

NOTICE OF MEETING



TRANSPORT AND INFRASTRUCTURE ADVISORY COMMITTEE MEETING

A Transport and Infrastructure Advisory Committee Meeting of Byron Shire Council will be held as follows:

Venue	Conference Room, Station Street, Mullumbimby
Date	Thursday, 30 January 2020
Time	9.00am

Phillip Holloway
Director Infrastructure Services

I2020/93
Distributed 23/01/20

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

TRANSPORT AND INFRASTRUCTURE 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 Transport and Infrastructure Advisory Committee Meeting held on 10 October 2019
- 3.2 Extraordinary Transport and Infrastructure Advisory Committee Meeting held on 3 December 2019

4. STAFF REPORTS

Infrastructure Services

- 4.1 Road Laser Condition Assessment - process and condition outcomes.....4
- 4.2 Open Spaces Asset Management Plan Communication Strategy8
- 4.3 Integrated Transport Management Strategy - Update..... 10
- 4.4 Stormwater Assets Management 12

STAFF REPORTS - INFRASTRUCTURE SERVICES

Report No. 4.1 **Road Laser Condition Assessment - process and condition outcomes**
Directorate: Infrastructure Services
5 **Report Author:** Blyth Short, Asset Management Coordinator
File No: I2020/30

10 **Summary:**

Council condition assesses the sealed roads using a laser profilometer system. This is a requirement for the transport infrastructure financial revaluation reporting requirements every 5 years. This vehicle drove each sealed road in the shire while collecting the road information.

15 As a result of the massive amount of data collected, it enables very accurate asset predictive modelling around road condition and the most appropriate treatments to apply. This modelling allows engineers to see the effects on road condition with different budget scenarios and the ability to create long term capital work outputs which then are ground truthed in the field.

20 The overall road network has improved since 2015 due to increased investment on the sealed roads and the increased number of road elements that were collected in 2019 laser condition assessment. However, significant long term investment is still required to maintain the road network condition.

25

RECOMMENDATION:

That the Road Laser Condition Assessment process is noted.

30

REPORT

Condition assessment process

5 Council condition assesses the sealed roads using a laser profilometer system. This is a requirement for the road financial revaluation reporting requirements every 5 years. This vehicle drove each sealed road in the shire while collecting the road information. The data is collected via a very expensive and specialised survey vehicle that consists of:-

- 10
- 8 cameras mounted on the roof, including 3D cameras
 - digital laser profilers
 - high accuracy differential GPS systems
 - digital imaging systems
 - equipment to measure road geometry (gradient, slope, curvature)
- 15
- ACD laser unit to measure pavement cracking
 - acquisition system
 - reference system to measure distance and links to councils road segments

20 Previous assessments collected roughness, rutting and texture data. This time the following 10 road condition elements were collected:

- 25
1. Roughness
 2. Flushing/bleeding
 3. Potholes
 4. Stripping
 5. Rutting
 6. Block cracking
 7. Surface texture
 8. Crocodile cracking
 9. Patch repairs
 10. Transverse cracking
- 30

35 As a result a massive amount of data enables council to create very accurate predictive modelling around road condition and the most appropriate treatments to apply. This modelling allows engineers to see the effects on road condition with different budget scenarios and the ability to create long term capital work outputs which then are ground truthed in the field.

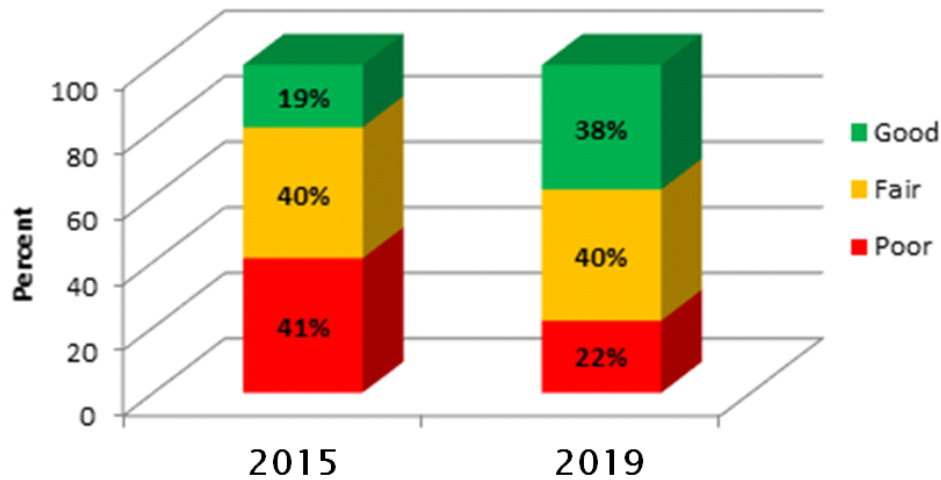
40 Additional asset condition information was collected included road signs, kerb and gutter and line marking condition. Video footage of all the sealed roads was also collected and is regularly used in the office for multiple projects which saves time not having to drive out to site.

45 Council performs this laser condition assessment on the sealed roads primarily as a part of the financial reporting requirement. This process allows for reliable and repeatable data comparisons over time, removes human judgement and is cost efficient.

Condition outcomes

50 The condition outcomes are below. The overall road network has improved due to increased investment on the roads and the increased number of road condition elements collected.

Sealed Roads
2015 vs 2019



Predictive Modelling

5 Council annually pays for predictive modelling software which provides the following:-

1. Capital works programs (over 10 years)
2. Optimises – allocates available funding in the optimal way to extend asset lives and improve service levels
- 10 3. Predicts long term funding – at desired levels of service
4. Scenarios - Compares different scenarios to demonstrate the impact of increased or decreased funding to inform capital investment decisions.
5. Informed decision making - enables Council to make fully open and transparent, scientific decisions for the community in regards to road renewals

15 Sealed road treatment types include reseals (capital), reconstructions (capital), pothole patching, heavy patching and crack sealing. For more information on these treatment types there are videos on council’s web site under Repairing Our Roads.

20 The council has received \$20million from the State Government over 4 years to go towards these road treatments. Additionally, the draft 20/21 General Fund for reseals is \$1.5million, crack sealing is \$34,000 and heavy patching is \$300,000. It does not include the potential grant funding from Fixing Local Roads or Fixing County Roads. This investment towards the sealed roads assets is at an all time high and should help the overall road network. However, it is worth noting that this investment has been modelled and does not hold / maintain the overall road network condition.

STRATEGIC CONSIDERATIONS

Community Strategic Plan and Operational Plan

CSP Objective	L2	CSP Strategy	L3	DP Action	L4	OP Activity
---------------	----	--------------	----	-----------	----	-------------

BYRON SHIRE COUNCIL

STAFF REPORTS - INFRASTRUCTURE SERVICES

4.1

Community Objective 1: We have infrastructure, transport and services which meet our expectations	1.1 Provide a road network which is safe, accessible and maintained to an acceptable level of service	1.1.2 Develop maintenance levels for road network infrastructure in line with Community Solutions Panel values (SP)	1.1.2.5 Undertake the transport infrastructure revaluation
--	---	---	--

Report No. 4.2 **Open Spaces Asset Management Plan Communication Strategy**
Directorate: Infrastructure Services
Report Author: Blyth Short, Asset Management Coordinator
File No: I2020/31

5

Summary:

10 The Open Spaces Asset Management Plan (OSAMP) – customer levels of service draft communication strategy has been prepared Attachment 1 (E2020/1191).

This report is to inform TIAC of the project and the Communication Strategy.

15 The results of the survey will be provided back to the committee later in the year.

The 28 day public exhibition period is planned for February 2020.

20

RECOMMENDATION:

That the draft Communication Strategy for Open Spaces Asset Management Plan (OSAMP) is noted.

Attachments:

1 Open Spaces Asset Management Plan Communication Strategy, E2020/1191

25

REPORT

This report is to inform TIAC of the project and the Communication Strategy attached. The results of the survey will be provided back to the committee.

5 The draft communication strategy has been prepared (E2020/1191) in readiness for the potential public exhibition period of February 2020.

The objectives of the communication strategy are to:-

- 10
1. Inform the broad community of the customer levels of service associated with the OSAMP and communicate via a wide variety of existing communication preferences.
 2. Consult the community about customer levels of service for open spaces.
 - 15 3. Involve the Transport and Infrastructure Advisory Committee to obtain specific feedback around Customer Levels of Service tables.

These objectives are in accordance with the NSW Office of Local Government.

The communication plan is to include:

- 20
- Survey interactive online map to measure customer levels of service
 - Emails survey to specific parties e.g. Sport field user groups etc.
 - Advertisements in Byron Shire Echo
 - E-news general
 - Media release
 - Social media
 - 25 • Display information in foyer and staff notice boards
 - Project Reference Group – Transport and Infrastructure Advisory Committee (TIAC)

STRATEGIC CONSIDERATIONS

30 ***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	1.2	Provide essential services and reliable infrastructure which meet an acceptable community standard	1.2.2	Develop infrastructure asset renewal and upgrade program in line with Community Solutions Panel values (SP)	1.2.2.1	Prepare an Open Space Asset Management Plan

Consultation and Engagement

35 As per E2020/1191 attached.

Report No. 4.3 **Integrated Transport Management Strategy - Update**
Directorate: Infrastructure Services
Report Author: Andrew Pearce, Traffic Engineer
File No: I2020/58

5

Summary:

10 The purpose of this report is to update Transport Infrastructure Advisory Committee (TIAC) on the progress of *the Integrated Transport Management Strategy* and request 2 extraordinary meetings of TIAC on the following dates:-

- Tuesday 3 March 2020
- Tuesday 19 May 2020

15

The purpose of the extra March meeting is to review the draft *Integrated Transport Management Strategy*.

20

The purpose of the extra May meeting is to preview the final report of the *Integrated Transport Management Strategy* prior to council adoption.

RECOMMENDATION:

That TIAC approve two extraordinary TIAC meetings to be held on Tuesday 3 March 2020 and Tuesday 19 May 2020.

25

REPORT

30 GTA Consultants (GTA) are currently writing the draft Integrated Transport Management Strategy report. This draft is based on the work undertaken to date, and the feedback provided from TIAC to date.

In summary, the following consultation steps have been undertaken so far by GTA with Council:

35

1. On 1st October 2019 GTA undertook an initial scoping workshop with council staff, TIAC and community stakeholders;
2. On 3rd December 2019 GTA participated in a workshop with TIAC to present their findings following this scoping and research phase;
3. TIAC members were asked to provide feedback to GTA following this workshop. This feedback was forwarded to GTA for consideration.
4. GTA are now preparing the Draft Integrated Transport Management Strategy Report.

40

In order to continue meeting the required deadlines it is requested to schedule two extraordinary TIAC meetings to be held on the following dates:

45

- Tuesday 3 March 2020
- Tuesday 19 May 2020

50

The March meeting would allow TIAC to review the draft report with the consultant present and provide subsequent feedback.

The May meeting would allow TIAC to review the final version prior to submission to Council for adoption on 25th June. The consultant may be present upon request.

5 It is also recommended to dedicate these extraordinary TIAC meetings to the Integrated Transport Management Strategy. Given the significance of this document each meeting is anticipated to take 1 ½ hours. This timeframe would help provide adequate time for presentation, discussion, questions and feedback.

10 The following is the proposed timeline to take the strategy to adoption:-

- 3 March – TIAC meeting - review draft strategy
- 3 March – TIAC minutes report to Manager
- 26 March - Council meeting - approve public exhibition of draft strategy
- 30 March to 30 April – public exhibition period
- 15 5 May - TIAC report to manager
- 19 May – TIAC meeting - review final draft strategy
- 1 June – TIAC minutes - report to manager
- 25 June - Council meeting - adopt strategy as per TIAC recommendation

20 **Key issues**

TIAC already have meetings scheduled for January 30th, April 30th, July 30th and October 8th.

25 The current timeline projects the project to be completed by July 2020.

The project is required to be completed by August 2020.

30 To meet the projected and required deadlines it is recommended to schedule the above two extraordinary meetings of TIAC.

Next steps

If approved, GTA will present the draft Integrated Transport Management Strategy report to TIAC during the meeting on Tuesday 3 March 2020.

35 Feedback will then be requested from TIAC and provided to the consultant.

The draft report will then be amended in accordance with the feedback received. This will form the final report to be previewed by TIAC on Tuesday 19 May 2020.

40 **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	1.3	Support, through partnership, a network of integrated sustainable transport options	1.3.1	Ensure an integrated and accessible transport network (SP)	1.3.1.1	Prepare an Integrated Transport and Movement Plan (ITMP)

45 **Consultation and Engagement**

Consultation has been undertaken as outlined above and will continue as the recommendations are adopted.

Report No. 4.4 **Stormwater Assets Management**
Directorate: Infrastructure Services
Report Author: Dean Baulch, Principal Engineer, Systems Planning
 James Flockton, Drain and Flood Engineer
5 **File No:** I2020/83

Summary:

10 Following a review of the 30 year capital works plan, it was identified that various gravity sewer assessments within the Mullumbimby area were scheduled for renewal over the coming years. It was agreed that condition assessments of both the gravity sewer and adjacent stormwater assets would be undertaken to verify whether these assets were in a state that warranted their renewal.

15 The assessments in Mullumbimby have since been completed and the findings identified that various assets are presenting a high risk to Council that should be remedied in a risk based manner. This report presents the findings of these assessments as well as identifying the proposed way forward with regards to the ongoing management of the gravity sewer and

20 stormwater network.

RECOMMENDATION:

That the Committee note the report and that a further report regarding funding of stormwater renewals will be presented to the next available meeting of TIAC for consideration.

Attachments:

- 25
- 1 Mullumbimby Catchment 4001 - Sewer Main Inflow and Infiltration Report - Willow and Sparrow, E2019/69598
 - 2 Mullumbimby Catchment 4001 - Sewer Maintenance Hole Inflow and Infiltration Report - Willow and Sparrow.pdf, E2019/80301
 - 3 Mullumbimby Catchment 4001 - Storm Water Main Inflow and Infiltration Report - Willow and Sparrow, E2019/71131
 - 4 Final Stormwater MH condition assessment report.pdf, E2019/80295

35

REPORT

1. Introduction

5 This report provides a summary of the findings relating to the stormwater infrastructure that is located within sewer catchment 4001 in Mullumbimby. The intent of this report is to provide a summary of the findings from the condition assessment works within Mullumbimby, present the subsequent recommendations from these assessments and present a proposal for the ongoing management of the remainder of the stormwater network.

10

2. Background

Inflow and Infiltration (I&I) is the process of groundwater and stormwater entering into the sewer network.

15

Following a review of the 30 year capital program, it was identified that 40 gravity sewer mains within the Mullumbimby catchment were proposed for renewal within the 2022-2031 horizon. This prompted some flow monitoring of the sewer network to identify if I&I was an issue which is a high level indication of the networks condition. Flow monitoring identified that I&I was evident, so detailed investigations were undertaken on both the gravity sewer and stormwater network due to efficiencies to individually determine each assets overall condition and consequence of failure scores to establish each assets overall risk rating.

20

3. Scope

25

3.1. Location

The extent of the project was encompassed by a small sewer pump station catchment (SPS4001) within Mullumbimby including all of the stormwater infrastructure encompassed by the same catchment. Mullumbimby is a low lying town that is located adjacent to the Brunswick River which is subject to high rates of I&I and flooding during rain events.

30

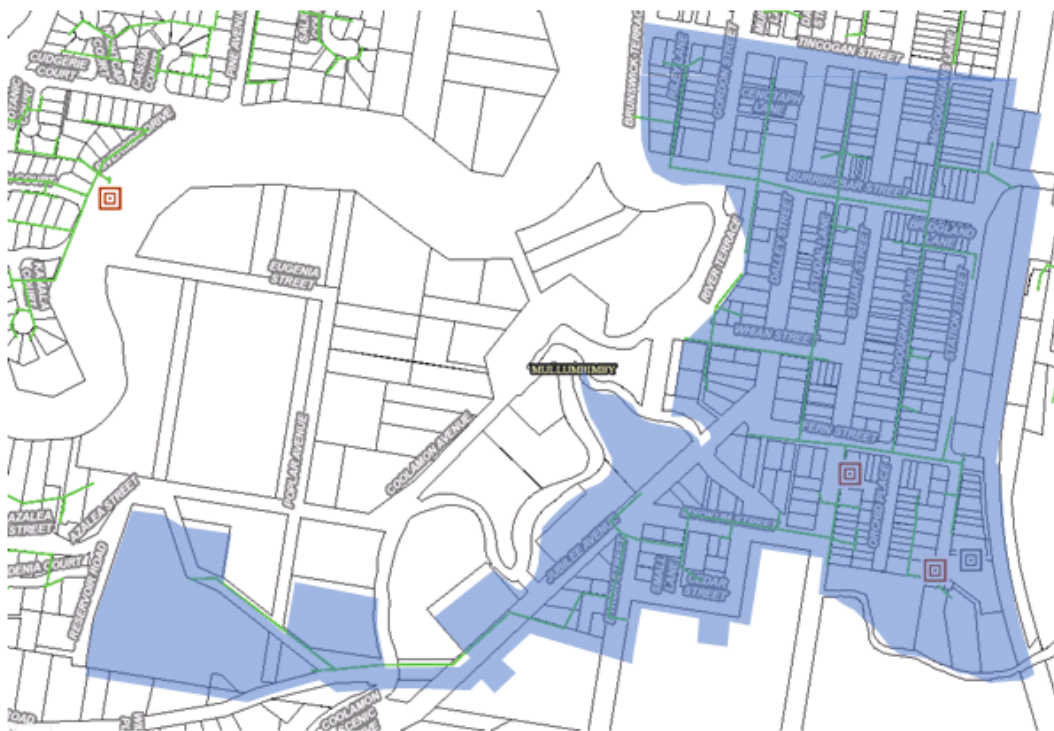


Figure 1 – Project Scope Extent

3.2. Condition Assessment

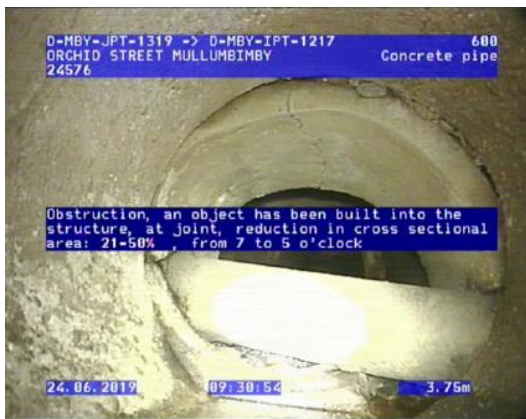
Following the conclusive data obtained from the flow monitoring that identified I&I as an issue for this portion of Mullumbimby's sewage catchment, detailed assessments of both the sewage and stormwater network were undertaken. These assessments consisted of CCTV of sewer mains and stormwater urban mains, visual inspections of maintenance structures, as well as smoke testing to identify potential points of entrance and incorrect stormwater connections to sewer mains.

The findings from the above assessments have all been documented in detailed condition assessment reports which can be found on HPE content manager (E2019/69598, E2019/80301, E2019/71131, and E2019/80295). These condition assessment reports provide a summary of each assets condition score. Each asset was assigned a consequence of failure based on the potential impact of the asset's failure and subsequent repair/replacement which then allowed an overall risk rating to be assigned. With these risk scores being considered, capital renewal and minor rectification works have been prioritised as well as a return schedule for the future assessment of each asset.

4. Mullumbimby Assessment Findings

4.1. Overall Asset Risk

In total there were 109 sewer mains and 107 stormwater urban mains that were assessed including the associated stormwater urban junctions. It was apparent through the development of the condition assessment reports that the stormwater urban mains and sewer mains that were initially constructed in the 1940s and 1960s respectively were subject to significant deterioration and had not been consistently maintained. Below are some images of the existing stormwater urban mains that were assessed.



Pipe penetrating stormwater urban main



Roof of stormwater urban main collapsing



Major root intrusion obstruction



Major cracking and radial deformation



Major cracking and radial deformation



Defective repair with a street sign

Figure 2 – Stormwater Urban Main Condition

Figure 3 presents the overall risk score summary for both the stormwater urban mains and sewer mains.

5

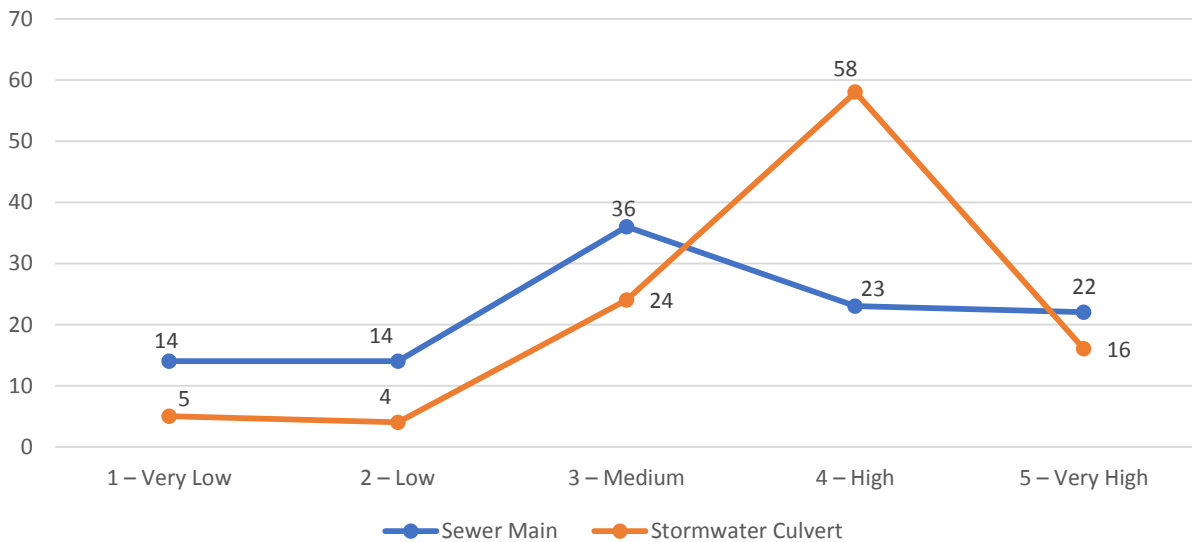


Figure 3 – Risk Score Summary

10 From Figure 3, it can be determined that 41% of the sewer network and 69% of the stormwater network within the project extent is either a high or very high risk of failure. It should be noted that these results are not considered to be representative of the entire catchment. However, 68km (35%) of the stormwater network has an average age in excess of 40 years. It is likely that this infrastructure needs maintenance and potentially rectification works to maintain the assets integrity and function.

15

The risks that BSC is responsible for managing include but are not limited to the following:

- a) Pipe collapse resulting in expensive emergency rectification works
 - b) Increased on-going sewerage operational costs due to capturing, transferring, and treating both groundwater and stormwater that infiltrates the sewer network
 - c) Poor conveyance of stormwater that can lead to flooding, resulting in damage to property and road infrastructure
 - d) Extensive infiltration into the stormwater network that results in the migration of supportive material beneath road pavements which can result in the undermining of pavements resulting in their collapse (sink hole).
- 20
- 25

4.2. Proposed Rectification Works

5 A summary of the proposed renewal and minor rectification works for FY19/20 are noted in Table 1 below with the overall conceptual construction cost estimate for each asset type.

Table 1 – Proposed Rectification Works FY19/20

Asset Type	# Assets Assessed	# Assets to Rectify	Nature of Scope	Estimated Cost (±20%)
Gravity sewer main	109	26	Renewal	\$400,000
		20	Rectification / maintenance	\$40,000
Sewer MH	92	20	Rectification / maintenance	\$50,000
Stormwater urban mains	107*	21	Renewal	\$580,000
		9	Rectification / maintenance	\$20,000
Stormwater MH	24	7	Rectification / maintenance	\$5,000
Sewer Subtotal				\$490,000
Stormwater Subtotal				\$605,000
TOTAL				\$1,095,000

*The assessment of only 92 stormwater mains could be completed due to obstructions

10 In addition to the above proposed rectification works which are deemed urgent, there are various other assets within this catchment that have been assessed that will require renewal in the subsequent years subject to budget availability and prioritisation against assets within other catchments.

15 A budget for the necessary rectification of the highest priority stormwater urban mains within Mullumbimby has not yet been established. A history of insufficient maintenance due to a competing road pothole maintenance budget means that this network requires increased budget to gather condition assessment information to commence prioritised maintenance and/or

20 rectification/replacement works on this essential infrastructure. This proposal is in line with the Transport Asset Management Plan (TAMP) which states that the Bring to Satisfactory Standard (BTS) backlog for capital renewals for road and stormwater infrastructure accounts for \$35M out of the total \$38M for all infrastructure. It is anticipated that in order to address this significant backlog as well as undertaking the required capital works as they become necessary will entail consistent capital expenditure over the next 20 years.

25 4.3. Timing

30 The proposed sewer renewal and rectification / maintenance works have been verified and supported by Utilities officers and management and has been advertised for tender in December 2019 with an estimated completion before the end of FY19/20. The scope of works also includes the stormwater urban mains and stormwater urban junctions minor rectification / maintenance works totalling an estimated construction cost of \$25,000 that will be funded by the available sewer capital budget.

35 As for the urgent stormwater urban mains renewals within Mullumbimby with an estimated construction cost of \$580,000, budget needs to be sourced to facilitate these works prior to tendering.

5. Ongoing Stormwater Assessments

As the assessment of the Mullumbimby sewer and stormwater catchment has revealed the poor condition of a large portion of the catchment (41% sewer and 69% stormwater). It is evident that other portions of the BSC network may be in particularly poor condition as well. This presents various previously noted risks to BSC all of which have the potential to adversely impact on the community's safety, the integrity of private property and public infrastructure, as well as the public perception of BSC.

It is proposed to replicate the approach that has been adopted for this portion of the Mullumbimby catchment, and apply it to the remainder of the BSC network in a prudent and efficient manner. By undertaking the proposed assessments of both the sewer and stormwater infrastructure in concurrence, the following benefits will be realised:

- a) BSC will have accurate information to support the prudent and efficient asset management of its gravity sewer and stormwater infrastructure into the future.
- b) Cost savings due to single establishments for camera and assessment crews in addition to an increased length of CCTV assessments which will result in economies of scale.
- c) A reduction in the impact to community from noise, amenity, traffic control, etc. due to the elimination of repeat works in the same areas.

A desktop risk analysis has been undertaken for all sewer catchments within the BSC region. These catchments will be assessed in order of priority according to their respective risk scores. It is intended that the risk scoring of the existing gravity sewer catchments will dictate the timing in which the adjacent stormwater network will be assessed in concurrence.

It is imperative that BSC gains a comprehensive understanding of the condition of its gravity sewer and stormwater networks to ensure that their integrity and function are maintained in order to manage the associated risks accordingly.

Below is a summary of the proposed assessments for both the gravity sewer and stormwater networks over the next 5 years. The below summary details the lengths to be assessed, the assessment cost, and the likely immediate rectification cost to promptly replace assets that are identified from the condition assessments to be a very high risk of failure. The rectification costs below are based on the same percentages that were identified from the Mullumbimby condition assessments which is deemed conservative i.e. 24% of sewer mains and 23% of stormwater urban mains that were assessed were proposed for urgent rectification.

Table 2 – Proposed 5 Year Works Summary

5 YEAR WORKS SUMMARY												
Year	Sewer				Stormwater				Combined			
	Length to Assess (km)	Assessment Cost	Immediate Rectification Cost	Total Cost	Length to Assess (km)	Assessment Cost	Immediate Rectification Cost	Total Cost	Length to Assess (km)	Assessment Cost	Immediate Rectification Cost	Total Combined Cost
Year 1	20.9	\$ 450,966	\$ 1,642,646	\$ 2,093,612	12.9	\$ 297,315	\$ 2,686,305	\$ 2,983,620	33.9	\$ 748,281	\$ 4,328,951	\$ 5,077,232
Year 2	18.0	\$ 386,669	\$ 1,408,446	\$ 1,795,115	8.4	\$ 193,790	\$ 1,750,938	\$ 1,944,728	26.4	\$ 580,460	\$ 3,159,384	\$ 3,739,843
Year 3	25.1	\$ 539,796	\$ 1,966,212	\$ 2,506,008	10.4	\$ 239,567	\$ 2,164,544	\$ 2,404,112	35.5	\$ 779,364	\$ 4,130,756	\$ 4,910,120
Year 4	19.7	\$ 425,271	\$ 1,549,053	\$ 1,974,325	8.0	\$ 183,282	\$ 1,655,990	\$ 1,839,271	27.7	\$ 608,553	\$ 3,205,043	\$ 3,813,596
Year 5	17.3	\$ 371,972	\$ 1,354,909	\$ 1,726,881	5.0	\$ 114,559	\$ 1,035,068	\$ 1,149,627	22.3	\$ 486,531	\$ 2,389,977	\$ 2,876,508
TOTAL	101.0	\$ 2,174,675	\$ 7,921,266	\$ 10,095,940	44.7	\$ 1,028,513	\$ 9,292,845	\$ 10,321,358	145.7	\$ 3,203,188	\$ 17,214,110	\$ 20,417,298

It is understood that the values identified in Table 2 are considerable. However, as previously noted due to a history of insufficient maintenance and capital underspending, it is now prudent that BSC initiates an accelerated asset management strategy. This will ensure that the network continues to function as intended whilst managing the associated risks.

6. Conclusion

5 Given the findings of the condition assessments that were undertaken in Mullumbimby, it is strongly recommended that ongoing condition assessments are undertaken for both the remainder of the gravity sewer and stormwater networks in concurrence. This will equip BSC with the necessary information to identify and manage risks in a prudent and efficient manner.

10 Furthermore, there are advantages to undertaking the assessments of these two networks in parallel. Economies of scale will dictate that an increase in value for money will be achieved in addition to other benefits such as reduced establishments and interruption to the community.

15 In order to facilitate these works and to capitalise on the efficiencies of undertaking these works in concurrence, an initial budget of \$1M will be required for FY20/21. This will cater for the completion of the proposed condition assessment scope for Year 1 (FY20/21) as well as the urgent rectification works of the stormwater urban mains deemed a very high risk of failure in Mullumbimby.

20 In order to continue with this condition assessment approach, approximately \$800k will be required in the subsequent 4 years (FY21/22 – 24/25). It should be noted that the above requests for budget totalling \$1.8M do not account for any rectification works that are identified from the proposed assessments between FY20/21 – 24/25.

A further report on funding methods will be reported to the next available meeting of TIAC.