

NOTICE OF MEETING



WATER, WASTE AND SEWER ADVISORY COMMITTEE MEETING

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

Venue	Conference Room, Station Street, Mullumbimby
Date	Thursday, 30 July 2020
Time	11.30am

Phillip Holloway
Director Infrastructure Services

I2020/1093
Distributed 23/07/20

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)

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.

BYRON SHIRE COUNCIL
WATER, WASTE AND SEWER ADVISORY COMMITTEE MEETING

BUSINESS OF MEETING

1. APOLOGIES

2. DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

3. ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 Water, Waste and Sewer Advisory Committee Meeting held on 9 April 2020

4. STAFF REPORTS

Infrastructure Services

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4.5	Nutrient Loading in the Belongil Update	25

STAFF REPORTS - INFRASTRUCTURE SERVICES

Report No. 4.1 **Minutes of Water, Waste and Sewer Advisory Committee Meeting held on 9 April 2020**

Directorate: Infrastructure Services
Report Author: Dominika Tomanek, Executive Assistant Infrastructure Services
File No: I2020/1073

Summary:

The previous minutes of Water, Waste and Sewer Advisory Committee Meeting of 9 April 2020 are attached to this report.

The Minutes were reported to the 28 May 2020 Council Meeting for consideration.

RECOMMENDATION:

That Committee note the report.

Attachments:

1 Minutes 09/04/2020 Water, Waste and Sewer Advisory Committee, I2020/533 , page 7 [↓](#) 

REPORT

The minutes of the Water, Waste and Sewer Advisory Committee Meeting held on 9 April 2020 are attached.

5

The minutes were reported to the 28 May 2020 Council Meeting which resulted in resolutions 20-243, 20-244, 20-045, 20-246 and 20-247.

20-243 Resolved that Council adopt the following Committee Recommendation(s):

Report No. 4.2 Nutrient Loading in the Belongil

File No: I2020/297

Committee Recommendation 4.2.1

1. That Council note that:-
 - a) for the twelve-month period 27 April 2017 to 26 April 2018 Total Nitrogen (TN; monitored as required in Condition 11 of Council's approval under its Resolution 02-1329 of December 2002) released to Belongil Creek was 1,564 kg and that this exceeds:
 - (i) the allowable discharge of 1,500kg TN; and
 - (ii) the 80% threshold under which an investigation is triggered.
 - b) the Condition requires this monitoring be done on a rolling two-month window, based on weekly sampling.
 - c) the Condition requires Council to investigate feasible management strategies to reduce loads below 80%.
 - d) the Condition further requires Council to discuss appropriate courses of action to prevent further exceedances.
2. That Council sample nutrient loads weekly or better, as required by Consent Condition 11.
3. That Council investigate all feasible management strategies to reduce loads below 80%, including strategies already under way such as:
 - a) Biostem pellets for removing sludge and therefore possibly nutrients, and
 - b) vetiver grass [increase sampling downstream of the trial planting to assess the grass's ability to reduce nutrients].
4. That Council continue testing its flow meter newly installed at EPA location #4 to assess accuracy and reliability of flow results and, once performance is confirmed or by the end of June 2020 (whichever is sooner) these results be reported to the next meeting (scheduled for 30 July) of the Water, Waste and Sewer Advisory Committee and published on Council's Water & Sewer information website.
5. That Council recognise:
 - a) that it is impossible to mitigate against increased nutrient loads during high rainfall events and
 - b) that rainfall periods longer than a month may cause breaches of Consent Conditions 11.

20-244 Resolved that Council adopt the following Committee Recommendation(s):

Report No. 4.3 Effects of water mining in Byron and surrounding shires on groundwater resources

File No: I2020/298

Committee Recommendation 4.3.1

That Council:

1. Note that the October 2019 Independent review of the impacts of the bottled water industry on groundwater resources in the Northern Rivers region of NSW (Final Report - NSW Chief Scientist & Engineer - 31 October 2019; E2019/91097) fails to consider cumulative impacts of this expanding industry on groundwater and does not adequately consider non-water impacts such as traffic in local communities and proliferation of plastic bottles.
2. Receive confirmation from staff to the committee that the current status of water mining for bottled water is that it is prohibited in the Byron shire.

20-245 Resolved that Council adopt the following Committee Recommendation:

Report No. 4.4 Condition 9. Additional Load at Byron STP

File No: I2020/497

Committee Recommendation 4.4.1

That Council receive reports twice yearly on the performance of BBSTP against its Consent Condition 9 via reports to its Water, Waste and Sewer Advisory Committee.

20-246 Resolved that Council adopt the following Committee Recommendation:

Report No. 4.5 Inflow and Infiltration - quarterly update

File No: I2020/504

Committee Recommendation 4.5.1

That Council note the report.

20-247 Resolved that Council adopt the following Committee Recommendation(s):

Report No. 4.6 Rous County Council - Service Level Agreements 1st July - 31st December 2019

File No: I2020/520

Committee Recommendation 4.6.1

That the Council note the report.

- 5 The reports related to the resolutions 20-243, 20-244 and 20-245 and 20-246 were included in the Agenda of Water, Waste and Sewer Advisory Committee of 30 July 2020.

The resolution 20-247 was noted.

MINUTES OF MEETING

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WATER, WASTE AND SEWER ADVISORY COMMITTEE MEETING

15

Venue	Online Skype Conference Call
Date	Thursday, 9 April 2020
Time	11.30am

20

Minutes of the Water, Waste and Sewer Advisory Committee Meeting held on Thursday, 9 April 2020

File No: I2020/1093

PRESENT: Cr Richardson, Cr C Coorey, Cr M Lyon and Cr S Ndiaye

Staff: Phillip Holloway (Director Infrastructure Services)
Cameron Clark (Manager Utilities)
Dean Baulch (Principal Engineer system Planning)
Bryan Green (Water and Sewer system Environment Officer)
Jason Stanley (System Planning Officer)
Julian Vivoli (Consultant IS)
Michael Matthews (Manager Open Spaces and Resource Recovery)
Dominika Tomanek (Minute Taker)

Community: Duncan Dey (online) and Ben Fawcett (online)

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

APOLOGIES:

Col Draper
Mary Gardner
David Fligelman,
Madeleine Green

DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

There were no declarations of interest.

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

Committee Recommendation:

That the minutes of the Water, Waste and Sewer Advisory Committee Meeting held on 30 January 2020 be confirmed.

(Fawcett/Coorey)

The recommendation was put to the vote and declared carried.

Note: The minutes of the meeting held on 30 January 2020 were noted, and the Committee Recommendations adopted by Council, at the Ordinary Meeting held on 27 February 2020.

BUSINESS ARISING FROM PREVIOUS MINUTES

There was no business arising from previous minutes.

Report No. 4.1 **Minutes of previous Water, Waste and Sewer Advisory Committee Meeting**
File No: I2020/498

Note:

Duncan congratulated staff on enabling this Committee meeting to go ahead, on keeping our business moving as much as is being achieved, and on continuing to operate under difficult COVID-19 conditions.

PROCEDURAL MOTION**Change the order of business:**

That Committee change the order of business to deal with Reports 4.5 first on the Agenda.

Report No. 4.5 **Inflow and Infiltration - quarterly update**
File No: I2020/504

Committee Recommendation:

That Council note the report.

(Dey/Ndiaye)

The recommendation was put to the vote and declared carried.

5

Report No. 4.2 **Nutrient Loading in the Belongil**
File No: I2020/297

Committee Recommendation:

1. That Council note that:
 - a) for the twelve-month period 27 April 2017 to 26 April 2018 Total Nitrogen (TN; monitored as required in Condition 11 of Council's approval under its Resolution 02-1329 of December 2002) released to Belongil Creek was 1564 kg and that this exceeds (a) the allowable discharge of 1500kg TN, and (b) the 80% threshold under which an investigation is triggered.
 - b) the Condition requires this monitoring be done on a rolling two-month window, based on weekly sampling.
 - c) the Condition requires Council to investigate feasible management strategies to reduce loads below 80%.
 - d) the Condition further requires Council to discuss appropriate courses of action to prevent further exceedances.
2. That Council sample nutrient loads weekly or better, as required by Consent Condition 11.
3. That Council investigate all feasible management strategies to reduce loads below 80%, including strategies already under way such as:

- a) Biostem pellets for removing sludge and therefore possibly nutrients, and
 - b) vetiver grass [increase sampling downstream of the trial planting to assess the grass's ability to reduce nutrients].
4. That Council continue testing its flow meter newly installed at EPA location #4 to assess accuracy and reliability of flow results and, once performance is confirmed or by the end of June 2020 (whichever is sooner) these results be reported to the next meeting (scheduled for 30 July) of the WWS Advisory Committee and published on Council's Water & Sewer information website.
5. That Council recognise:
- a) that it is impossible to mitigate against increased nutrient loads during high rainfall events and
 - b) that rainfall periods longer than a month may cause breaches of Consent Conditions 11.

(Dey/Coorey)

The recommendation was put to the vote and declared carried.

Report No. 4.3 Effects of water mining in Byron and surrounding shires on groundwater resources
File No: I2020/298

Committee Recommendation:

That Council:

- 1. note that the October 2019 *Independent review of the impacts of the bottled water industry on groundwater resources in the Northern Rivers region of NSW* (Final Report - NSW Chief Scientist & Engineer - 31 October 2019; E2019/91097) fails to consider cumulative impacts of this expanding industry on groundwater and does not adequately consider non-water impacts such as traffic in local communities and proliferation of plastic bottles.
- 2. receive confirmation from staff to the committee that the current status of water mining for bottled water is that it is prohibited in the Byron shire.

(Dey/Coorey)

The recommendation was put to the vote and declared carried.

Report No. 4.4 Condition 9. Additional Load at Byron STP
File No: I2020/497

Committee Recommendation:

That Council receive reports twice yearly on the performance of BBSTP against its Consent Condition 9 via reports to its Water, Waste and Sewer Advisory Committee.

(Dey/Fawcett)

The recommendation was put to the vote and declared carried.

5

Report No. 4.6 Rous County Council - Service Level Agreements 1st July - 31st December 2019
File No: I2020/520

Committee Recommendation:

That the Council note the report..

(Lyon/Fawcett)

The recommendation was put to the vote and declared carried.

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- 5 *There being no further business the meeting concluded at 1:06 pm.*

Report No. 4.2 Effects of water mining in Byron and surrounding shires on groundwater resources

Directorate: Infrastructure Services

Report Author: Dean Baulch, Principal Engineer, Systems Planning

File No: I2020/879

Summary:

The Council Meeting of 28 May 2020 resolved to receive confirmation from staff to the committee that the current status of water mining for bottled water is prohibited in the Byron Shire.

Planning staff advise the Byron LEP 2014 current definition of rural industry prohibits this activity.

RECOMMENDATION:

That the committee note the report.

REPORT

The following resolution, relating to Effects of water mining in Byron and surrounding shires on groundwater resources, came from the Council Meeting of 28 May 2020:

20-244 Resolved that Council adopt the following Committee Recommendation(s):

Report No. 4.3 Effects of water mining in Byron and surrounding shires on groundwater resources

File No: I2020/298

Committee Recommendation 4.3.1

That Council:

1. Note that the October 2019 Independent review of the impacts of the bottled water industry on groundwater resources in the Northern Rivers region of NSW (Final Report - NSW Chief Scientist & Engineer - 31 October 2019; E2019/91097) fails to consider cumulative impacts of this expanding industry on groundwater and does not adequately consider non-water impacts such as traffic in local communities and proliferation of plastic bottles.
2. Receive confirmation from staff to the committee that the current status of water mining for bottled water is that it is prohibited in the Byron shire.
(Richardson/Hunter)

In consultation with the Manager Sustainable Development for Sustainable Environment & Economy (SEE) it is understood that under Byron LEP 2014 water mining for bottled water is not a permitted use in the RU1 and RU2 Zones. In terms of defining the activity it is considered that it fits within the definition of general industry and an industrial activity.

general industry means a building or place (other than a heavy industry or light industry) that is used to carry out an industrial activity.

5 **industrial activity** means the manufacturing, production, assembling, altering, formulating, repairing, renovating, ornamenting, finishing, cleaning, washing, dismantling, transforming, processing, recycling, adapting or servicing of, or the research and development of, any goods, substances, food, products or articles for commercial purposes, and includes any storage or transportation associated with any such activity.

10 Other definitions of Rural Industry, Extractive Industry or Mining would not apply to the activity due to the manner in which they are drafted.

15 **Rural industry** means the handling, treating, production, processing, storage or packing of animal or plant agricultural products for commercial purposes, and includes any of the following—

- (a) agricultural produce industries,
- (b) livestock processing industries,
- (c) composting facilities and works (including the production of mushroom substrate),
- (d) sawmill or log processing works,
- 20 (e) stock and sale yards,
- (f) the regular servicing or repairing of plant or equipment used for the purposes of a rural enterprise.

25 **extractive industry** means the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, tunnelling or quarrying, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or separating, but does not include turf farming.

30 **extractive material** means sand, soil, gravel, rock or similar substances that are not minerals within the meaning of the [Mining Act 1992](#).

mine means any place (including any excavation) where an operation is carried on for mining of any mineral by any method and any place on which any mining related work is carried out, but does not include a place used only for extractive industry.

35 .
mining means mining carried out under the [Mining Act 1992](#) or the recovery of minerals under the [Offshore Minerals Act 1999](#), and includes—

- a) the construction, operation and decommissioning of associated works, and
- 40 b) the rehabilitation of land affected by mining.

Water is not listed for the purposes of the Mining Act 1992 as a “Mineral”.

45 It is noted Tweed Shire Council have amended the Tweed LEP 2014 to permit ground water extraction for commercial purposes under Clause 7.15. The provisions nominate the activity as an industry and limit or enable the activity to only six properties in the Shire. The Byron LEP 2014 has no planning clauses of a similar nature. The clause state:

Tweed Local Environmental Plan 2014

Current version for 29 May 2020 to date (accessed 3 June 2020 at 16:57)

[Part 7](#) > [Clause 7.15](#)



7.15 Industry—groundwater extraction, etc

- (1) This clause applies to development for the purpose of industry, being a building or place at which groundwater is extracted, handled, treated, processed, stored or packed for commercial purposes.
- (2) Development to which this clause applies is prohibited on land to which this Plan applies, except for the following land—
 - (a) Lot 1, DP 735658, being land at 477 Uriup Road, Uriup,
 - (b) Lots 1 and 2, DP 883113, being land at 2574 Kyogle Road, Kunghur,
 - (c) Lot 121, DP 1111869, being land at 101 Bryens Road, Nobbys Creek,
 - (d) Lot 5, DP 1206755, being land at 10–20 Edwards Lane, Kynnumboon,
 - (e) Lot 1, DP 593157, being land at 64 Geles Road, Upper Burringbar,
 - (f) Lot 3, DP 815475, being land at 350 Rowlands Creek Road, Rowlands Creek.
- (3) Before granting consent to development to which this clause applies, the consent authority must—
 - (a) consider any impact of the proposed development on—
 - (i) natural water systems, and
 - (ii) the potential agricultural use of land, and
 - (iii) groundwater dependent ecosystems, and
 - (b) be satisfied that the proposed development incorporates appropriate measures to avoid, minimise or mitigate any impact set out in paragraph (a).



- 5 Council has previously approved a water bottling plant under DA 10.2011.530.1 at Clunes in 2012. The use was considered under Byron LEP 1988 at the time as a permitted use.

Report No. 4.3 **Byron STP Condition 9. Additional Load - Quarterly report**
Directorate: Infrastructure Services
Report Author: Vivianne Lins, Environmental Planner
 Dean Baulch, Principal Engineer, Systems Planning
5 **File No:** I2020/1011

Summary:

This report is for Council information and reviews compliance with the Byron Bay Sewerage Augmentation Scheme - Conditions of Approval (2002). Condition 9(iii) requires that sufficient reuse (recycled water) capacity be available before the acceptance of any additional load at the treatment plant. On 27 February 2020 Council resolved to have this reported to the committee on a quarterly basis.

In the years since the approval was granted (2002 to date), 2,478 Equivalent Tenements (ET) have been approved, resulting in an additional load of 1.46 ML/day at the treatment plant. The current day operating capacity of the reuse system equates to 2.02ML/day or 3,427ET. Therefore the reuse system provides sufficient capacity to accommodate the additional load as defined in the Conditions of Approval

RECOMMENDATION:

That the report is noted.

REPORT

From Council's ordinary meeting of 27 February 2020:

20-054 Resolved that Council adopt the following Committee Recommendation(s):

Report No. 4.3 Condition 9. Additional Load at Byron STP
 File No: I2019/2155

Committee Recommendation 4.3.1

.....

3. That staff continue to monitor compliance to Condition 9 and report quarterly to WWSAC and Council.

....

(Richardson/Lyon)

The relevant section from Condition 9 of the Approval is Condition 9(iii), which states, "Additional load at West Byron STP will not be accepted until: availability of sufficient reuse capacity to accommodate 100% of the volume of treated effluent generated by the additional load".

"Additional Load" is defined in the report as "any sewage load resulting from development consents after the date of this approval". Date of Approval is 9 December 2002.

From December 2002 through to the end of June 2020, 2,478 additional sewer Equivalent Tenements (ET) have been approved by Council through development consents. This additional load (including approvals for secondary dwellings) was also adjusted (reduced) based on development applications that have been withdrawn or refused during the same period. Further adjustment will be required for future reports relating to approved developments that have expired (not been started within the time limitations of the approval). Figure 1 shows the annual approved additional ET load from 2002 to 2020.

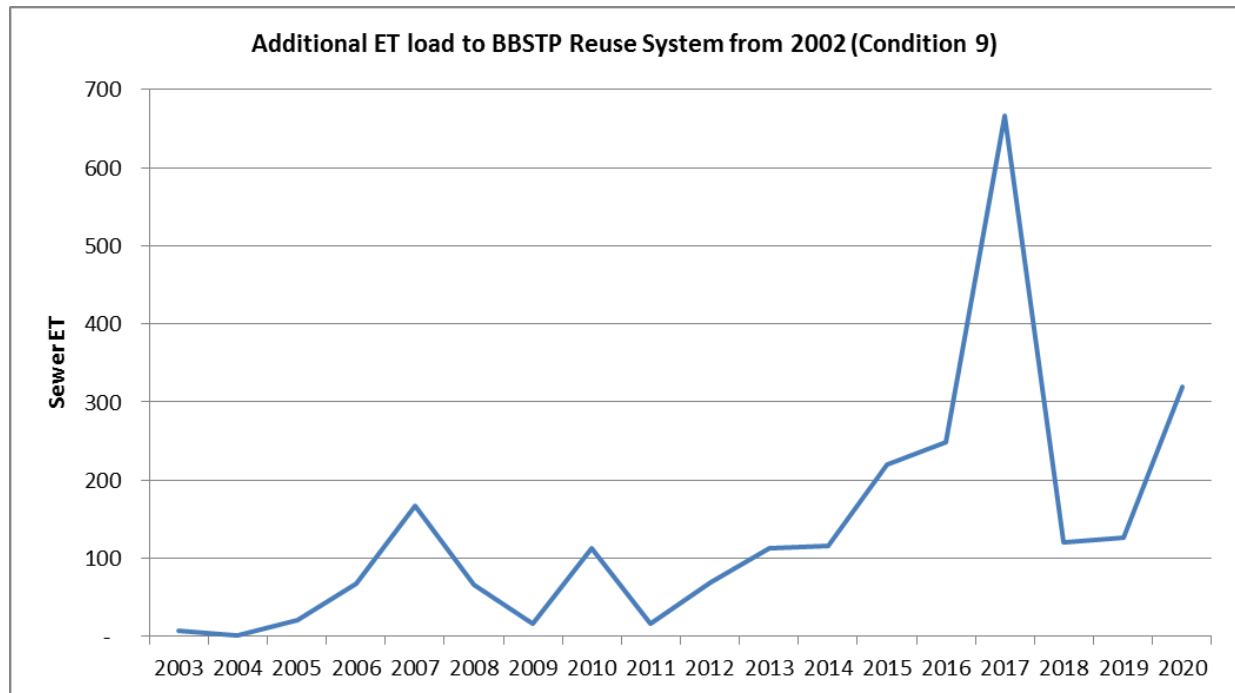


Figure 1 - Equivalent Tenements approved by Council

The current day operating capacity of the reuse system to produce treated effluent is 26 Litres per second or 2.25ML/day less 10% of water for filter backwash purposes equates to 2.02ML/day or 3,427ET.

	Current Approved ET	Available Capacity (ET)
Condition 9(iii) Additional Load Calculation	2,478	-
Current effluent reuse system capacity 2020	3,427	949

Therefore, the existing reuse system provides sufficient capacity to accommodate the additional load as defined in the Conditions of Approval.

Committee Report Tracking Summary: Condition 9. Additional Load at Byron STP	Current Approved ET	Difference (ET)
30 January 2020	2,408	-
30 July 2020	2,478	70

Report No. 4.4 **Inflow and Infiltration - quartely update**
Directorate: Infrastructure Services
Report Author: Jason Stanley, Inflow & Infiltration Project Manager
File No: I2020/1062

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Summary:

10 The Byron Shire Council Inflow and Infiltration (I&I) project involved two independent projects that were both successfully awarded to civil contractor "Interflow".

15 Despite the presence of the COVID-19 viral pandemic and the imposed limitations by the Australian and state Governments, measures and contingencies were put in place to ensure that these projects could continue in a safe and timely manner.

20 The rectification of the highest risk assets in sewer catchment 4001 in the Mullumbimby CBD are almost complete with the exception of maintenance holes that are awaiting the installation of protective liners to be installed.

25 The next highest risk sewer catchments as determined by the sewer catchment risk profile were found to be 3002 and 5012 in Byron Bay and Ocean Shores. The condition assessment of these two catchments is almost complete. Final reporting and recommendations from engineering consultancy Willow and Sparrow will be finalised and submitted by the end of August.

25

RECOMMENDATION:

That the committee note the report

30

REPORT**1. Introduction**

This report will provide an update on the status of the two Inflow and Infiltration projects that have been progressing through the second half of FY19/20. These projects include the rectification of the high risk assets within sewer catchment 4001 in the Mullumbimby CBD and the condition assessment of the mains and maintenance holes (MHs) in sewer catchments 3002 and 5012 in Byron Bay and Ocean Shores.

2. Background

In 2019, there were a number of gravity sewer mains identified for renewal in the Mullumbimby 4001 sewer gravity catchment without reasonable justification to warrant the budget for their replacement. The Utilities team undertook the assessment of this catchment to confirm the condition and subsequently assign a risk score against each of the gravity sewer and stormwater mains. The poor condition of both networks that was identified by these investigations have led Byron Shire Council to initiate a proactive approach to the ongoing management of the gravity sewer network. At this stage, budget is yet to be assigned to the proactive asset management of the stormwater network.

Byron Shire Council has committed a total budget of \$5M over a five year period (FY19/20 – 24/25) to ensure that the gravity sewer networks integrity and function are maintained through the prioritised condition assessment and rectification programs.

3. Rectification Works**3.1 Mullumbimby (Sewer)**

Following the condition assessments that were undertaken within the 4001 gravity sewer catchment, refer to Figure 1 below, the highest risk assets were identified and packaged up for rectification/renewal. This scope included:

- Structural relining of 27 gravity sewer mains
- Rectification of 18 gravity sewer mains
- Rectification of 22 gravity sewer maintenance holes
- Rectification of 9 stormwater culverts
- Rectification of 7 stormwater maintenance holes

Civil contractor Interflow has completed all of the above works apart from the installation of protective liners on several sewer MHs due to the failure of the control box on the lining machine that controls the mix ratio of the two part epoxy.

Both Interflow and council have agreed to postpone this portion of the works to wait for the arrival of the replacement control box from the United States to ensure that the optimal ratio is applied to the MHs. These works are expected to be completed by the end of August.

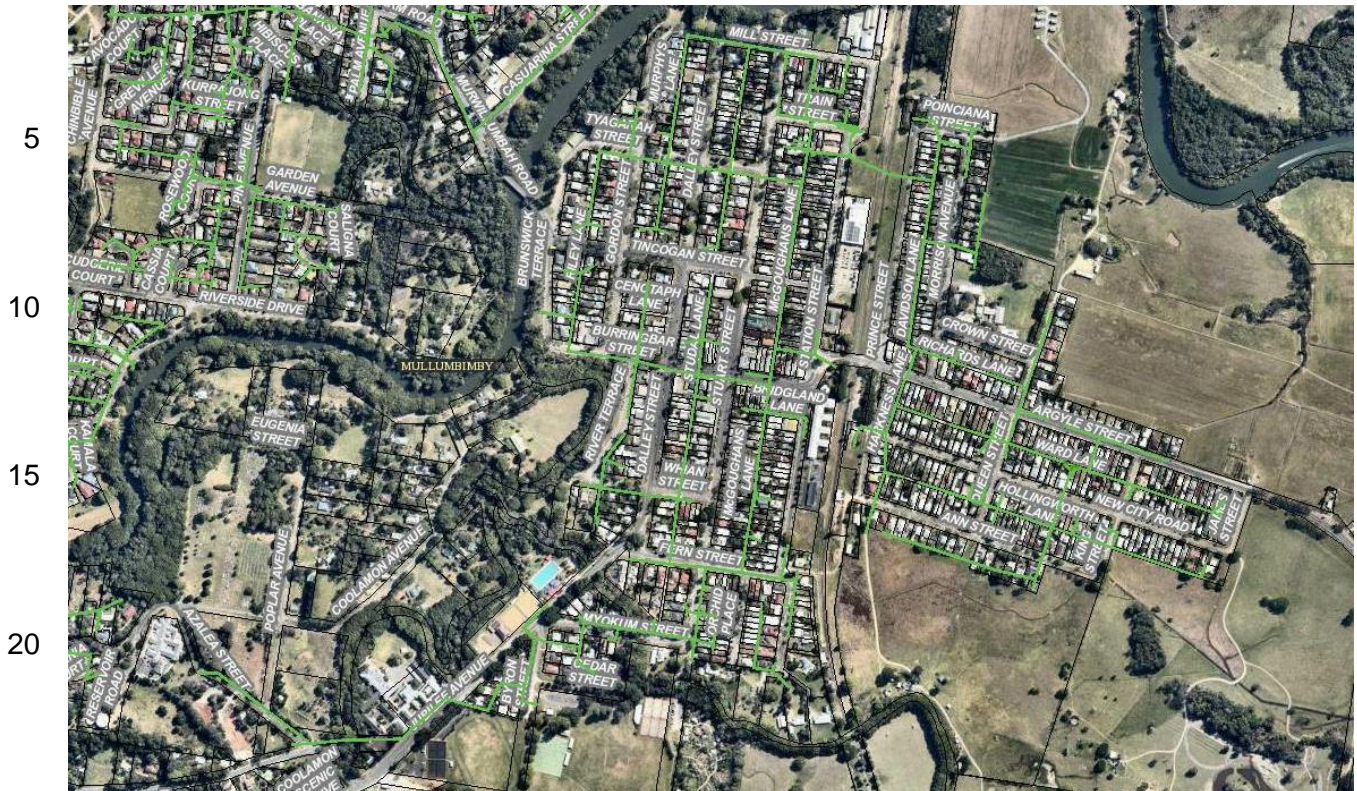


Figure 1 – Mullumbimby 4001 Sewer Catchment, Various Rectification

3.2 Mullumbimby (Stormwater)

In addition to the above rectification scope, the stormwater asset management team had previously allocated a budget of \$300,000 for FY19/20 to renew the highest risk assets as determined by the condition assessments that were undertaken in Mullumbimby's 4001 sewer catchment.

Willow and Sparrow had commenced some high level modelling based on the limited information that was available and identified a prudent way forward. To eliminate the risk associated with replacing mains that may need to be upgraded, a detailed modelling assessment was proposed to be completed prior to undertaking replacement works to ensure that mains are replaced in a diameter that is required to adequately service the catchments needs.

Unfortunately, due to the onset of COVID-19, the budget that was initially assigned to rectifying these high risk stormwater assets was withdrawn for other council priorities. At this stage, it is unclear if or when budget will be assigned to enable the rectification of this critical infrastructure that is in very poor condition.

4. Assessment Works

4.1 FY19/20

The sewer risk analysis model was utilised to identify the next highest risk sewer catchments after the Mullumbimby 4001 catchment. The model identified that the next highest risk gravity sewer catchments were 3002 and 5012 in Byron Bay and Ocean Shores respectively. These catchments total a length of 22.65km, refer to Figures 2 and 3 below for the locality of each catchment.



Figure 2 – Byron Bay 3002 Sewer Catchment, CCTV Works

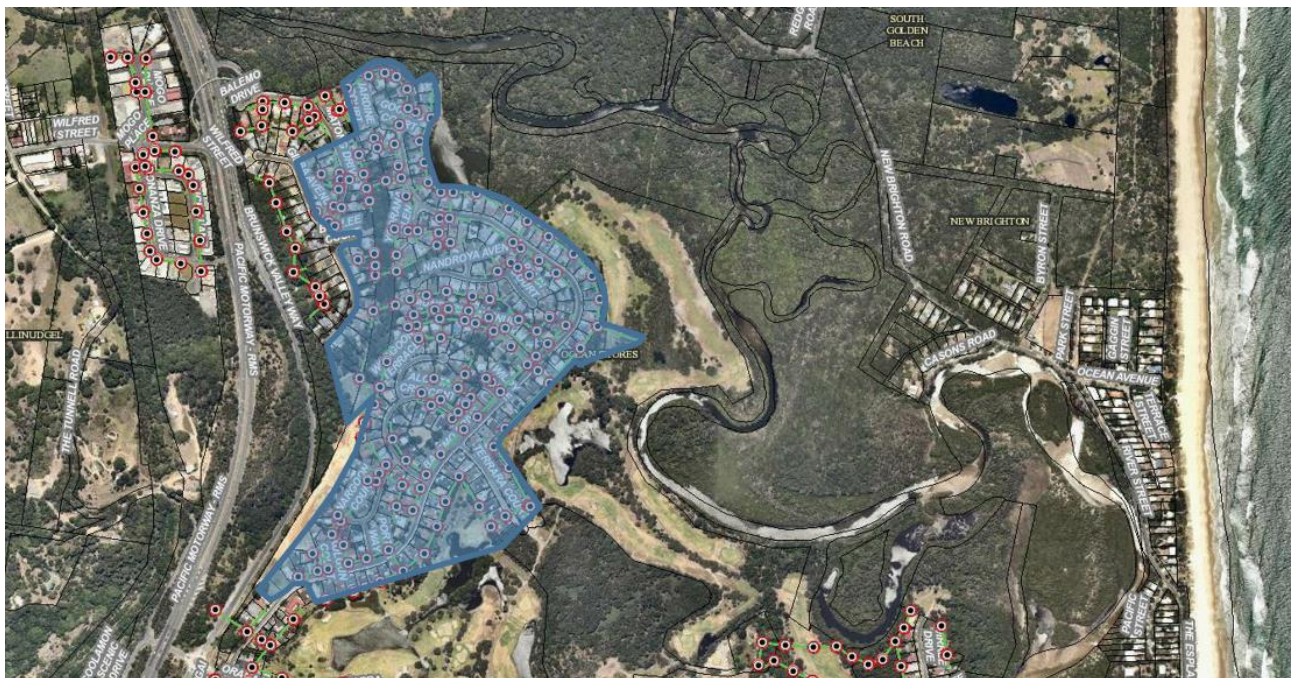


Figure 3 – Ocean Shores 5012 Sewer Catchment, CCTV Works

4.2 Update

The CCTV works for both of these catchments was awarded to civil contractor Interflow who commenced the assessments in Catchment 3002 in early March 2020. Interflow and Willow and Sparrow have all but completed the sewer main CCTV inspections and sewer MH assessments apart from where MHs are buried beneath road surfaces, gardens, and structures. The Byron Shire Council sewer maintenance teams have been successful in uncovering a number of buried MHs and are currently uncovering buried MHs within the road pavement with the assistance of

traffic control. It is anticipated that the remaining sewerage mains and MHs left to be assessed will be completed by the end of August.

4.3 Preliminary Findings

With approximately 90% of the assessments being completed by Interflow and about 80% reported on by Willow and Sparrow, it is anticipated that rectification works similar to that identified below in Table 1 will be the result from these condition assessments.

Table 1 – Anticipated Outcome from Assessments

Catchment	3002	5012
MAINS		
Total number	350	260
Number requiring rectification*	150	63
Rectification cost	\$565k	\$110k
MHs		
Total number	262	159
Number requiring rectification*	124	92
Rectification cost	\$300k	\$55k
Total rectification cost		
	\$865k	\$165k

*It should be noted that rectification works vary substantially. The total rectification costs have been interpolated from the average rectification cost estimate for the reports that have been completed to date by Willow and Sparrow.

4.4 Budget

Interflows timeframe has been extended due to the fact that various MHs have been inaccessible due to being buried beneath gardens, structures, and road pavements.

The Council sewer crew have been assisting with locating and making these MHs accessible, however it is anticipated that budget will need to be carried over to FY20/21 to account for the additional CCTV and MH assessments that remain to be completed.

5. Ongoing Assessment

Through the employment of the sewer risk model, the next highest risk catchments were identified as 3005 in Byron Bay, 4002, 4003, and 4004 in Mullumbimby, and 5009 in Ocean Shores.

These catchments are proposed to be assessed in FY20/21 and total a length of 29.2km which in conjunction with the MH assessments and associated reporting is anticipated to cost in the order of \$500k.



Figure 4 – Byron Bay 3005 Sewer Catchment



Figure 5 – Mullumbimby 4002 Sewer Catchment

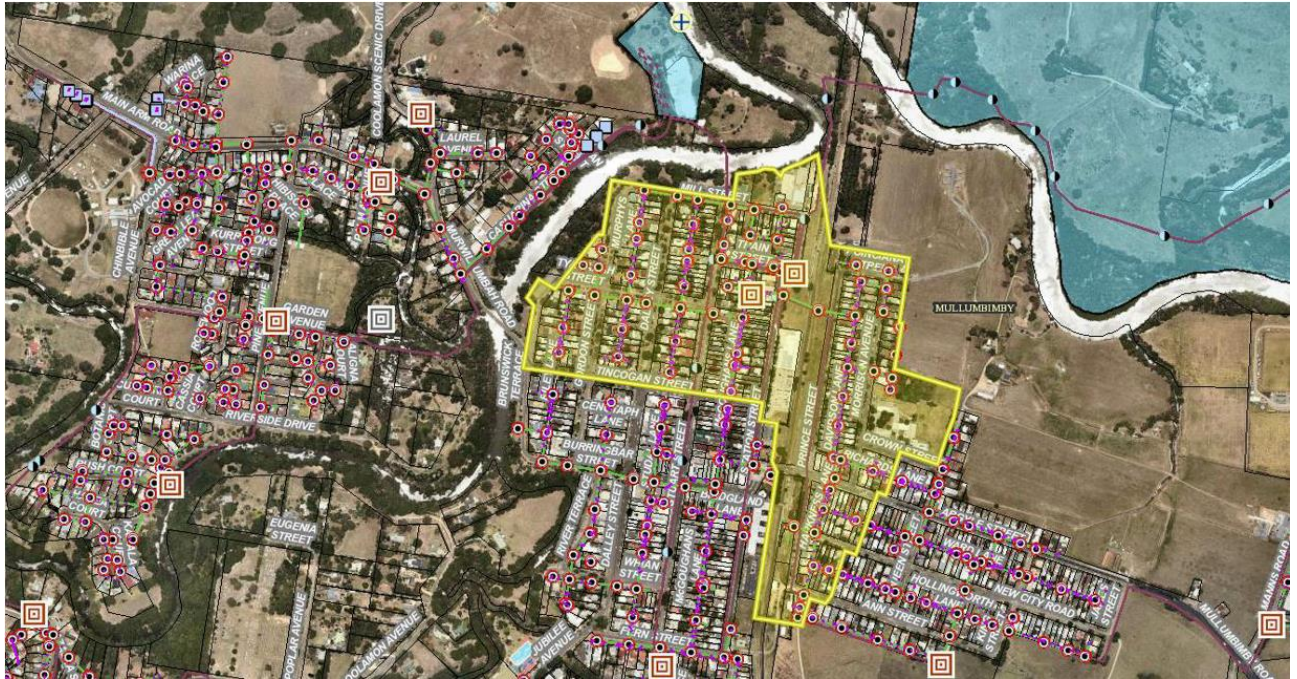


Figure 6 – Mullumbimby 4003 Sewer Catchment



Figure 7 – Mullumbimby 4004 Sewer Catchment

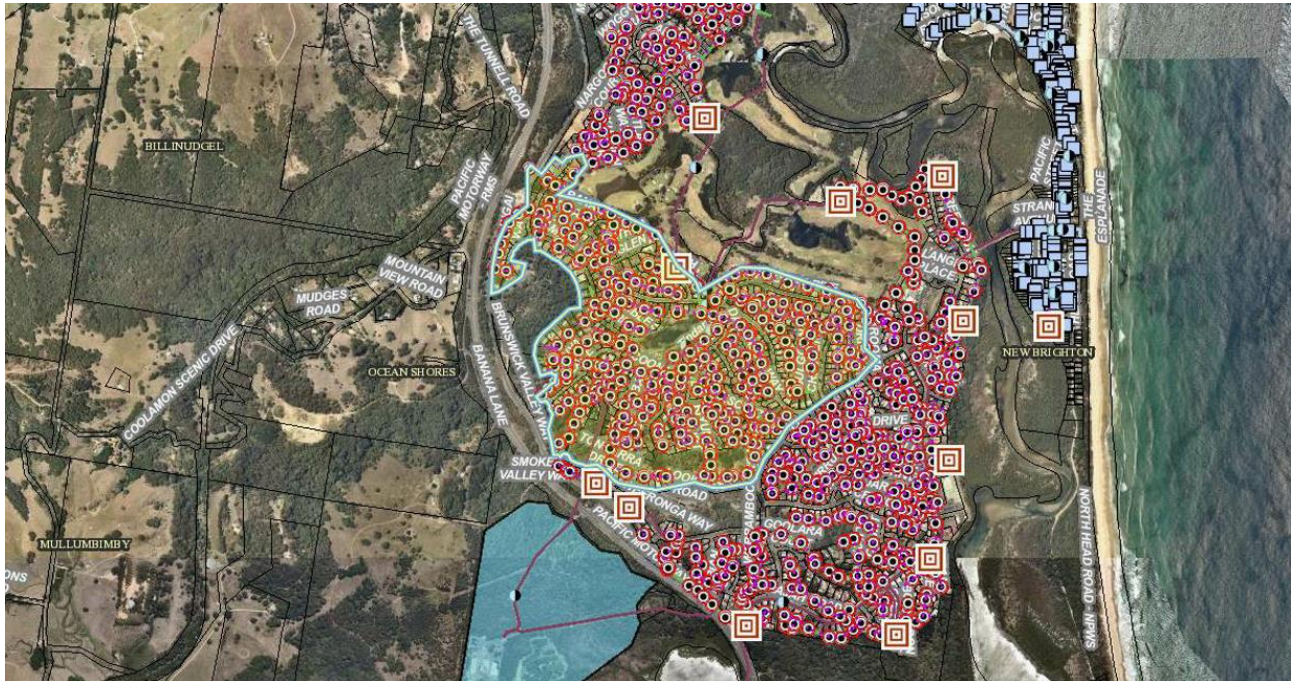


Figure 8 – Ocean Shores 5009 Sewer Catchment

5 6. Conclusion

The results from the recently initiated Inflow and Infiltration project are adding significant asset life to the sewer network.

10 Various issues throughout the networks highest risk catchments are being cost effectively identified and rectified to maintain the networks capacity whilst limiting the risk of overflows and expensive reactive rectification works.

15 It is anticipated that the reporting for the FY19/20 assessments in sewer catchments 3002 and 5012 will be completed in August.

It is likely that the rectification works that are required in these two catchments will be scoped and tendered in October giving the successful contractor ample time to complete the works prior to June 30, 2021.

20 It should be noted that Council's sewer operational staff and Willow and Sparrow have already commenced the assessment of the MHs for the FY20/21 sewer catchments. This is so that buried or inaccessible MHs can be identified early on and rectified prior to the CCTV contractor requiring access. This saves re-work and improves the efficiency of the project as a whole.

Report No. 4.5 **Nutrient Loading in the Belongil Update**
Directorate: Infrastructure Services
Report Author: Bryan Green, Water Sewer Systems Environment Officer
File No: I2020/1078

5

Summary:

- 10 This report is in response to questions raised by the Waste and Water Sewage Advisory Committee, and subsequent recommendation that a report be submitted to Council to address Resolution 20-243.

RECOMMENDATION:

That the Committee note the update provided to resolution 20-243 in relation to nutrient loading in the Belongil catchment.

15

REPORT

This report provides an update to the questions raised by the Waste and Water Sewage Advisory Committee, and subsequent resolution (20-243) that a report be submitted to Council. Each of the points from the resolution are addressed below:-

Condition 11

1. *That Council note that:*

- a) *for the twelve-month period 27 April 2017 to 26 April 2018 Total Nitrogen (TN; monitored as required in Condition 11 of Council's approval under its Resolution 02-1329 of December 2002) released to Belongil Creek was 1,564 kg and that this exceeds:*
 - (i) *the allowable discharge of 1,500kg TN; and*
 - (ii) *the 80% threshold under which an investigation is triggered.*
- b) *the Condition requires this monitoring be done on a rolling two-month window, based on weekly sampling.*
- c) *the Condition requires Council to investigate feasible management strategies to reduce loads below 80%.*
- d) *the Condition further requires Council to discuss appropriate courses of action to prevent further exceedances.*

Council staff are currently undertaking a review of the monitoring requirements in Condition 11 of Council's approval under its Resolution 02-1329 of December 2002. This review will take approximately 6 months to complete.

Nutrient Loads Sampling

2. *That Council sample nutrient loads weekly or better, as required by Consent Condition 11. 3. That Council investigate all feasible management strategies to reduce loads below 80%, including strategies already under way such as:*
- a) *Biostem pellets for removing sludge and therefore possibly nutrients, and*
 - b) *vetiver grass [increase sampling downstream of the trial planting to assess the grass's ability to reduce nutrients].*

Council staff are currently undertaking a review of the sampling analysis plan (SAP) in relation to nutrient loads from discharge points from all STP's in the Shire. This review will take approximately 4 months to complete.

Management Strategies to Reduce Nutrient Loads

3. *That Council investigate all feasible management strategies to reduce loads below 80%, including strategies already under way such as:*
- a) *Biostem pellets for removing sludge and therefore possibly nutrients, and*
 - b) *vetiver grass [increase sampling downstream of the trial planting to assess the grass's ability to reduce nutrients].*

Council staff engaged AWC and Water Quality Solutions to advise about the viability to use Biostem pellets for removing sludge and therefore, possibly nutrients from the treated effluent water column within the Byron Wetlands.

- a) *Water Quality Solutions experts provided the following advice after an on-site meeting held on July 7 with BSC officers and AWC Consultants:*

“Pellets were not formulated to work on the water column, but rather directly with the sediment layer. They will primarily reduce levels of organic content, such as phosphorous and nitrogen, from the sediments. However, this sedimentary process could still help limit overlying water column phosphorous (P) and nitrogen (N) levels. This process may include assimilating, or otherwise making nutrients such as P and N unavailable to transfer into the water column from the sediment layer.”

- Council staff are currently evaluating the cost and value of implementing a trial with the Biostem pellets.

b) Further investigation into the use of Vetiver Grass as a suitable wetlands species as well as an onsite visit to Oxley Creek, Tweed Shire, where Vetiver was used very successfully as a bank stabiliser, it was concluded Vetiver was not suitable for wetland application for the following reasons:

- Although Vetiver Grass is well suited in removal of nutrients from the water column it does not survive well when the root system is submerged under water for long periods of time.
- Furthermore, the root systems can reach up to 3-6m long, which in turn would penetrate the clay lined constructed wetlands thereby potentially triggering leakage into the surrounding groundwater system.
- Planting of native wetlands species that are thriving in their current habitats, such as Juncus. Spp, Lepironia spp. etc will commence once weather conditions are suitable. A vegetation plan will be developed and implemented to ensure appropriate wetland coverage to improve nutrient uptake and suspended solid extraction from the water column as well as to prevent short circuiting.

EPA #4 Flow Results

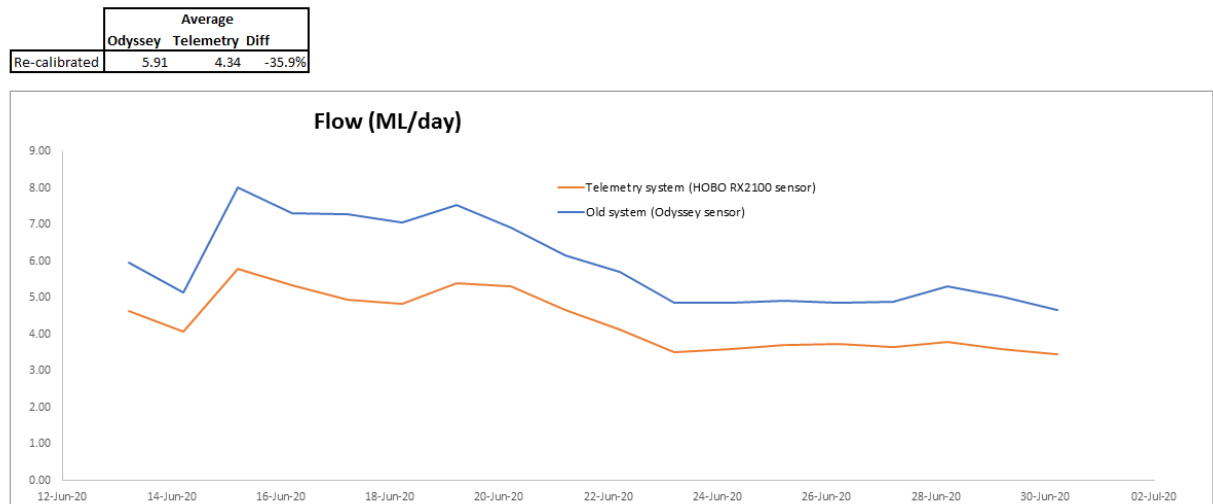
4. That Council continue testing its flow meter newly installed at EPA location #4 to assess accuracy and reliability of flow results and, once performance is confirmed or by the end of June 2020 (whichever is sooner) these results be reported to the next meeting (scheduled for 30 July) of the Water, Waste and Sewer Advisory Committee and published on Council's Water & Sewer information website.

Australian Wetland Consultancy were engaged to improve flow monitoring equipment at the Byron Wetlands discharge point (EPA 4). A HOB0 RX2100, a OneTemp product manufactured in South Australia, is a flow measuring device used extensively in the agricultural industry to measure flow in water supply and drainage channels, utilises barometric pressure probe technology to measure depth in the water column, in conjunction with an existing v-notch weir device, to calculate flows from EPA 4.

The new OneTemp telemetry flow meter system was installed at EPA 4, Byron Wetlands discharge point in mid-April 2020.

There was an initial error in positioning of the new telemetry system (HOB0 RX2100) barometric sensor that calculates the flows for EPA 4. The positioning error of the sensor resulted in a 25% higher flow values in comparison with the old system (Odyssey sensor).

Following a series of investigations and troubleshooting, the sensor was recalibrated on the 12th of June 2020. The initial results, as shown below, suggest flows are 35% lower when compared with the old system, largely due to the improved accuracy of the new sensor and higher resolution measurements.



However, a longer more extensive data set, including periods of heavy rainfall events, would ensure the accuracy of the new system. Once this data has been collected and assessed, it will be uploaded to the Council's Water & Sewer information website. Committee members can either be notified by email or other suitable means when this is completed or this data can be provided to the next committee meeting (29 October 2020) pending rainfall.

Mitigation during high rainfall

5. That Council recognise:
 - a) that it is impossible to mitigate against increased nutrient loads during high rainfall events and
 - b) that rainfall periods longer than a month may cause breaches of Consent Conditions 11.

Noted.

STRATEGIC CONSIDERATIONS

Community Strategic Plan and Operational Plan

CSP Objective	L2	CSP Strategy	L3	DP Action	L4	OP Activity
Community Objective 1: We have infrastructure, transport and services which meet our expectations	1.5	Provide continuous urban water and sewerage services within the Shire	1.5.2	Ensure Wastewater Treatment Plants are maintained in accordance with operating licences		There is no Operational Plan activity identified for this work.

Legal/Statutory/Policy Considerations

Compliance with Byron Sewerage Treatment Plan EPA Licence 3404.

Financial Considerations

Not applicable.

Consultation and Engagement

Consultation with the Water, Waste, and Sewer Advisory Committee.