

NOTICE OF MEETING



BYRON SHIRE FLOODPLAIN RISK MANAGEMENT COMMITTEE MEETING

A Byron Shire Floodplain Risk Management Committee Meeting of Byron Shire Council
will be held as follows:

| | |
|-------|--|
| Venue | Council Chambers, Station Street, Mullumbimby |
| Date | Thursday, 28 January 2021 |
| Time | 2.00pm |

Phillip Holloway
Director Infrastructure Services

I2021/83
Distributed 21/01/21

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
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 Byron Shire Floodplain Risk Management
Committee Meeting..... 5

4. STAFF REPORTS

Infrastructure Services

- 4.1 Incident Management System Trial Event - East Coast Low - 11 December
2020..... 11

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

**Report No. 3.1 Adoption of Minutes from Previous Byron Shire
Floodplain Risk Management Committee
Meeting**

Directorate: Infrastructure Services

Report Author: Shelley Flower, Infrastructure Planning Support Officer, IS - Works

File No: I2021/35

RECOMMENDATION:

That the minutes of the Byron Shire Floodplain Risk Management Committee Meeting held on 29 October 2020 be confirmed.

Attachments:

- 1 Minutes 29/10/2020 Byron Shire Floodplain Risk Management Committee, I2020/1649 ,
page 7 [↓](#)

BYRON SHIRE COUNCIL

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1

Report

The attachment to this report provides the minutes of the Byron Shire Floodplain Risk Management Committee Meeting of 29 October 2020 .

Report to Council

- 5 The minutes were reported to Council on 26 November 2020. **Comments**

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

Report No. 14.6 Report of the Byron Shire Floodplain Risk Management Committee Meeting held on 29 October 2020
File No: I2020/1775

- 20-001 Resolved** that Council note the minutes of the Byron Shire Floodplain Risk Management Committee Meeting held on 29 October 2020.

- 20-002 Resolved** that Council adopt the following Committee Recommendation:

Report No. 3.1 Adoption of Minutes from previous Floodplain Risk Management Committee Meeting
File No: I2020/1629

Committee Recommendation 3.1.1

That the minutes of the Byron Shire Floodplain Risk Management Committee Meeting held on 20 August 2020 be confirmed.

- 20-003 Resolved** that Council adopt the following Committee Recommendations:

Report No. 4.1 Mullumbimby Land Release Areas (MLRA) Flood and Stormwater Assessment
File No: I2020/1589

Committee Recommendation 4.1.1

1. That Council acknowledges the adoption of the North Byron Flood Risk Management Study and Plan.
2. That Council note the presentation regarding the Mullumbimby Land Release Areas and the associated DRAFT Flood Impact Assessment (Attachment 1 – E2020/43608).
3. That Council note the importance of evacuation management for the site and the existing constraints in relation to evacuation capacity of Mullumbimby township, as identified in FRMS&P at action RM07.
4. That Council commences holistic analysis of emergency management for the proposed area.

MINUTES OF MEETING



**BYRON SHIRE FLOODPLAIN RISK
MANAGEMENT COMMITTEE MEETING**

| | |
|-------|--|
| Venue | Conference Room, Station Street, Mullumbimby |
| Date | Thursday, 29 October 2020 |
| Time | 9.00am |

BYRON SHIRE COUNCIL

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

3.1 - ATTACHMENT 1

BYRON SHIRE COUNCIL

BYRON SHIRE FLOODPLAIN RISK MANAGEMENT COMMITTEE MEETING MINUTES 29 OCTOBER 2020

Minutes of the Byron Shire Floodplain Risk Management Committee Meeting held on Thursday, 29 October 2020

File No: I2020/1649

PRESENT: Councillors: Cr Hunter and Cr Lyon, Cr Richardson (10 am)

Staff: Scott Moffett (Flood and Drainage Engineer)
James Flockton (Infrastructure Planning Coordinator)
Shelley Flower (Infrastructure Planning Support Officer)
Alex Caras (Land Use Planning Coordinator)
Dominika Tomanek (Minute Taker)

Invited Members: Peter Mair (SES), Martin Rose (Environment and Heritage)

Community: Duncan Dey, Matthew Lambourne

Visitors: Chad Ellis (SES), Karl Allen

Consultants: Dan Wood (WMA)

Cr Lyon (Chair) opened the meeting at 9:05 am and acknowledged that the meeting was being held on Bundjalung Country.

APOLOGIES:

Toong Chin (Environment and Heritage)
Cr J Hackett
Robyn Bolden
Andrew Page (Cape Byron Marine Park)
Steve Keefe – resigned
Phil Holloway (Director Infrastructure Services)
Rebecca Brewin

DECLARATIONS OF INTEREST – PECUNIARY AND NON-PECUNIARY

There were no declarations of interest.

ADOPTION OF MINUTES FROM PREVIOUS MEETINGS

Report No. 3.1 Adoption of Minutes from previous Floodplain Risk Management Committee Meeting

File No: I2020/1629

Committee Recommendation:

That the minutes of the Byron Shire Floodplain Risk Management Committee Meeting held on 20 August 2020 be confirmed.

(Dey/Lyon)

The recommendation was put to the vote and declared carried.

BYRON SHIRE COUNCIL

BYRON SHIRE FLOODPLAIN RISK MANAGEMENT COMMITTEE MEETING MINUTES 29 OCTOBER 2020

BUSINESS ARISING FROM PREVIOUS MINUTES

That the Committee Recommendation of the Report 4.2 from the previous Floodplain Risk Management Committee meeting held on 20 August has not been reported to Council due to administrative error.

The additional recommendation was:

**No. 4.2 Additional Recommendation - Mullumbimby Land Release Areas
Flood Impact Assessment and Concept Surface Water Management
Plan**

File No: I2020/1154

Committee Recommendation:

That Council share its Mullumbimby Land Release Areas Flood Impact Assessment and Concept Surface Water Management Plan for lot 22 in south Mullumbimby and surrounding land with the Committee and refer to committee for review, comment and advice prior to adoption.

(Dey/Bolden)

The recommendation was put to the vote and declared carried.

Management Comment:

It is noted that, with regard to item No.4.2 above, despite the recommendation being missed from the previous report to Council. The recommendation was still completed at this recent meeting of the committee and various comments were received as noted in item 4.1.

STAFF REPORTS - INFRASTRUCTURE SERVICES

**Report No. 4.1 Mullumbimby Land Release Areas (MLRA) Flood and Stormwater
Assessment**

File No: I2020/1589

Committee Recommendation:

1. That Council acknowledges the adoption of the North Byron Flood Risk Management Study and Plan.
2. That Council note the presentation regarding the Mullumbimby Land Release Areas and the associated DRAFT Flood Impact Assessment (Attachment 1 – E2020/43608)
3. That Council note the importance of evacuation management for the site and the existing constraints in relation to evacuation capacity of Mullumbimby township, as identified in FRMS&P at action RM07.
4. That Council commences holistic analysis of emergency management for the proposed area.

(Lyon/Dey)

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

BYRON SHIRE FLOODPLAIN RISK MANAGEMENT COMMITTEE MEETING MINUTES 29 OCTOBER 2

There being no further business the meeting concluded at 11:06 am .

STAFF REPORTS - INFRASTRUCTURE SERVICES

Report No. 4.1 Incident Management System Trial Event - East Coast Low - 11 December 2020

5 **Directorate:** Infrastructure Services

Report Author: Scott Moffett, Drainage & Flood Engineer, IS - Works - Infrastructure Planning

File No: I2021/6

10 **Summary:**

Presentation on Incident Management System (IMS) trial event for the East Coast Low on 11 December 2020

RECOMMENDATION:

That Byron Shire Floodplain Risk Management Committee note the presentation summarising the Incident Management System (IMS) trial event for the East Coast Low on 11 December 2020. (E2021/4075)

15 **Attachments:**

- 1 Byron Flood Committee Meeting Draft Presentation for 28 January 2021 meeting - Scott Moffett, E2021/4075 , page 12 [↓](#)

20

Byron Shire Flood Warning Network



Byron Shire Flood Warning Network



- Overview of the Flood Warning Network
 - Monitoring
 - Forecasting
 - Collaboration
- First event – our beta test
- Issues
- Continuous improvement



Byron Shire Flood Warning Network



- Byron's Flood Warning Network

Is a combination of infrastructure, software, and people

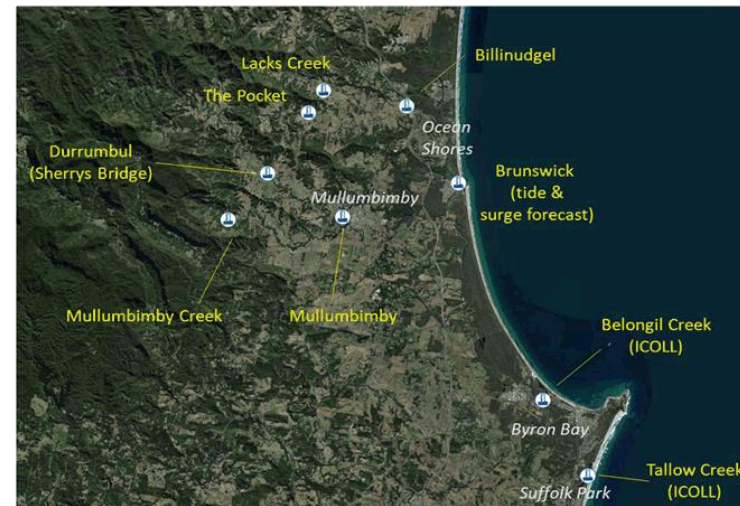
1. Infrastructure: Alert Hydrometric Telemetry Network:

1. 8 water level stations (plus 2 being installed currently)
2. 8 rainfall stations
3. 2 repeater stations
4. 2 base stations
5. With an ongoing renewal programme

2. Software: Enviromon, flood forecasting system, Guardian IMS, Tulio messaging service

3. People: Multi-agency collaboration:

1. Council
2. SES
3. BoM
4. Hydrometric office
5. Hydrology consultants



Byron Shire Flood Warning Network



- The new flood forecasting system - background

Developed as a multi-year, multi-agency project

1. Floods in 2017 identified weaknesses in Byron's flash flood risk
2. Council was awarded funding through the NSW Government's Stronger Country Communities fund
3. Council engaged JBP and QIT+ to develop a new system to integrate infrastructure, software and agencies.
4. System development occurred throughout 2019/20 with Council, SES and BoM.
5. The system ran internally since January 2020, and went 'live' in November 2020
6. With little rainfall within 2020, the first beta test occurred in December



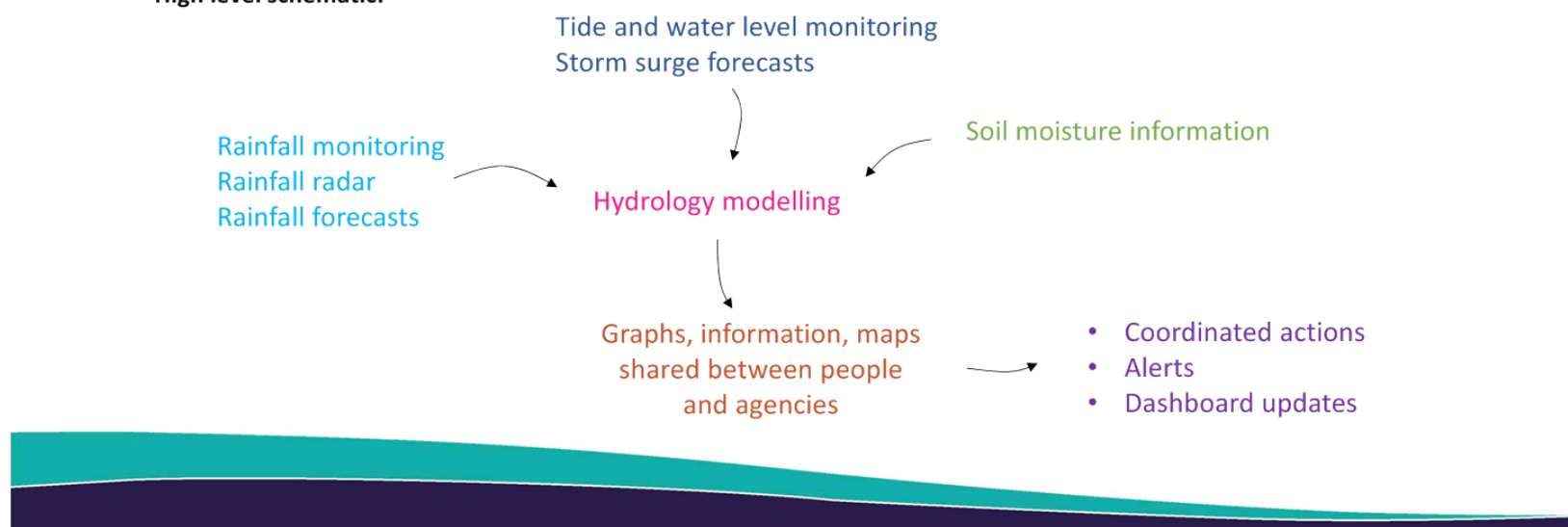
Byron Shire Flood Warning Network



- The new flood forecasting system – where, what, how

A combined flood forecasting and warning system, with internal functionality, an external community dashboard, and messaging service

High level schematic:

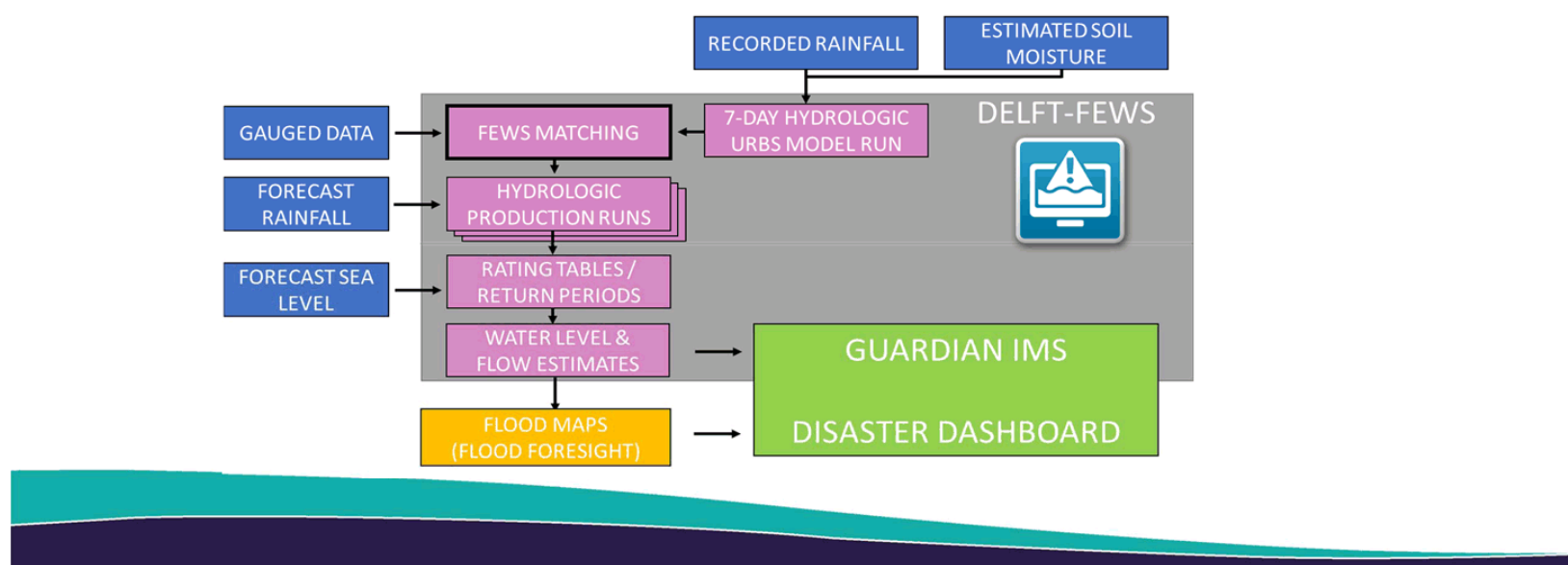


Byron Shire Flood Warning Network



- The new flood forecasting system – where, what, how

A combined flood forecasting and warning system, with internal functionality, an external community dashboard, and messaging service



Byron Shire Flood Warning Network



- First event – our beta test
- December 2020
- 17 days after the system had ‘gone live’ with full functionality.
- An event where forecasts and observations were changing by the hour
- An event occurring on an extremely dry catchment
- An event coinciding with large waves, and closed ICOLLS
- **Importantly: it was an event that occurred on a weekend, at night (standard time for a flood)**



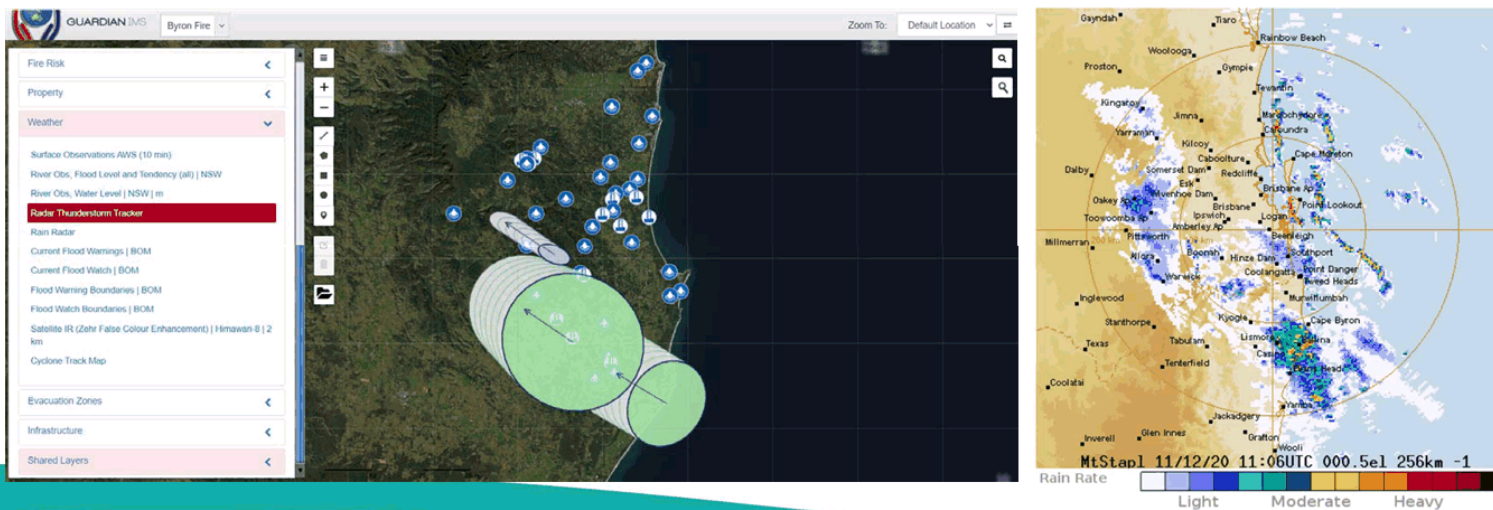
Byron Shire Flood Warning Network



1

- First event – our beta test

1. **Friday night** - Early forecasts showed **250mm rain predicted**, with a small rise in creek levels
2. At 9pm light rain had started falling – around 25mm, but no response in creeks



FRIDAY 11 DEC – 2100 hrs

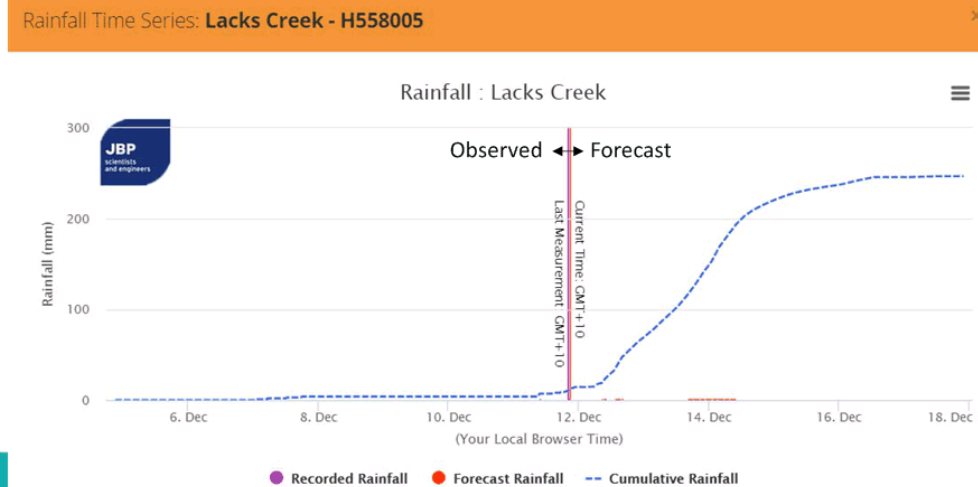
Byron Shire Flood Warning Network



1

- First event – our beta test

1. **Friday night** - Early forecasts showed 250mm rain predicted, with a small rise in creek levels
2. At 9pm light rain had started falling – around 25mm, but no response in creeks



FRIDAY 11 DEC – 2100 hrs

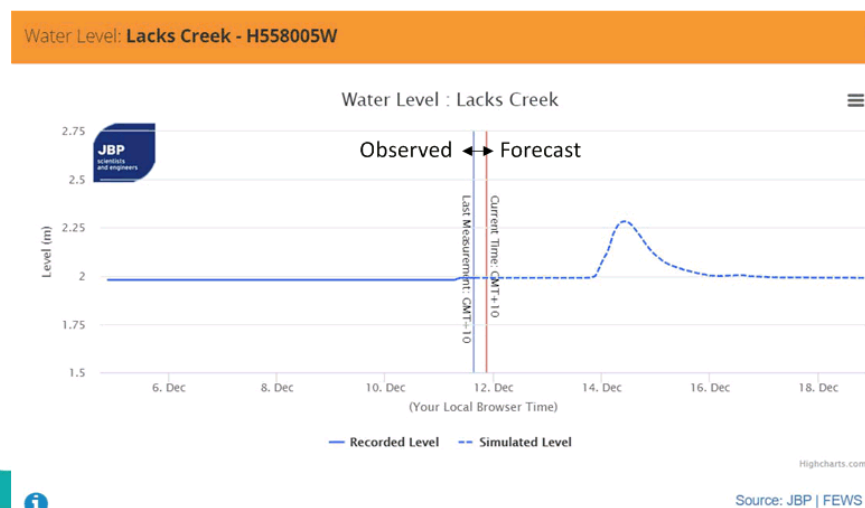
Byron Shire Flood Warning Network



1

- First event – our beta test

1. **Friday night** - Early forecasts showed 250mm rain predicted, with a small rise in creek levels
2. At 9pm light rain had started falling – around 25mm, but no response in creeks



FRIDAY 11 DEC – 2100 hrs

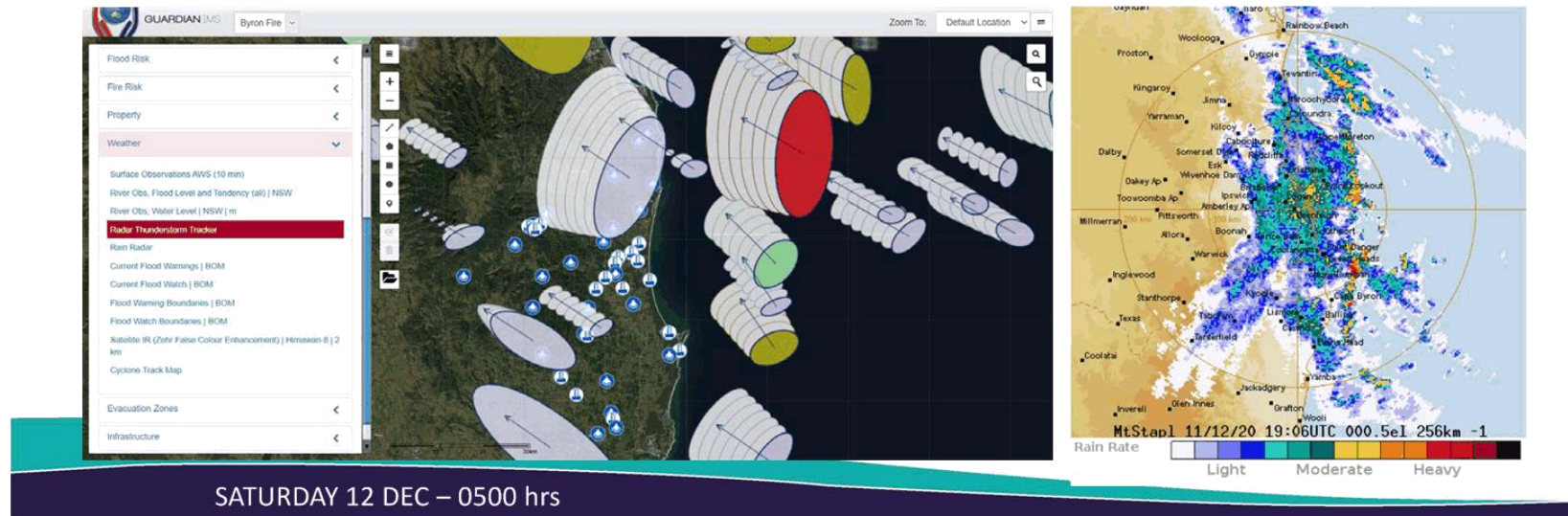
Byron Shire Flood Warning Network



2

- First event – our beta test

1. **Saturday morning** – More regional storm activity, 30-40mm had fallen of **350mm rain predicted**.
2. At 5am Saturday a minimal rise in creek levels as rain was still soaking into the dry catchment



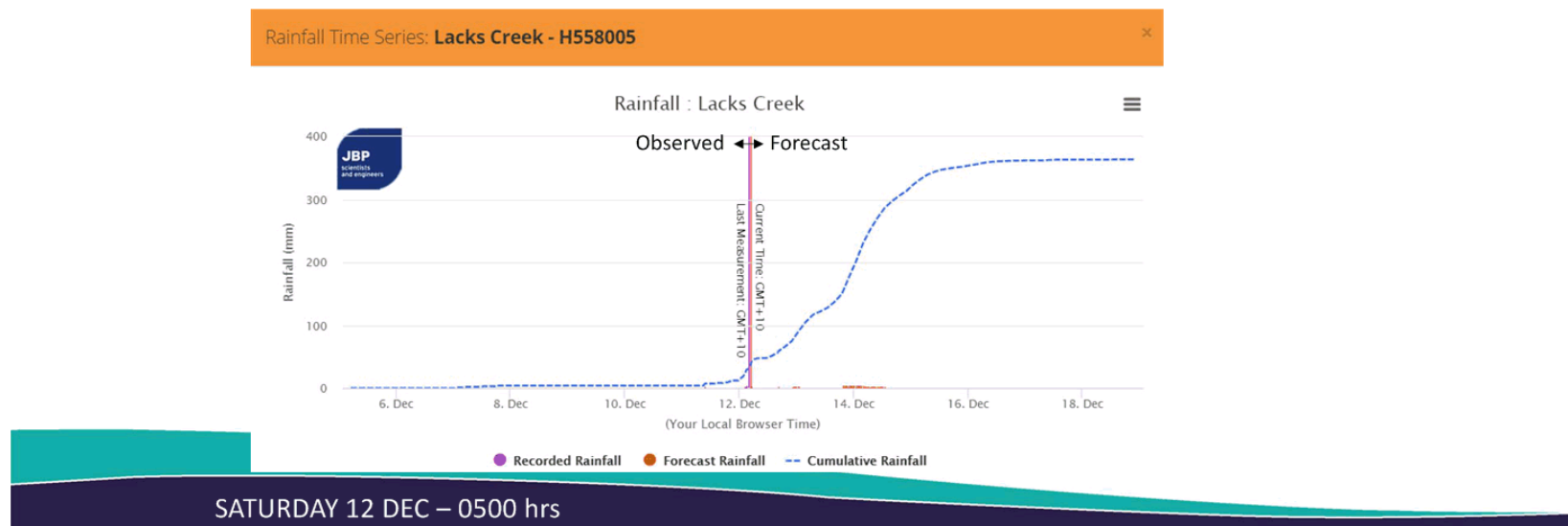
Byron Shire Flood Warning Network



2

- First event – our beta test

1. **Saturday morning** – More regional storm activity, 30-40mm had fallen of 350mm rain predicted.
2. At 5am Saturday a minimal rise in creek levels as rain was still soaking into the dry catchment



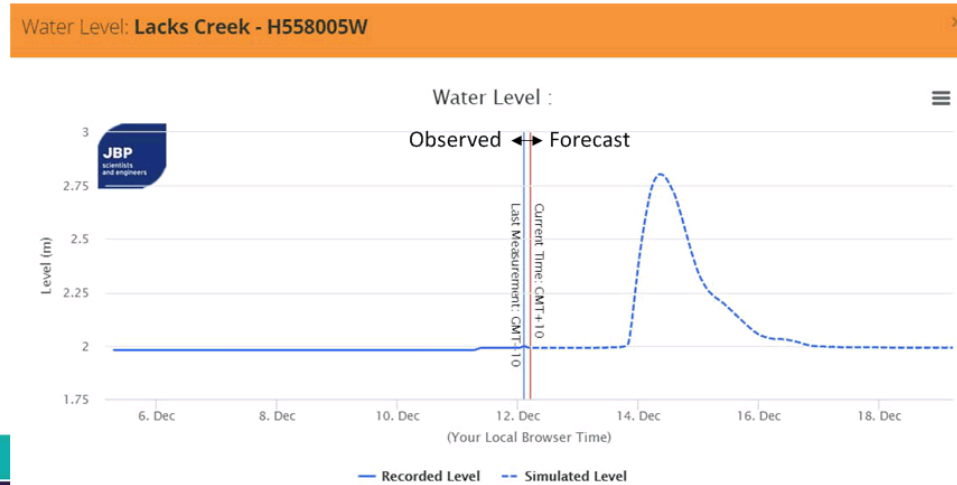
Byron Shire Flood Warning Network



2

- First event – our beta test

1. **Saturday morning** – More regional storm activity, 30-40mm had fallen of 350mm rain predicted.
2. At 5am Saturday a minimal rise in creek levels as rain was still soaking into the dry catchment



SATURDAY 12 DEC – 0500 hrs

Byron Shire Flood Warning Network



3

- First event – our beta test

1. **Saturday evening** – Heavy rainfall, 170mm fallen and 420mm predicted.
2. Creek response began after ~100mm infiltration. Focus began on Billinudgel (Marshall's Creek catchment), which was predicting a minor level, and Belongil Creek.

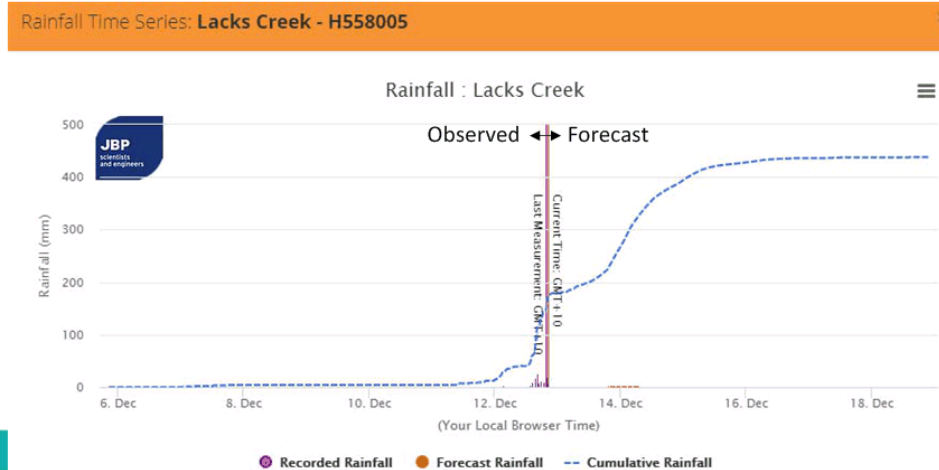


Byron Shire Flood Warning Network



3

- First event – our beta test
1. **Saturday evening** – Heavy rainfall, 170mm fallen and 420mm predicted.
 2. Creek response began after ~100mm infiltration. Focus began on Billinudgel (Marshall's Creek catchment), which was predicting a minor level



SATURDAY 12 DEC – 2100 hrs

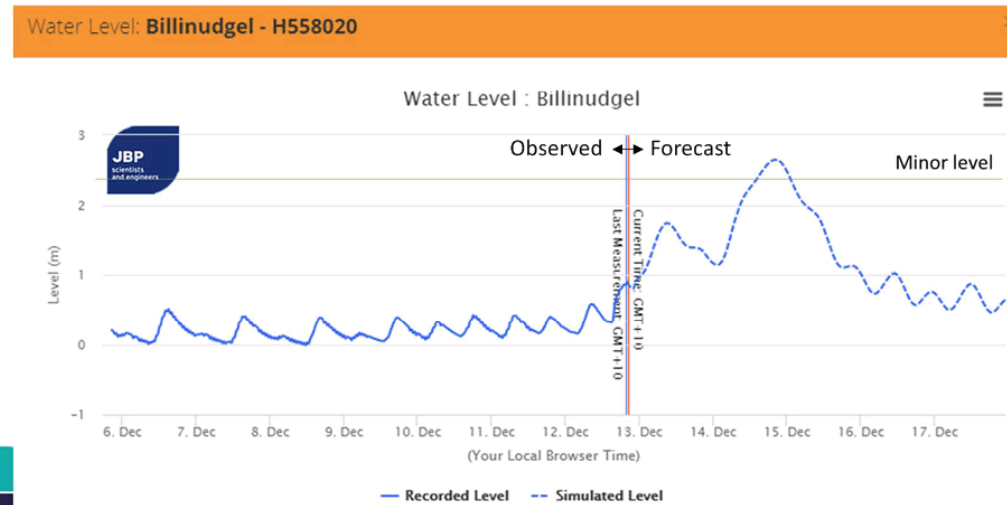
Byron Shire Flood Warning Network



3

- First event – our beta test

1. **Saturday evening** – Heavy rainfall, 170mm fallen and 420mm predicted.
2. Creek response began after ~100mm infiltration. Focus began on Billinudgel (Marshall's Creek catchment), which was predicting a minor level



SATURDAY 12 DEC – 2100 hrs

Byron Shire Flood Warning Network



3

- First event – our beta test

1. **Sat/Sunday (midnight)** – Continued heavy rain, 270mm fallen of **450mm predicted**.
2. FFS indicated moderate levels in Billinudgel, prompting team to alert SES. **Team investigated forecasts and system response; finding an issue at Billinudgel.**



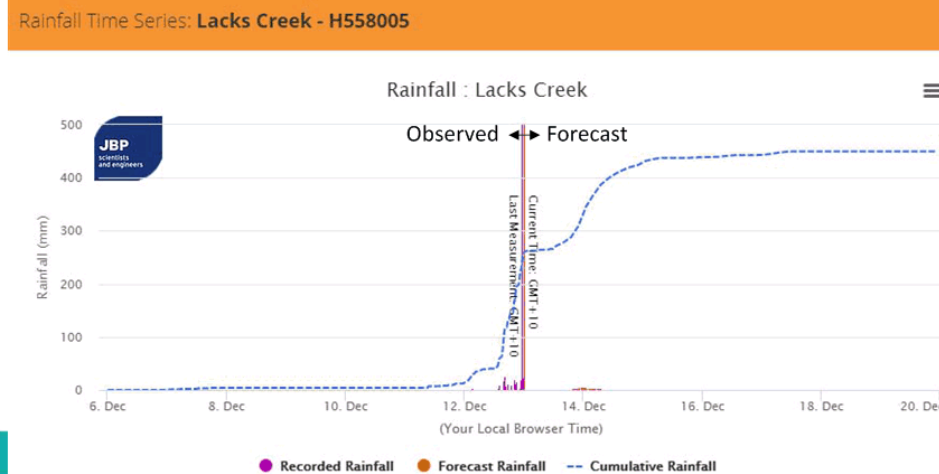
Byron Shire Flood Warning Network



3

- First event – our beta test

1. **Sat/Sunday (midnight)** – Continued heavy rain, 270mm fallen of 450mm predicted.
2. FFS indicated moderate levels in Billinudgel, prompting team to alert SES. Team investigated forecasts and system response; finding an issue at Billinudgel.



SUNDAY 13 DEC – 0200 hrs

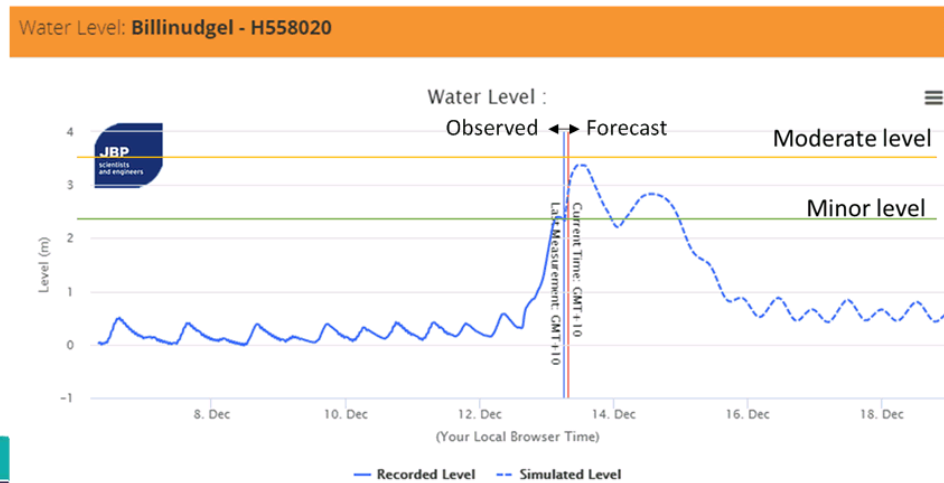
Byron Shire Flood Warning Network



3

- First event – our beta test

1. **Sat/Sunday (midnight)** – Continued heavy rain, 270mm fallen of 450mm predicted.
2. FFS indicated moderate levels in Billinudgel, prompting team to alert SES. **Team investigated forecasts and system response; finding an issue at Billinudgel.**



Forecast
flagged,
output not
trusted

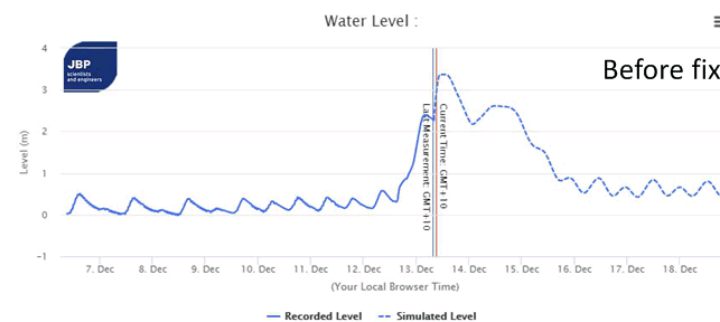
SUNDAY 13 DEC – 0200 hrs

Byron Shire Flood Warning Network

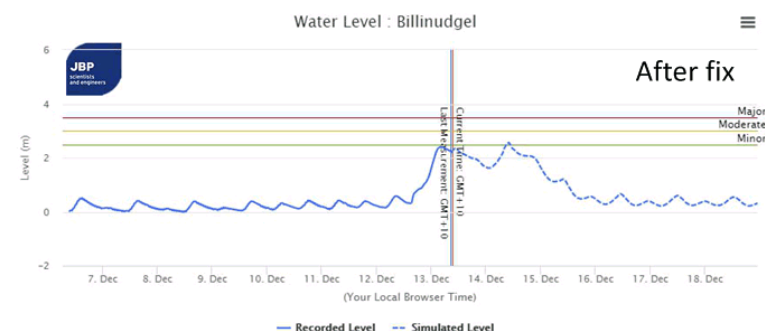


- First event – our beta test
1. **Sunday morning** – 300mm fallen of 450mm predicted.
 2. Consultants implemented changes to the Billinudgel forecast point, and corrected the predictions.

Water Level: Billinudgel - H558020



Water Level: Billinudgel - H558020



SUNDAY 13 DEC – 1000 hrs

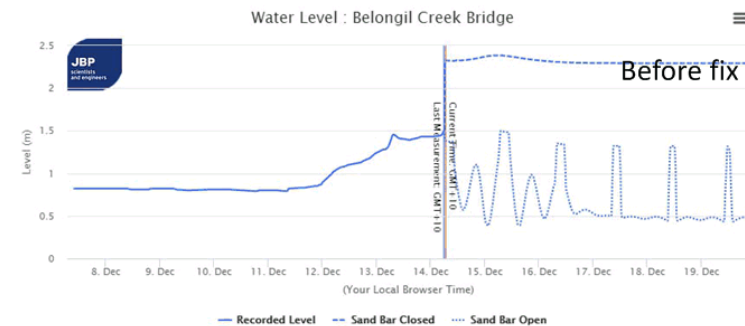
Byron Shire Flood Warning Network



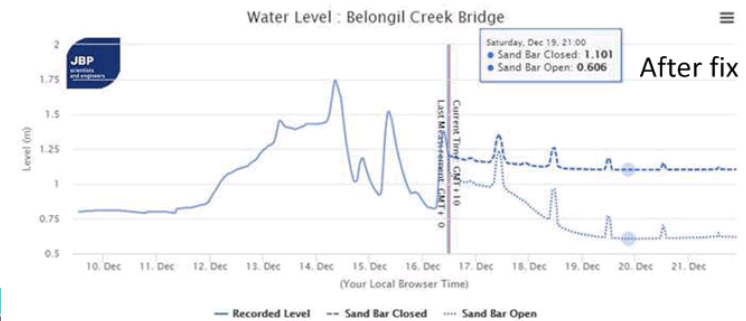
- First event – our beta test
1. **Sunday morning** – 300mm fallen of 450mm predicted.
 2. Consultants implemented changes to the Billinudgel forecast point, and corrected the predictions.
 3. Consultants implemented changes to the way ICOLL water levels were predicted to support Council operations

SUNDAY 13 DEC – 1000 hrs

Water Level: Belongil Creek Bridge - H558099W



Water Level: Belongil Creek Bridge - H558099W



Byron Shire Flood Warning Network



4

- First event – our beta test

1. Event summary:

1. Heavy rainfall event. 340mm in Marshals Creek, 350 at Upper Main Arm, 250mm in Coopers Shoot.
2. BoM had predicted between 300-400mm for the event.
3. Two issues identified, both fixed within 24 hours
4. Will add a few more Points next week after discussions with Evan and Phil-SM



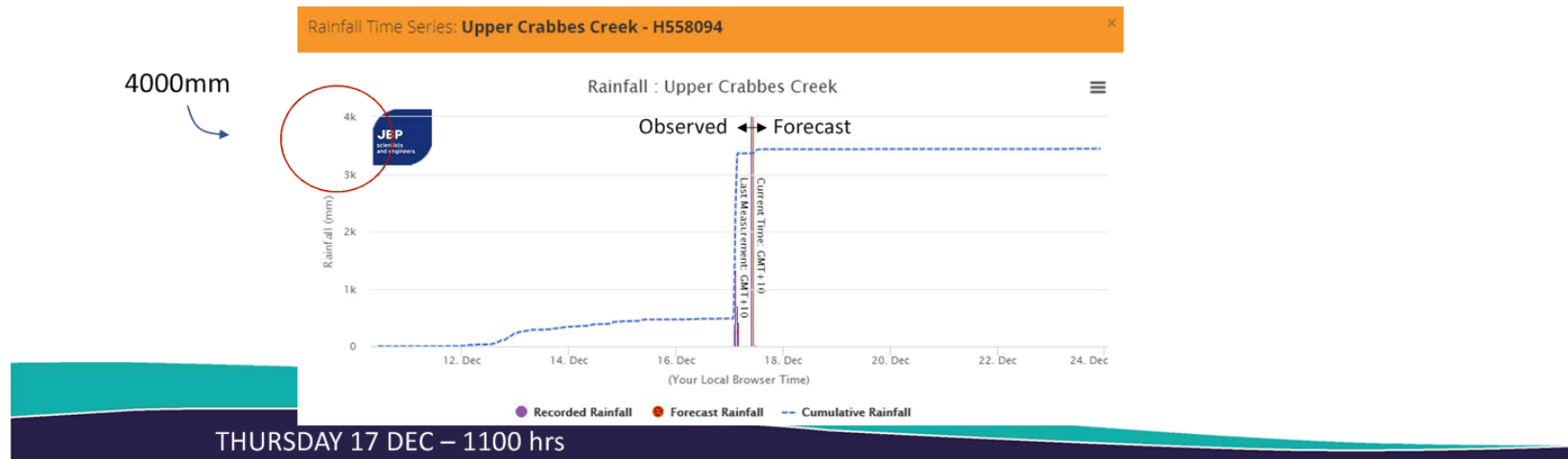
Byron Shire Flood Warning Network



5

- Second event – our beta test

1. **Thurs 17 Dec** – On a wet catchment, 50mm rainfall occurred, with a creek rise of several metres in Marshalls Creek. Whilst potentially within reason, some team members questioned the water level forecast and started an investigation.
2. Investigations found a rainfall gauge within Tweed Shire (Upper Crabbes Creek) errored, falsely recording 10,000mm of rainfall.



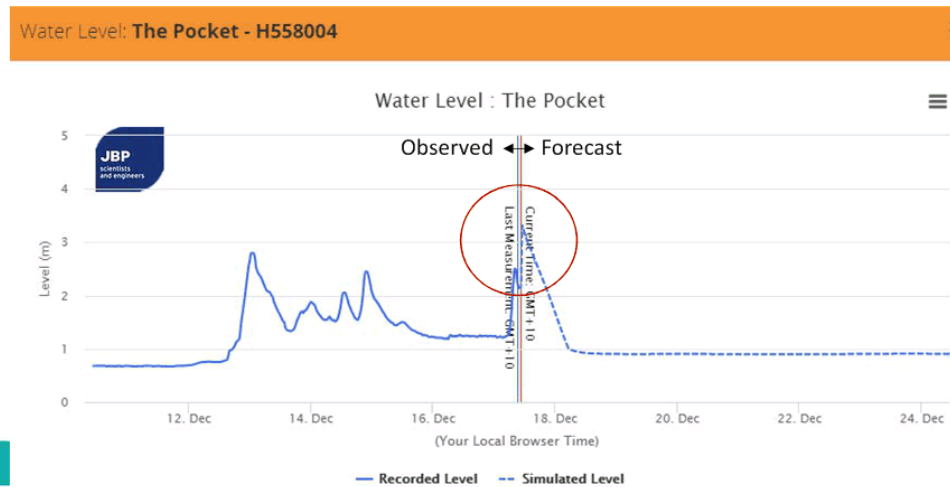
Byron Shire Flood Warning Network



5

- Second event – our beta test

1. **Thurs 17 Dec** – Once identified, instructions were shared to project partners to ignore the Billinudgel Gauge.
2. Erroneous gauge records needed to be manually removed within 24 hours allowing the FFS to return to normal



THURSDAY 17 DEC – 1100 hrs

Byron Shire Flood Warning Network



- Continuous improvement
- The Byron Flood Warning Network is an example of Australian (and worldwide) best practice.
- It has also been developed to allow continuous improvement.
- A rainfall station and water level gauge renewal program is now developed, and being implemented
- The forecasting system is designed to link to a wide range of datasets, models and outputs, allowing new flood study data to be updated as it is developed
- The system is highly collaborative, allowing stakeholders to collaborate during an event. During the beta test:
 1. SES questioned forecasts at Billinudgel, which prompted changes to be made to tide-flow interactions and improvements made within 24h
 2. The Billinudgel water level predictions now include tides (which are missed in the BoM model) which can be fed back into their national system
 3. Council staff identified the erroneous rainfall gauge, which was communicated to the team through Guardian IMS. These messages now sit within an event log.
 4. Discussions with Council flagged challenges interpreting ICOLL predictions, which were updated within 24h

