

# 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, 21 March 2024
Time	11.30am

Phil Holloway  
Director Infrastructure Services

I2024/399  
Distributed 21/03/24

---

---

## 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

### 1. APOLOGIES

### 2. DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

### 3. ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

- 3.1 Adoption of Minutes from Previous Meeting ..... 6

### 4. STAFF REPORTS

#### Infrastructure Services

- 4.1 IS Utilities Status Report - November 2023 - January 2024 ..... 13  
4.2 Response to Questions - Future Water Strategy ..... 43

### 5. LATE REPORTS

### 6. FOR INFORMATION ONLY

- 6.1 Utilities Digital Asset Management Plan (dAMP) Presentation ..... 53

# BYRON SHIRE COUNCIL

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1

## ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

### **Report No. 3.1      Adoption of Minutes from Previous Meeting**

**Directorate:**                      Infrastructure Services

5    **File No:**                              I2024/342


---

#### **RECOMMENDATION:**

10    **That the minutes of the Water and Sewer Advisory Committee Meeting held on 16 November 2023 be confirmed.**

#### **Attachments:**

15

1      Minutes 16/11/2023 Water and Sewer Advisory Committee, I2023/1798 , page 8 [↓](#) 

## Report

The attachment to this report provides the minutes of the Water and Sewer Advisory Committee Meeting of 16 November 2023 .

5

### Report to Council

The minutes were reported to Council on 14 December 2023.

### Comments

10

In accordance with the Committee Recommendations, Council resolved the following:

**23-632 Resolved** that Council adopts the following Committee Recommendations:

Report No. 4.2 Ocean Shores STP Transfer to Bruns Valley Workshop  
Presentation

#### Committee Recommendation 4.2.1

That Council:

1. Notes the presentation; -
2. Recommends that: -
  - a) Council notifies the NSW EPA in response to their letter requesting Councils strategic direction being - Option 4R - Partial transfer to BVSTP, with wet weather Storage and minor upgrade; retain OSSTP (capacity limited, with load shedding and minor upgrade).
  - b) Council staff start project initiation stage for Option 4R - Partial transfer to BVSTP, with wet weather Storage and minor upgrade; retain OSSTP (capacity limited, with load shedding and minor upgrade).

**Minutes of Meeting**  
**Water and Sewer Advisory Committee**  
**Meeting**

<b>Venue</b>	<b>Conference Room, Station Street, Mullumbimby</b>
<b>Date</b>	<b>Thursday, 16 November 2023</b>
<b>Time</b>	<b>9.00am</b>





**BYRON SHIRE COUNCIL**

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 - ATTACHMENT 1

# BYRON SHIRE COUNCIL

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 - ATTACHMENT 1

## BYRON SHIRE COUNCIL

WATER AND SEWER ADVISORY COMMITTEE MEETING MINUTES 16 NOVEMBER 2023

### **Minutes of the Water and Sewer Advisory Committee Meeting held on Thursday, 16 November 2023**

**File No:** I2023/1798

#### PRESENT:

Councillors:	Cr C Coorey	Apology
	Cr M Lyon	In person
	Cr S Ndiaye	Audio visual, joined at 9:45 am
	Cr D Dey	In person
Staff:	Phil Holloway (Director Infrastructure Services)	In person
	Cameron Clark (Manager Utilities)	In person
	Dominika Tomanek (Minute taker)	In person
Community	Elia Hauge	Audio-visual
	David Fligelman	In person
	Ben Fawcett	In person
	Bruce Clarke	In person

Visitors: Russell Mills, Flavia Steinauer, David deHaas (GHD)

*Cr Lyon (Chair) opened the meeting at 9:19 am and acknowledged that the meeting was being held on Bundjalung Country.*

#### APOLOGIES:

Cr Coorey

#### DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

David Fligelman declared a perceived non-pecuniary/pecuniary interest. 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.

# BYRON SHIRE COUNCIL

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 - ATTACHMENT 1

## BYRON SHIRE COUNCIL

WATER AND SEWER ADVISORY COMMITTEE MEETING MINUTES 16 NOVEMBER  
2023

---

### ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

**Report No. 3.1      Adoption of Minutes from Previous Meeting**  
**File No:              I2023/1717**

**Committee Recommendation:**

**That the minutes of the Water and Sewer Advisory Committee Meeting held on 17 August 2023 be confirmed.**

(Lyon/Clarke)

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

### BUSINESS ARISING FROM PREVIOUS MINUTES

Cr Dey requested to include standing item in the future agendas called 'Items for future discussion'.

---

### STAFF REPORTS - INFRASTRUCTURE SERVICES

**Report No. 4.1      Utilities Operational Plan Report**  
**File No:              I2023/1588**

**Committee Recommendation:**

**That the committee notes the report and may submit questions by email as there was no time to discuss the matter.**

(Dey/Lyon)

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

# BYRON SHIRE COUNCIL

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 - ATTACHMENT 1

## BYRON SHIRE COUNCIL

WATER AND SEWER ADVISORY COMMITTEE MEETING MINUTES 16 NOVEMBER 2023

---

**Report No. 4.2**      **Ocean Shores STP Transfer to Bruns Valley Workshop Presentation**

**File No:**            I2023/1753

**Committee Recommendation:**

**That Council:**

1. **Notes the presentation;**
2. **Recommends that:**
  - a) **Council notify the NSW EPA in response to their letter requesting Councils strategic direction being - Option 4R - Partial transfer to BVSTP, with wet weather Storage and minor upgrade; retain OSSTP (capacity limited, with load shedding and minor upgrade)**
  - b) **Council staff start project initiation stage for Option 4R - Partial transfer to BVSTP, with wet weather Storage and minor upgrade; retain OSSTP (capacity limited, with load shedding and minor upgrade).**

(Lyon/Clarke)

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

---

### FOR INFORMATION ONLY

**Report No. 6.1**      **Byron STP Condition 9 Additional Load - Quarterly Report**  
**File No:**            I2023/1713

---

**Report No. 6.2**      **Mullumbimby Inflow and Infiltration**  
**File No:**            I2023/1765

---

*There being no further business the meeting concluded at 11:13 am.*

**STAFF REPORTS - INFRASTRUCTURE SERVICES**

**Report No. 4.1      IS Utilities Status Report - November 2023 - January 2024**

5    **Directorate:**                             Infrastructure Services  
**Report Author:**                         Daniela Wilken-Jones, Utilities Admin Support Officer  
**File No:**                                     I2024/341

**Summary:**

10    This report summarises the performance of Utilities Department delivery for November 2023 – January 2024.

---

**RECOMMENDATION:**

15    **That the Committee notes the report.**

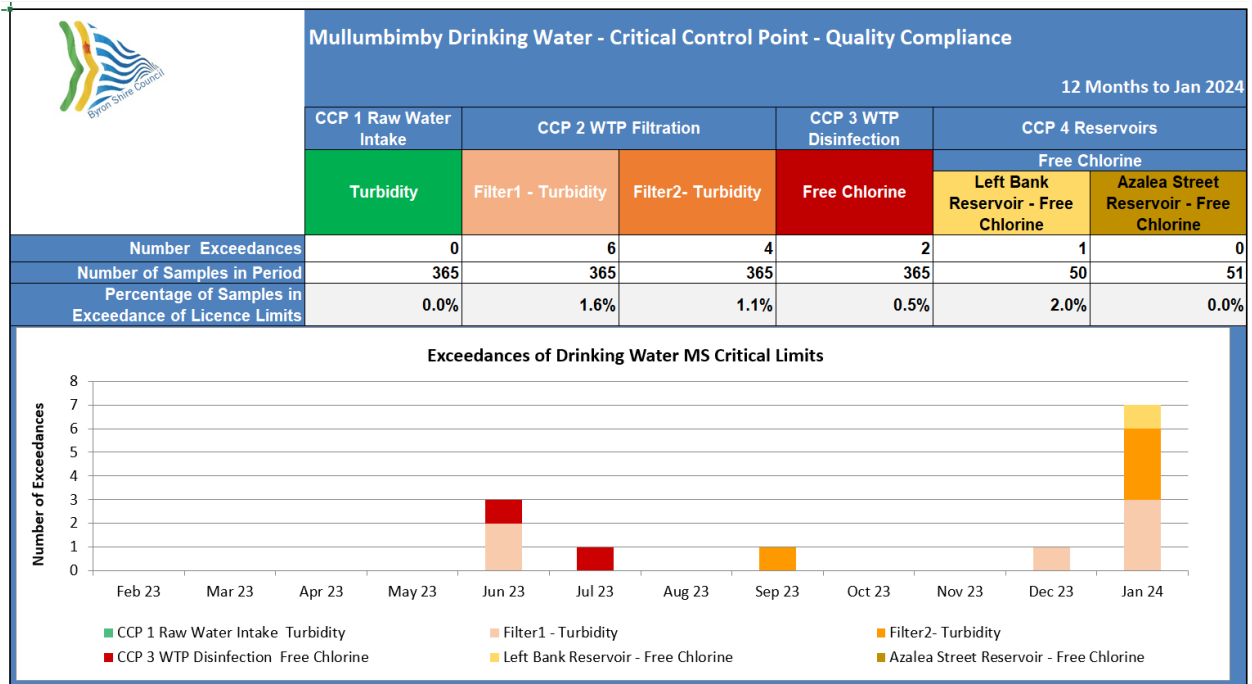
20

Report

DRINKING WATER QUALITY

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

5 In the period December 2023 to January 2024 there were seven (7) critical limit exceedances at Mullumbimby WTP.



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

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

Public Health Reportable Events

CRITICAL LIMIT EXCEEDANCES				
Mullumbimby Drinking Water Supply Critical Control Points (CCPs)				
Last 12 Months				
Date Occurred	Description	Description and Cause of Issue	Action Taken to Remedy Situation	Action Taken to Prevent Reoccurrence
14/6/23 & 15/6/23	Turbidity Exceedance ' 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	Low Chlorine reading was due to inline instrument problem. As a safeguard the plant was stopped automatically when the low value was recorded. When the plant was attended, onsite test showed Chlorine reading was 1.55 mg/L free and 1.82 mg/L Total, well within guideline values.	Inline instrument maintenance undertaken to rectify underread.	Continued Maintenance on Inline Instruments and continual monitoring of SCADA alarms. Fail safe Plant stop trigger points in place for Chlorine and Turbidity.
14/9/23	Turbidity Exceedance ' Filter 2 = 0.83 NTU	Inline Turbidity Instrument on Filter No 2 found to be reading incorrectly (0.83 NTU) on the 14/9/23. Calibrated on the 15/9/23 and found to be reading correctly again. Finished water on this day 14/9/23 0.08 NTU Turbidity on combined Filters Out.	Continual Monitoring	Continual monitoring & planned maintenance
5/1/23 to 6/1/23	Turbidity Exceedance ' Filter 1 & 2 (3 exceedances)	Incident reports on these exceedances to be issued shortly.		
11/1/23 – 15/1/23	Chlorine Residual at Left Bank Reservoir = 0.19mg/L	Incident reports on these exceedances to be issued shortly.		

### Public Health Reportable Events

5 There were no water quality reportable events in November 2023. However, there was an exceedance of coliforms at Warrambool reservoir.

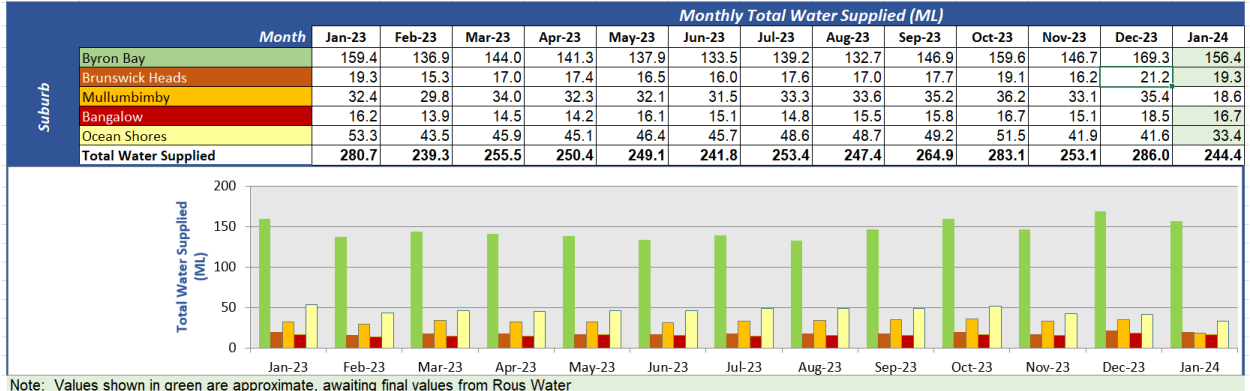
# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

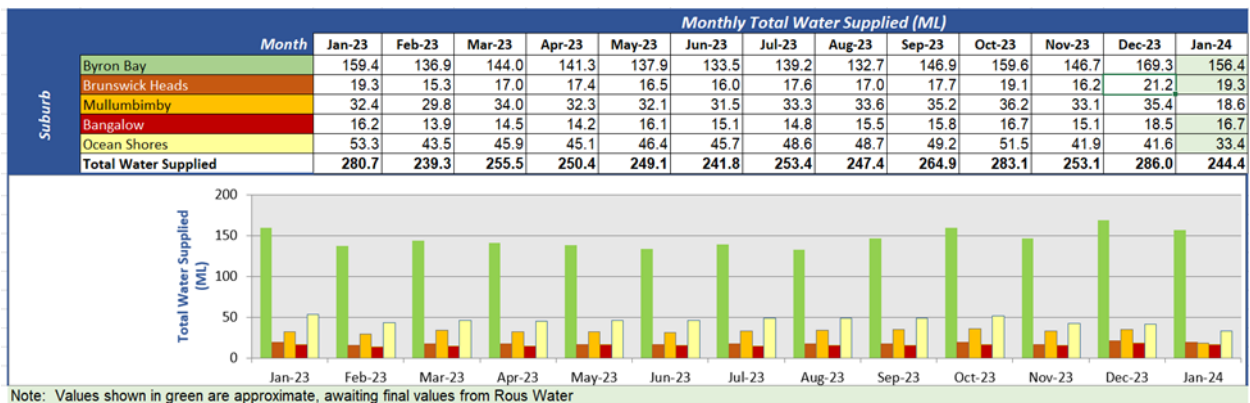
There were no water quality reportable events in the period December 2023 to January 2024.

### Shire Water Consumption



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

### STP INFLOWS



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

### STP Performance

There were two (2) STP licence 100 percentile limit exceedances in November 2023.

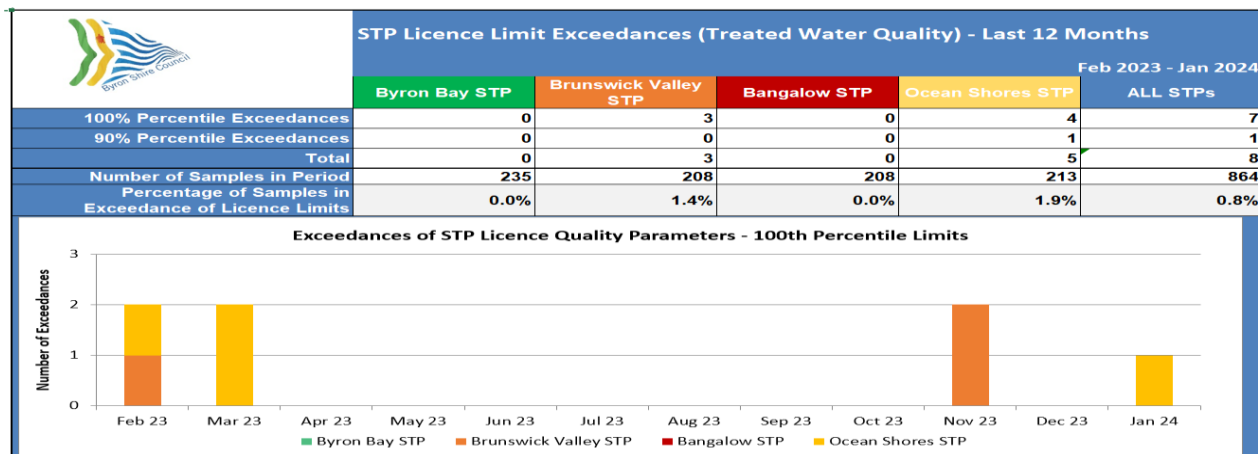
There was one (1) STP licence 100 percentile limit exceedances in the December 2023 to January 2024 period.



# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1



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 15 th 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.
22/11/23	Exceedances at EPA1: Faecal Coliform >6000 cfu /100 ml & Ammonia 8.83 mg/ml	TBC – Incident report to follow	TBC	TBC
Ocean Shores STP				
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 14 & 15 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.
17/1//24	Faecal Coliform Exceedance 'EPA 3' of 1750 cfu /100 ml	Exceedance caused high rainfall event (200mm in 4 days). The ability of the UV disinfection was reduced due to a build-up of dead vegetation in the wetland system. Also, the high flow rate also reduced the effectiveness of the UV system.	During the event the UV system was cleared and cleaned to increase effectiveness. Monitoring of discharge point (EPA3) and receiving waters were tested until within operational limits.	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 incidents during November 2023.

There was one (1) EPA reportable incident during the December 2023 to January 2024 as detailed below:

- 5 **Reference: EPA Licence # 784 - Byron Shire Council self-report, wet weather process exceedance for faecal coliforms above the hundred percental at Ocean Shores STP EPA Ref: 27136**

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

The north of Byron Shire LGA experienced heavy rainfall between 15 to 18 January 2024:

- 10 o 180.2mm recorded at BOM weather station 58040: Mullumbimby (Fairview Farm);  
o The Ocean Shores STP rain gauge registered 205.5 mm for the same period.

This significant rainfall exceeded stormwater system capacity which resulted in inflow and infiltration into the sewerage network beyond the maximum capacity of the STP.

- 15 On Monday 15 January 2024 (7.40 pm), Council operators were notified (via SCADA) that a process bypass at the Ocean Shores Sewage Treatment Plant (STP) had occurred. Treatment was reinstated once flow rates were within the treatment capacity of the plant on 16 January 2024 (9.00 am). The STP went into bypass later that day from (1.30 pm) until (6.00 am) the following morning 17 January 2024 when it was put back online because the inflows had reduced sufficiently. However, it did go out again for another 5  
20 hours from Wednesday 17 January (8.20 am) until (1.30 pm).

During this time all flows underwent primary screening and passed through the UV system.

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

All raw sewage and stormwater was discharged via primary screening and UV treatment.

- 25 No untreated sewage was discharged into the surrounding environment.

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

- During and after the incident, operators monitored and adjusted treatment to correct high faecal coliform count in effluent.
- 30 • Council operators carried out additional sampling at the effluent discharge point (EPA3) and in addition, monitoring of water quality upstream and downstream of the STP outfall at:

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

- o Brunswick Valley upstream of Ocean Shores STP (Federation bridge Mullumbimby)
- o Brunswick Valley downstream of Ocean Shores STP (Massey Greene Boat Ramp, Ocean Shores)

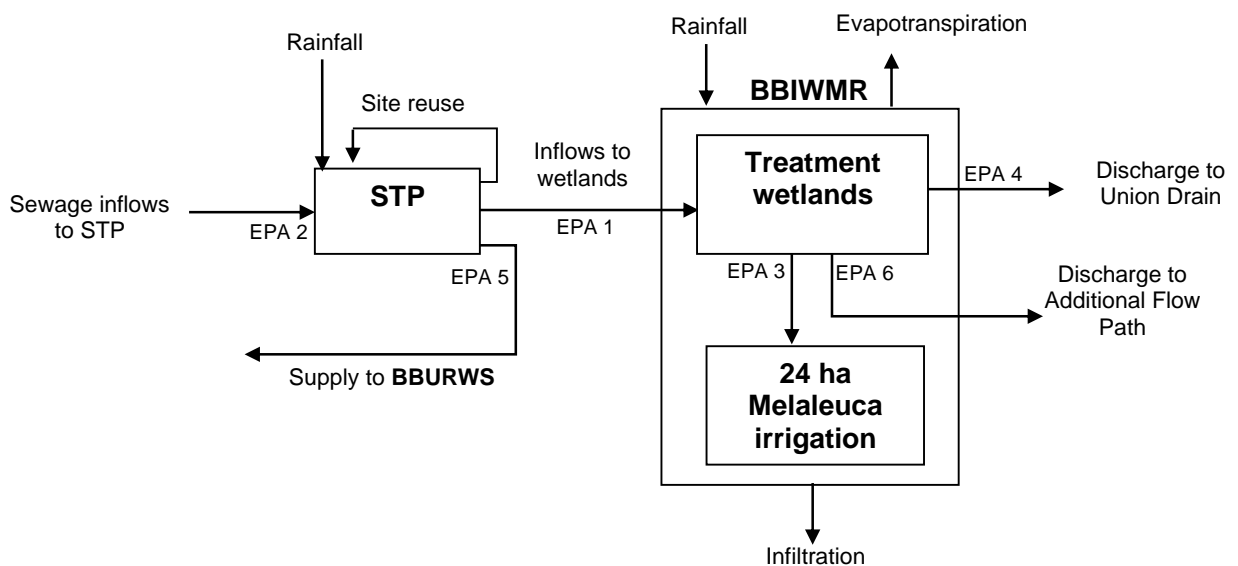
5 **(d) Details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;**

- Take wetland offline to reduce vegetation load that is breaking up and flowing with the effluent to the UV disinfection.

### TREATED EFFLUENT & REUSE WATER MANAGEMENT SYSTEMS

#### Byron Bay treated effluent water balance.

- 10 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).



- 15 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.
- 20

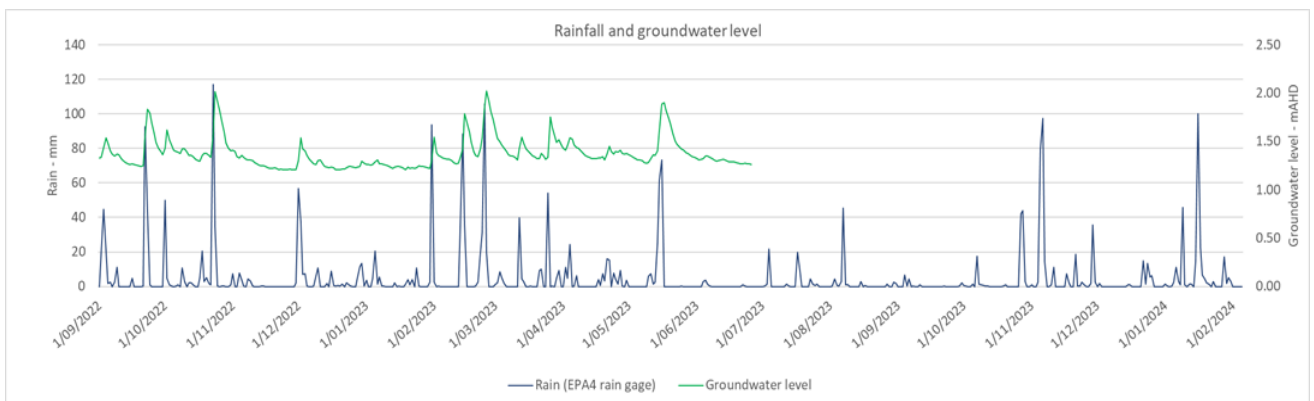
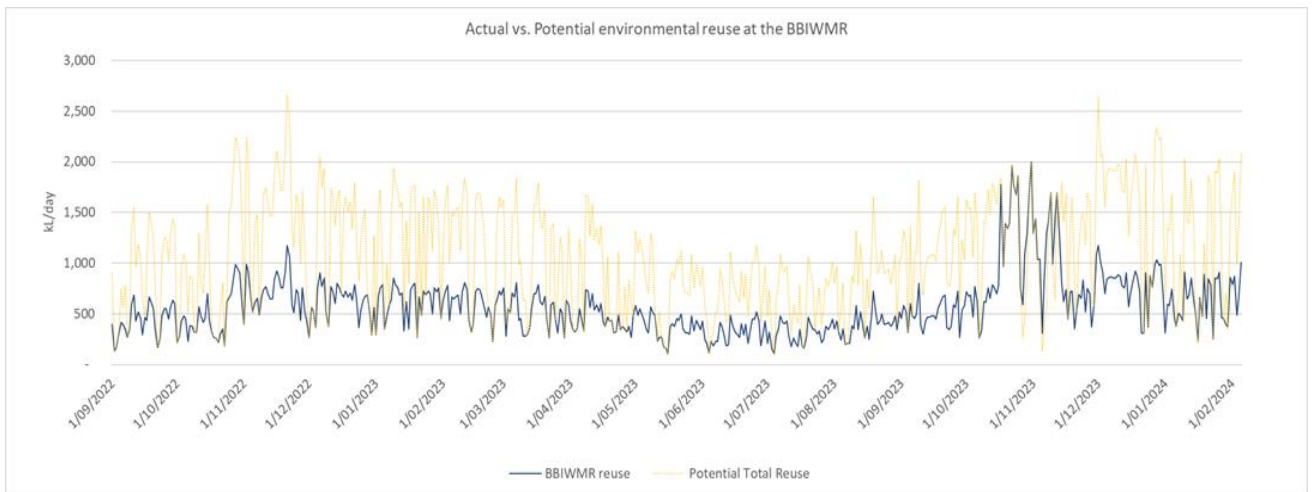
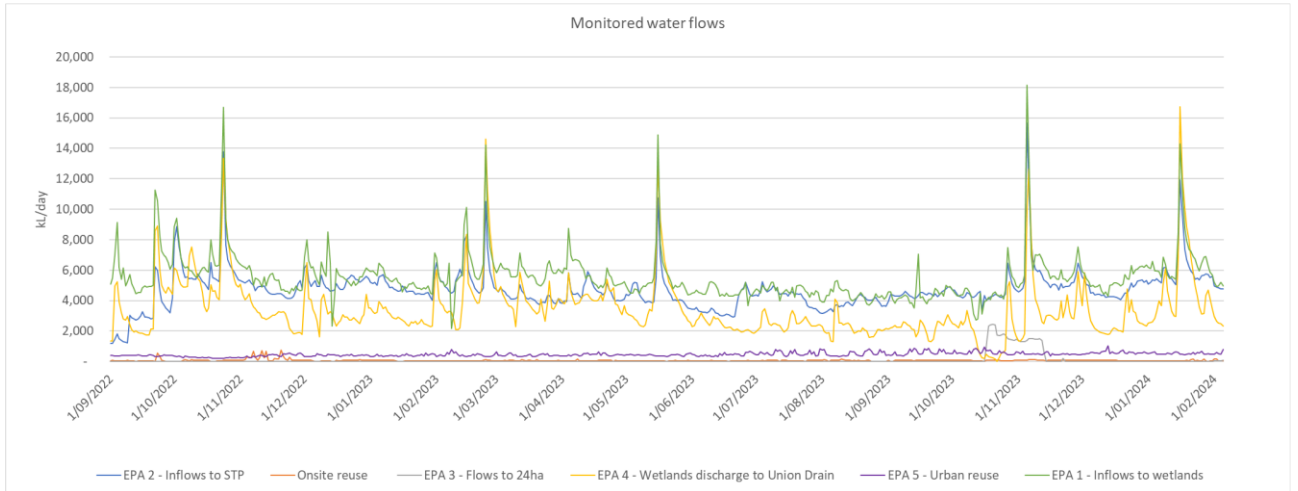
Total effluent reuse includes urban reuse (EPA 5 flows), STP site reuse and evapotranspiration at the BBIWMR site.

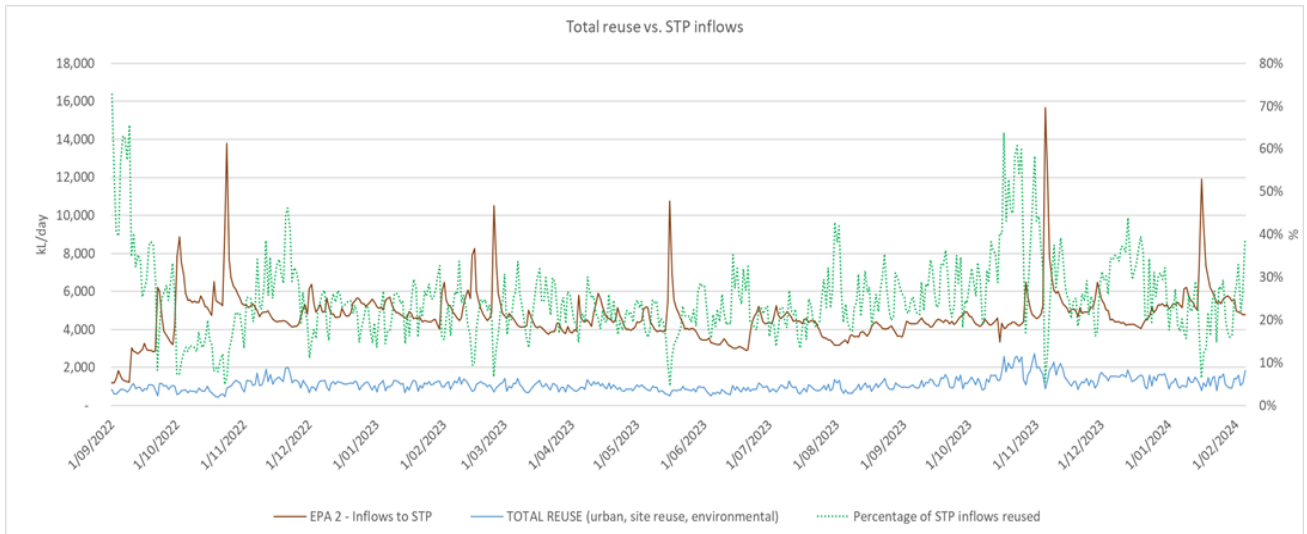
Updated results from the abovementioned model are shown below:

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1





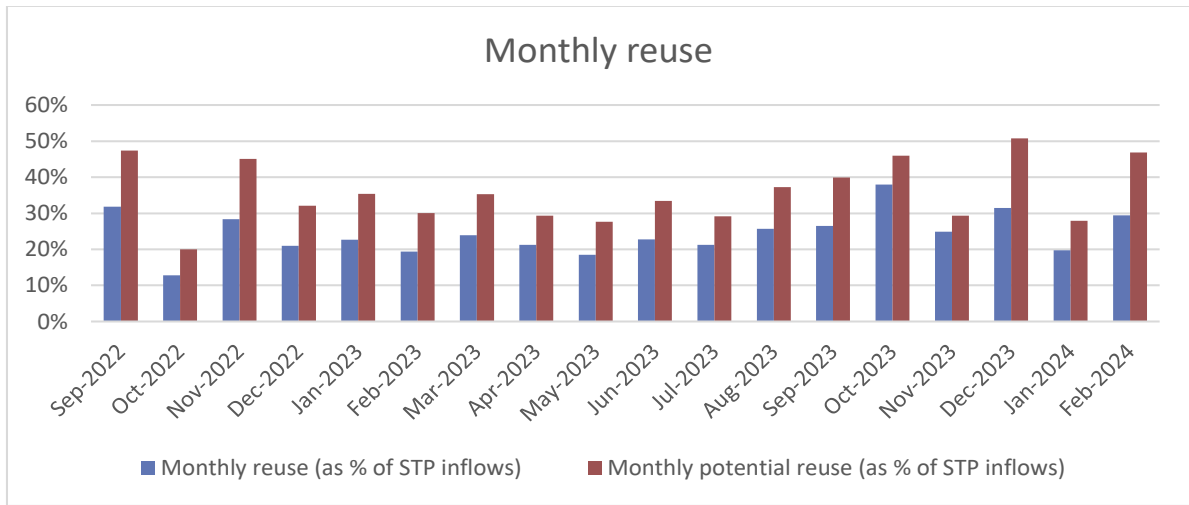
**November 2023 Key observations:**

- Tyagarah bushfire impacts:
  - o Supply to the 24ha irrigation site (EPA3) was activated in October 17th to reduce impact of bushfire (and subsequent peat fires). A daily average of 1.8 ML has been supplied. Supply ceased in November 15th.
  - o The increase in reuse at the 24ha has seen a sharp decline in effluent discharge into the drain system (EPA4).
- Rain appears to be a substantial driver for water flows into and out of the effluent management systems.
- 2023, particularly between later June and early November, has seen a decrease in rainfall, triggering an increase in urban reuse demand, and a more stable dry-weather discharge trend into the drainage network (EPA4).
- There is untapped reuse potential at the 24 ha site (approx. 500 kL/day). This system is in the process of being reactivated.
- There is variability in reuse levels. This is attributed to rainfall, variable climate and seasonal patterns, which in turn affect demand from urban and environmental reuse schemes.

**December 2023 – January 2024 Key observations:**

- Rain appears to be a substantial driver for water flows into and out of the effluent management systems.
- There is untapped reuse potential at the 24 ha site (approx. 500 kL/day). This system is in the process of being reactivated.
- There is variability in reuse levels. This is attributed to rainfall, variable climate and seasonal patterns, which in turn affect demand from urban and environmental reuse

schemes. A monthly summary of reuse levels (as a percentage of STP inflows) is presented below:



Byron Wetlands Water Quality

5 The data below shows the assimilative and polishing capacity of Byron Wetlands for November 2023 to January 2024.

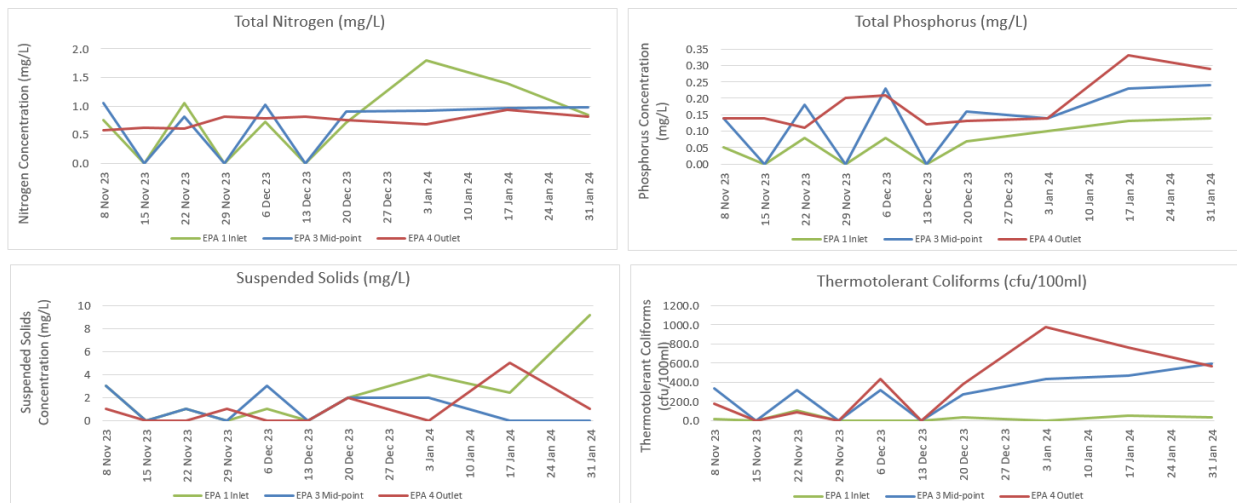
Byron Wetlands Nutrient Removal - November 2023 to January 2024										
Statistics	Total Nitrogen (mg/L)					Total Phosphorus (mg/L)				
	EPA P1 Inlet	EPA P3 Mid point	EPA P4 Outlet	Reduction Target	Total Nitrogen Reduction	EPA P1 Inlet	EPA P3 Mid point	EPA P4 Outlet	Reduction Target	Total Phosphorus Reduction
Average	1.04	0.95	0.74	40-55%	29%	0.09	0.19	0.18	40-60%	-95%
Geomean	0.98	0.95	0.73		25%	0.09	0.18	0.17		-92%
Median	0.84	0.97	0.77		8%	0.08	0.18	0.14		-75%

Note: Average nutrients removals figures from:

[https://www.researchgate.net/publication/6717563\\_Removal\\_of\\_Nutrients\\_in\\_Various\\_Types\\_of\\_Constructed\\_Wetlands](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

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

The assimilative and polishing capacity is demonstrated by the nutrient reduction trend between EPA1 and EPA4 for nitrogen and phosphorus concentrations as follows:

- Total Nitrogen - an average reduction of between 8-29% is seen between EPA1 and EPA4. This is lower than that seen in the literature of around 40-55%.
- 5 • Total Phosphorus - an average increase of 75-95% is seen between EPA1 and EPA4.

10 The reduced efficiency of nitrogen removal and increased phosphorus levels at EPA 4 (Wetland Outlet) starting from the end of October 2023 is undoubtedly the impact of the recent bushfires and associated fire risk reduction activity, followed by a wet period at the Wetlands site. We anticipate the efficacy of the nutrient removal to increase over the coming months.

### **Wetlands Operation – November 2023**

15 Water levels in the wetlands have increased due to rainfall. This has assisted in suppressing fire activity within the Frog and Grass owl Habitat and 24ha regeneration area.

New valves were installed at the distribution pit to convey flow to Cells I and J.

The outlets of Cell F and G have been reopened and flows directed to Cells F and G to sustain the water levels for the DPI Salvinia trial. Further sampling as part of the Salvinia management trial has been conducted.

20 Frogbit was detected in Cell H. Both Rous County Council and Byron Shire Council bush regeneration staff have been active with targeted spraying and hand removal. A thorough assessment of the rest of the BBIWMR has been undertaken and is ongoing.

Periodically additional topes of flows are released into Cells F and G to support the Jacanas present at the top of Cell H.

25 Cells D and E have been opened and higher water levels are now evident this has resulted in reestablishment of water lilies in Cell D and high levels of bird activity.

Monthly inspections were conducted.

Condition assessment of the remaining irrigation and monitoring infrastructure was commenced.

### 30 **Biosolids Management**

#### **Volumes Distributed**

The table below shows the total biosolids removed from the STP sites and applied to land for the last 12 months to January 2024.

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	Total
Byron Bay STP	-	360	323	452	-	171	-	131	-	800	230	-	2,467
Brunswick Valley STP	-	295	-	-	-	-	117	45	-	-	286	-	743
Bangalow STP	-	60	-	-	71	24	-	11	-	60	-	-	225
Ocean Shores STP	120	71	104	-	117	-	45	30	-	-	157	-	644
Total Biosolids (cu. metres)	120	786	427	452	188	195	162	216	-	860	673	-	4,078

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

### Biosolids Contamination Grading

5 The allowable uses for Biosolids are detailed in the following extract from the NSW EPA Guidelines: Use and Disposal of Biosolids Products (2020).

Biosolids Classification	Classification of Biosolids Products		
	Allowable Land Application Use	Minimum Quality Grades	
		Contaminant Grade	Stabilisation Grade
Unrestricted Use	i) Home lawns and gardens.	A	A
	ii) Public contact sites.		
	iii) Urban landscaping.		
	iv) Agriculture.		
	v) Forestry.		
	vi) Soil and site rehabilitation.		
	vii) Landfill disposal.		
	viii) Surface land disposal (2).		
Restricted Use 1	i) Public contact sites.	B	A
	ii) Urban landscaping.		
	iii) Agriculture.		
	iv) Forestry.		
	v) Soil and site rehabilitation.		
	vi) Landfill disposal.		
	vii) Surface land disposal(2).		
Restricted Use 2	i) Agriculture.	C	B
	ii) Forestry.		
	iii) Soil and site rehabilitation.		
	iv) Landfill disposal.		
	v) Surface land disposal2.		
Restricted Use 3	i) Forestry.	D	B
	ii) Soil and site rehabilitation.		
	iv) Landfill disposal.		
	iv) Surface land disposal2		
Not Suitable For Use	i) Landfill disposal.	E (1)	C(1)
	ii) Surface land disposal2.		

Notes:

- (1) Biosolids products which are not contaminant or stabilisation graded are automatically classified Not Suitable For Use.
- (2) To be applied within the boundaries of sewage treatment plant site.

The contamination grading results for each STP for the last 12 months are detailed below:



# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

Bangalow STP Biosolids											Byron Bay STP Biosolids								
EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	Enter First Batch Num	Date	23	24	25	26	EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	Enter First Batch Num	Date	32	33	34	35
(ma/ka)	(ma/ka)	(ma/ka)	(ma/ka)			6/06/2023	11/09/2023	10/10/2023	20/11/2023	(ma/ka)	(ma/ka)	(ma/ka)	(ma/ka)			6/06/2023	11/09/2023	10/10/2023	20/11/2023
20	20	20	30	Arsenic		3.857	3.315	3.609	3.638	20	20	20	30	Arsenic		11.153	8.971	9.008	8.193
3	5	20	32	Cadmium		2.328	2.442	2.797	2.379	3	5	20	32	Cadmium		2.562	2.981	2.794	2.432
100	250	500	600	Chromium		18.877	17.106	18.335	17.251	100	250	500	600	Chromium		40.863	37.415	40.613	34.180
100	375	2000	2000	Copper		436.966	417.075	460.893	401.586	100	375	2000	2000	Copper		382.893	391.756	427.700	353.422
150	150	420	500	Lead		17.744	15.168	16.049	16.298	150	150	420	500	Lead		12.288	12.367	12.883	11.133
1	4	15	19	Mercury		1.241	0.838	1.277	1.138	1	4	15	19	Mercury		0.515	0.384	0.828	0.624
60	125	270	300	Nickel		18.471	15.935	16.944	16.126	60	125	270	300	Nickel		25.802	23.352	25.954	24.188
5	8	50	90	Selenium		4.429	4.702	4.913	4.895	5	8	50	90	Selenium		4.225	5.515	6.097	5.386
200	700	2500	3500	Zinc		754.931	670.820	744.212	711.054	200	700	2500	3500	Zinc		723.797	744.603	831.556	728.976
0.5	0.5	1	1	pp-DDE		0.010	0.010	0.010	0.010	0.5	0.5	1	1	pp-DDE		0.010	0.010	0.010	0.010
0.5	0.5	1	1	pp-DDD		0.010	0.010	0.010	0.010	0.5	0.5	1	1	pp-DDD		0.010	0.010	0.010	0.010
0.5	0.5	1	1	pp-DDT		0.010	0.010	0.010	0.010	0.5	0.5	1	1	pp-DDT		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	Aldrin		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	Aldrin		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	Dieldrin		0.024	0.029	0.030	0.024	0.02	0.2	0.5	1	Dieldrin		0.074	0.087	0.073	0.067
0.02	0.2	0.5	1	trans-Chlordane		0.010	0.010	0.017	0.013	0.02	0.2	0.5	1	trans-Chlordane		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	cis-Chlordane		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	cis-Chlordane		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	Heptachlor		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	Heptachlor		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	HCB		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	HCB		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	gamma-BHC (Lindane)		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	gamma-BHC (Lindane)		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	alpha-BHC		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	alpha-BHC		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	beta-BHC		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	beta-BHC		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	delta-BHC		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	delta-BHC		0.010	0.010	0.010	0.010
0.1	0.3	1	1	Total PCB's		0.100	0.100	0.100	0.100	0.1	0.3	1	1	Total PCB's		0.192	0.190	0.189	0.188
Overall Contamination Grade						C	C	C	C	Overall Contamination Grade						C	C	C	C

Brunswick Valley STP Biosolids											Ocean Shores STP Biosolids								
EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	Enter First Batch Num	Date	20	21	22	23	EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	EPA Guideline s Grade	Enter First Batch Number in Cal	Date	19	20	21	22
(ma/ka)	(ma/ka)	(ma/ka)	(ma/ka)			6/06/2023	11/09/2023	10/10/2023	20/11/2023	(ma/ka)	(ma/ka)	(ma/ka)	(ma/ka)			6/06/2023	11/09/2023	10/10/2023	20/11/2023
20	20	20	30	Arsenic		11.386	6.654	6.323	6.516	20	20	20	30	Arsenic		7.563	7.473	6.323	6.015
3	5	20	32	Cadmium		2.908	2.288	2.328	2.306	3	5	20	32	Cadmium		1.520	1.395	1.219	1.105
100	250	500	600	Chromium		43.713	35.871	38.076	39.590	100	250	500	600	Chromium		17.623	19.554	16.420	16.312
100	375	2000	2000	Copper		278.434	226.238	243.344	242.773	100	375	2000	2000	Copper		277.810	319.284	280.502	258.959
150	150	420	500	Lead		31.979	19.082	19.968	20.422	150	150	420	500	Lead		11.182	13.004	11.364	11.621
1	4	15	19	Mercury		1.827	1.154	2.082	2.027	1	4	15	19	Mercury		0.542	0.542	0.668	0.592
60	125	270	300	Nickel		33.134	23.968	25.700	26.363	60	125	270	300	Nickel		17.186	16.767	16.318	15.580
5	8	50	90	Selenium		5.253	5.160	4.558	4.639	5	8	50	90	Selenium		5.028	5.868	5.301	4.845
200	700	2500	3500	Zinc		910.463	704.637	751.219	778.388	200	700	2500	3500	Zinc		794.810	805.468	805.911	755.138
0.5	0.5	1	1	pp-DDE		0.010	0.010	0.010	0.010	0.5	0.5	1	1	pp-DDE		0.010	0.010	0.010	0.010
0.5	0.5	1	1	pp-DDD		0.010	0.010	0.010	0.010	0.5	0.5	1	1	pp-DDD		0.010	0.010	0.010	0.010
0.5	0.5	1	1	pp-DDT		0.010	0.010	0.010	0.010	0.5	0.5	1	1	pp-DDT		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	Aldrin		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	Aldrin		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	Dieldrin		0.217	0.202	0.193	0.168	0.02	0.2	0.5	1	Dieldrin		0.044	0.062	0.059	0.039
0.02	0.2	0.5	1	trans-Chlordane		0.013	0.013	0.013	0.013	0.02	0.2	0.5	1	trans-Chlordane		0.016	0.032	0.026	0.018
0.02	0.2	0.5	1	cis-Chlordane		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	cis-Chlordane		0.013	0.013	0.013	0.012
0.02	0.2	0.5	1	Heptachlor		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	Heptachlor		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	HCB		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	HCB		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	gamma-BHC (Lindane)		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	gamma-BHC (Lindane)		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	alpha-BHC		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	alpha-BHC		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	beta-BHC		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	beta-BHC		0.010	0.010	0.010	0.010
0.02	0.2	0.5	1	delta-BHC		0.010	0.010	0.010	0.010	0.02	0.2	0.5	1	delta-BHC		0.010	0.010	0.010	0.010
0.1	0.3	1	1	Total PCB's		0.100	0.100	0.100	0.100	0.1	0.3	1	1	Total PCB's		0.100	0.100	0.100	0.100
Overall Contamination Grade						C	C	C	C	Overall Contamination Grade						C	C	C	C

### Recycled Water Management Strategy

#### Update on project progress:

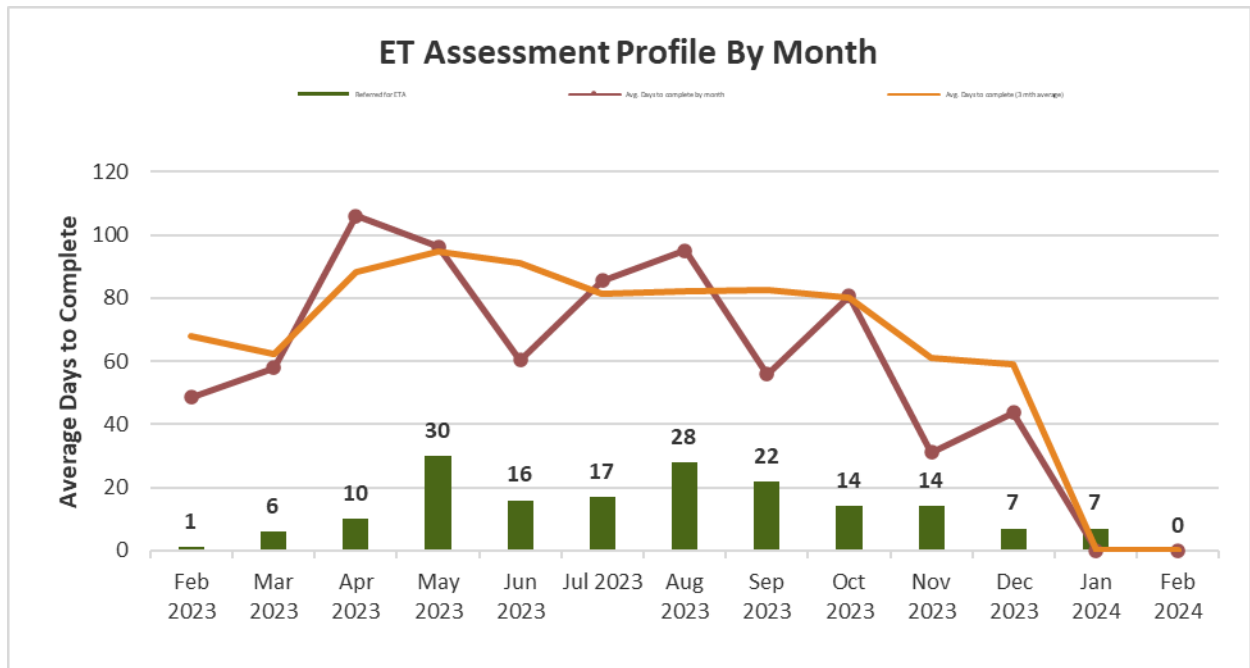
Cost-benefit assessment of future options for effluent reused is being undertaken.

**DEVELOPMENT APPLICATIONS**

**ET Assessments**

Category	Overdue <span style="color: red;">■</span>	Due in 7 days <span style="color: orange;">■</span>	Due in 7+ days <span style="color: green;">■</span>
Development Application	50 <span style="color: red;">█</span>	11 <span style="color: orange;">█</span>	3 <span style="color: green;">█</span>

5 The graph below illustrates the ET assessment profile from February 2023 to February 2024. In November 2023, the systems planning team required an average of 86.1 days to complete ET assessments. In December (2023) and January (2024), the systems planning team required an average of 78.9 days to complete ET assessments.



**Overview**

- 10 • Assessments are being completed based on a priority list sent by planning staff each week.
- 13 ET assessments were finalised this month (November 2023).
- 14 ET assessments were finalised in December (2023) and January (2024).
- 15 • 13 referrals are currently on hold due to requested additional information from planners/applicants.

**ASSET MAINTENANCE SYSTEM ROLLOUT**

**Project Status**

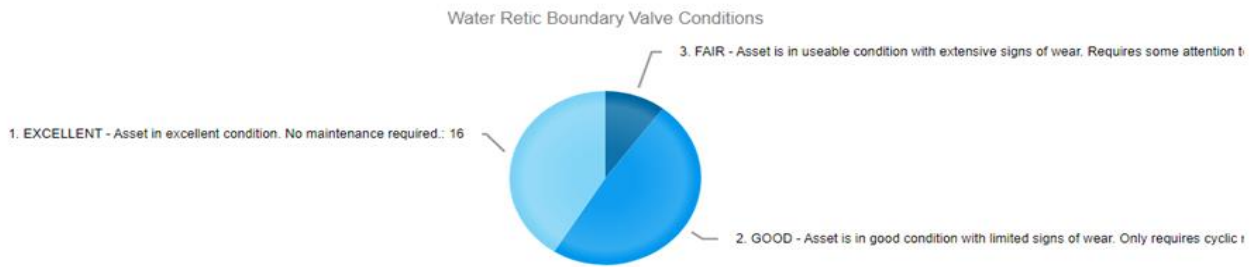
1. Utilities have now rolled out the new maintenance management software Assetic to all operational teams, bringing the project to practical completion.

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

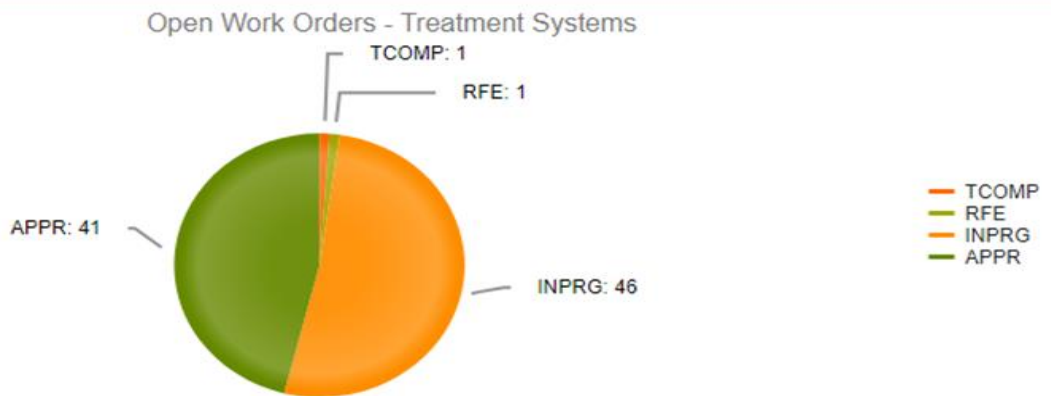
- a. All teams are live and using the system to manage planned and reactive maintenance tasks.
- b. The Rates team are now using the Assetic maintenance system to manage Property meter changes (installs and removals) as well as special meter reads.
- 5 c. Built-in Asset condition assessments on some Planned Maintenance tasks are beginning to return data. For example, recent Water Reticulation Boundary Valve inspections returned the following:



- 2. Over the coming months, Planned Maintenance tasks will be reviewed, and changes made as necessary to those that are outdated or obsolete.
- 10
- 3. Monthly reporting is now being developed in two streams:

### Within Assetic

For team leaders, who are managing workloads, personalised dashboards have been created within Assetic to manage their team's work, for example:



15

### In Power BI

- The BSC IT team and Assetic have successfully developed an integration allowing a live link from Power BI to Assetic. For Asset Management purposes high level reports will now be developed in Power BI. Once developed, these will be published to the IS Utilities
- 20 Workspace for access via the web.

**General Asset Management Improvements**

**Utilities Digital Asset Management Plan (dAMP):**

- Cyber security credentials passed.
- Governance process completed.
- 5 • Accessibility on Councils website completed.
- dAMP is now live on Councils website. Project completed.

**Water Reservoirs:**

- Water Reservoir assessments have been held back 4 weeks due to contractor. Assessments will now begin early March 2024.

10 **Water Hydrants:**

- Scope under development for the assessment, maintenance and capital works of water hydrants around the Shire.
- Contract number obtained following procurement requirements. RFQ process to begin shortly.

15 **Water Mains:**

- Meeting with Operations Engineer and Water Operations Team Leader to occur early February to determine capital works program for water mains.
- A dedicated GIS project has been created to enable condition and treatment observation of the entire network effortless.

20 **Utilities Buildings:**

- Buildings component data audit check underway between Councils database platforms (Authority™, GIS and Predictor™).
- Scope under development for the assessment of all Utilities buildings and associated components.

25 **Sewer Pump Stations:**

- Scope under development for the Survey project of all sewer pump stations in the Shire. Heights to be surveyed include wet well lid, wet well bottom, wet well inlet and bottom of switchboard.
- RFQ process to begin shortly.

30 **FY2024-25 Budget process:**

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

- All capital work programs have been developed for all asset classes.
- Ongoing budget adjustment requests from finance are requiring modified models and new capital works programs. Waiting on final feedback from finance on locked in budget amounts.

### 5 **Flow meter verifications:**

- Certificates all received and saved to server. Project completed.

### **Flood Damage Grant Funding Projects:**

- 10 • North Coast Water and Wastewater Repair and Recovery Program Phase 1 – RFI EW001 – Public Works (PW) have stated that some claim items are deemed technically ineligible when evaluated against the approved assessment criteria. In order for Council to receive all claimed funding, Council is required to submit to PW a Statutory Declaration signed by the General Mangere warranting that all claimed costs are genuine and accurate. This process has started.
- 15 • Wilsons Creek Weir Slip Repair – Concept designs provided to BSC for comment. REF on hold until Options Report completed, and detail design commences. Proposed access costs exceed budget allocation for project. Repair options and access options to be further developed and reviewed. External consultant engaged to prepare Options Report – site visit occurred 18th December. Report due mid-February.
- 20 • Ocean Shores STP Options Report - Resilience project to be confirmed. Limited funds might restrict to design only. Proposal requested from WRM for the design and documentation for the inlet works upgrades. Currently awaiting response from BSC detailing UV disinfection system.
- Mullum Water Mains Extension – Detailed design stage ongoing.
- 25 • Water Mains Replacement (Kolara Way) – Design and specification received 22 December 2023. 90% Draft Geotechnical report received 22nd December 2023. REF commenced. Issue to market as D&C by Feb 2024.
- Villages Pressure Sewer Systems – Design progressing.
- SPS Switchboards and Access – Survey of boards has occurred. Review of eligible boards underway.
- 30 • Standby Power/Generators – Analysis of eligible SPS boards and critical Assets will allow for final scoping.
- River/Flood level warning systems – Council has elected to deliver this project. Materials expected in December 2024 and construction to commence in January 2024.
- 35 • SCADA/Remote Access Review - Scoping report endorsement anticipated end Jan 2024

- I & I Issues/Sew Modelling - Claim form and Council managed project documentation has been sent to Council for review and input.

- Review Critical Equipment and Major Spares Inventory – Critical equipment and major spares inventory created with budgeting values from suppliers and ready for discussion with Council.

5

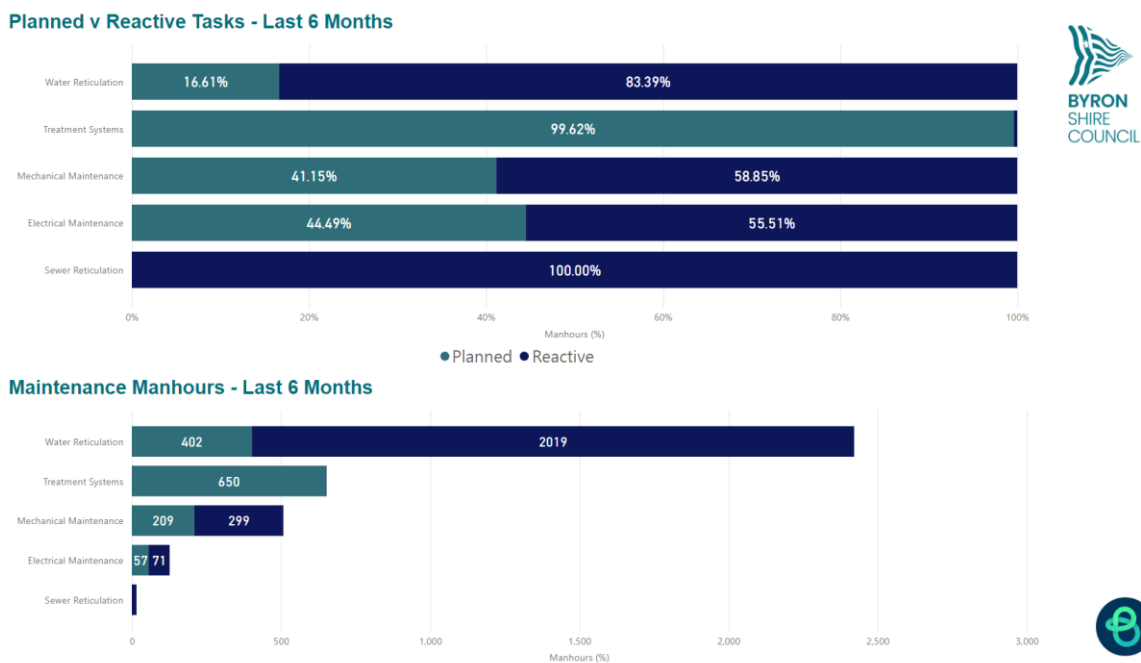
**ASSET MAINTENANCE STATUS**

**Maintenance Hours**

**Figure 1** shows the manhours by team for the last 6 months and the breakdown between planned and reactive maintenance as well time worked on non-Utilities assets. Ultimately, we will be able to show the trend between planned and reactive maintenance over time.

10

**Figure 1 – Planned and Reactive Maintenance Breakdown**



**Figure 2** shows the breakdown of manhours by asset class by team since June 2023. However, a data drill-down can be performed to undertake this analysis by individual asset when more data is available.

15

**Figure 2 –Maintenance Manhours by Asset Class**

Maintenance Manhours by Asset Type

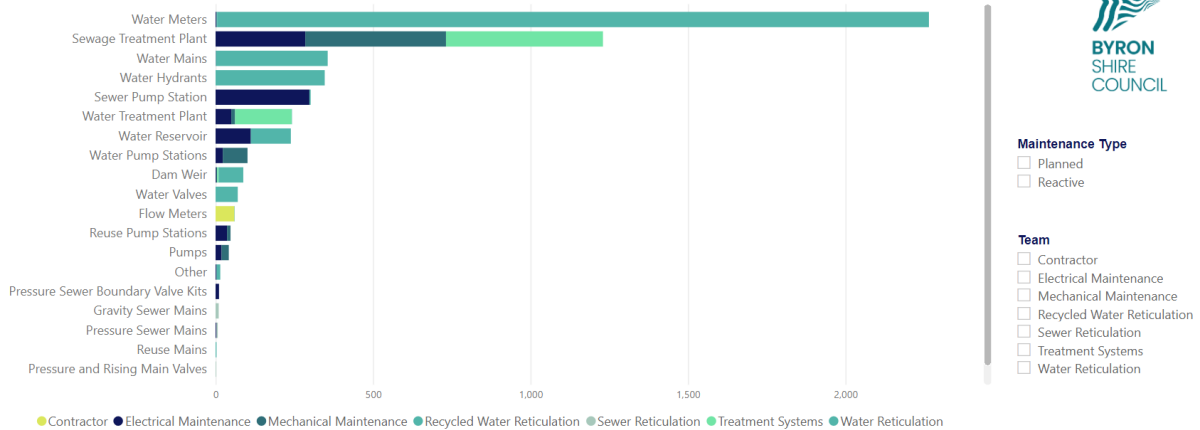


Figure 3 shows the breakdown of overdue Planned Maintenance tasks by team. Note: As one Planned Maintenance task is generated per Asset in Assetic, the total number of tasks can be disproportionate to the actual scale of work and manhours required.

5 Figure 3 – Current Status Planned Maintenance

KPI - Percentage of Planned Maintenance Completed by Due Date

Water Reticulation

Work Order Status	Total Number	Percent of Total Number
Overdue	155	3.35%
On Schedule	4474	96.65%
<b>Total</b>	<b>4629</b>	<b>100.00%</b>

Electrical Maintenance

Work Order Status	Total Number	Percent of Total Number
Overdue	75	34.56%
On Schedule	142	65.44%
<b>Total</b>	<b>217</b>	<b>100.00%</b>

Treatment Systems

Work Order Status	Total Number	Percent of Total Number
Overdue	80	21.74%
On Schedule	288	78.26%
<b>Total</b>	<b>368</b>	<b>100.00%</b>

Mechanical Maintenance

Work Order Status	Total Number	Percent of Total Number
Overdue	6	6.45%
On Schedule	87	93.55%
<b>Total</b>	<b>93</b>	<b>100.00%</b>

Sewer Reticulation & Pump Stations

Work Order Status	Total Number	Percent of Total Number
Overdue	41	14.59%
On Schedule	240	85.41%
<b>Total</b>	<b>281</b>	<b>100.00%</b>

**UTILITIES SUSTAINABILITY**

No updates since October 2023

**CAPITAL WORKS**

**Byron Shire Bioenergy Facility Project**

- 5 Council's Bioenergy Facility was successful in its 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. The Commonwealth invited Council, as a successful Stage 1 EOI applicant, to submit a full application, which was completed by Utilities and the Grant Coordinator, and submitted on January 15, 2023.
- 10 With HWL Ebsworth, Council Utilities staff also completed and submitted in December 2023 the Public Private Partnership (PPP) "Initial Assessment" submission to the NSW Office of Local Government (OLG); responses were expected from the NSW OLG by Feb.02, 2024 (the expiry of the 30-business-day OLG review period).
- 15 The PPP Initial Assessment application was presented to the GM, DIS, Executive Officer, Manager Finance and Manager Utilities on August 10, 2023. On December 01, 2023, the Council Executive Officer approved the revised application. An OLG Initial Assessment (approval) is intended to allow Council to pursue the option to seek private equity financing for the D&C and O&M of the facility. Council expected to submit in August 2023 its NSW OLG PPP Initial Assessment.
- 20 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 new "Regional Precincts and Partnerships Program," which has not yet been announced; that funding stream shall be reviewed and considered when more detailed information is available.
- 25 Either of these two grant funding streams, should they be successful, could be put to offsetting Council's debt borrowing and/or the private equity needs of a PPP delivery model; equally, the Project could continue solely as a PPP, should Council determine and resolve that this is the best course of action.

30

35



## BYRON SHIRE COUNCIL

### STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

#### SPS Renewals for Byron, Mullum, Ocean Shores & Bangalow

SPS	% COMPLETE	PUMPS DELIVERED	SWITCH-BOARD DELIVERED	COMPLETED SCOPE SUMMARY
SPS 1002	10	N/A	Quoted	Cast new switchboard pad (1830x1600x200), install new 3x 63mm electrical conduits and new 16mm mains onto pumps, replace switchboard install 2x gateway for pump mounted VSD. Make good old switchboard plinth and penetrations into well and valve chamber.
SPS 1005	100	N/A	N/A	Remove existing broken sealed surface and re-asphalt access road
SPS 1007	10	N/A	Quoted	Install bypass connection and MH. Remove pumps, Guide rails and lifting chains in preparation for coating, allow for EPOXY time. Remove ladder. Add spindle (SS316) on inlet valve. Replace risers in PE 125 and replace lifting chains in SS. Remove existing switchboard and concrete plinths including combined odour vent pole and plinth. Install new switchboard on new concrete pad (1960x1600x200). 3x63mm conduit 16mm electric main. Penos with 2 parts mega poxy (5-10mm). Replace odour with ground mount McBerns filter, try use same vent pipe. Relocate water service. Fix padlock cover on lid.
SPS 2002	0	N/A	N/A	Replace risers PE125 through to the valve chamber, no need for valves. New

## BYRON SHIRE COUNCIL

### STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

				Spindle on SS316
<b>SPS 2004</b>	100	N/A	N/A	Replace existing DN150 gate valve in the 2002 rising main on outside of well
<b>SPS 2010</b>	10	N/A	Quoted	Replace risers PE180, DN150 outlet gate valves, check valves, Gibault and flanged spigot. Install new Switchboard pad (1600x1600x200) including 3 x 63mm electrical conduits and penos, install new board facing south. Install new 16mm electric mains to green boy approx. 120m away. Water Service Relocation.
<b>SPS 3004</b>	25	N/A	N/A	Bypass completed, Epoxy Coating and crack injections completed, Stand pipe and ductile iron manifold updated to HDPE.
<b>SPS 3010</b>	10	N/A	N/A	Replace risers PE125 from elbow on wet well to valve pit, DN150 outlet gate valves, check valves. DN150 inlet gate valve and Spindle to be checked when doing service, relocate water service.
<b>SPS 3017</b>	100	N/A	N/A	Replace inlet gate valve, refurbish inlet pipe penetration
<b>SPS 3021</b>	10	N/A	Quoted	Replace DN125 risers, DN100 outlet gate valves, check valves, DN150 inlet gate valve, replace guide rails and brackets, relocate water service, remove vent pole and replace with McBerns odour filter, remove switchboard plinth and replace switchboard.

## BYRON SHIRE COUNCIL

### STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

<b>SPS 4007</b>	N/A	N/A	N/A	Removed from scope
<b>SPS 5003</b>	N/A	N/A	N/A	Removed from scope
<b>SPS 5014</b>	10	N/A	Quoted	Cast new 600x600x200 switchboard plinth, install new 3x63mm conduits to pump well, removing existing conduits and grout. Possibly remove and make good part of the fence. Install new electrical mains from green boy to board, install new switchboard and commission with electricians.
<b>SPS 5017</b>	10	N/A	Quoted	Replace DN125 risers, DN100 outlet gate valves, check valves and dismantling joints, DN150 inlet gate valve and spindle, remove switchboard plinth and replace switchboard on new elevated hardstand approximately 1m above wet well height. Replace vent pole with odour filter on new slab and run new conduits to suite. Relocate water service.
<b>SPS 5020</b>	10	N/A	N/A	Supply and install 2 x new DN125 PE riser pipes through to the valve chamber, new gate valves and check valves, Gibault and flanged spigots. New gate valve DN150 on incoming gravity sewer. New slab for switchboard (3120x1000x200). Apply bitumen coat on spigot. Remove Ladder.
<b>SPS 5022</b>	10	N/A	Quoted	Supply and install new switchboard conduits 3 x 63mm to new concrete platform. Remove existing switchboard and concrete plinths and install new switchboard on new platforms. Design of new platform to be per previous flood

# BYRON SHIRE COUNCIL

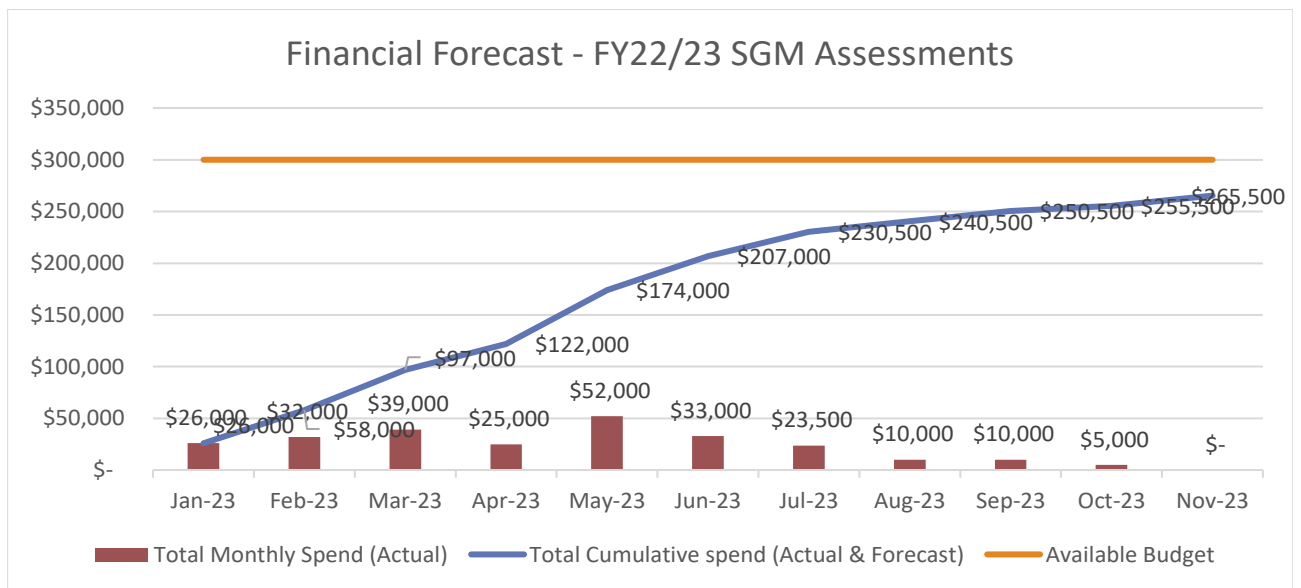
## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

				platforms, length 2600 by 1200mm wide. Relocate water service. New Covers, grill and frames sealed for odour control. Modify existing plinth to suit new ground mount odour filter.
--	--	--	--	---

### Condition Assessments – FY22/23

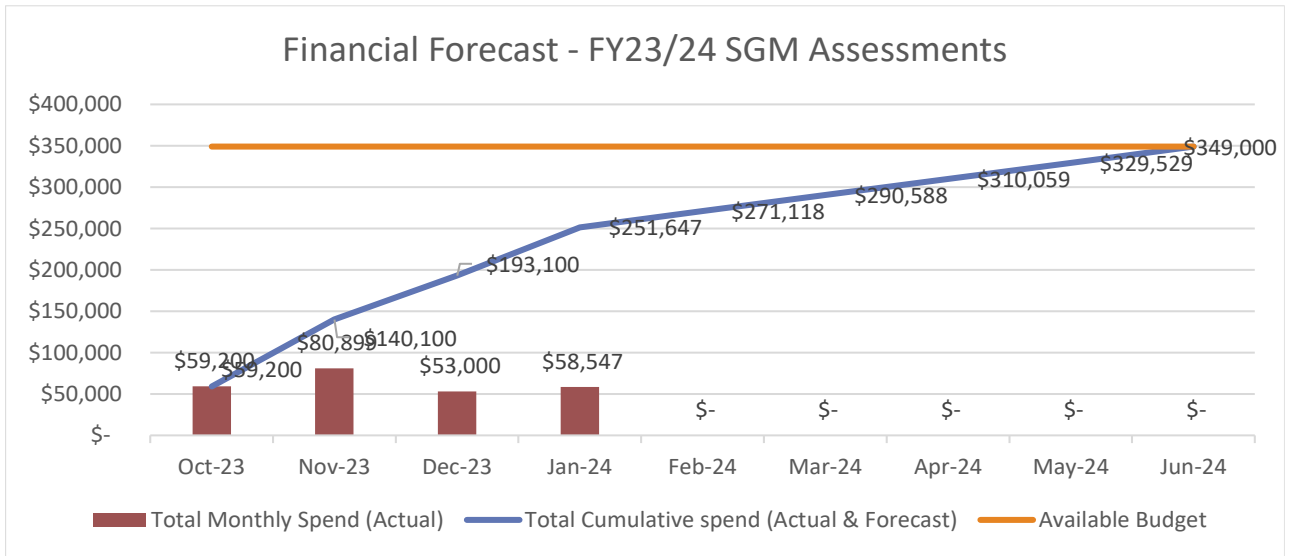
5 The condition assessment of gravity sewer mains and maintenance holes was awarded to Willow and Sparrow (Maintenance holes) and Subsurface Mapping Solutions (Mains). The Maintenance hole condition assessments are underway. The CCTV mains contract was awarded to Subsurface Mapping Solutions and work 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 for mains are complete and reports for MH's are now being finalised.



10

### Condition Assessments – FY23/24

15 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 has commenced. The sewer catchments that fall within this scope are across Brunswick Heads, Suffolk Park, Byron Bay, Mullumbimby, and Ocean Shores. The indicative budgetary limit of \$350,000 will cover the costs for both CCTV assessments, MH visual assessments and condition assessment reporting.



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

**Work accomplished in the period:**

**5 Site 01 Carlyle Street – Byron Bay**

- Stage 1 and 2 Cut ins have been completed on Carlyle Street and residents are now fully serviced by the new DN200 Watermain;
- The final Cut in for Carlyle Street is schedule for the 06/02/2024-08/02/2024. This will ultimately make the existing main along Carlyle Street to Massinger St redundant.



Figure 1: Site 01 Carlyle Street – Chainage 451.628 – Detail D

**Site 02 Azalea Street – Mullumbimby**

- CivilCS have commenced work and have laid approximately 153metres DN300 DICL and 200metres of DN200 DICL pipe;
- Bedrock has been observed onsite and CivilCS have required a hammer, ripper, jackhammer etc. for trenching; and
- Planit consulting is acting as Superintendent representative and are working closely with CivilCS (Contractor) to finalise the project for BSC.



Figure 2: Site 02 Azalea St – Ch90 DN200 Trench Excavator Ripper

### Reservoir Roof Replacement Works

#### Work accomplished in the period:

- 5 • Planit are working with the Contractor to close out the remaining minor items.
  - The project is currently in the post completion period.
  - Planit are working with Council staff to monitor the works and ensure any defects are rectified by the contractor as required.
  - Planit to provide Council with as built package for updating of asset register once received from ACE.
- 10

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

#### Work accomplished in the period:

- The project is currently in the defect's liability period.

# BYRON SHIRE COUNCIL

## STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

- Planit are working with Council staff to monitor the works and ensure any defects are rectified by the contractor as required.

### **Byron STP inlet works remediation.**

#### **5 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.

#### **10 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.

#### **15 Paterson St Reservoir Replacement**

##### **Work accomplished in the period:**

- A Survey RFQ was previously undertaken with a preferred contractor being recommended for engagement.
  - o Planit has reached out the preferred supplier to confirm their fee is current. A list of clarifications was also issued.
- Michael Salu (SSE) has been engaged to develop a concept structural design (to be used for community consultation, planning approvals and liaison with Telcos). This is due to be completed in early February.

- A Statement of Heritage Impact (SoHI) has now been prepared for the mural to be removed.

Telcos – Paterson: NO CHANGE FROM MAY 2023

- A meeting was held with BMM Group (who act on behalf of all major Telcos)
  - o 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.



o 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.

5

**Mullumbimby Trunk Water Main (Detailed Design)**

**Work accomplished in the period:**

• The Detailed Design of the water main alignment has now been completed and the Issue for Construction Plan set issued to Council and NSW Public Works.

10 o Planit Consulting and SSE (Salu Structural Engineering) currently working through the detailed design of the brackets for the proposed water main.

• The detailed design plans have now been issued to third parties for approval (UGL Third Party Works & APA).

15 • Planits Review of Environmental Factors is now complete. This includes the Biodiversity Assessment and advice from an arborist.

**West Byron Water Main**

**Work accomplished in the period:**

20 • A surveyor (B&P Surveys) has now been engaged to undertake field survey and service locating. Once the surveyor has been on site and prepared a detailed survey plan potential service clashes shall be identified, and site potholing shall be coordinated.

• Both an REF and EIS will be required for this project. The funding has been provided by Council in a purchase order. As it stands the following may be required:

- o EIS for the Belongil Creek crossing (on the bridge)
- 25 o REF for all other areas.

This shall commence once the survey information is provided, and it is determined whether the mapped Coastal Wetland is impacted from the proposed works.

30 • A site visit with a Structural Engineer (SSE) regarding the attachment of the watermain to the existing bridge structure over the Belongil Creek crossing occurred on 14/1/2024. The structural engineer is expected to provide their fees early Feb 2024.

**Draft Operational Standard – Protection of Water and Sewer Infrastructure**

**Work accomplished in the period:**

- Planit has now completed their input to the Draft Operational Standard to protect water and sewer infrastructure. This included documenting the procedure of locating BSC Utilities assets and more importantly documenting the procedure of notifiable work.

**Main Arm Road Concept Water Main**

**Work accomplished in the period:**

- Planit has now prepared a Concept Design package of the replacement water main (currently DN100 to be replaced with a DN150 pipe).
- Planit has identified locations for potholing to confirm pipeline sizes and is in the process of preparing quotes for potholing and service locating.

15

20

25

**Report No. 4.2      Response to Questions - Future Water Strategy**

**Directorate:**                      Infrastructure Services

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

5    **File No:**                        I2024/435

**Summary:**

The following report is in response to questions raised by the Committee in relation to the Mullumbimby Future Water Strategy.


10

---

**RECOMMENDATION:**

**That the Committee notes Council staff response to questions.**

15    **Attachments:**

1      Mullumbimby Water Supply - Communication Engagement Plan, E2024/28243 , page 45  

## Report

1. *When will the WSAC have sight of the Stakeholder Management Plan regarding MFWS?*

5 Please find attached Stakeholder Management Plan.

It has taken some time to find a comms/stakeholder consultant in the current market. They will commence next week and focusing on the implementation of the plan.

2. *Why is a new 375mm pipeline planned for construction in 2024 from the Rous County Council bulk pipeline at Gulgan Road to the Azalea Street reservoirs?*

Council have resolved to design and construct the pipeline with design to future proof for capacity.

- 3a. *What estimates does Council have from Rous County Council of future costs of bulk water to be supplied by RCC to Byron Shire Council up to at least 2060?*

The report was based onto the data available at the time from Rous.

The estimates were based on Rous's estimated financial business planning.

- 3b. *If Mullumbimby water supply is permanently connected to RCC will a headworks contribution be payable? If so, how much might this be?*

Due to Council (through grant) funding the design and construct of the pipeline. Headworks contributions should not be relevant.

However, this is still in negotiation with Rous and associated SLA.



Communication and Engagement Plan

Mullumbimby Water Supply Strategy	
<b>Aim</b>	To receive feedback from the community on the Mullumbimby Water Supply Strategy before Council makes on decision on the way forward.
<b>Background</b>	<p>Mullumbimby’s drinking water supply is sourced from the upper reaches of Wilsons Creek at Laverty’s Gap weir. Water flows by gravity through an open channel, via a tunnel to the Mullumbimby water treatment plant and potable water is distributed to Mullumbimby customers. Mullumbimby’s existing water supply will be insufficient to meet demand during droughts, particularly with projected future growth. The objective of the Mullumbimby Water Supply Strategy is to provide a secure long-term water supply to service current demand and future growth that is sustainable and minimises costs to the community. The Water Supply Strategy addresses various factors, including the condition and performance of key assets, demand reduction measures and effective drought management and emergency response procedures. The ability of the water supply system to meet current and future demand for potable water and a range of potential supply augmentation options have been assessed in the strategy. Augmentation of the existing emergency supply pipeline from the Rous Regional Supply to service all customers in Mullumbimby and permanent connection to the Rous Regional Supply is the most favourable option when environmental, social and economic factors are considered. It is likely that some of the existing Mullumbimby water supply assets (weir, raw water channel and water treatment plant) will not be required as part of the regional scheme and investigations into heritage management requirements to provide guidance on long-term maintenance and management of these assets will be required.</p> <p>Community consultation is required in accordance with the Council resolution:                  2. That Council notes that this issue [Byron Shire council Future Water Strategy] is of significant importance and will consult and inform the community in a meaningful way before making a decision (Report No. 4.1, File No: I2023/899).</p>
<b>When</b>	February 2024 to March 2024
<b>Job number</b>	Provide a job number here if necessary for advertising, graphic design costs.

<p><b>Sensitivities and challenges</b></p>	<p>Are there any sensitivities and challenges that could have an impact on the comms and engagement plan for this project?</p> <ul style="list-style-type: none"> <li>• There are some Councillors who are opposed to the recommended approach due to the association with the Rous regional supply. This opposition seems to be linked to Rous County Council's investigations into a new dam at Dunoon.</li> <li>• Parts of the Mullumbimby community have an emotional attachment to local assets and may be unhappy with the regional water supply approach.</li> <li>• Some customers consider that potable demand reduction approaches alone (such as rainwater tanks and effluent recycling) can achieve a secure water supply. Reliance on demand management measures will not ensure a secure supply in a drought and also over the long-term as the current water supply cannot meet demand (even with successful demand management measures)</li> <li>• Some customers may be concerned that the water will be fluoridated. The Rous regional supply to Byron Shire water is not fluoridated and Mullumbimby's water would be the same as the rest of the shire.</li> <li>• If the regional water supply is connected, an alternative supply arrangement will need to be developed for the customers directly connected to the trunk main from the water treatment plant (approximately 13 customers).</li> <li>• The heritage value, age and condition of the existing assets are a key constraint with the existing water supply system. Opportunities for future management and use of the assets still needs to be addressed, regardless of the strategy implemented.</li> </ul>
<p><b>Key messages</b></p>	<p>What are the key points/messages you want to get across? Imagine this is a radio ad and you have to summarise the project in five sentences.</p> <ul style="list-style-type: none"> <li>• A secure water supply is critical to ensure the Mullumbimby community's health and quality of life as well as a sustainable environment and continued economic prosperity.</li> <li>• Mullumbimby's existing water supply would not meet demand during a drought due to the small storage available at Laverty's Gap weir. Harsh restrictions were introduced during the 2019/20 drought and following the 2022 floods and if conditions continued, the storage in Laverty's Gap would have run out of water. If we experience another drought or water supply disruption, the community would experience harsh</li> </ul>

# BYRON SHIRE COUNCIL

	<p>restrictions and the existing system may fail (run out of water), requiring trucking of water to parts of Mullumbimby at high cost and significant disruption.</p> <ul style="list-style-type: none"> <li>• The strategy considers a range of augmentation options including increasing storage in the current system, alternative water supplies, upgrading water treatment infrastructure, demand reduction measures and connection to the regional water supply.</li> <li>• Based on an assessment of environmental, social and economic considerations, the most favourable option is to connect to the Rous regional water supply (consistent with the remainder of Byron Shire) and ongoing potable demand reduction measures.</li> <li>• The strategy will be on public exhibition and the community is encouraged to provide feedback.</li> </ul>
<p><b>Strategy</b> <b>How are we going to do it?</b></p>	<ul style="list-style-type: none"> <li>• Your Say Byron Shire and survey</li> <li>• Social media channels</li> <li>• Media release</li> <li>• Radio segment</li> <li>• Emails and E-News</li> <li>• Market and pop-up stalls</li> </ul>
<p><b>Evaluation</b></p>	<p>How will you evaluate the success of this comms plan? (Don't think too hard about this...it might be simple such as a noticeable change in behaviour, large number of submissions etc.)</p> <p>The success may be measured by the level of engagement through the Your Say Byron Shire website and attendance at the pop-up events.</p>
<p><b>Media spokesperson</b></p>	<p>Who is going to be the media spokesperson for interviews? Is it you, your Manager or Director? Do they know about the project and its timeframes?</p> <p>Cameron Clark, Manager Utilities</p>

# BYRON SHIRE COUNCIL

<b>Work contact</b>	<ul style="list-style-type: none"> <li>• Cameron Clark, Manager Utilities 6685 9306, 0417 464 716</li> <li>• Comms team member: Annie Lewis</li> </ul>	
<b>IAP2 Level of Engagement</b>	<p><b>INFORM:</b> Letting people know what is happening with a Council project/process etc. You want to provide balanced and objective information to the community or stakeholders to help them understand a topic or a problem, including alternatives, opportunities and perhaps solutions.</p> <p><b>CONSULT:</b> You want people to provide comment or feedback about something. You want to get feedback from people and groups on a problem, document, issue, decision etc. You want to hear what they think, their opinions, analysis, alternative views etc.</p>	
<b>Potential level of impact</b>	<p>Think about your project – what is the level of impact? Delete the ones that aren't relevant.</p> <p>Level 3 – high impact, local area</p>	
<b>Stakeholders</b>	<p><b>Internal</b></p> <ul style="list-style-type: none"> <li>• Who in Council needs to be involved?</li> <li>• Cameron Clark</li> <li>• Dean Baulch, Principal Engineer Systems Planning</li> </ul>	<p><b>External</b></p> <ul style="list-style-type: none"> <li>• List all the stakeholders/who might need to know about this project and how influential they are (high, medium, low).</li> <li>• Water and Sewer Advisory Committee (high) – already informed</li> <li>• Mullumbimby Residents Association (high)</li> <li>• General Mullumbimby community (high)</li> <li>• Wider Byron Shire community (medium)</li> </ul>



# BYRON SHIRE COUNCIL

<p><b>Consideration for people living with disability</b></p>	<p>You need to make sure your activities take into consideration people with disability. This includes:</p> <ul style="list-style-type: none"> <li>• making sure venues are accessible for people with living with disability</li> <li>• that documents are accessible and suitable for screen reader</li> <li>• that text is simple, clear and easy to understand.</li> </ul> <p>Briefly detail your considerations for people with a disability.</p> <ul style="list-style-type: none"> <li>• Much of the <i>Inform</i> level of engagement will be in the media and accessible to people with a disability. This includes, social media, radio segment and Your Say Byron Shire website.</li> <li>• Market pop-up stalls will be in areas where they are accessible for people with a disability.</li> </ul>
<p><b>Other projects and internal staff who might need to know about this?</b></p>	<p>Is this a project that will involve another Directorate or have an impact on another project? Are there any similar consultations going on at the moment? Can they be combined?</p> <p>No.</p>
<p><b>Submitted to Director or Manager</b></p>	<p>Who is your Manager or Director?</p>
<p><b>Reported to ET</b></p>	<p>Does this need to be reported to ET?</p>
<p><b>Reported to Comms Panel/Council</b></p>	<p>Talk to the Media and Comms team to see if this needs to go to the Comms Panel</p>

**Communication & Engagement Plan Actions**

Following is what you are going to do to get your message out? The Comms team will help you fill this section out. These are just ideas and you can add or subtract from the list. These are examples to get you thinking about what you might do and the timeframe. No point in wanting to design posters etc when the project starts tomorrow.

Task/Action	Audience	Details	Who is doing it?	Cost	Date to start/finish
Briefing of Comms Panel	Internal	The Communication Plan will be shared with Council's Communications Panel to ensure they are aware of the plan, and the methods being used to promote the plan to the community and to staff.	<b>Cameron Clark</b>	Staff time	<b>December 2023</b>
<b>Identification and engagement of key stakeholders</b>	Internal and external		Council's Communications Panel	Staff time	<b>December 2023 – January 2024</b>
<b>www.Yoursaybyronshire</b>	External	Include summary of issues and strategy content and survey for people to provide feedback	Council's Communications Panel	Staff time	12/2/24 – 10/3/24 (4 weeks)
<b>Visual campaign development</b>	External	Develop visual 'look and feel' with images and graphics for use on the website, print advertising, social media etc.	Council's Communications Panel	Staff time	<b>January 2024</b>

## BYRON SHIRE COUNCIL

Task/Action	Audience	Details	Who is doing it?	Cost	Date to start/finish
<b>Email/letter to key stakeholders and residents</b>	External	Letter with brief introduction and to direct people to webpage	Council's Communications Panel	Staff time	12/2/24 – 16/2/24
<b>Website information</b>	External	Page to be developed for website.	Council's Communications Panel	Staff time	<b>January 2024</b>
<b>VMS signage</b>	External	?			
<b>Newspaper advertising</b>	External	Professionally designed display ad in Byron Shire Echo and Northern Rivers Times	Council's Communications Panel	Staff time	Publish 12/2/24
<b>Media release</b>	External	with brief introduction and to direct people to webpage	Council's Communications Panel	Staff time	12/2/24
<b>Social media</b>	External	Social media posts and advertising	Council's Communications Panel	Staff time	12/2/24 and reminder on 4/3/24 (1 week remaining)
<b>Staff update and promotion</b>	Internal	Promotion and explanation of project to all staff	?	Staff time	<b>January 2024</b>
<b>Radio ad or editorial</b>	External	Radio segment to introduce project and direct people to the website		Staff time	12/2/24 – 16/2/24
<b>Market &amp; street stalls</b>	External	Stalls to be held at Mullum Markets or outside	Cameron Clark and potentially a	Staff time and potentially	Woolies pop-up: 12/2/24 – 16/2/24 (4 hours)

# BYRON SHIRE COUNCIL

Task/Action	Audience	Details	Who is doing it?	Cost	Date to start/finish
		Woollies, in the main street.	consultant representative	consultant involvement	Market – Saturday 17/2/24
<b>E-news / E-flash</b>	External	To promote project, media release etc.	Council's Communications Panel	Staff time	As necessary.

**FOR INFORMATION ONLY**

**Report No. 6.1      Utilities Digital Asset Management Plan  
(dAMP) Presentation**

5    **Directorate:**                    Infrastructure Services  
**Report Author:**                Craig Purdy, Utilities Asset Engineer  
**File No:**                            I2024/386

10    **Purpose:** To present the finalised and published digital Asset Management Plan (dAMP) of Utilities to the Water and Sewer Advisory Committee. The presentation will be verbal as well as using PowerPoint, Predictor and latest dAMP website page.



**Information/Background:**

15    As described in the Asset Management Policy 2021 (E2021/121105), the Integrated Planning and Reporting (IP&R) framework legislation specifies that Asset Management Plans must encompass all the assets under Council’s control. The plans must identify service standards and contain long term projections of asset maintenance, rehabilitation and replacement costs. The Utilities dAMP accomplishes this requirement for all Water, Sewer and Water Reuse assets.

20    A long-term Asset Management Plan (AMP) is usually set for a 10-year term. As these AMP’s have historically been paper based, they become out of date as soon as they are adopted. The Utilities dAMP contains all the information found in a traditional AMP, but also features the following advantages for Council:

- Data continually updated as it comes to hand.
- Predictor modelling directly feeds into dAMP.
- Graphical Map based outputs.
- 25    • User friendly dashboards that show all of Utilities assets at a glance.
- Easily updated and enhanced.

**Attachments:**

30    1      E2024/26614 Presentation - Asset Quantities + Predictor + DAMP V2 - PDF version, E2024/26614 , page 57  

## Strategic Considerations

### Community Strategic Plan and Operational Plan

<b>CSP Objective</b>	<b>CSP Strategy</b>	<b>DP Action</b>	<b>Code</b>	<b>OP Activity</b>
5: Connected Infrastructure	5.5: Provide continuous and sustainable water and sewerage management	5.5.1: Water supply - Provide a continuous water supply that is maintained in accordance with NSW Health guidelines	5.5.1.14	Undertake review of identified Asset Management Plans to inform and improve Asset Management System

**Risk:**

<b>Risk Code</b>	<b>Risk Area</b>	<b>Risk Owner</b>	<b>Risk Title</b>	<b>Risk Details</b>	<b>Controls</b>
SR1	IS	Phillip Holloway	Assets & Infrastructure	Council assets and infrastructure do not meet the current and future needs of the community.	Utilities - Digital Asset Management Plan Owner: Cameron Clark Effectiveness: Good Status: Existing Control
SR2	IS	Phillip Holloway	Assets & Infrastructure	Council fails to provide continuous and sustainable water, sewerage and waste management.	Utilities - Digital Asset Management Plan Owner: Cameron Clark Effectiveness: Good Status: Existing Control

# BYRON SHIRE COUNCIL

FOR INFORMATION ONLY

6.1

**Vendor Dependency** – The dAMP software platform is reliant on a third-party vendor. The 3<sup>rd</sup> Party vendor in this case is Brightly™. Brightly™, a Siemens company, is an international company dealing in asset management solutions. It is over 20 years old and has more than 12,000 clients worldwide. Council already engages this vendor for the following services:

5

- Utilities Maintenance Management System (Utilities department only)
- Predictive modelling software – Predictor™ (Council wide)
- Financial Revaluations of asset classes (Council wide)

## Consultation and Engagement

Who was consulted?	How did consultation occur? e.g. email, verbal etc	Comments/Feedback
<p><b>Dean Baulch</b> (Principal Engineer Systems Planning)</p> <p><b>Cameron Clark</b> (Manager Utilities)</p>	<p>Initial dAMP viability overview presentation.</p> <p>Weekly updates in the 'Systems Planning Team Meetings'.</p> <p>Monthly updates on progress and status in the 'Utilities Monthly Status Report document'.</p> <p>Whole Team dAMP presentation on 04/10/2023</p>	<p>Presentation be made to the Executive Team for adoption</p>
<p><b>Executive Team</b></p>	<p>Presentation to the Executive Team on the 01/11/2024</p> <p>dAMP was published on the Public Website on the 19/01/2024</p>	<p>Once the following concerns have been addressed, the dAMP will be approved for publishing on the Public Website:</p> <p><b>Data Security</b> – passed by I.T department.</p> <p><b>Corporate Governance Compliance</b> – passed by Corporate Services.</p> <p><b>Accessibility</b> – passed by Digital</p>

# BYRON SHIRE COUNCIL




























FOR INFORMATION ONLY

6.1

		Communications Officer.
--	--	-------------------------



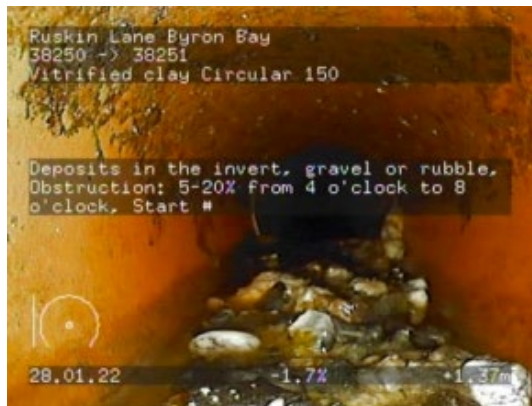
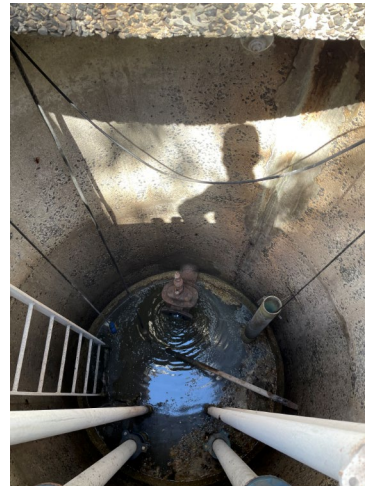
## Utilities Assets Overview

	Water Hydrants – 2470		Sewer Treatment Plants – 4
	Water Treatment Plants – 1		Sewer Pump Stations – 87
	Water Pump Stations – 9		Sewer Rising Mains – 164 (73km)
	Water Valves – 1615		Sewer Rising Main Valves – 214
	Water Mains – 1740 (250km)		Sewer Gravity Mains – 5187 (195km)
	Dam Weirs – 1		Sewer Gravity Main Valves - 3
	Water Reservoirs – 15		Sewer Gravity Manholes – 3991
	Water Reuse Access Points – 7		Vacuum Sewer Mains – 174 (7km)
	Water Reuse Pump Stations – 3		Vacuum Sewer Valves – 20
	Water Reuse Valves – 163		Vacuum Sewer Pods – 84
	Water Reuse Mains – 91 (26km)		Pressure Sewer Mains – 602 (11km)
	Water Reuse Filling Stations – 4		Pressure Sewer Boundary Kits – 252
	Irrigation Systems - 20		Buildings – 29
			Shelters - 9

# Data Collection, Preparation and Calculation

## Consequence of Failure

- Environmental Impact
- Customer Load / Capacity
- Customer Type
- Regulatory
- BSC Reputation



## Component Criticality

- Health & Safety
- Functional Significance
- Impact of Failure
- Redundancy
- Spare Parts Availability
- Lead Time of Repair
- Historical Failure

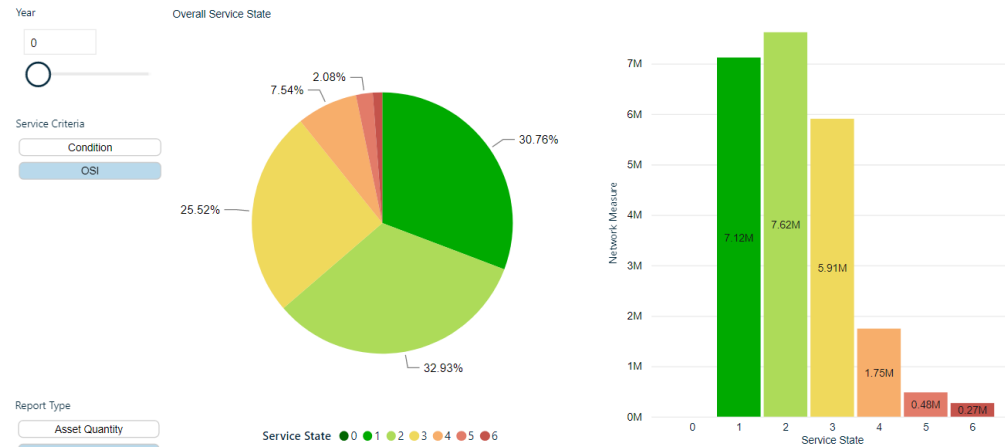


# Predictive modelling of Utilities Assets

- Optimise available funding to extend asset life and improve levels of service.
- Apply condition based life cycle degradation profiles to accurately model future asset conditions.
- Produce prioritised long term capital work and financial plans.
- Drive capital investment in regards to agreed levels of service.

2022 - MAINTAIN - Budget to maintain + 2.5% Inflation

23.15M Network Measure	23.15M Asset Value	1,507 Asset Quantity	2.50M Threshold Backlog Value	2.65M Workbank Backlog Value	2.21 Average Service State
---------------------------	-----------------------	-------------------------	----------------------------------	---------------------------------	-------------------------------



2022 - MAINTAIN - Budget to maintain + 2.5% Inflation

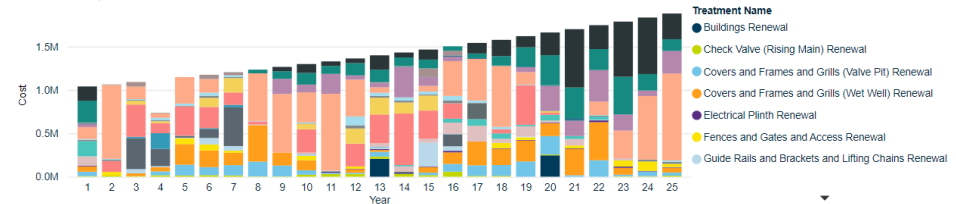
Service State by Year

Asset Name	Unique Asset ID	0	1	2	3	4	5	6	7	8	9	10	11	12
SPS1002 Raftons Road Behind 5&7 Palm Tree Crs	(Rising Main)													
SPS1002 Raftons Road Behind 5&7 Palm Tree Crs   Covers and Frames and Grills (Valve Pit)		4.00	0.00	0.00	1.00	1.00	2.00	2.00	2.00	2.00	3.00	3.00	3.00	0.00
SPS1002 Raftons Road Behind 5&7 Palm Tree Crs   Covers and Frames and Grills (Wet Well)		4.00	0.00	0.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00
SPS1002 Raftons Road Behind 5&7 Palm Tree Crs   Guide Rails and Brackets and Lifting Chains		2.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00
SPS1002 Raftons Road Behind 5&7 Palm Tree Crs   Instrumentation		4.00	4.00	5.00	0.00	0.00	1.00	1.00	2.00	2.00	3.00	3.00	3.00	4.00

2022 - MAINTAIN - Budget to maintain + 2.5% Inflation

Summary	Treatment Breakdown	Treatment Group Breakdown	Budget Distribution	Budget Breakdown
---------	---------------------	---------------------------	---------------------	------------------

Treatment Cost by Year and Treatment Name

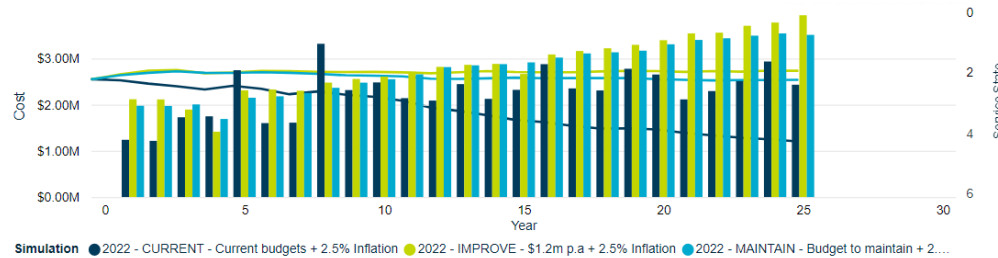


# Predictive Modelling – Compare budgeting scenarios

## Predictor

- Create scenarios to clearly demonstrate the impact of increased, static or decreased funding to ultimately make better informed decisions.

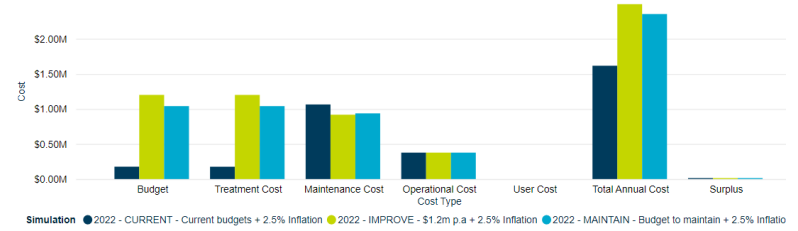
Total Cost and Service State by Year and Simulation



Service State:

Year	2022 - CURRENT - Current budgets + 2.5% Inflation	2022 - IMPROVE - \$1.2m p.a + 2.5% Inflation	2022 - MAINTAIN - Budget to maintain + 2.5% Inflation
19	3.76	1.94	2.17
20	3.80	1.95	2.20
21	3.91	1.97	2.22
22	3.99	1.95	2.24
23	4.06	1.97	2.23
24	4.11	1.93	2.23
25	4.18	1.94	2.23

Cost by Simulation and Cost Type



Budget and Cost Allocation by Simulation

Simulation	Budget	Treatment Cost	Maintenance Cost	Operational Cost	User Cost	Total Annual Cost	Surplus
2022 - CURRENT - Current budgets + 2.5% Inflation	\$176,493.00	\$175,787.50	\$1,063,591.74	\$376,644.45	\$0.00	\$1,616,023.69	\$705.50
2022 - IMPROVE - \$1.2m p.a + 2.5% Inflation	\$1,200,000.00	\$1,199,762.50	\$917,513.02	\$376,644.45	\$0.00	\$2,493,919.97	\$237.50
2022 - MAINTAIN - Budget to maintain + 2.5% Inflation	\$1,040,000.00	\$1,039,862.50	\$936,649.97	\$376,644.45	\$0.00	\$2,353,156.92	\$137.50

Total Backlog

Year	2022 - CURRENT - Current budgets + 2.5% Inflation	2022 - IMPROVE - \$1.2m p.a + 2.5% Inflation	2022 - MAINTAIN - Budget to maintain + 2.5% Inflation
0	\$2,645,525.00		\$2,645,525.00
1	\$2,469,737.50		\$1,605,662.50
2	\$2,718,492.19		\$827,892.50
3	\$2,802,069.41		\$259,530.64
4	\$2,909,650.78		\$0.00
5	\$3,284,478.04		\$564,572.70
6	\$4,074,582.82		\$333,991.70
7	\$5,372,859.61		\$298,360.12
8	\$5,569,319.64		\$1,068,539.34
9	\$6,752,602.08		\$1,425,577.08
10	\$7,504,495.64		\$1,434,974.77
11	\$9,208,224.16		\$2,068,504.62
12	\$10,752,386.15		\$2,746,262.98
13	\$11,665,649.72		\$2,616,413.96
14	\$12,631,279.47		\$2,054,463.94
15	\$13,385,171.65		\$1,607,610.96
16	\$13,725,738.97		\$2,072,369.85
17	\$14,200,000.00		\$2,072,369.85

# DIGITAL Asset Management Plan (DAMP)

## What does a long term Asset Management Plan (AMP) set to achieve for Council:

- Identifies asset quantities and current conditions.
- Gives consideration to the whole of life costs of the asset.
- Identifies existing levels of service and any potential gaps which may exist.
- Provides information on current and future Capital Work programs.
- Identifies the level of service that will be delivered by the asset and how the service will be monitored.
- Identifies funding needs on a short term and long term basis.
- Provides guidance to develop programs to optimise the asset value and minimise funding commitments.
- Provides the basis for long-term financial planning for assets under the custodianship of council.
- Provides an improvement plan to follow.



## Advantages of a Digital Asset Management Plan (DAMP):

- Data continually updated as it comes to hand (paper-based version are out of date as soon as they are adopted)
- Predictor modelling directly feeds into DAMP.
- Graphical Map based outputs.
- User friendly dashboards that show all of Utilities assets at a glance.
- Easily updated and enhanced.

