taken to Remedy Situation | Action Taken to Prevent Reoccurrence |

| | | | | |
|---|---|---|---|---|
| **Byron Bay STP** | | | | |
| | | No Exceedances | | |
| **Bangalow STP** | | | | |
| | | No Exceedances | | |
| **Brunswick Valley STP** | | | | |
| 15/02/23 | Faecal Coliform Exceedance 'EPA 1' of 3750 cfu /100 ml | Exceedance was caused by a high rainfall event over 14th and 15th February. Hi inflows resulted in bypass of the UV system. | Outflow was retested until FC had dropped to an acceptable level meeting License). This was achieved by 20/02/2023. | Monitor FC testing results and reduce inflow and infiltration into the system. |
| **Ocean Shores STP** | | | | |
| 26/10/22 | Faecal Coliform Exceedance 'EPA 3' of 3640 cfu /100 ml | FC Exceedence caused by High Inflows to plant due to an extreme rainfall event. | Council operators monitored flows and ensured UV operating correctly. Retesting was carried out to ensure FC levels reduced quickly after the rainfall event. | |
| 4/1/23 | Faecal Coliform Exceedance 'EPA 3' of 950 cfu /100 ml | Cleaning of wetlands combined with heavy rainfall caused flow of debris to hinder effectiveness of UV. | Operators cleaned UV and tested FC levels continuously until license compliance achieved. | Ensure regular cleaning of Wetlands channel and cleaning of UV Tubes to prevent recurrence. |
| 15/2/23 | Faecal Coliform Exceedance 'EPA 3' of 1120 cfu /100 ml | 15 February 2023 a high FC count was tested at EPA 3. This was due to a High rainfall event on 14th and 15th February. | Retesting was done until FC count met License. This was achieved by 20/02/23. | Monitor FC results. Reduce Inflow--Infiltration into system. |

| | | | | |
|---|---|---|---|---|
| 1/3/23 | Faecal Coliform Exceedance 'EPA 3' of 4700 cfu /100 ml | Investigation determined that organic material from the wetland cell is washing through the UV during high flow periods. | A resample was conducted on 17/3/2023 and the result came back at 130cfu which is within normal operating range. | UV to be cleaned regularly to limit the organic material building up in the unit also monitoring of the water quality going through the wetland. |
| 15/3/23 | Faecal Coliform Exceedance 'EPA 3' of 730 cfu /100 ml | Investigation determined that organic material from the wetland cell is washing through the UV during high flow periods. | A resample was conducted on 17/3/2023 and the result came back at 130cfu which is within normal operating range. | UV to be cleaned regularly to limit the organic material building up in the unit also monitoring of the water quality going through the wetland. |

## EPA Reportable Events

There were zero (0) EPA reportable incident during May and June 2023.

There was one (1) EPA reportable incident during July 2023. The details are as follows:

**EPA Licence # 3404 - Byron Shire Council self-report, gravity main break resulting in sewage overflow near intersection of Bangalow Road and Wollumbin Street, Byron Bay**

**EPA Ref: 22617**

**(a) The cause, time and duration of the event**

Byron Shire Council (*Council*) received notification at approximately 2pm Friday 21st July regarding bubbling water appearing on the road surface at the corner of Bangalow Road and Wollumbin Street, Byron Bay.

Council staff were onsite within 30 minutes and determined that leak was a sewage leak instead of potable water leak. Given its location, it was initially determined that this leak was caused by a split in the sewer rising main which runs along Bangalow Road. The leak had caused a pothole on the road, which was overflowing into the nearby stormwater system.

To minimise overflow, Council staff reduced the pump speed at the pump station (which pressurises the sewer rising main) to minimum flow and pressure. Staff observed not long afterwards that the overflow at the pothole had stopped. Council staff implemented traffic control around pothole and started to perform site clean-up including disinfection. After ensuring that the overflow onsite had ceased and that the site was safely secured with traffic control, Council scheduled to perform the dig up and repair the following morning.

Work started 7am Saturday 22nd July. As staff excavated area it was soon discovered that the leak had come from a gravity sewerage main instead of the sewer rising main. It was found that two sewer manhole lids in the area had been asphalted over and there was a blockage within one of the manholes.

Once this issue was identified, Council staff exposed the manhole lid and cleared the blockage within the manhole. Contractors and staff performed repairs to the sewer manhole and gravity sewer main and had the site reinstated and disinfected by 9:00am.

**(b) The type, volume and concentration of every pollutant discharged as a result of the event**

The estimated volume of untreated sewage discharged over the 20 hour period was approximately 1 kL.

During the time of the leak, it was dry weather and untreated sewage was mainly localised around pothole and the stormwater drain shown in Appendix A.

Council staff undertook sampling on 24th July at the downstream stormwater retention basin (shown Appendix A). Results from this sampling are attached to this report with an extract shown below.

| Sample Identification:<br>Date Taken:<br>Test | Method | Units | Constellation Court<br>24/07/2023 11:00 AM<br>232661-1 |
|---|---|---|---|
| Thermotolerant Coliforms | B1 | cfu/100mL | 11,870 |
| Total coliforms colilert | B12 | MPN/100mL | 72,700 |
| *E. coli* colilert | B12 | MPN/100mL | 11,870 |

**(c) Action taken by the licensee in relation to the event, including any follow-up contact with any complainants.**

- Council staff responded to issues within a timely manner. All localised overflow was removed (using vacuum excavation) and then the site was disinfected.

- Council staff performed environmental sampling of stormwater system downstream to the leak on 24th July as previously noted in Section (b).

**(d) Details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;**

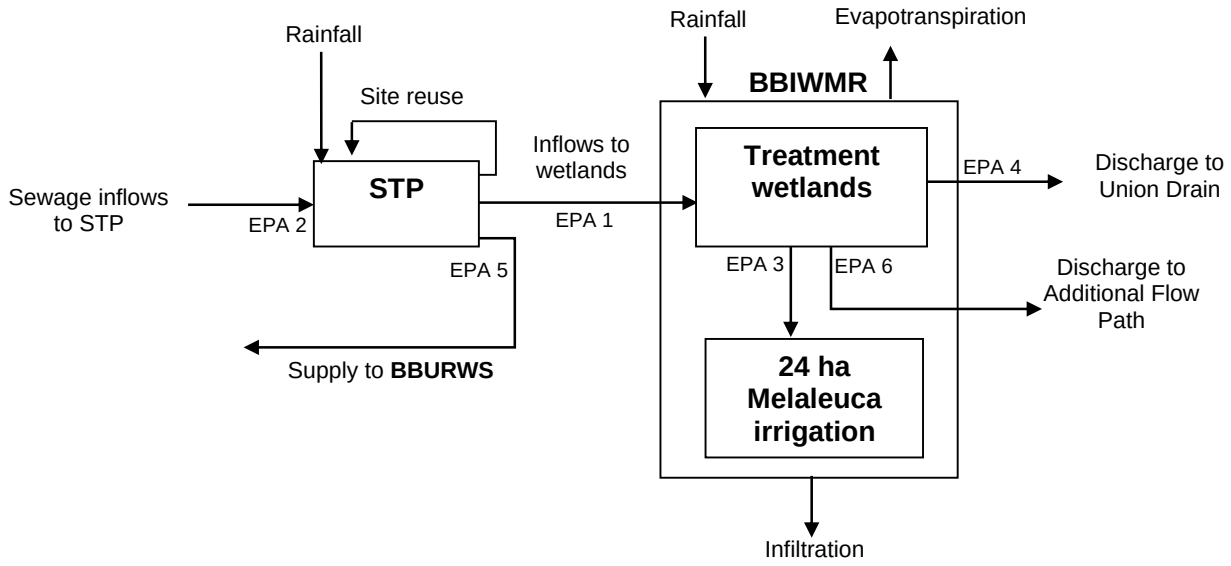
- Perform asset investigation of sewer infrastructure in area to determine if any additional repairs to sewer manholes and/or structural relining of gravity sewer main in proximity to leak is required.

- Raise incident with Council's Infrastructure Services division as part of an internal review of asphalting procedures to outline importance of not asphalting over sewer assets.

# TREATED EFFLUENT & REUSE WATER MANAGEMENT SYSTEMS

## Byron Bay treated effluent water balance

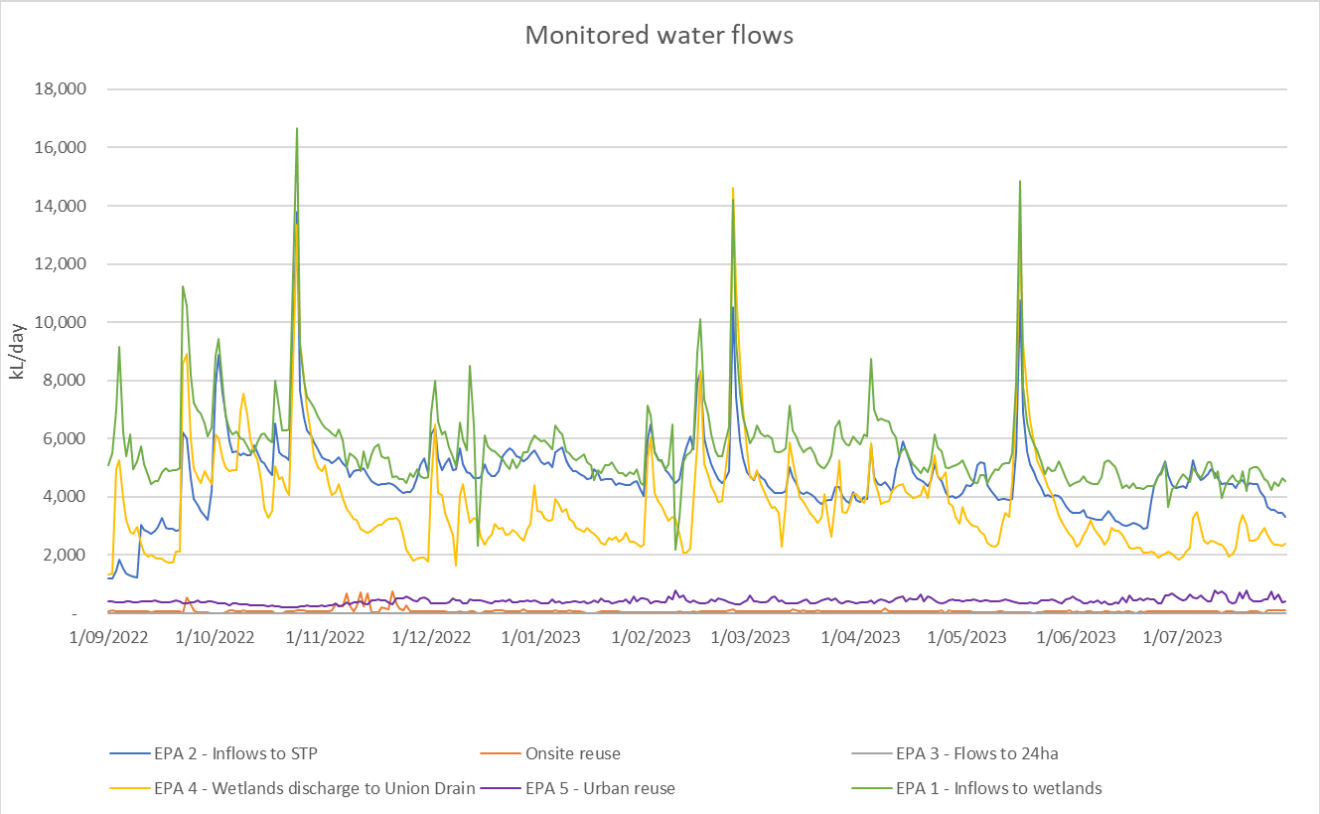
Below is a basic water-balance model of Byron Bay effluent management systems, which include the Byron Bay STP, the Byron Bay Urban Recycled Water Scheme (BBURWS), and the Byron Bay Integrated Water Management Reserve (BBIWMR).

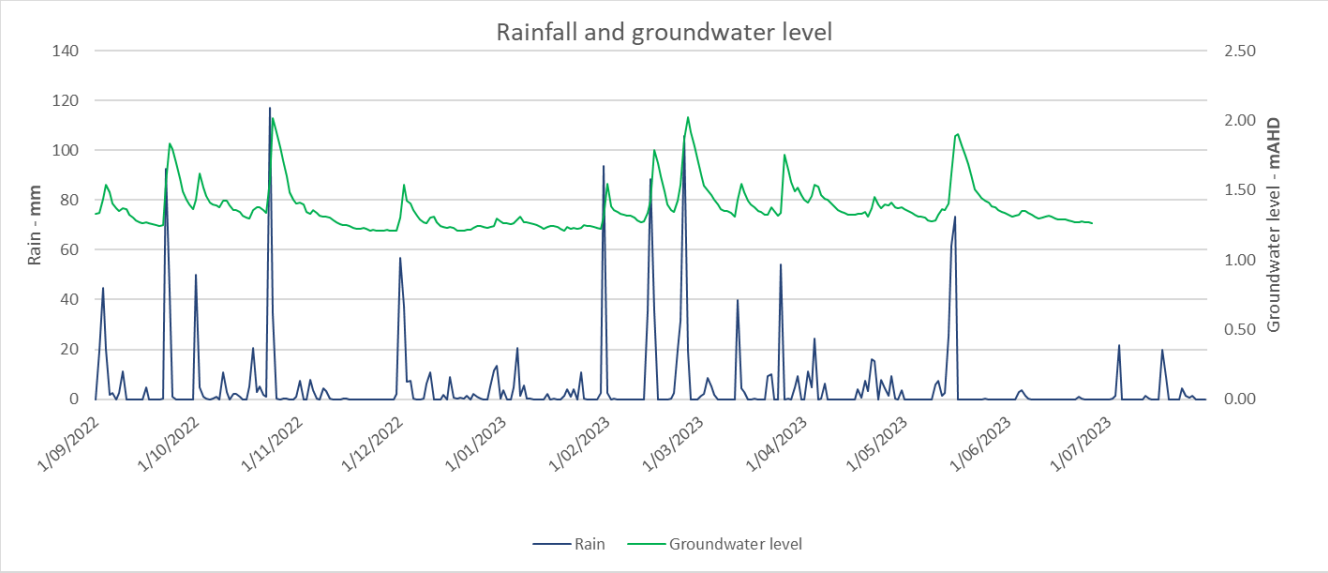



A numerical model has been developed to better understand the water-balance dynamics of the site. It is fed with monitoring data (EPA points, STP site reuse, rainfall). It estimates the evapotranspiration output (i.e. environmental effluent reuse) at the BBIWMR. Remaining knowledge gaps in the model include groundwater infiltration in the BBIWMR. EPA 6 flows will be included in the model once the Additional Flow Path system is commissioned.

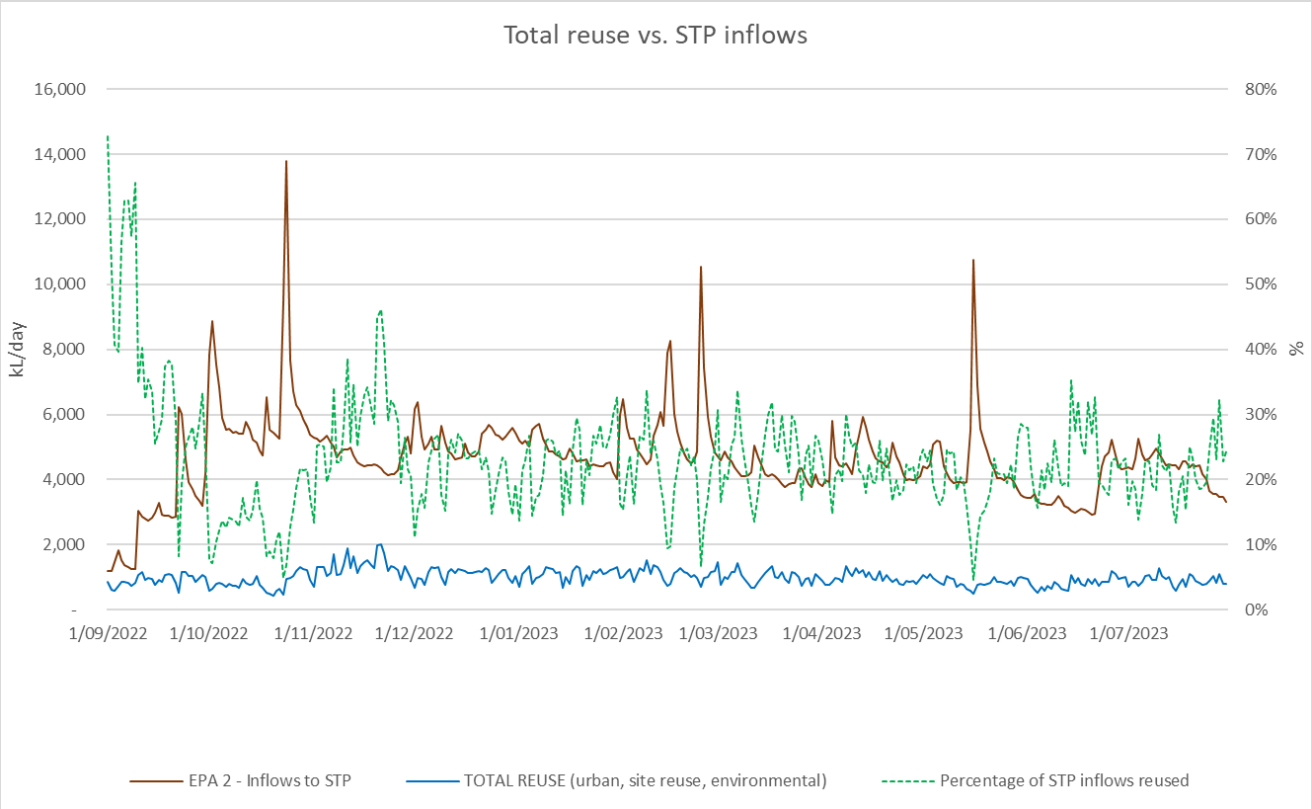
Total effluent reuse includes urban reuse (EPA 5 flows), STP site reuse and evapotranspiration at the BBIWMR site.

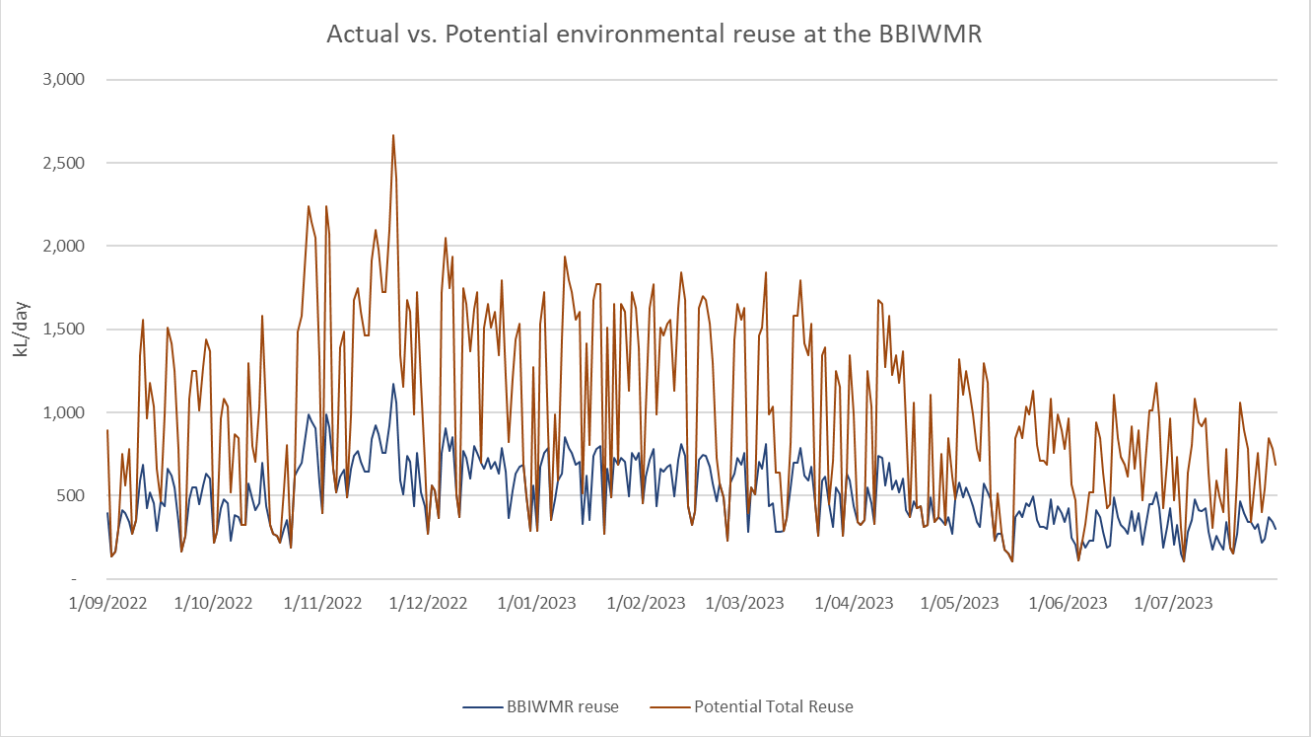
Results from the abovementioned model are shown below:


Monitored water flows
kL/day
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023
1/04/2023
1/05/2023
1/06/2023
1/07/2023
EPA 2 - Inflows to STP
Onsite reuse
EPA 3 - Flows to 24ha
EPA 4 - Wetlands discharge to Union Drain
EPA 5 - Urban reuse
EPA 1 - Inflows to wetlands


Rainfall and groundwater level
Rain - mm
Groundwater level - mAHD
140
120
100
80
60
40
20
0
2.50
2.00
1.50
1.00
0.50
0.00
1/09/2022
1/10/2022
1/11/2022
1/12/2022
1/01/2023
1/02/2023
1/03/2023
1/04/2023
1/05/2023
1/06/2023
1/07/2023
Rain
Groundwater level

5




5 Key observations:

- Rain appears to be a substantial driver of increased water flows into and out of the effluent management systems.

- On average, approx. 23% of STP inflows are reused per day. However, variability is high, with reuse ranging from approx. 5% to 75% per day. This variability is attributed to the highly variable rainfall.

- It is estimated that effluent reuse represents 25% (approx. 1ML/day) of ADWF inflows to the STP.

- There is untapped reuse potential at the 24 ha site (approx. 500 kL/day). This system is in the process of being reactivated.

- If 24 ha reuse site is reactivated, it is estimated that reuse could be increased to an average of 38% (approx. 1.5 ML/day) if ADWF inflows to the STP.

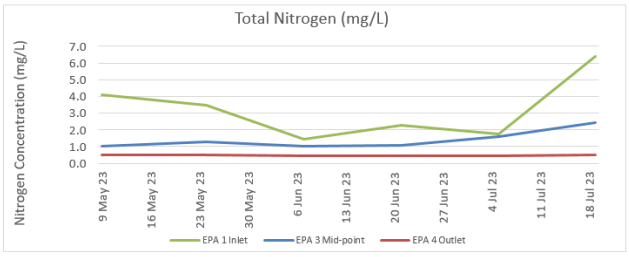
## Byron Wetlands Water Quality

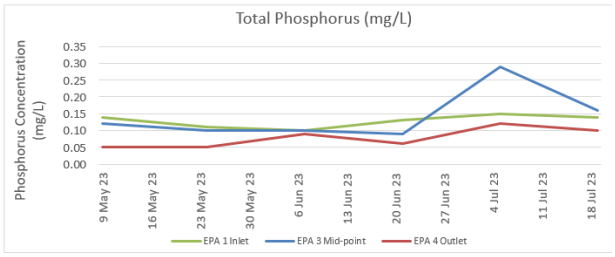
The data below shows the assimilative and polishing capacity of Byron Wetlands for the May to July 2023 period.

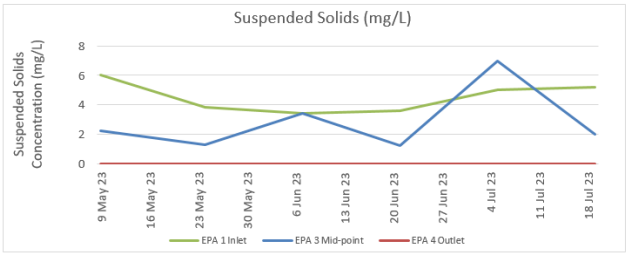
**Byron Wetlands Nutrient Removal - May 2023 to July 2023**

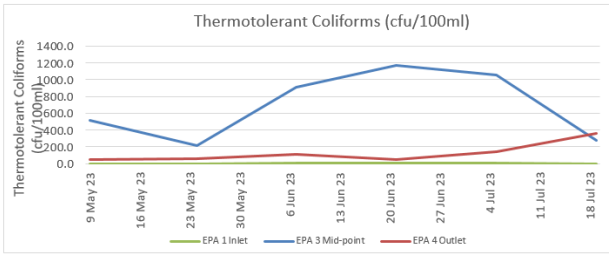
| Statistics | Total Nitrogen (mg/L) | | | | | Total Phosphorus (mg/L) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | EPA P1 Inlet | EPA P3 Mid point | EPA P4 Outlet | Reduction Target | Total Nitrogen Reduction | EPA P1 Inlet | EPA P3 Mid point | EPA P4 Outlet | Reduction Target | Total Phosphorus Reduction |
| **Average** | 3.23 | 1.41 | 0.47 | 40-55% | 85% | 0.13 | 0.14 | 0.08 | 40-60% | 39% |
| **Geomean** | 2.82 | 1.33 | 0.47 | | 83% | 0.13 | 0.13 | 0.07 | | 42% |
| **Median** | 2.85 | 1.18 | 0.48 | | 83% | 0.14 | 0.11 | 0.08 | | 44% |

Note: Average nutrients removals figures from:
https://www.researchgate.net/publication/6717563_Removal_of_Nutrients_in_Various_Types_of_Constructed_Wetlands
1-"Removal of total nitrogen in studied types of constructed wetlands varied between 40 and 55%"
2.-"Removal of total phosphorus varied between 40 and 60% in all types of constructed wetlands"




From: WaterOutlook > Reports > Special > MONTHLY UTILITIES REPORTS > UTILITIES REPORT - Wetlands Performance

The assimilative and polishing capacity is demonstrated by the nutrient reduction trend between EPA1 and EPA 4 for nitrogen and phosphorus concentrations as follows:

- **Total Phosphorus** - an average decrease of 39-44% is seen between EPA1 and EPA4, this decrease is in line with the reduction seen in the literature of around 40-60%.

- **Total Nitrogen** - an average reduction of between 83-85% is seen between EPA1 and EPA4. This is significantly better than that seen in the literature of around 40-55%

## Wetlands Operation

Updates unavailable for June and July, however during May the following monthly inspections and checklists were completed by AWC.

Bird Buddies have observed an increase in waterbird numbers in recent surveys.

Water levels have been slightly reduced. Reintroduction of effluent into Cell D and E and rainfall has buffered and neutralised the disturbed ASS materials.

The DPI research team continued monthly monitoring. The reduction of salvinia extent has been sustained in Cell H with large areas of open water providing habitat for waterbirds. There also appears to have been some impact on the Salvinia presence in Cell I due to weevil activity.

Discussions are ongoing with Planit and Safe Group regarding monitoring requirements and the additional flow path are in progress.

The assessment of the function and condition of the 24ha effluent irrigation area has been commenced. See photo below. Clearing of access to critical infrastructure has been completed by Martin Tolley and Shane Austin.

## Biosolids Management

The table below shows the total biosolids removed from the STP sites and applied to land for the last 12 months to July 2023.

| | Aug 22 | Sep 22 | Oct 22 | Nov 22 | Dec 22 | Jan 23 | Feb 23 | Mar 23 | Apr 23 | May 23 | Jun 23 | Jul 23 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ıy STP | - | - | 531 | 415 | 239 | 376 | - | 127 | 114 | 160 | - | - | 1,962 |
| :k Valley STP | - | - | - | 376 | - | - | - | 104 | - | - | - | - | 480 |
| ν STP | - | 65 | - | 60 | 30 | - | - | 21 | - | - | 25 | - | 201 |
| ıores STP | - | - | - | 168 | 131 | - | 42 | 25 | 37 | - | 41 | - | 445 |
| Total Biosolids (cu. metres) | - | 65 | 531 | 1,019 | 400 | 376 | 42 | 278 | 151 | 160 | 66 | - | 3,088 |

From: WaterOutlook > Reports > Special > MONTHLY UTILITIES REPORTS > UTILITIES REPORT - Biosolids Movements

## Recycled Water Management Strategy

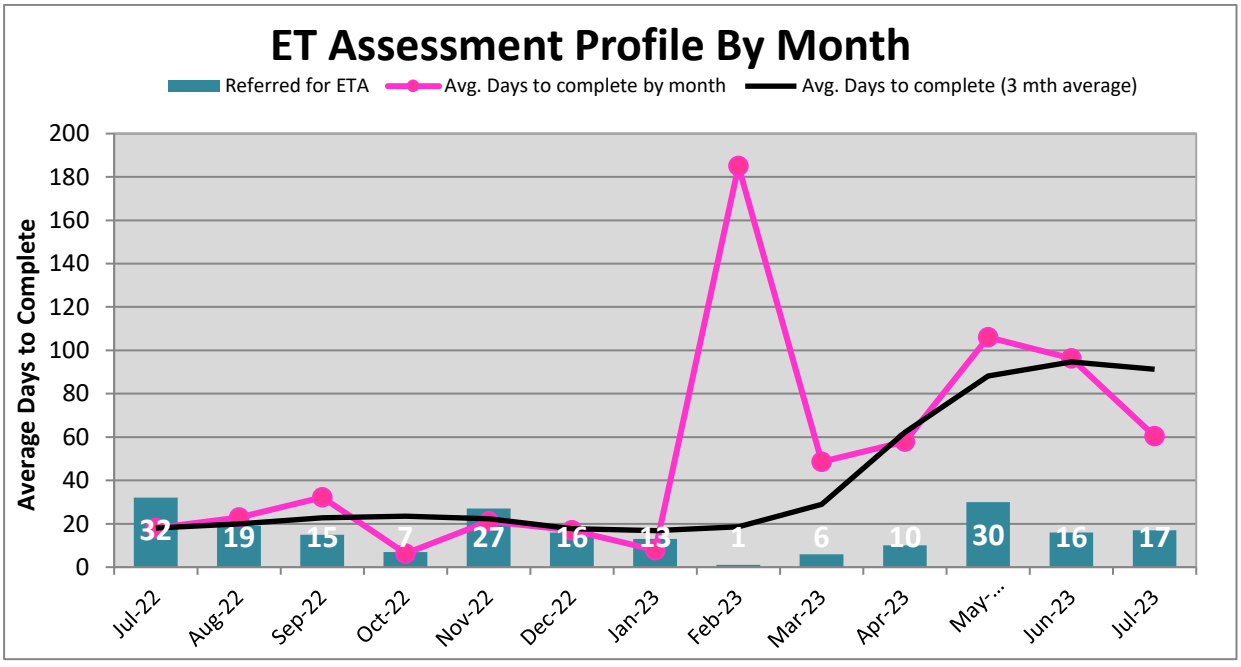
### Update on project progress:

Cost-benefit assessment of future options for effluent reused is being undertaken.

# DEVELOPMENT APPLICATIONS

## ET Assessments

The graph below illustrates the ET assessment profile from July 2022 to July 2023. In July 2023, the systems planning team required an average of 60.4 days to complete ET assessments.



### Overview

- Resources are depleted due to staff leave.
- Assessments are being completed based on a priority list sent by planning staff each week.
- 17 ET assessments were finalised this month (July 2023).
- 14 referrals are currently on hold due to requested additional information from planners/applicants.
-

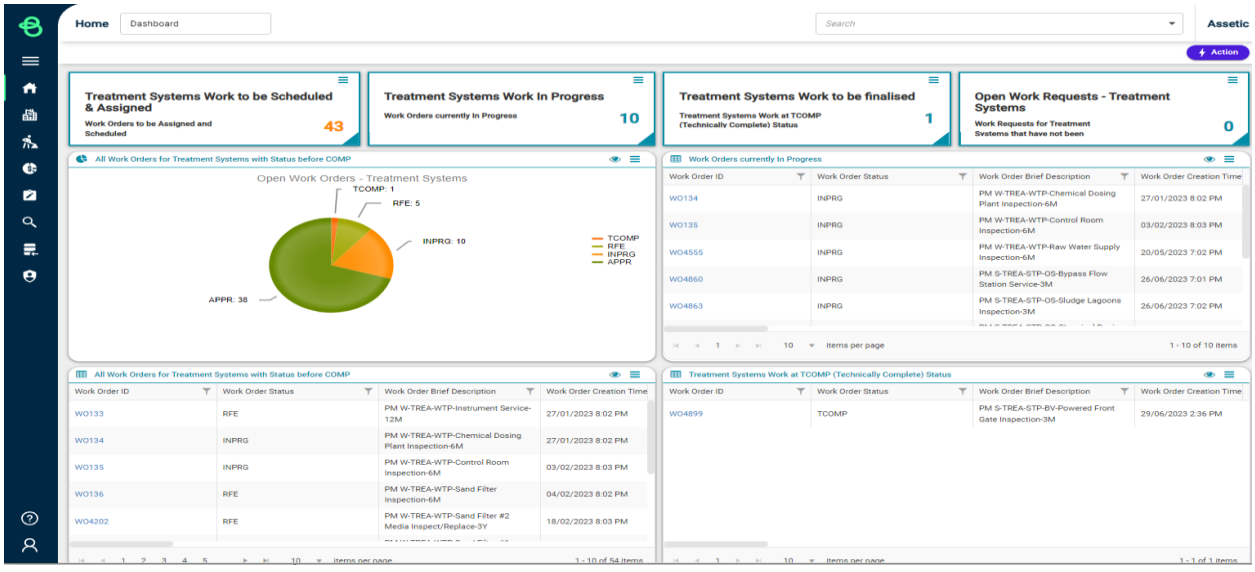
## ASSET MAINTENANCE SYSTEM ROLLOUT

### Project Status

Utilities are in the process of moving to new maintenance management software Assetic.

1. Three teams (Water Reticulation, Electrical Maintenance and Operational Treatment Systems) are now live in this system and using it to manage all planned and reactive maintenance.
2. The next team to be rolled out is the Mechanical Treatment Systems team. This team's planned maintenance schedule has been built in Assetic with training and go-live scheduled for the first week of August 2023.
3. The final team. Sewer Operations will be bought into the system early September 2023.
4. During the period Improvements have been made to various processes within Assetic, for example.
    a. tracking maintenance performed on non-Utilities Assets has been included.
    b. All teams have had individual dashboards built to help the team leaders manage, allocate and monitor maintenance tasks.

Example of Home Screen dashboard in Assetic for the Operational Treatment team



### Maintenance Reporting in Power BI

Higher level reporting for management purposes is currently being developed in Power BI. This is for the following reasons:

- Power BI has reporting and data analytics capabilities far in advance of Assetic.
- Integration with Power BI is part of a wider project to develop integrations with a variety of software to develop a single 'portal' where the team can access data from a wide variety of platforms. At this stage the plan is to include the Utilities Digital Asset Management Plan (DAMP), summary water quality data and energy efficient reporting.

Examples of the Asset Maintenance reporting being developed in Power BI are included in the following section Planned & Reactive Asset Maintenance.

## PLANNED & REACTIVE ASSET MAINTENANCE

### Planned & Reactive Maintenance

Although there is not currently sufficient data in the Assetic Maintenance system to make planning decisions or monitor performance with any precision (between 4 and 1 months depending on the team); the following charts are examples of the type of indicators that can be monitored.

**Figure 1 & 2** - The breakdown of manhours between planned and reactive maintenance and maintenance manhours by team over time.

This information can be used to inform decisions around optimum servicing levels, resource planning and for budgeting purposes.

**Figure 1 – Planned versos Reactive breakdown**

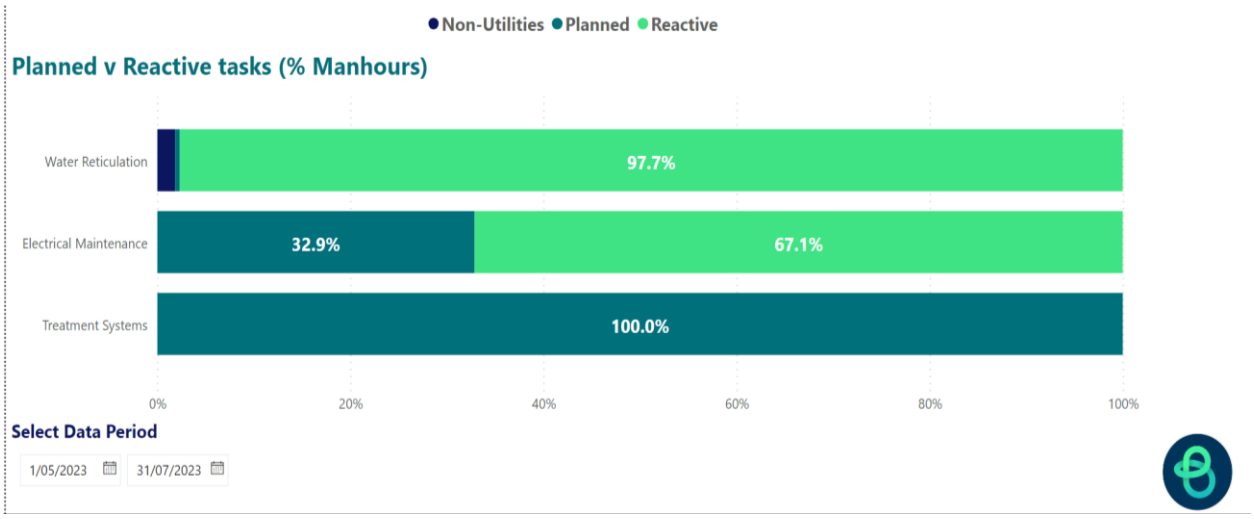


**Figure 2 – Planned versos Reactive breakdown**

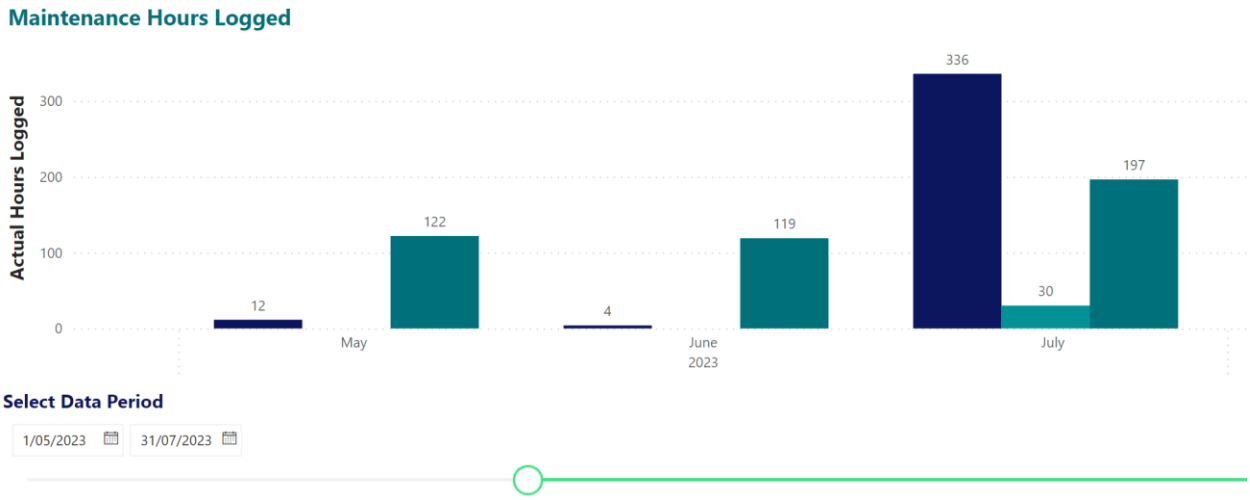
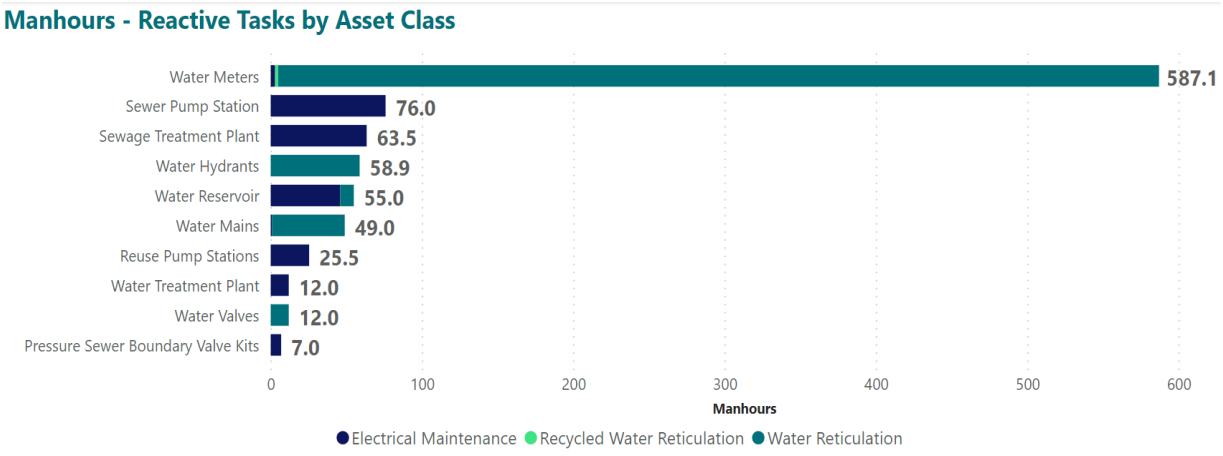



**Figure 3** shows the breakdown of manhours by asset class however, a data drill-down can be performed to undertake this analysis by individual assets.

5 This information can be used to inform budgeting decisions around optimum servicing levels.

**Figure 4** can also show this data geographically in a heatmap, this example selection water mains, highlights the recent cluster of main breaks in the Wategos area.

**Figure 3 – Reactive Maintenance Manhours by Asset Class**




10

**Figure 4 – Heatmap of Reactive Maintenance Manhours by Asset Class**

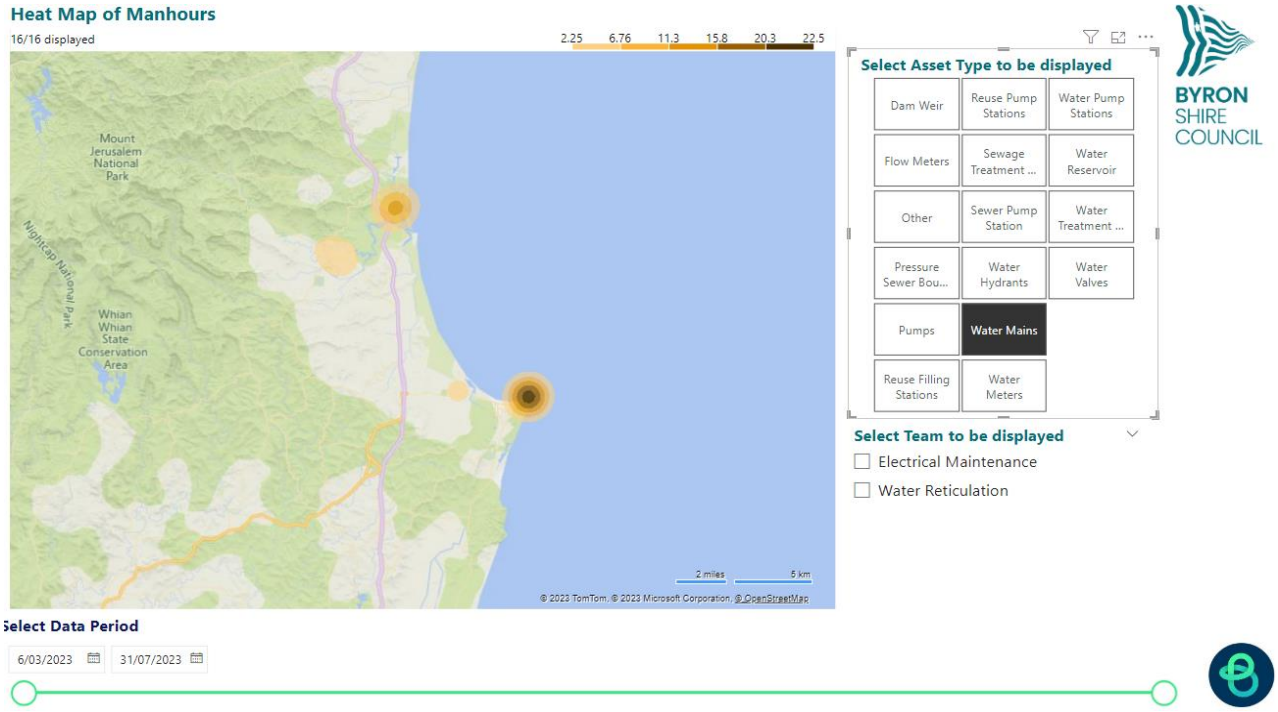



**Figure 5** shows overdue planned maintenance tasks by team. This information can be used by management and team leaders for planning purposes but also informs the Operational Plan KPI 5.5.1.1. Complete 80% of Programmed Maintenance for water and sewer Assets. This KPI will be reported once all the teams are active in the Assetic system.

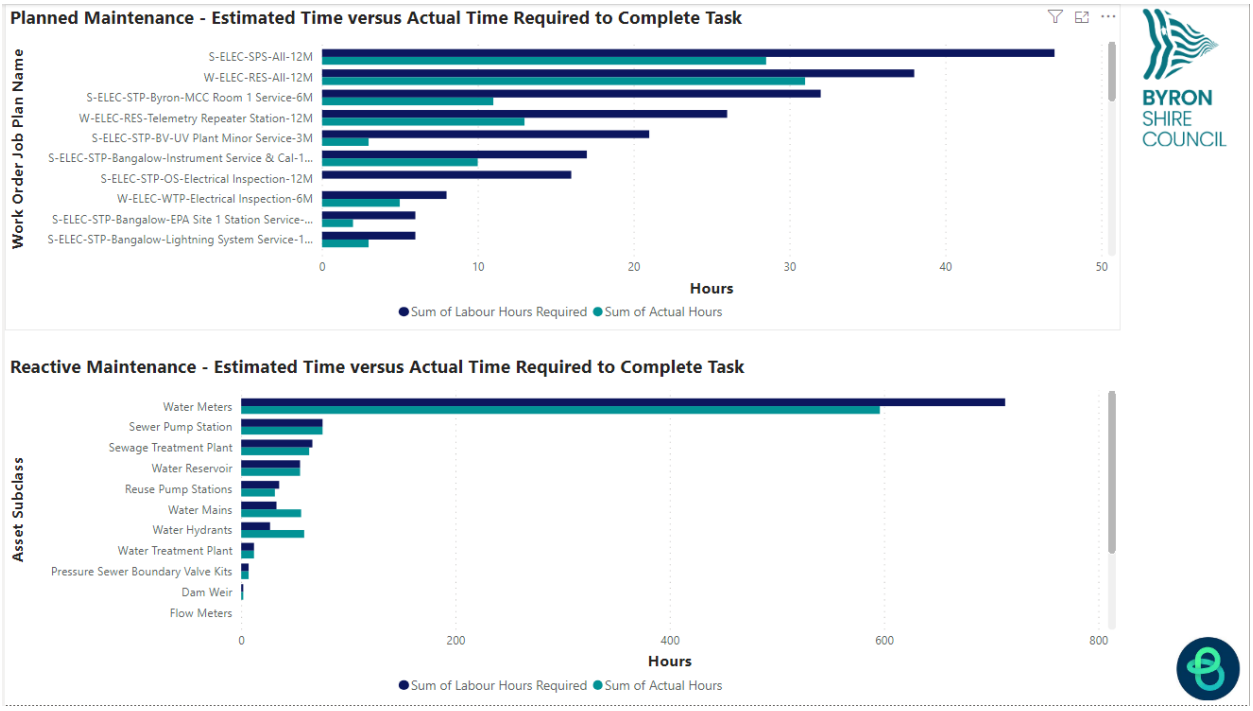
**Figure 5 – Overdue Planned Maintenance Tasks**


| Work Order ID | Work Order Job Plan Group Type | Work Order Status | Work Order Brief Description | Asset Name |
|---|---|---|---|---|
| WO4673 | Electrical Maintenance | INPRG | PM S-ELEC-SPS-All-12M | SPS1006 |
| WO4695 | Electrical Maintenance | INPRG | PM S-ELEC-SPS-All-12M | SPS2008 |
| WO4873 | Treatment Systems | INPRG | PM S-TREA-STP-BA-Balance Pump Station Inspection-3M | BANGALOW SEWAGE TREATMENT WORKS |
| WO4875 | Treatment Systems | INPRG | PM S-TREA-STP-BA-Inlet Works Inspection-3M | BANGALOW SEWAGE TREATMENT WORKS |
| WO4862 | Treatment Systems | INPRG | PM S-TREA-STP-BA-Membrane Tank Inspection-3M | BANGALOW SEWAGE TREATMENT WORKS |
| WO4868 | Treatment Systems | INPRG | PM S-TREA-STP-BA-Sediment & Sludge Removal-3M | BANGALOW SEWAGE TREATMENT WORKS |
| WO5339 | Treatment Systems | APPR | PM S-TREA-STP-BA-Site Service Out Building Inspect-3M | BANGALOW SEWAGE TREATMENT WORKS |
| WO4866 | Treatment Systems | APPR | PM S-TREA-STP-BV-Statutory Air Receiver Inspect-12M | BRUNSWICK VALLEY SEWAGE TREATMENT WO |
| WO4675 | Treatment Systems | INPRG | PM W-TREA-WTP-Chlorination Plant Inspection-6M | Wilson Creek Water Treatment Plant |
| WO4555 | Treatment Systems | INPRG | PM W-TREA-WTP-Raw Water Supply Inspection-6M | Wilson Creek Water Treatment Plant |
| WO4638 | Treatment Systems | INPRG | PM W-TREA-WTP-Site Inspection-6M | Wilson Creek Water Treatment Plant |
| WO4599 | Water Reticulation | APPR | PM W-WRET-DAM-Laverty's Gap Race Cleaning-6M | LAVERTY'S GAP WEIR |
| WO4574 | Water Reticulation | APPR | PM W-WRET-RES-Tongarra-DRONE-3M | Tongarra Reservoir |

**Figure 6** shows the estimated versus actual time (manhours) to complete tasks. For planned maintenance this is by Servicing Protocol (Job plan type) and for reactive tasks this is by asset type. Over time we will be able to more accurately forecast the time taken

for each tasks type which will result in more accurate scheduling and resource planning. Ultimately, we will be able to apply costings to these task times for budgeting purposes.

**Figure 6 – Estimated versus Actual time to complete task**




## 5 General Asset Management Improvements

Digital Asset Management Plan (DAMP)

- Finalised.
- Circulated for internal review and feedback.

Water Mains and Reuse Mains:

- Predictor™ model build completed.
- Building several financial scenarios for budgetary considerations

Water Valves:

- Predictor™ model build completed.
- Building several financial scenarios for budgetary considerations

Sewer Valves:

- Predictor™ model build completed.

- Building several financial scenarios for budgetary considerations

Reuse Access Points and Reuse Filling Stations:

- Predictor™ model build underway.

Sewer Vacuum Pods:

- Predictor™ model build underway.
- Scope sent out to three contractors for Vacuum Pod condition assessment. Expecting quotes back early June.

Sewer Pump Stations:

- Xylem carried out the audit and installation assessment of all Concertor pump sites. Report coming June.

Utilities Digital Asset Management Plan (DAMP):

- DAMP second draft build continuing.

Sewer Treatment Plants:

- Data compiled for Predictor™ model. All replacement/treatment costs now assigned. Predictor™ model build in progress.
- Byron STP wetlands first round of data received. Replacement/treatment costs process underway.

Water Treatment Plant:

- Data compiled for Predictor™ model. All replacement/treatment costs now assigned. Predictor™ model build in progress.

Flood Damage:

- **Laverty's Gap Weir –** Concept design submitted. REF progressing.
- **Gravity Sewer Mains –** Interflow awarded work for this project on modified reduced submission. Schedule for project being developed by Willow & Sparrow who are project managing this on Councils behalf.
- **Mullum Water Mains Extension –** Survey started on 01/05. Clash register required for areas of concern. Underbore exit and entry locations to be determined dependent on services info. Scope at Azalea St reservoir to be reviewed - reliant on survey. All Geotech data provided. Survey deliverables - stagger areas. PWA to

request a schedule from surveyors. Section near hospital (300m) being done/tendered July/August. ARTC application lodged this week.

- **Water Mains Replacement (Kolora Way) –** Surveyor engaged. Need data to confirm vegetation removal. Existing survey data to be forwarded. Geotech to be performed.

- **SPS Switchboard –** Timeline of projects as follows:

    - SPS 4001 – Fully Completed.
    - SPS 3016 – Fully Completed.
    - SPS 4013 – Fully Completed.
    - SPS 4006 – Fully Completed.
    - SPS 5005 – Fully Completed.
    - **47 possible eligible switchboards** - Survey completed by PWA. Audit should be completed in next 2 weeks confirming which boards are below 1:100yr+ 0.5 flood level as these will be eligible for raising.

- **Pressure Sewer Boundary Valve Kits –** PW have completed site audit. A few sites could not be viewed. Council staff going out to investigate non inspected assets. Hope to issue RFT before end of June.

- **Telemetry Data Gathering –** Review being done on comms backbone report and proposed RTU upgrades**.**

- **Electrical Grid Review (OSSTP) –** Ongoing. Awaiting Essential Energy feedback to finalise report. Gen set appears to be recommended solution.

- **Review Critical Equipment and Major Spares Inventory –** PWA initiated a meeting between stakeholders on the 08/06 to get this project underway.

- **River/Flood level warning systems –** Project approved by PWA. General Fund (James Flockton's team) to run project.

## UTILITIES SUSTAINABILITY

### Energy Savings Certificates (ESC's) for WBSTP Blower Upgrades

Energy Conservation Focus (ECF) have been engaged as the consultant for generating Energy Savings Certificates (ESC's). A representative from ECF will be attending WBSTP on 3/8/23 to inspect the Turboblower project and their next step will be to have their

monitoring and verification (M&V) method approved by the state government system administrator.

After the M&V methodology is approved, the project can continue to completion and commissioning, at which point the M&V period will begin. This M&V period will continue for 2 years and the data will be used to generate the ESC's. The ESC's will then be sold on the open market and after the consultant takes their agreed upon fee council will be credited with the remainder, having paid no upfront fee.

### Utilities Rolling Energy Performance Metrics

Utilities have undertaken many energy efficiency upgrades to the wastewater network. These upgrades have produced verifiable financial and environmental benefits for council. The Sustainability Officer Utilities (SOU) has been tasked with developing systems for quantifying and reporting on these savings as well as prioritising sites for assessment and upgrade.

In order, to assess an assets energy efficiency while taking into account load variations due to population fluctuations and weather variability the SOU has utilised a kWh/kL energy performance metric. In order, to use performance metrics as an efficiency tracking and anomaly diagnostic the Utilities Data Analytics Officer is in the process of embedding energy performance metrics into Utilities data management systems.

The generation and perpetuation of these metrics is planned to be incorporated into the Power BI platform that is being introduced into councils' technology system. The procedures around utilising, acting on and reporting on these metrics will need to be developed and resourced.

### Electricity Procurement Contract

The current Byron Shire Council electricity procurement contracts expire on 31/12/2023. Consequently, a project has been established to secure a new electricity contract for both councils' large market and small market sites before the end of the calendar year.

Presync has been engaged as the consultant and, with the assistance of the manager of Corporate Services, the Sustainability Officer Utilities and council's asset owners/responsible officer, will be generating the request for tender documents and facilitating the tender assessment process.

The first step in this is forecasting councils' energy profile over the next 5-7 years. This forecast needs to allow for any significant alterations to council's portfolio of electricity consuming or generating such as large facility/plant additions or removals, major energy upgrades and the addition of large renewable energy generation facilities such as the bioenergy facility.

### Follow Up

- At the request of the Principal Engineer Systems Planning the SOU is endeavouring to separate the electricity billing for Depot Training Room and SPS3023. As a part of the sewer network SPS3023 should have its own dedicated electricity bill and apparently an electricity allowance is included in the lease agreement for the Depot Meeting Room Building that is used by Utilities staff. SOU is waiting for a new BSC electricity contract owner to be appointed in order to action this request.
- Electricity account information for all Utilities sites is being validated and corrected where necessary to ensure data accuracy for the implementation of Utilities wide rolling energy performance metrics. This data cleanse is nearly complete, and the Utilities Data Analytics Officer has produced a sample energy performance metrics report utilising Power BI.

## TOUCHSTONE ENEGINEERING – JOHN HART

### Byron Shire Bioenergy Facility Project

Working closely with HWL Ebsworth, Council's project team is nearly finished preparing the Public Private Partnership (PPP) "Initial Assessment" submission to the NSW Office of Local Government (OLG). An OLG Initial Assessment (approval) is intended to allow Council to pursue, the financing option to seek private equity financing for the D&C and O&M of the facility. Council expects to submit in August 2023 its NSW OLG PPP Initial Assessment.

The Council Grants Coordinator and the Bioenergy Facility Project Manager completed the Stage 1 EOI application for grant funding from the Commonwealth "Growing Regions Program Round 1", which replaces the now-cancelled BBRF Round 6 Grant Fund.

One additional Commonwealth grant stream is expected in 2023 and might be potential funding sources for the BEF project. The Department of Infrastructure, Transport, Regional Development, Communications and the Arts: the new "Regional Precincts and Partnerships Program" has not yet been announced, and that funding stream shall be reviewed and considered when more detailed information is available.

These funds could be put to offsetting the debt borrowing and private equity needs of a PPP delivery model.

# WILLOW AND SPARROW – MICHAEL CHAMBERLAIN

## SPS Renewals for Byron, Mullum, Ocean Shores & Bangalow 2023/24

The sewer pump station renewals programmed in 2023/24 includes 16 pump stations in total. The scope of work is summarised below.

| SPS | % COMPLETE | PUMPS DELIVERED | SWITCH-BOARD DELIVERED | COMPLETED SCOPE SUMMARY |
|---|---|---|---|---|
| **SPS 1002** | 5 | N/A | Quote in Progress | New Switchboard |
| **SPS 1005** | 0 | N/A | N/A | Amend fence, gate and access |
| **SPS 1007** | 5 | N/A | Quote in Progress | Install bypass connection and MH. Remove pumps, Guide rails and lifting chains in preparation for coating. Epoxy Coat well and cover slab. Replace risers in PE 125 and through to the valve chamber and replace lifting chains in SS. Remove and replace existing switchboard and concrete plinths including combined odour vent pole and plinth. |
| **SPS 2002** | 0 | N/A | N/A | Replace outlet risers |
| **SPS 2004** | 0 | N/A | N/A | Replace inlet gate valve |
| **SPS 2010** | 5 | N/A | Quote in Progress | Replace outlet risers and switchboard |
| **SPS 3004** | 5 | N/A | N/A | Install bypass connection and MH. Remove and reinstate pumps, Guide rails and lifting chains as required for coating. Epoxy coat wet well and cover slab. |

| | | | | |
|---|---|---|---|---|
| **SPS 3010** | 10 | Hydraulics Complete | N/A | Replace pumps, Check valves, outlet risers, remove ladder, and replace water service and odour vent pipe with odour filter. |
| **SPS 3017** | 0 | N/A | N/A | Replace inlet gate valve, refurbish inlet pipe penetration |
| **SPS 3021** | 5 | N/A | Quote in Progress | Replace guile rails and lifting chains, replace riser pipes, odour vent stack with filer unit, new switchboard. |
| **SPS 4007** | 0 | N/A | N/A | New Switchboard |
| **SPS 5003** | 10 | Hydraulics Complete | N/A | Replace pumps |
| **SPS 5014** | 5 | N/A | Quote in Progress | Cast new 600x600 switchboard plinth, install new 3x63mm conduits to pump well. Install new electrical mains and install switchboard and commission with electricians.<br>Provisional - remove vent stack and replace with odour filter. |
| **SPS 5017** | 5 | N/A | Quote in Progress | Supply and install 2 x new DN125 PE riser pipes through to the valve chamber, 1 x new gate valve on incoming gravity sewer.<br><br>Supply and install new switchboard conduits 3 x 80mm to new concrete platform. New platform to be per previous flood platforms, length 2600 by 1200mm wide. Move water service. |
| **SPS 5020** | 0 | N/A | N/A | Supply and install 2 x new DN180 PE riser pipes through to the valve chamber, including check valves, gate valves and dismantling joints. Install |

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| | | | | new gate valve in incoming sewer, remove ladder, cast new slab for switchboard platform and remove 1/2 of old concrete plinth. |
| **SPS 5022** | 5 | N/A | Quote in Progress | Supply and install 2 x new DN125 PE penetrations to connect existing PE riser pipes to check valves. Relocation rising main around new switchboard platform. Supply and install new switchboard platform with 3x80mm new Conduits to wet well. Platform to be as per flood design 2600mm long x 1200 wide. Move water service. |

### SPS Renewals for Byron, Mullum, Ocean Shores & Bangalow 2022/23

The sewer pump station renewals programmed in 2022/23 includes 24 pump stations in total. The scope of work is summarised below - June 2023. The refurbishment of the receival MH at SPS 3001 was added to the list in August to address urgent repairs and has been completed. The following works have been completed in the lead up to the replacement works:

- Hydraulics calculations and pump selections made.
- Pumps have been ordered.
- Switchboards have been built and delivered

The table below summarises the scope what's been completed to date at each site.

| SPS | % COMPLETE | PUMPS DELIVERED | SWITCH-BOARD DELIVERED | COMPLETED SCOPE SUMMARY |
|---|---|---|---|---|
| SPS 1001 | 100% | N/A | N/A | Replace Internal DN100 Risers in OD125 PE100 from the pump pedestals through to the check |

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| | | | | valve in valve chamber |
| SPS 1002 | 100% | N/A | N/A | Replace covers, frames, and grills on wet well and valve chamber |
| SPS 1004 | 100% | N/A | N/A | Replace covers frames and grills on the wet well and the checker plate MH cover. Remove and dispose of existing cover and step irons. Replace the water service assembly and mount on a stainless-steel support posts. Replace the riser pipes in PE of equivalent internal diameter and replace valve and check valves and reposition. Replace the rising main through the well wall in PE and provide two support brackets to vertical risers. |
| SPS 2001 | 100% | N/A | NO | Install diversion pumping tee. Replace covers frames and grills on the valve chamber. Remove and dispose internal ladder. Remove the vent pole hat. Replace the water service assembly. Replace the inlet valve and supply and install new SS316 spindle. Refurbish/ treat the incoming gravity pipe. Replace the riser pipes in PE125 through to the valve chamber including replace valves and check valves. Supply and install new SS316 guide rails and brackets. Remove existing switchboard and reinstate new switchboard 180 degrees to original position. |
| SPS 2005 | 100% | N/A | N/A | Replace covers, frames and grills on wet well and valve Chamber, |

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| | | | | Remove existing wet well ladder. |
| SPS 3002 | 100% | N/A | N/A | Repair the centre grill with the wet well cover as its not seating on the frame. cover frames and grills on the wet well. Replace the water service assembly and mount on a stainless-steel support posts. |
| SPS 3003 | 100% | N/A | N/A | Replace covers frames and grills on the valve chamber. The contractor shall remove and dispose of existing covers. Remove existing wet well ladder. Replace Internal DN100 Risers in OD125 PE100 from the pump pedestals through to the check valve in valve chamber. |
| SPS 3005 | 100% | N/A | N/A | Replace covers, frames and grills on wet well and valve chamber |
| SPS 3006 | 100% | N/A | N/A | Replace the existing stop valve on the rising main outside the existing building. Remove and dispose existing wet well ladder. |
| SPS 3009 | 100% | N/A | N/A | Replace existing DN100 check valve (one only) in the valve chamber. |
| SPS 3015 | 100% | N/A | NO | Remove and replace existing switchboard and provide new electrical conduits on new concrete slab adjacent the existing rectangular wet well. Switchboard location to be confirmed by the Principal's Representative. A new checker plate cover shall be made to cover the existing penetration on |

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| | | | | the wet well cover once the switchboard is removed. Concrete slab place to be reinforced and be dimensions 2400 x 1000 x 150. |
| SPS 3016 | 100% | NO | NO | Replace pumps and pedestals, guide Rails and Brackets. Remove and replace existing switchboard and provide new electrical conduits on new concrete slab adjacent the existing rectangular wet well. Switchboard location to be confirmed by the Principal's Representative. A new checker plate cover shall be made to cover the existing penetration on the wet well cover once the switchboard is removed. Concrete slab place to be reinforced and be dimensions 2400 x 1000 x 500 thick. |
| SPS 3022 | 100% | NO | N/A | Replace the existing pumps and pump pedestals. Adjust rising main height if required to enable new pedestals to be installed. Remove and dispose existing wet well ladder. |
| SPS 3023 | 100% | N/A | NO | Replace Switchboard – D&C Contract. Design is complete. Switchboard is currently being fabricated (this item is a continuation from 21/22 program and due to floods was delayed? |
| SPS 3026 | 100% | NO | N/A | Replace the existing pumps and pump pedestals. Adjust rising main height if required to enable new pedestals to be installed. |

| | | | | |
|---|---|---|---|---|
| SPS 3040 | 100% | N/A | N/A | Epoxy Coat wet well structure and cover slab |
| SPS 4000 | 100% | N/A | N/A | Epoxy Coat wet well structure and cover slab |
| SPS 4008 | 100% | N/A | N/A | Replace Internal DN100 Risers in OD125 PE100 from the pump pedestals through to the valve chamber and replace gate valves, check valve and manual air release ball valves in valve chamber. The contractor shall install flanged 90-degree PE bends with stainless steel backing rings. Replace the inlet valve, dropper tee (in PE) and extension spindle in SS316. |
| SPS 5002 | 100% | N/A | NO | Install Diversion tee, facilitate epoxy coating, replace riser pipes in OD 125, replace inlet valves x 2 and extension spindles in SS316, replace one check valve, remove and replace switchboard supplied by Council |
| SPS 5005 | 100% | N/A | N/A | Cast new switchboard plinth 600mm high at new location adjacent to the valve chamber. This will require new electrical conduit penetrations. Relocate existing switchboard to new concrete plinth. |
| SPS 5007 | 100% | N/A | N/A | Supply and replace DN50 SS316 check valves and gates on risers pipes in the wet well. |

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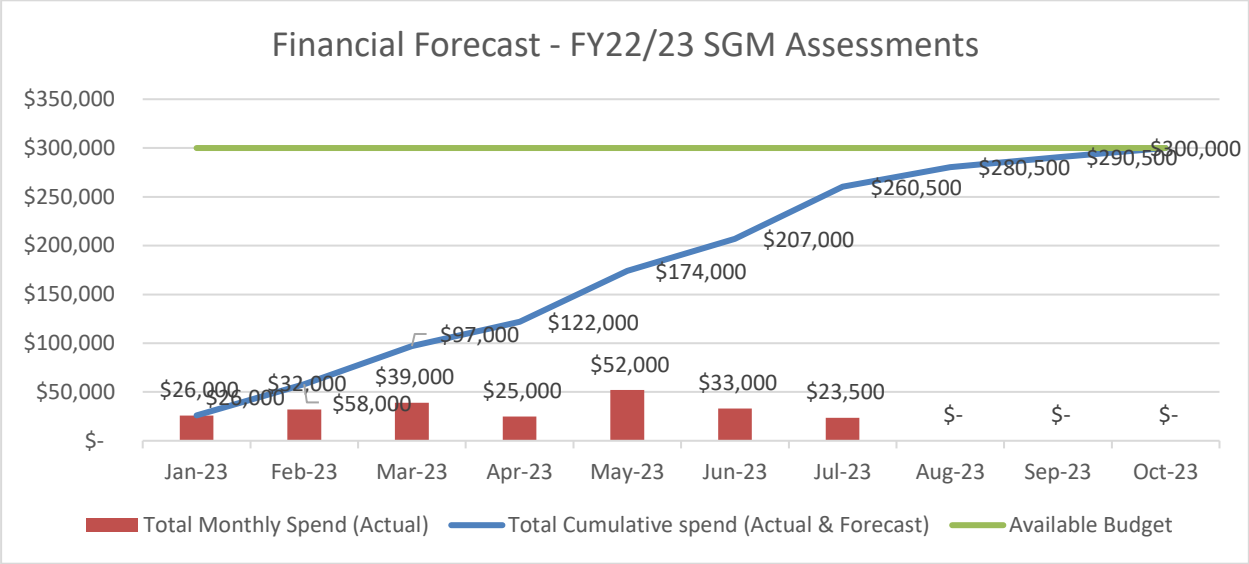
|---|---|---|---|---|
| SPS 5011 | 100% | NO | N/A | Replace pump and install pump pedestal, fabricate and install SS316 support frame for guide rail support. Supply and install guide rails and brackets. Remove existing flexible rising main hose and install new DN50 PE100 rising main and connect to existing external check valve assembly. Install a new DN50 SS316 gate valve. |
| SPS 5017 | 100% | NO | N/A | Replace pumps and pump pedestals, guide rails, brackets and lifting chains. Adjust rising main height if required. Install Diversion Tee if diversion pumping is required. |

## WILLOW AND SPARROW – ALAN NEWNHAM

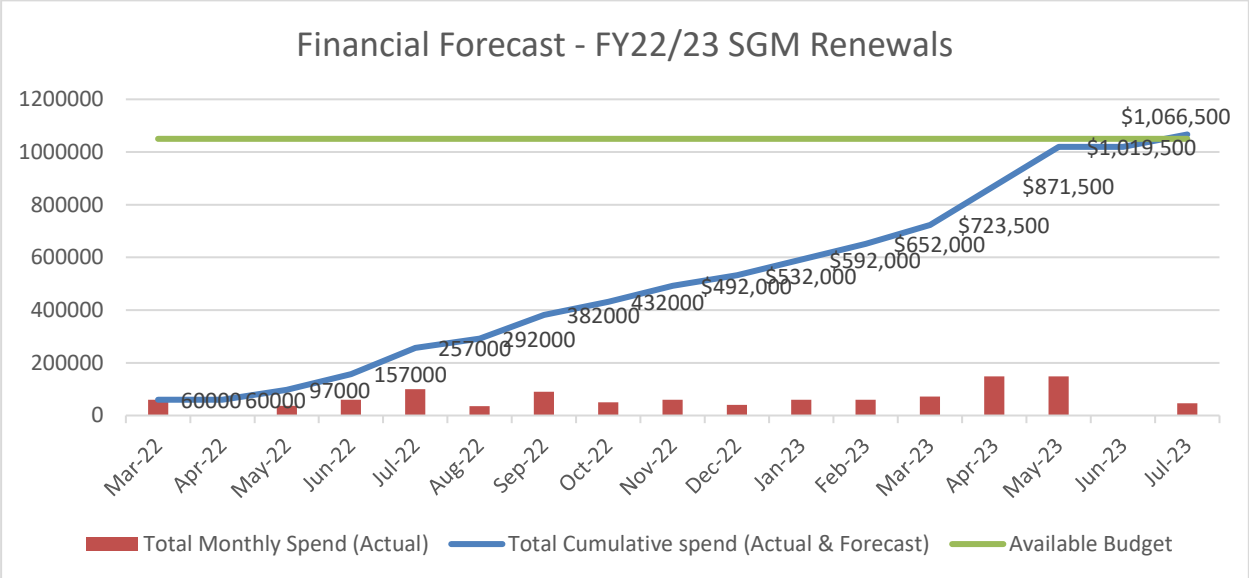
### Condition Assessments – FY22/23

The condition assessment of gravity sewer mains and maintenance holes was awarded to Willow and Sparrow (Maintenance holes) and Subsurface Mapping Solutions (Mains). The Maintenance hole condition assessments are underway. The CCTV mains contract was awarded to Subsurface Mapping Solutions and work was completed by June 30. The sewer catchments that fall within this scope are across Bangalow, Byron Bay, Mullumbimby, and Ocean Shores. The indicative budgetary limit of $300,000 has covered the costs for both CCTV assessments and MH visual assessments. Condition assessment reports are now being developed.



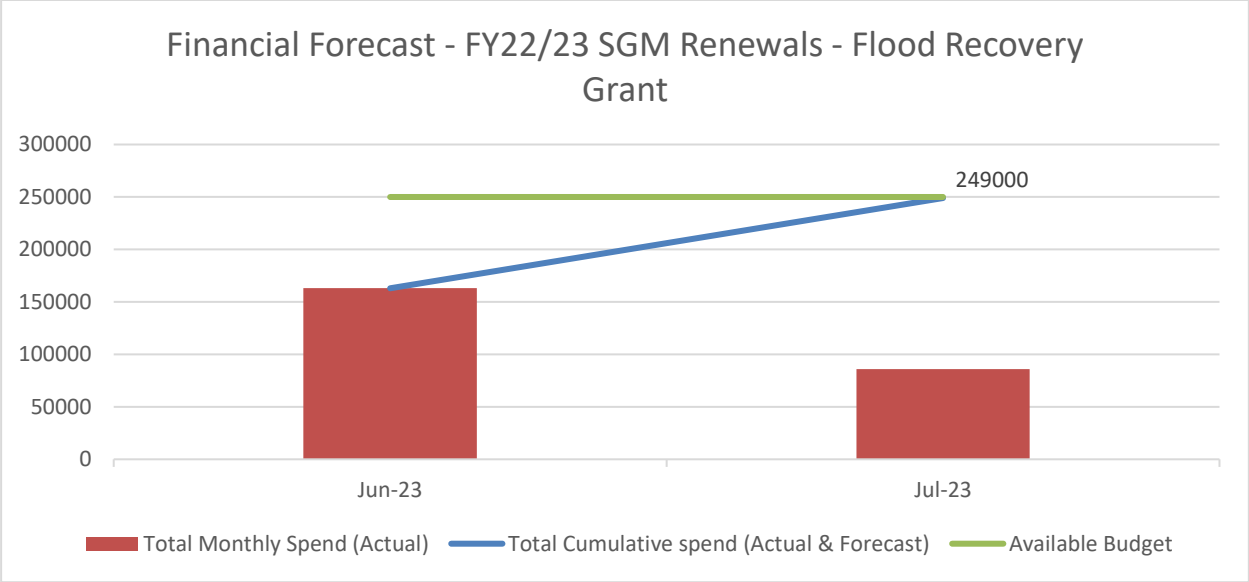

## Gravity Sewer Rectification – FY21/22

The gravity sewer rectification scope involves the rectification of over 300 assets throughout previously assessed catchments, 3002, 4001, and 5012. The works have been awarded to Interflow who commenced in March 2022 but have been heavily delayed due to the inclement weather. It is expected that the contract will extend to July 2023 due to delays with flood and rain affected areas. Interflow will keep BSC updated on the impact to the holistic program schedule.



### Gravity Sewer Rectification – FY21/22

Byron Shire Council was awarded a grant to assist in flood recovery from NSW Public Works. This funding was allocated to sewer main rectification and was awarded to Interflow who commenced in June 2023. Work has now been completed.




## PLANIT CONSULTING – SIMON MILLICHAMP & SAM LEE

### Water Main Replacements – Supply and Installation: Fletcher St, Carlyle St and Bangalow Rd Byron Bay; and Azalea St Mullumbimby

### Work accomplished in the period:

- Civil CS have been approved by Council as the successful contractor
- Letter of award has been provided to Civil CS
- The final contract has been provided to Civil CS for execution
- A meeting has been held on site at Carlyle St to discuss scope and working with Council's Works Team for their proposed road and parking upgrade
- Construction should commence mid September at Carlyle St. This will be followed by Azalea St (Mullum) over summer, then back to Fletcher St and Bangalow Rd in the first half of 2024.

- Planit will undertake the Superintendent's Representative role for the construction phase.

## Reservoir Roof Replacement Works

### Work accomplished in the period:

- ACE completed the roof replacement works for the Wategos Reservoir in June 2023, with some minor items remaining.
- Works completed in July 2023 included:
    - Construction of concrete access stair slab for Yamble Reservoir.
    - Construction of concrete access stair slab for Wategos Reservoir.
- Remaining items for Wategos reservoir which does not impact the operation of the reservoir, include:
    - Installation of access stairs
    - Installation of Davit arm
    - Installation of anti-Climb
- Coopers Shoot Reservoir:
    - Installation of inlet pipe anti-climb cover, these works will not impact the operation of the reservoir.
- Yamble Reservoir:
    - Ongoing monitoring of the crack injection location is being undertaken weekly and will continue for the next few months. Significant leaks will warrant a level drop test and further crack injection.
    - ACE to install access stairs and new inlet pipe anti-climb cover, these will not impact the operation of the reservoir.
- Reservoir Operation:
    - All reservoirs are back online and reticulating.
- Planit continue Sup Rep role and management of the construction contract. Sam Lee is the primary Planit rep.

**Wategos Reservoir – Completed Roof sheeting, perimeter handrail/ kick rail, external fascia, working platforms, walkways and access hatches.**

**Wategos Reservoir – Access stairs slab prior to concrete pour**

**Yamble Reservoir – Access stairs slab prior to concrete pour**

**Water Reservoir Slope Stability Works – Byron Bay and Ocean Shores**

**Work accomplished in the period:**

- Warner Company completed slope stability works at the Warrambool Reservoir this month.
- Works completed at Warrambool in July 2023 included:
  - Drilling and Installation of sub horizontal drainage (weepholes)
  - Installation of spider plates and strip drains
  - Acceptance testing of soil nails in accordance with TfNSW R64
  - Fibre reinforced shotcrete spraying of the slope.
  - Construction of shotcrete bund and bottom kerb.
- Items remaining:
  - Perimeter fence replacement and remediation.
  - Minor retaining works on the Southern fence line
- Planit continue the Sup Rep role and management of the construction contract.

**Warrambool Reservoir –** Pre-Slope Stability Works Commencement


**Warrambool Reservoir –** Slope strip and preparation

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**Warrambool Reservoir –** Installation of soil nails, spider plates, sub horizontal drainage, strip drains and kerb forms

**Warrambool Reservoir –** Completed Shotcrete Slope (view from Southern end)

**Warrambool Reservoir –** Completed Shotcrete Slope (view from Northern end)

### Byron STP inlet works remediation

### Work accomplished in the period:

- The project is currently in the defect's liability period.
- Planit are working with Council staff to monitor the works and ensure any defects are rectified by the contractor as required.

## PLANIT CONSULTING – SIMON MILLICHAMP

### Byron Bay STP UV Filter Pre-Filter System Upgrade

### No Change in Status:

- Project on hold until further notice as project now with Council and City Water Technology.

## Paterson St Reservoir Replacement

### Work accomplished in the period:

- Responses to the Survey RFQ have been reviewed and a preferred contractor has been recommended to Council for engagement
- Michael Salu (SSE) has been engaged to develop a concept structural design (to be used for community consultation, planning approvals and liaison with Telcos).

### Telcos – Paterson: NO CHANGE FROM MAY 2023

- A meeting was held with BMM Group (who act on behalf of all major Telcos)
    - BSC and BMM have agreed on a concept design for the antenna locations and Telco access to the antennas – being from a Telco gantry off the side of the reservoir, NOT via the BSC stairs and roof.
    - Planit to provide survey and concept design to BMM to allow them to proceed with planning approvals and draft design of the access and antenna connections.
- Works on site are subject to a new license agreement – pending consultation with Utilities and Paula Telford.

## Mullumbimby Trunk Water Main (Detailed Design)

### Work accomplished in the period:

- Survey of the alignment is all but complete. We are awaiting approval from UGLX to access the rail corridor to pothole and survey the APA cable. Additional potholing is required at the Rous connection point.
- The ASSMP is progressing with ENV Solution.
- Detailed design has commenced. The alignment has been updated from ‘concept’ with the survey data and the alignment will now impact some trees.
    - Accordingly, a biodiversity assessment is now required with an update to the REF.
- A meeting was held with Rous, Council and PWA to discuss design and connection details, existing approvals, required updates to the Level of Service Agreement, additional modelling and augmentation for Rous.

### West Byron Water Main

### Work accomplished in the period:

- Responses to the Survey RFQ have been reviewed and a preferred contractor has been recommended to Council for engagement
- Both an REF and EIS will be required for this project:
    - EIS for the Belongil Creek crossing (to be done by underbore)
    - REF for all other areas.
    - Planit are awaiting Council approval to proceed on the SEARs application for the EIS – noting that most issues are mitigated through the use of an underbore under the Belongil Ck
- The survey and REF/EIS process will inform the detailed design.

### Lismore Road Water Main Concept Plans

### Work accomplished in the period: NO CHANGE FROM MAY 2023

- The Concept Plan has been prepared by Planit to replace an irrigation pipeline servicing multiple lots with a Council main. These have been issued to Council with a cost estimate for budgeting purposes and awaiting review/comments from Council.

## PLANIT CONSULTING – GIUSEPPE FALLARA

### Additional Flow Path

### Work accomplished in the period:

- Response to council resolution provided.
- Setting up of roadmap to streamline commissioning, including: system asset assessment, creation of baseline data, investigation of level/rainfall data correlation, system testing, system repairing.
- Drafting of commissioning plan.
  Liaising with Safegroup and review of sensor rollout and capabilities

### Byron STP Aerator platform upgrade

### Work accomplished in the period:

- The design is being finalised and Barnes are preparing for construction and installation.

# UTILITIES STRUCTURE

Cameron Clark is Manager Utilities. Jason Stanley is Operations Engineer. Dean Baulch is Principal Engineer Systems Planning. Samuel Frumpui is Manager Works and Lee Griffiths is Capital Works Engineer.

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