

Subject: Fwd: Urgent update on Ross River Dam Situation
Date: Sunday, 3 February 2019 at 2:05:56 pm Australian Eastern Standard Time
From: PURTILL James
To: Dave Stewart
Attachments: image979498.png, image459986.png, image566057.png, image935848.png

Hi Dave

Latest SunWater update. Please let me know if this is redundant and clogging your emails but want to ensure you have what I have

Sent from my iPhone

Begin forwarded message:

From: Colin Bendall <[redacted]@sunwater.com.au>
Date: 3 February 2019 at 2:00:32 pm AEST
To: "Mark Rhimes (External)" <[redacted]@dnrme.qld.gov.au>, "Gee.Bob" <[redacted]@police.qld.gov.au>, Linda Dobe <[redacted]@dnrme.qld.gov.au>, "james.purtill" <[redacted]@dnrme.qld.gov.au> <[redacted]@dnrme.qld.gov.au>
Cc: Nicole Hollows <[redacted]@sunwater.com.au>, Media <Media@Sunwater.com.au>
Subject: Urgent update on Ross River Dam Situation

Bob, James

Ross River Dam catchment and lake surface has received some high intensity rainfall in the last two hours as a result the level is rising rapidly and has now reached 42.71.

The gates are in automatic operation and at 42.75 the middle gate will fully open, resulting in the discharge from the dam increasing from around 1000 cubic meters per second to around 1300 cubic meters per second which is a 30% increase in discharge. Based on the current rate of rise this could occur in the next 1 to 2 hours.

Townsville executive are currently meeting to advise on any revised operating strategy for the dam. SunWater stands ready to implement any change in strategy required by TCC.

I will advise further or if the Automatic gate trigger occurs in the meantime.

Regards

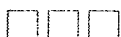
Colin

Colin Bendall
EGM Operations and Services



P [redacted]
M [redacted]
E [redacted]
sunwater.com.au

Green Square
North, Level 9, 515
St Pauls Terrace,
Fortitude Valley,
Queensland 4006



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Released under RTI - DSS

Pages 3 through 6 redacted for the following reasons:

Access Deferred

Released under RTI - DPC

Subject: Re: Ross River Dam at Stand up 1
Date: Friday, 1 February 2019 at 6:00:04 am Australian Eastern Standard Time
From: Dave Stewart
To: James Purtill (DNRME), Anthony Lynham, Zanatta Simon

Thanks

Dave Stewart
Director-General
Office of the Director-General
Department of Premier and Cabinet
[redacted]
[redacted]@premiers.qld.gov.au

From: PURTILL James <[redacted]@dnrme.qld.gov.au>
Sent: Friday, February 1, 2019 5:56:27 AM
To: Anthony Lynham; Zanatta Simon; Dave Stewart
Subject: Fwd: Ross River Dam at Stand up 1

No advice on any change to operation of the fates but will advise ASAP

Sent from my iPhone

Begin forwarded message:

From: FEELY Alan <[redacted]@dnrme.qld.gov.au>
Date: 1 February 2019 at 5:46:00 am AEST
To: PURTILL James <[redacted]@dnrme.qld.gov.au>
Cc: DOBE Linda <[redacted]@dnrme.qld.gov.au>
Subject: Fwd: Ross River Dam at Stand up 1

Hi see below ta al

Sent from my iPhone

Begin forwarded message:

From: NIELSEN Chris <[redacted]@dnrme.qld.gov.au>
Date: 1 February 2019 at 5:34:51 am AEST
To: FEELY Alan <[redacted]@dnrme.qld.gov.au>, DOBE Linda <[redacted]@dnrme.qld.gov.au>
Cc: DOWNES Mandy <[redacted]@dnrme.qld.gov.au>, GUPPY Ron <[redacted]@dnrme.qld.gov.au>
Subject: Ross River Dam at Stand up 1

Hi

Just spoke to Brendan, Ross River dam is at stand up 1 because the flood of record 40.73m has been reached.

Gates are still operating automatically (not sure if they went to manual overnight, I don't think so).

Water level rate of rise has slowed overnight but its unlikely levels will drop today. There has been around 10mm of rainfall in the catchment over the past 5 hours, so water levels aren't likely to rise significantly in the next few hours. Meteye forecasts are for less rain today compared to yesterday, but still significant (70 to 150mm as opposed to about 200mm yesterday).

Regards

Chris

<http://www.bom.gov.au/fwo/IDQ65393/IDQ65393.532020.plt.shtml>

<http://www.bom.gov.au/qld/flood/townsville.shtml>

<http://www.bom.gov.au/places/qld/townsville/>

<http://data.dnrm.qld.gov.au/eap/ross-river-eap.pdf>



Chris Nielsen
Director, Dam Safety

Operations Support
Department of Natural Resources, Mines and Energy

P: [redacted] **M:** [redacted]

E: [redacted]@dnrme.qld.gov.au

A: Level 3, 1 William St, Brisbane QLD 4002

W: www.dnrme.qld.gov.au



Subject: Fwd: Ross River Dam at Stand up 1
Date: Friday, 1 February 2019 at 5:56:27 am Australian Eastern Standard Time
From: PURTILL James
To: Anthony Lynham, Zanatta Simon, Dave Stewart
Attachments: image004.png, image005.jpg

No advice on any change to operation of the fates but will advise ASAP

Sent from my iPhone

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From: FEELY Alan <[redacted]@dnrme.qld.gov.au>
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Cc: DOWNES Mandy <[redacted]@dnrme.qld.gov.au>, GUPPY Ron <[redacted]@dnrme.qld.gov.au>
Subject: Ross River Dam at Stand up 1

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Water level rate of rise has slowed overnight but its unlikely levels will drop today. There has been around 10mm of rainfall in the catchment over the past 5 hours, so water levels aren't likely to rise significantly in the next few hours. Meteye forecasts are for less rain today compared to yesterday, but still significant (70 to 150mm as opposed to about 200mm yesterday).

Regards

Chris

<http://www.bom.gov.au/fwo/IDQ65393/IDQ65393.532020.plt.shtml>

<http://www.bom.gov.au/qld/flood/townsville.shtml>).

<http://www.bom.gov.au/places/qld/townsville/>).

<http://data.dnrm.qld.gov.au/eap/ross-river-eap.pdf>



Chris Nielsen
Director, Dam Safety

Operations Support
Department of Natural Resources, Mines and Energy

P: [redacted] M: [redacted]

E: [redacted]@dnrme.qld.gov.au

A: Level 3, 1 William St, Brisbane QLD 4002

W: www.dnrme.qld.gov.au



Released under the Information Privacy Act - DPC

Subject: Fwd: Ross River Flood Guidance 15 - 02/02/19 17:00
Date: Saturday, 2 February 2019 at 9:03:28 pm Australian Eastern Standard Time
From: PURTILL James
To: Anthony Lynham, Zanatta Simon, Dave Stewart
Attachments: image283169.png, ATT00001.htm, image353612.png, ATT00002.htm, image269992.png, ATT00003.htm, image396771.png, ATT00004.htm, image148048.png, ATT00005.htm, image761591.png, ATT00006.htm, image523733.png, ATT00007.htm, image625109.png, ATT00008.htm, PRODUCTION-#2406029-v1-Ross_River_Dam_Flood_Guidance_15.pdf, ATT00009.htm

Detailed SunWater update

Sent from my iPhone

Begin forwarded message:

From: Colin Bendall <[REDACTED]@sunwater.com.au>
Date: 2 February 2019 at 5:28:33 pm AEST
To: "Mark Rhimes (External)" <[REDACTED]@dnrme.qld.gov.au>, Linda Dobe <[REDACTED]@dnrme.qld.gov.au>, "james.purtill" <[REDACTED]@dnrme.qld.gov.au>, "[REDACTED]@dnrme.qld.gov.au", "Gee.Bob" <[REDACTED]@police.qld.gov.au>
Subject: FW: Ross River Flood Guidance 15 - 02/02/19 17:00

Bob, James,

As promised see attached our latest Flood guidance to TCC on Dam Operations, this is guidance number 15, out predicated heights align closely with the BOM,

However the BOM is the source of truth for flood heights and timing in Ross River as this guidance and modelling is developed for a specific purpose (determining likely scenario's at Ross River Dam only.)

SunWater provides the information as a guide and to assist only and should not be relied on for any other purposes such as determining downstream impacts or flood heights that need to consider a number of other factors such as local runoff and tide heights.

Let me know if I can assist further

Regards

Colin

Colin Bendall
EGM Operations and Services

Ross River Dam Flood Guidance

sunwater

Event: Tropical Low		
Date: 02 February 2019	Time: 17:00	Sitrep Number: 15
Distribution: Townsville City Council, Sunwater Operations		
Update		
<ul style="list-style-type: none">• The current EAP status is Stand Up 2. Current water level is 42.215m and rising.• BoM have forecast 204 mm for the next 24 hours over the Ross River catchment to 16:00 03/02/2019.• Sunwater are forecasting a peak level of RL 42.8 mAHD at approximately 10am 03/02/2019 (tomorrow morning). If automatic gate operations were in place, this scenario would trigger the centre gate (gate 2) to be fully open and the left and right gates (gates 1 and 3) to remain submerged to an opening height of 3.75m.• This dam level forecast is based on forecast rainfall information, water levels will vary depending on actual rainfall within the catchment.• Gates are currently in manual operation as instructed by Townsville City Council and all gates were raised manually to 3.25m at 22:23 on 02/02/2019.• Outflows commenced at 13:33 Friday 30/01/2019.• A major flood warning has been issued by BoM for the Ross River.• Sunwater 24-hour on ground operational rosters are in place at Ross River Dam.• The Sunwater Operations Centre is monitoring conditions on a 24-hour basis.• BoM forecast rainfall data as of 13:00 02/02/2019, therefore, forecasts in this status update are based on this information.		

Ross River Dam Flood Guidance

sunwater

Recorded Rainfall

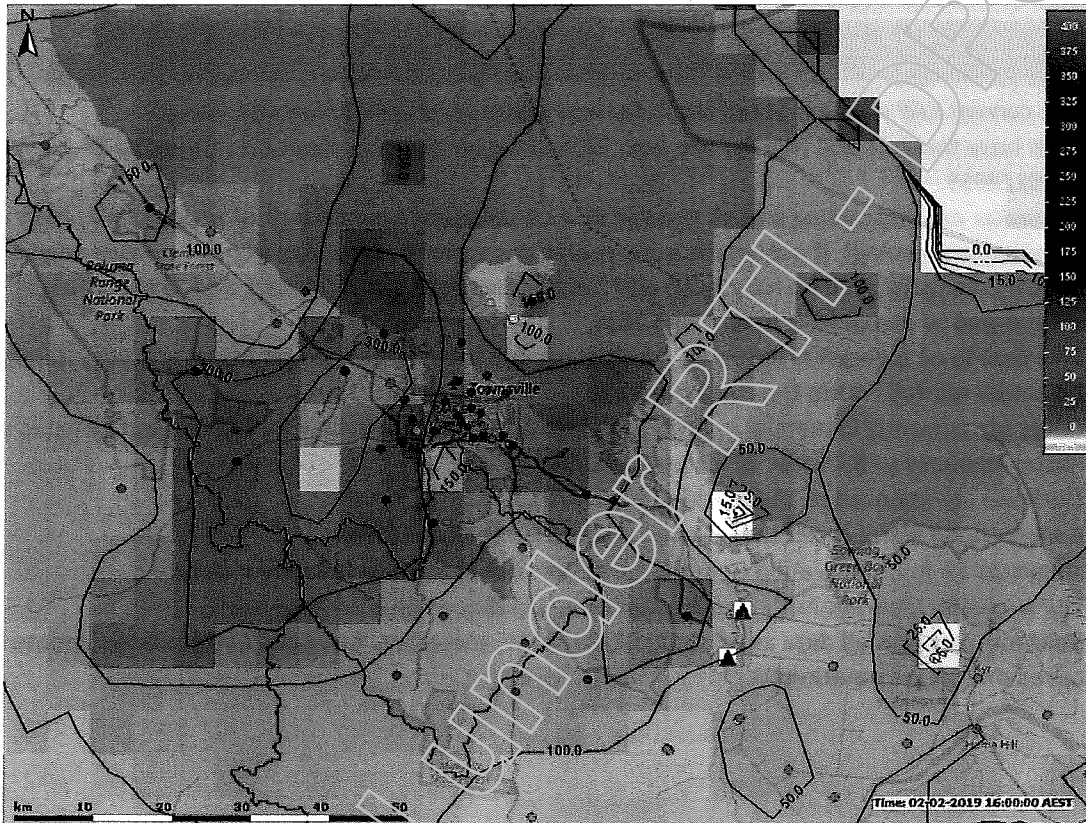


Figure 1. Total observed rainfall 24 hours to 16:00 on 02/02/2019

Flows and Water Levels

The headwater level at 16:00pm was 42.215m AHD (3.665m above full supply) and gradually rising, storage capacity was 216%.

Gate Settings

Current Status – all gates are currently open and manual gate operation has re-commenced as instructed by Townsville City Council. Opening heights and discharge are presented below, discharge as of 16:00pm was 866 m³/s.

Table 1. Gate settings at 16:00

	Gate 1	Gate 2	Gate 3
Opening height (m)	3.236	3.234	3.253
Discharge (m ³ /s)	279.0	307.0	280.0

Ross River Dam Flood Guidance

sunwater

Forecast Rainfall

BoM forecast rainfall data as of 13:00 02/02/2019, therefore, forecasts in this status update are based on this information.

BoM forecast rainfall ADFD 25% (most likely) for the next 24 hours to 03/02/2019 1600 is 204 mm catchment average over the Ross River catchment.

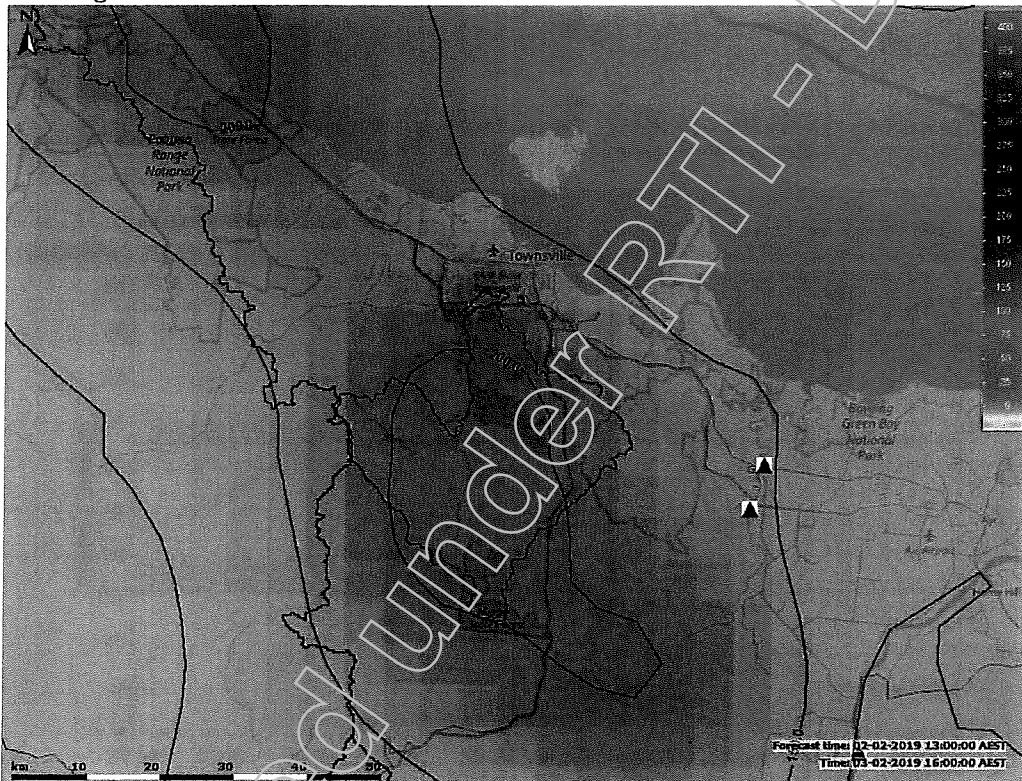


Figure 2. Total forecast rainfall 24 hours to 16:00 03/02/2019

Forecast rainfall over the next three days is summarised as follows:

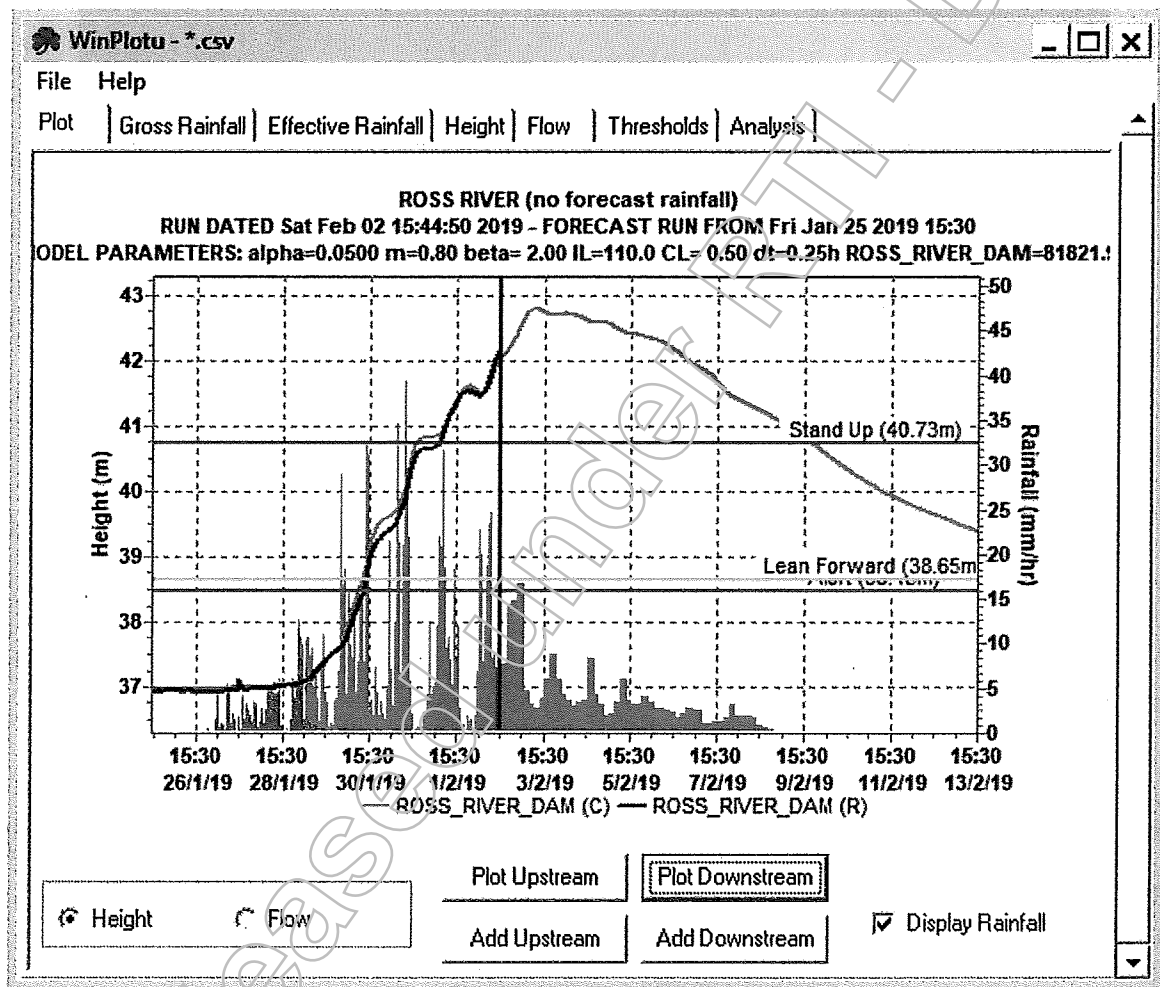
- 24 hours to 16:00 04/02/2019 – 118.04 mm
- 24 hours to 16:00 05/02/2019 – 99 mm
- 24 hours to 16:00 06/02/2019 – 75 mm

Ross River Dam Flood Guidance

sunwater

Forecast Dam Level

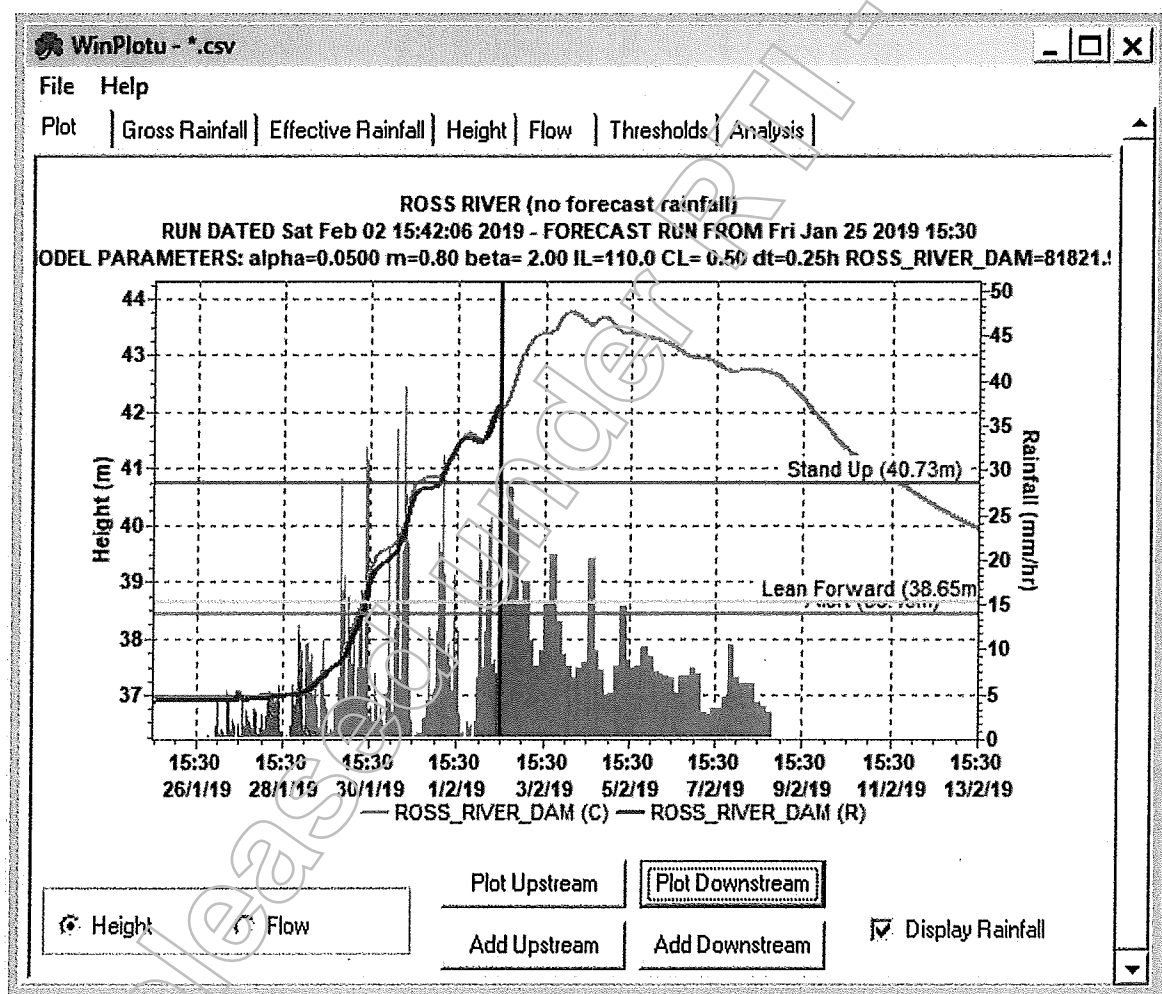
Based on the BoM expected forecast rainfall (ADFD 25%), a peak water level of approximately RL 42.8m AHD (approx. discharge of 1,305 m³/s) would occur on the morning of the 03/02/2019 (approximately 10am).



Ross River Dam Flood Guidance

sunwater

Based on the BoM unlikely high-end forecast rainfall (ADFD 10%), a peak water level of approximately **RL 43.76m AHD (approx. discharge of 2153 m³/s)** would occur during the early morning of the 04/02/2019 (approximately 6am). Note that the BoM are not using the ADFD 10% rainfall forecast information to represent the worst-case scenario. The BoM have indicated the current ADFD 10% is an 'unrealistic' worst case and they have adopted the 'EC' model results to represent the worst-case scenario, please defer to the BoM's information regarding worst-case scenario.



Please note the following:

- This forecast includes spatial and time varying rainfall inputs to the dam level forecast model as requested by Townsville City Council.
- This information is provided for dam operation purposes and a prediction of lake level in relation to the EAP.
- During manual gate operations predicted water surface level and outflows will not be reliable.

Ross River Dam Flood Guidance

sunwater

Next update	
03/02/2019 06:00	
Prepared by	Daniel Esposito, Operations Centre Duty Officer
Reviewed by	Michael Hughes, Flood Operations Decision Maker

Released under RTI - DPC

Subject: Fwd: Ross River Flood Guidance 21 - 04/02/2019 - 06:00
Date: Monday, 4 February 2019 at 8:14:16 am Australian Eastern Standard Time
From: Gee.BobW[REGOPS]
To: Dave Stewart
Attachments: image345513.png, image241922.png, image862208.png, image539880.png, image237361.png, image621373.png, image008449.png, image057177.png, PRODUCTION-#2406249-v1-Ross_River_Dam_Flood_Guidance_21.pdf

R.W. Gee APM
Deputy Commissioner
Ph [redacted]

From: Colin Bendall <[redacted]@sunwater.com.au>
Sent: Monday, February 4, 2019 7:06:02 AM
To: Gee.BobW[REGOPS]; james.purtill [redacted]@dnrme.qld.gov.au; Mark Rhimes (External); Linda Dobe
Subject: FW: Ross River Flood Guidance 21 - 04/02/2019 - 06:00

Bob, James (please advise if you do not wish to continue receiving as conscious you would be getting significant email traffic)

Our most recent flood guidance number 21 for Ross River Dam provided to TCC.
As previously stated BOM is the source of truth for flood heights and timing in Ross River as this guidance and modelling is developed for a specific purpose (determining likely scenario's at Ross River Dam only.)

SunWater provides the information as a guide and to assist only and should not be relied on for any other purposes such as determining downstream impacts or flood heights that need to consider a number of other factors such as local runoff and tide heights.

Let me know if I can assist further

Regards

Colin

Colin Bendall
EGM Operations and Services

sunwater

P [redacted]
M [redacted]
E [redacted]
sunwater.com.au

Green Square
North, Level 9, 515
St Pauls Terrace,
Fortitude Valley,
Queensland 4006



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From: Russell Denton

Sent: Monday, 4 February 2019 6:48 AM

To: Marian Hart <[redacted]@sunwater.com.au>; Michael Hughes <[redacted]@sunwater.com.au>; Russell Denton <[redacted]@sunwater.com.au>; Adam Broit <[redacted]@sunwater.com.au>; Kym Brookes <[redacted]@sunwater.com.au>; OC Team <OCTeam@sunwater.com.au>; Incident Coordinator <IC_EAP@sunwater.com.au>; Robert.McCaig <[redacted]@townsville.qld.gov.au>; Shaun Warner (External) <[redacted]@sunwater.com.au>; Flood Operations Decision Maker <fodm@sunwater.com.au>; David Hayes <[redacted]@sunwater.com.au>; Joel Musty <[redacted]@sunwater.com.au>; Ken Hughes <[redacted]@sunwater.com.au>; scott.moorhead <[redacted]@sunwater.com.au>

Cc: Media <Media@Sunwater.com.au>; Executive Leadership Team <ExecutiveLeadershipTeam@sunwater.com.au>; [redacted]@aecom.com; Jared Johnston <Jared.Johnston@[redacted]@qitplus.com>

Subject: Ross River Flood Guidance 21 - 04/02/2019 - 06:00

Hello,

Please find attached the latest flood guidance report for Ross River Dam relating to the current weather event.

The Sunwater Operations Centre is monitoring conditions on a 24-hour basis.

If you have any queries regarding the attached guidance, please contact the Sunwater Operations Centre at 3120 0245.

Regards,
Russell

Russell Denton
Hydrographic Officer

sunwater

P [redacted]
M [redacted]
E [redacted]
sunwater.com.au

Green Square North,
Level 9, 515 St Pauls
Terrace, Fortitude
Valley, Queensland
4006



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Released under RTI - DPC

Ross River Dam Flood Guidance

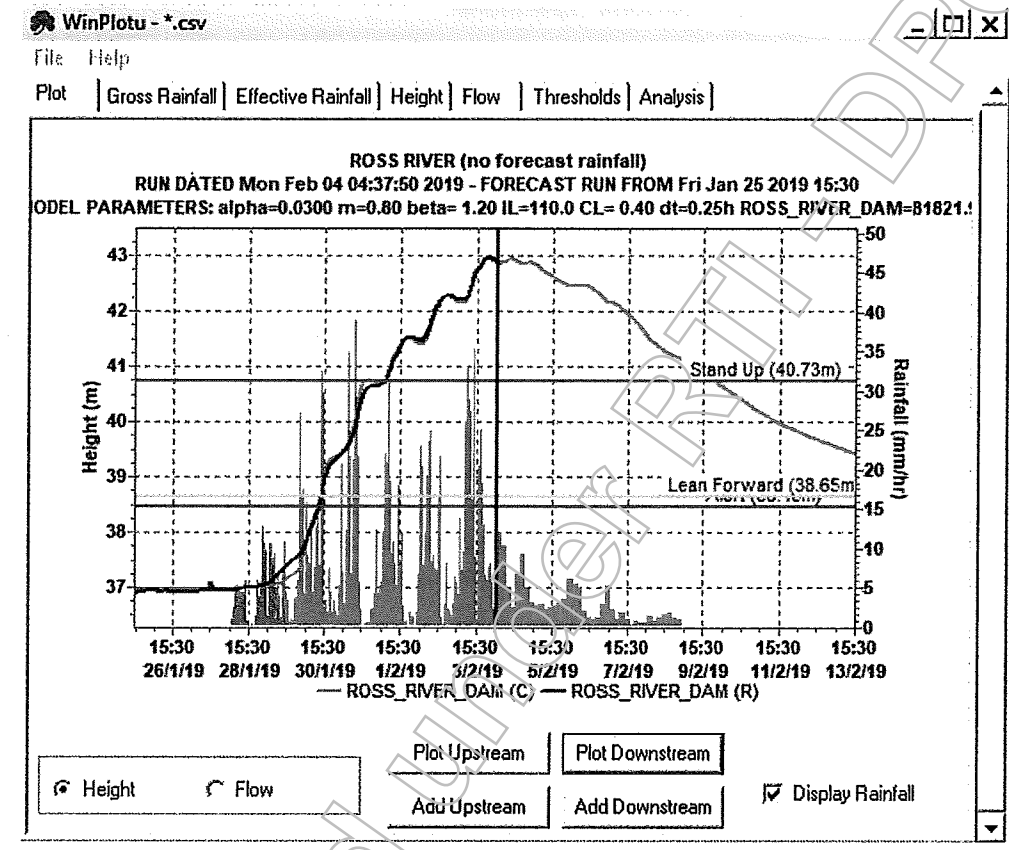
sunwater

Event: Monsoonal Event		
Date: 04 February 2019	Time: 06:00	Sitrep Number: 21
Distribution: Townsville City Council, Sunwater Operations		
Update		
<ul style="list-style-type: none"> • The water surface level at Ross River Dam exceeded 43.0m AHD (1,875 m³/s) at 20:00 03/02/2019 and the outside gates (gates 1 and 3) were lifted out of the water as per the automatic gate operations • Current water level is 42.84m at 06:00 04/02/2019 with an outflow of 1,821 m³/s • Based on observed and forecast rainfall (ADFD 25%) the dam will maintain similar surface levels of 43m for the remainder of Monday. • Water surface levels are then forecast to continue to lower pending any variation to the BoM rainfall forecast • The outside gate pair (gates 1 and 3) will return to an opening height of 3.75m above the spill crest when the water surface elevation returns to 42.5 mAHD under automatic operations. This is expected to occur on the evening of Tuesday, 5/02/2019. • BoM are forecasting about 50mm over the next 6 hours to 13:00 on 4/02/2019 and potentially 150mm over the next 24 hours. However the monsoonal conditions still have the potential to generate significant rainfall totals above the current forecast information and we are continuing to monitor. 		
Forecast		
Forecast rainfall 24 hours to 07:00 05/02/2019 (BoM ADFD 25% - issued at 04:00 04/02/2019)		

Ross River Dam Flood Guidance

sunwater

Water surface level prediction plot (forecast rainfall based on BoM ADFD 25%)



Gate Settings

Current Status – all gates are currently open and in automatic operation as instructed by Townsville City Council. Opening heights and discharge are presented below, discharge at 06:00 was 1,821 m³/s.

Table 1. Gate settings at 06:00 04/02/2019

	Gate 1	Gate 2	Gate 3
Opening height (m)	10.93	11.00	11.01
Discharge (m ³ /s)	587.0	646.7	587.0

Next update

04/02/2019 12:00

Prepared by Russell Denton | Operation Centre Duty Officer

Reviewed by Tim Lawrence | Flood Operations Decision Maker

Subject: Fwd: Ross River Flood Guidance 21 - 04/02/2019 - 06:00
Date: Monday, 4 February 2019 at 8:32:13 am Australian Eastern Standard Time
From: Dave Stewart
To: Sara Lando
Attachments: image345513.png, image241922.png, image862208.png, image539880.png, image237361.png, image621373.png, image008449.png, image057177.png, PRODUCTION-#2406249-v1-Ross_River_Dam_Flood_Guidance_21.pdf

Dave Stewart
Director-General
Office of the Director-General
Department of Premier and Cabinet
[redacted]@premiers.qld.gov.au

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Subject: Fwd: Ross River Flood Guidance 21 - 04/02/2019 - 06:00

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Deputy Commissioner
PH [redacted]

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Bob, James (please advise if you do not wish to continue receiving as conscious you would be getting significant email traffic)

Our most recent flood guidance number 21 for Ross River Dam provided to TCC.
As previously stated BOM is the source of truth for flood heights and timing in Ross River as this guidance and modelling is developed for a specific purpose (determining likely scenario's at Ross River Dam only.)

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Colin

Colin Bendall
EGM Operations and Services

sunwater

P [redacted]
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Green Square
North, Level 9, 515
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Queensland 4006



Delivering water for prosperity

From: Russell Denton

Sent: Monday, 4 February 2019 6:48 AM



Subject: Ross River Flood Guidance 21 - 04/02/2019 - 06:00

Hello,

Please find attached the latest flood guidance report for Ross River Dam relating to the current weather event.

The Sunwater Operations Centre is monitoring conditions on a 24-hour basis.

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Regards,
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Russell Denton
Hydrographic Officer

sunwater

P
M
E



sunwater.com.au

Green Square North,
Level 9, 515 St Pauls
Terrace, Fortitude
Valley, Queensland
4006



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Released under RTI - DPC

Ross River Dam Flood Guidance

sunwater

Event: Monsoonal Event

Date: 04 February 2019

Time: 06:00

Sitrep Number: 21

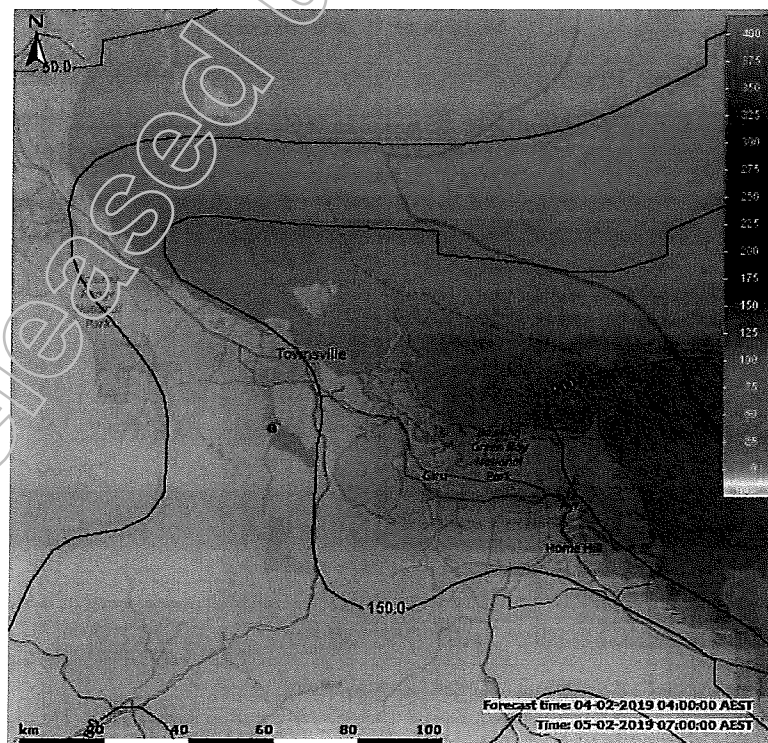
Distribution: Townsville City Council, Sunwater Operations

Update

- The water surface level at Ross River Dam exceeded 43.0m AHD (1,875 m³/s) at 20:00 03/02/2019 and the outside gates (gates 1 and 3) were lifted out of the water as per the automatic gate operations
- Current water level is 42.84m at 06:00 04/02/2019 with an outflow of 1,821 m³/s
- Based on observed and forecast rainfall (ADFD 25%) the dam will maintain similar surface levels of 43m for the remainder of Monday.
- Water surface levels are then forecast to continue to lower pending any variation to the BoM rainfall forecast
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Forecast

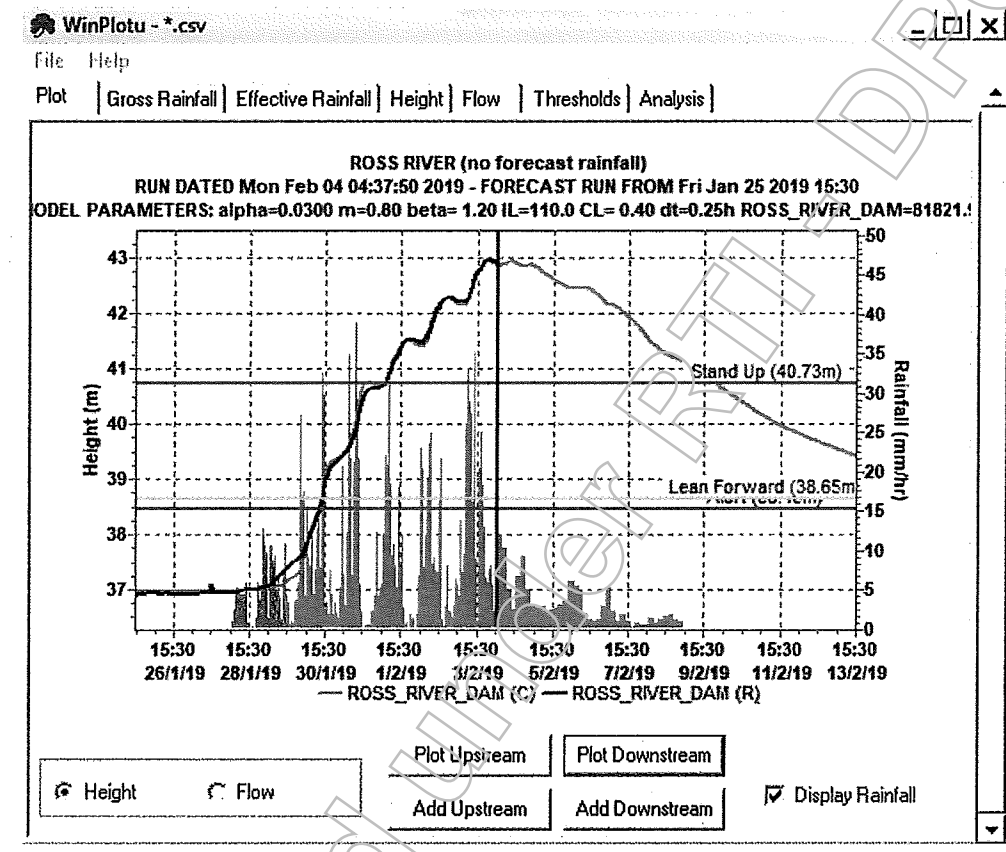
Forecast rainfall 24 hours to 07:00 05/02/2019 (BoM ADFD 25% - issued at 04:00 04/02/2019)



Ross River Dam Flood Guidance

sunwater

Water surface level prediction plot (forecast rainfall based on BoM ADFD 25%)



Gate Settings

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Opening height (m)	10.93	11.00	11.01
Discharge (m ³ /s)	587.0	646.7	587.0

Next update

04/02/2019 12:00

Prepared by Russell Denton | Operation Centre Duty Officer

Reviewed by Tim Lawrence | Flood Operations Decision Maker

Subject: Fwd: Updated Severe Weather Briefing for QDMC with New Aplin Weir Forecast [SEC=UNCLASSIFIED]
Date: Monday, 4 February 2019 at 10:10:03 am Australian Eastern Standard Time
From: Bruce Gunn
To: Tina Culpo
Attachments: image001.gif, ATT00001.htm, Severe Weather Briefing 04022019 - AM Update.pdf, ATT00002.htm

Regards
Bruce Gunn
Sent from my iPhone

Begin forwarded message:

From: James Thompson <[REDACTED]@bom.gov.au>
Date: 4 February 2019 at 9:40:49 am AEST
To: sdcc <sdcc@gfes.qld.gov.au>, QLD Flood Warning <flood.qld@bom.gov.au>, QLD Warnings <warnings.qld@bom.gov.au>, "Del Vecchio.Tony[OSC]" <[REDACTED]@police.qld.gov.au>, Victoria Dodds <[REDACTED]@bom.gov.au>
Subject: Updated Severe Weather Briefing for QDMC with New Aplin Weir Forecast [SEC=UNCLASSIFIED]

Hi All,

See attached for a small update to the previous slides for the QDMC to include the Ross River (Aplin Weir) Forecast River Heights.

Kind Regards,
James Thompson | Queensland Fire and Emergency Services Meteorologist

Released Under RTI - DPC



Australian Government
Bureau of Meteorology



Severe Weather Briefing

Monday, 4th February 2019

Released under RTI - DPC



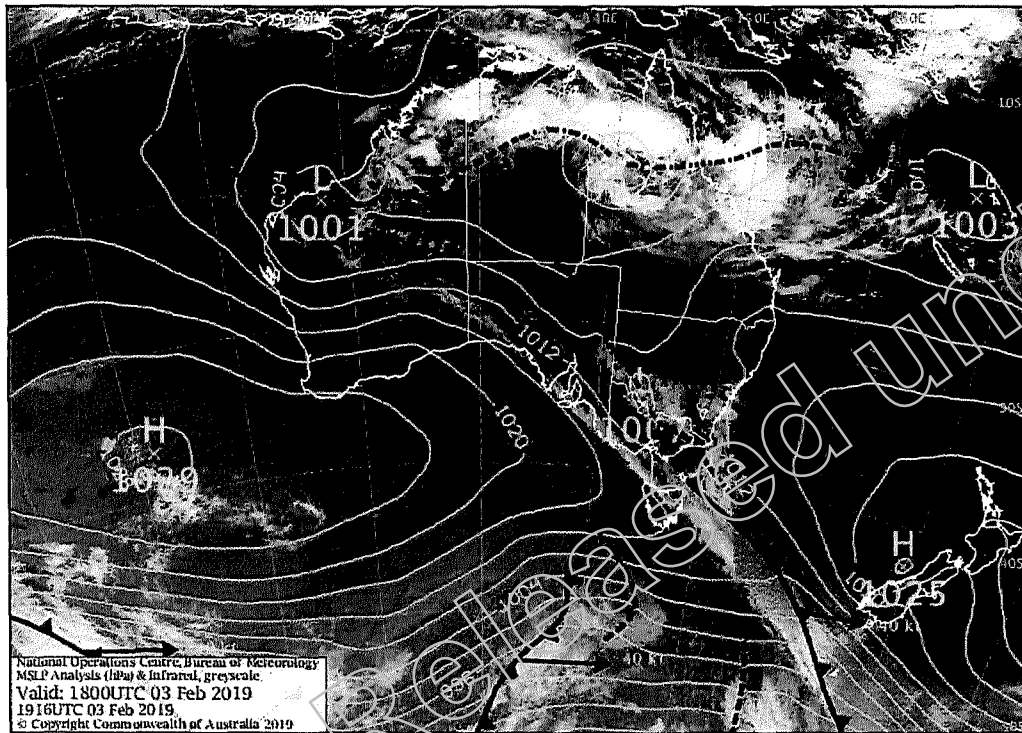
Australian Government

Bureau of Meteorology

Current situation - Satellite



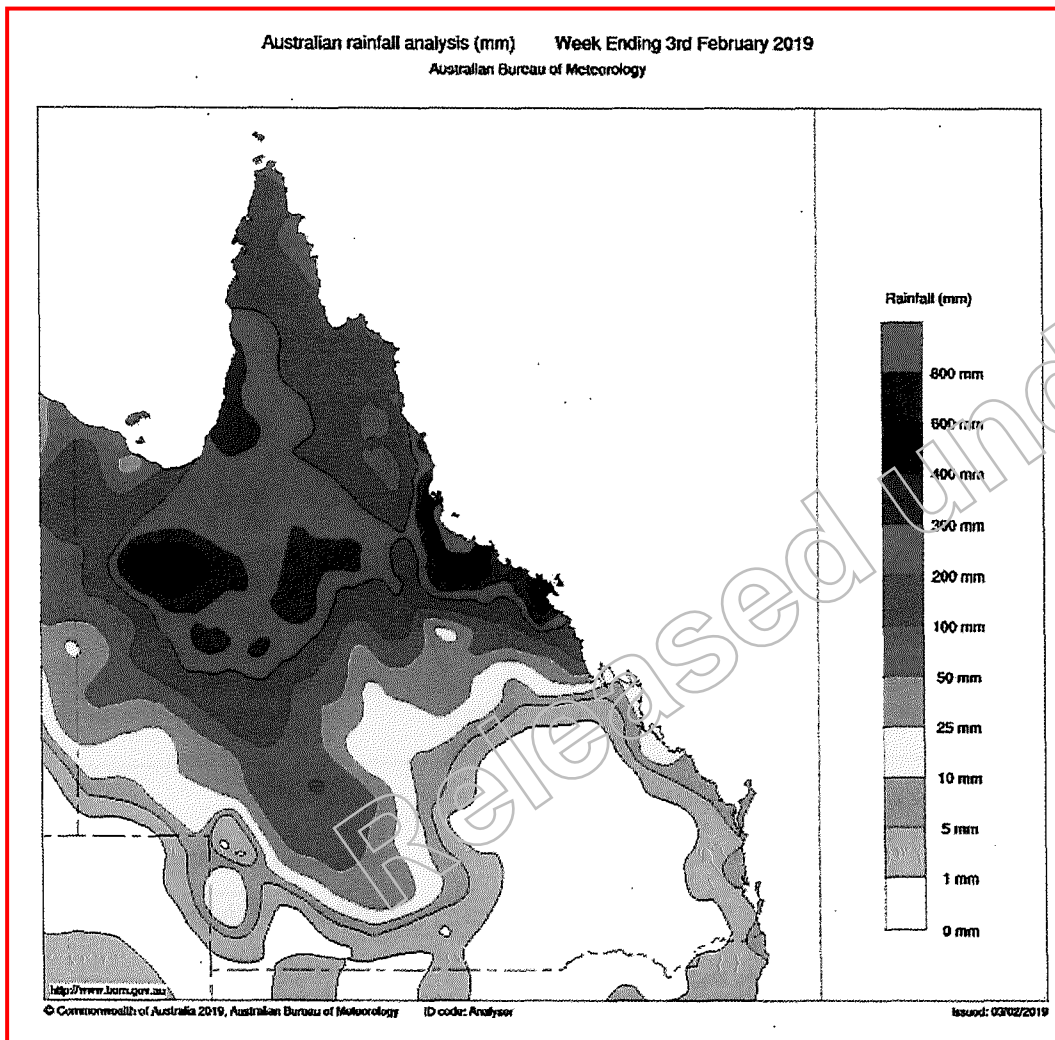
2



- Heavy showers and thunderstorms about an active monsoon trough and embedded tropical low.
- The monsoon flow is expected to remainder active through this week.



Recent conditions – rainfall



Highest rainfall totals in the 7 days to 9am AEST Sunday:

- 1600mm at Paluma
- 1568mm at Upper Bluewater
- 1554mm at Woolshed

Townsville:

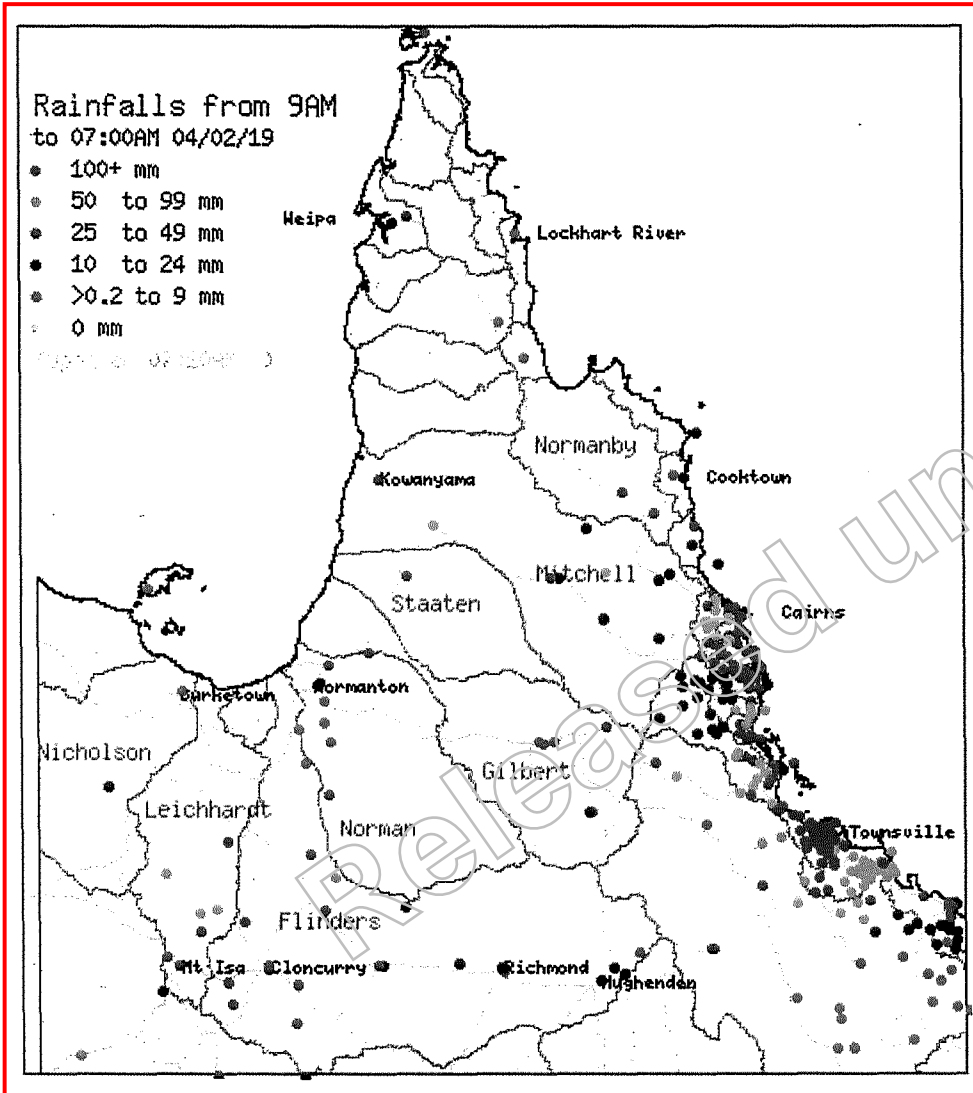
Townsville has recorded 1012mm in the 7 days to 9am on Saturday.

The Townsville record for a 7-day period was 886.2mm (1998).

The Townsville annual average rainfall is 1128mm.



Recent conditions – rainfall (to 7am Monday)

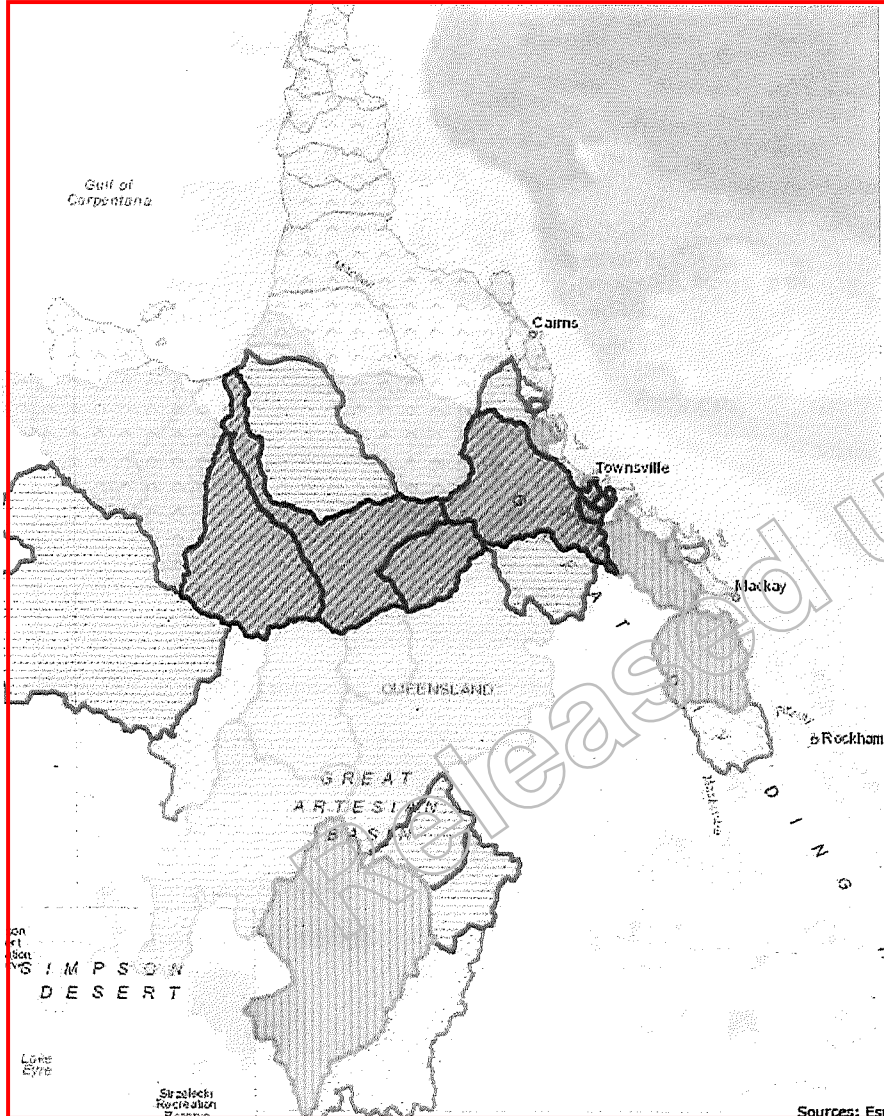


Since 9am Sunday:

- 401mm at Woodlands (near Ross River Dam)
- 233mm at Rollingstone
- 221mm at South Townsville, 204mm at Townsville airport
- 100mm+ north of Mount Isa
- 60-90mm near Giru
- 57mm at Sellheim (near Charters Towers)



Current Flood Watches/Warnings (as of 8:20am AEST Monday)



- **Record Major Flood Levels for Ross River (Townsville).** Aplin Weir forecast to reach ~4m (previous record was 1.77 metres in 1998).
- **Near-record Major Flood Levels for Haughton River (Giru).**
- **Major flood levels for Upper Burdekin (Selheim).** Currently above 2012 levels, may reach near 2011 levels.
- **Major for the Flinders, Cloncurry and Leichardt Rivers.**
- **Moderate flood warning for Herbert, Lower Burdekin, Don and Thomson and Barcoo Rivers (and Cooper Creek).**
- **Minor flood warnings for the Isaac River, Georgina River, Paroo and Murray Rivers.** Flood warning for the Diamantina and Tully Rivers.
- **Flood Watch for coastal catchments from Daintree to Mackay, the western Cape York Peninsula and Gulf of Carpentaria catchments.**



Severe Weather Warning 1 (as of 7:35am AEST Monday)



Coastal areas + ranges between Cardwell to Mackay:

- Intense rainfall and **damaging to locally destructive winds** are possible across north Queensland.
- 6-hourly rainfall totals of 150mm to 200mm are likely with concentrated areas of intense rainfall with totals up to 300mm possible, particularly with bands of thunderstorms.
- Creek and river catchments are already saturated and will therefore respond very rapidly to any rainfall.
- **Flash flooding is a high risk.** Landslides have been reported associated with this event and will continue to be possible in vulnerable areas that have experienced significant rainfall.



Severe Weather Warning 1 (as of 7:35am AEST Monday)



Northern interior, including Charters Towers, Cloncurry, Julia Creek, Gregory Springs, Winton and Hughenden:

- Heavy rainfall and damaging winds are forecast across north Queensland.
- 6-hourly rainfall totals of 70 to 120mm are possible.
- Damaging wind gusts up to 90km/h are also possible to the south of the monsoon trough and tropical low.



Severe Weather Warning 2 (as of 7:35am AEST Monday)



- Abnormally high tides are forecast around the Gulf of Carpentaria coast, including the Torres Strait Islands.
- Water levels above HAT are possible around the time of high tide, exacerbated by large waves through parts of the northern Gulf and Torres Strait.
- Monsoonal squalls with damaging wind gusts up to 90km/hr also possible north of Pormpuraaw, particularly with thunderstorms.

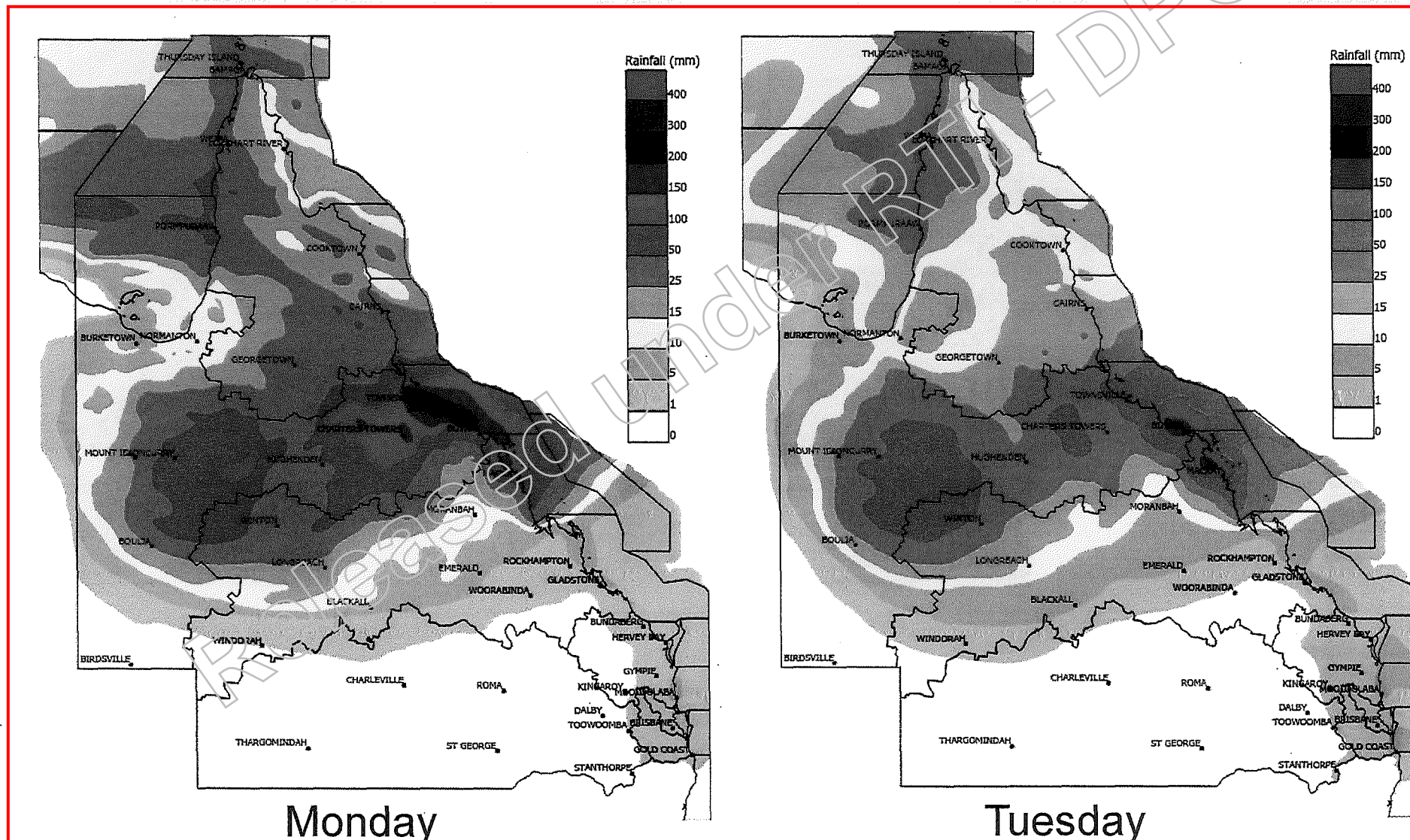


Australian Government
Bureau of Meteorology

Forecast conditions – rainfall (as of 7:30am AEST Monday)

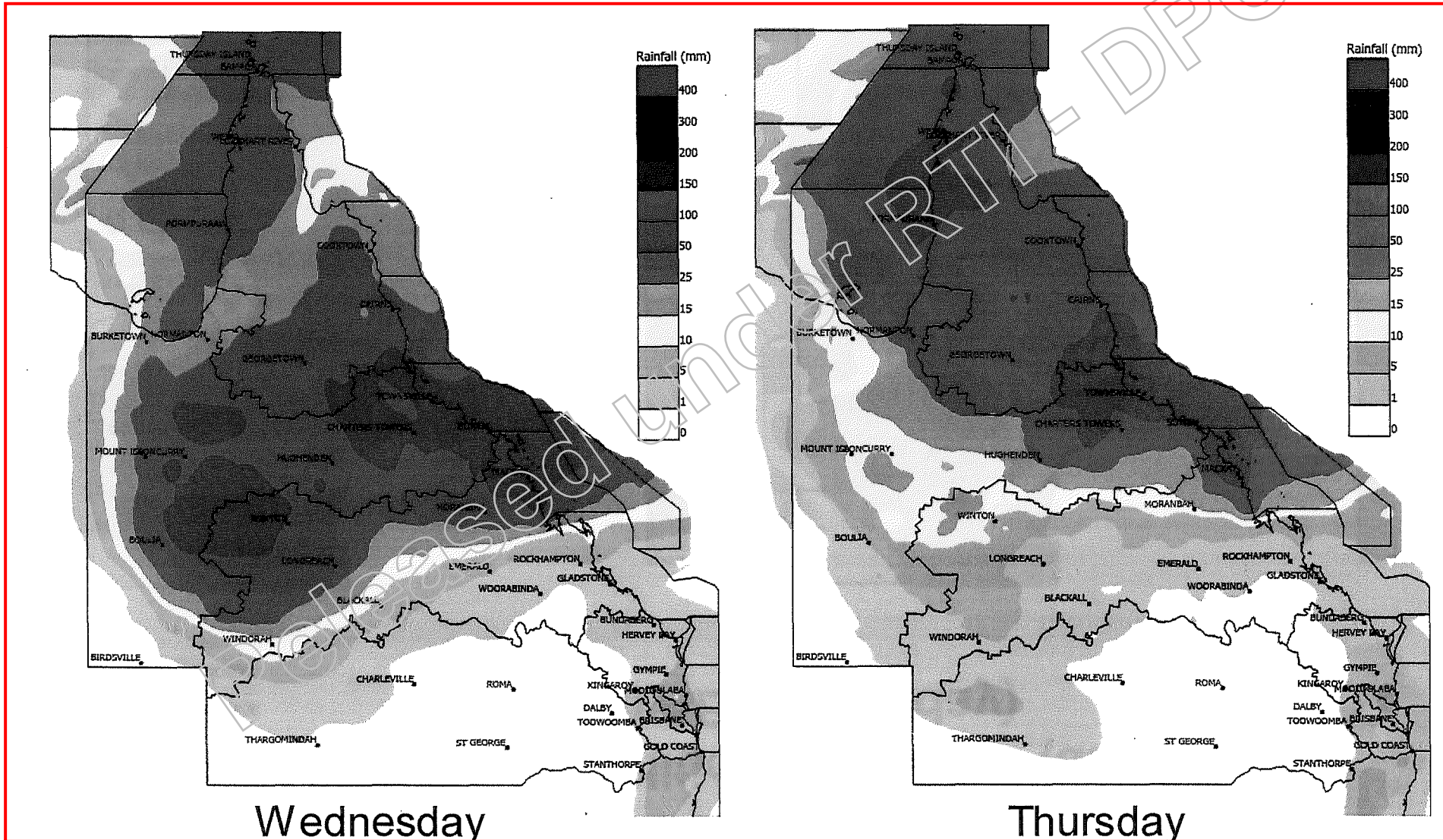


9





Forecast conditions – rainfall (as of 7:30am AEST Monday)





Australian Government
Bureau of Meteorology

Forecast scenario - Aplin Weir on the Ross River (as of 9:03am AEST Monday)



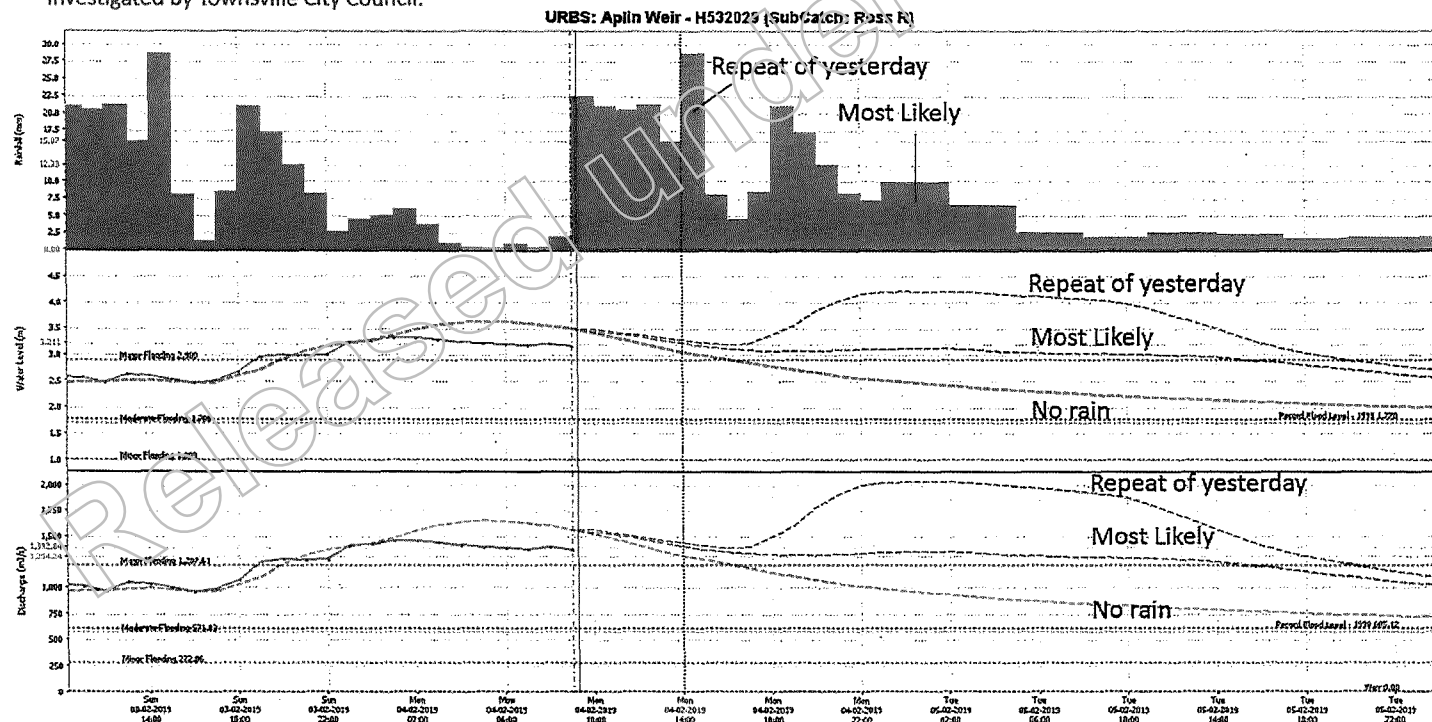
Forecast Scenario as @ 0800 hours Monday 04/02/2019

Current worst case scenario: Scenario where the rainfall that occurred in last 24 hours is repeated in the next 24 hours. There is a low (10%) possibility of seeing a similar rainfall burst to what was observed yesterday (approx. 300mm in 3 hours) at some point today. Advice from meteorologist is that this rainfall is a low chance and more certainty can be provided around the chance of this scenario as the day progresses.

Most likely scenario: 25% probability scenario from latest forecasts available in MetEye.

No further rain: If rainfall ceases immediately. As the day progresses, if we do not see rainfall in the catchment, levels closer to this scenario will become increasingly likely.

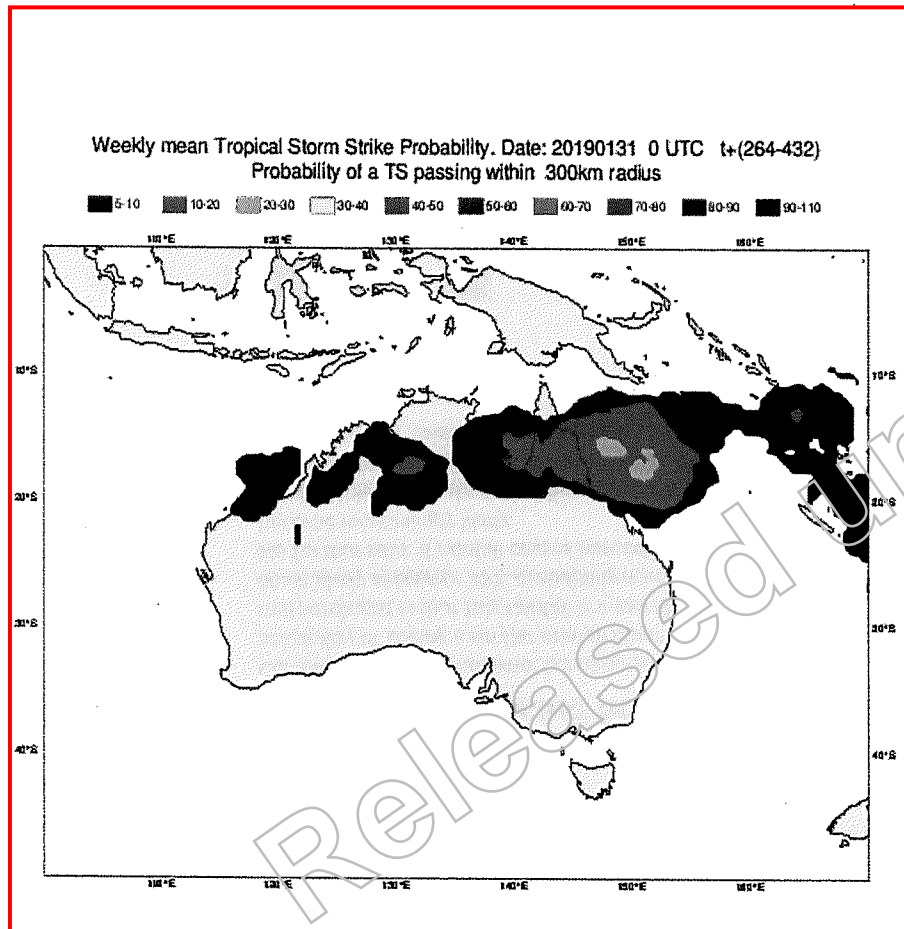
NB: Modelled peak modelled flows at Aplin Weir matched well with the outflow from the Ross River Dam late Sunday. Attenuation and breakouts of flow between Ross River Dam and Aplin Weir may account for the difference in recorded and modelled flows and this is currently being investigated by Townsville City Council.



NOT FOR DISTRIBUTION



Forecast scenario – Tropical Cyclone



- Monsoon trough with slightly elevated probability (~10%) of a TC mid-late this week.
- There is no significant, specific risk of a tropical cyclone developing across the next 7 days. However, given the time of year and a monsoon trough in the region, there is a slightly elevated probability of a tropical cyclone developing by mid-late this week.
- The next name on the tropical cyclone list is Savannah.



Key messages



- **Major flood levels for Ross, Haughton and Upper Burdekin Rivers.** Major flood warnings also for Flinders, Cloncurry and Leichardt Rivers.
- Moderate flood warnings for lower Burdekin, Herbert, Don and Thomson and Barcoo Rivers. Further flood warnings and flood watch also current.
- Heavy rainfall and damaging winds are forecast across north Queensland for the rest of this week, at least.
- 6-hourly rainfall totals of 150-200mm are likely, with concentrated areas of intense rainfall with totals 300mm+ possible, particularly with bands of thunderstorms, between Cardwell and Mackay.
- Abnormally high tides and damaging wind gusts are possible around the Gulf Country, Peninsula and Torres Strait Islands.
- **Many catchments in north Queensland are saturated so rivers and creeks are likely to respond rapidly to any further rainfall. Flash flooding and landslides remain a significant risk.**
- There is a low (~10%) chance of a TC developing from late this week.

Subject: Fwd: Ross River Flood Guidance 22 - 04/02/2019 - 12:00
Date: Monday, 4 February 2019 at 12:38:03 pm Australian Eastern Standard Time
From: Gee.BobW[REGOPS]
To: Dave Stewart
Attachments: image719337.png, image244264.png, image913313.png, image399080.png, image967537.png, image691362.png, image758262.png, image755703.png, PRODUCTION-#2406417-v1-Ross_River_Dam_Flood_Guidance_22.pdf

R.W. Gee APM
Deputy Commissioner
Ph [redacted]

From: Colin Bendall <[redacted]@sunwater.com.au>
Sent: Monday, February 4, 2019 12:36:40 PM
To: Gee.BobW[REGOPS]; james.purtill <[redacted]@dnrme.qld.gov.au>; Mark Rhimes (External); Linda Dobe
Subject: FW: Ross River Flood Guidance 22 - 04/02/2019 - 12:00

Bob, James

Our most recent flood guidance number 22 for Ross River Dam provided to TCC, we note concerns raised by TCC at QDMC re modelling and wish to confirm our modelling only relates to the lake level in Ross River Dam and should not be relied for determining downstream levels or the timing of peaks.

As previously stated BOM is the source of truth for flood heights and timing in Ross River as this guidance and modelling is developed for a specific purpose (determining likely scenario's at Ross River Dam only.)

SunWater provides the information as a guide and to assist only and should not be relied on for any other purposes such as determining downstream impacts or flood heights that need to consider a number of other factors such as local runoff and tide heights.

Let me know if I can assist further

Regards

Colin

Colin Bendall
EGM Operations and Services

sunwater

P [redacted]
M [redacted]
E [redacted]

Green Square
North, Level 9, 515
St Pauls Terrace,



Delivering water for prosperity

From: Lucas Hughes

Sent: Monday, 4 February 2019 12:15 PM

To: Russell Denton [redacted]@sunwater.com.au>; Marian Hart [redacted]@sunwater.com.au>; Michael Hughes [redacted]@sunwater.com.au>; Adam Broit [redacted]@sunwater.com.au>; Kym Brookes [redacted]@sunwater.com.au>; OC Team <OCTeam@sunwater.com.au>; Incident Coordinator <IC_EAP@sunwater.com.au>; Robert.McCaig [redacted]; Shaun Warner (External) [redacted]@townsville.qld.gov.au>; Flood Operations Decision Maker <fodm@sunwater.com.au>; David Hayes [redacted]@sunwater.com.au>; Joel Musty [redacted]@sunwater.com.au>; Ken Hughes [redacted]@sunwater.com.au>; scott.moorhead [redacted]

Cc: Media <Media@Sunwater.com.au>; Executive Leadership Team <ExecutiveLeadershipTeam@sunwater.com.au>; [redacted]@aecom.com; Jared Johnston [redacted]@townsville.qld.gov.au>; [redacted]@qitplus.com; Ashley.Astorquia [redacted]; [redacted]@aecom.com; Zahid.Ahmed [redacted]; Darron.Irwin [redacted] john.lay [redacted]; [redacted]@aecom.com

Subject: Ross River Flood Guidance 22 - 04/02/2019 - 12:00

Hello,

Please find attached the latest flood guidance report for Ross River Dam relating to the current weather event.

The Sunwater Operations Centre is monitoring conditions on a 24-hour basis.

If you have any queries regarding the attached guidance, please contact the Sunwater Operations Centre at 3120 0245.

Regards,

Lucas Hughes
Flood Engineer



P [redacted]
M [redacted]
E [redacted]
sunwater.com.au

Green Square North,
Level 9, 515 St Pauls
Terrace, Fortitude
Valley, Queensland
4006



Delivering water for prosperity

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Released under RTI - DPC

Ross River Dam Flood Guidance

sunwater

Event: Monsoonal Event

Date: 04 February 2019

Time: 12:00

Sitrep Number: 22

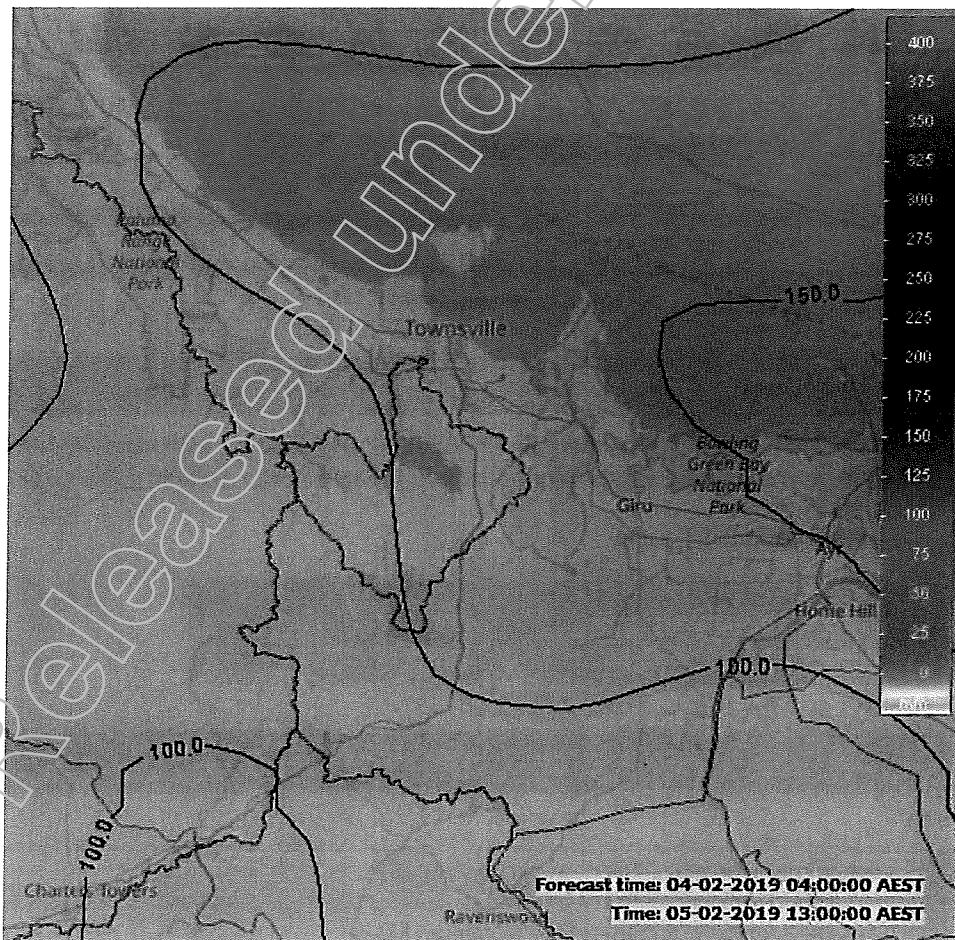
Distribution: Townsville City Council, Sunwater Operations

Update

- The water surface level at Ross River Dam continues to fall since peaking at 43.0m AHD (1,875 m³/s) at 20:00 03/02/2019.
- The Current water level is 42.56m with an outflow of 1,725 m³/s (as of 11:50)
- As directed by Townsville City Council, manual gate operations are currently in place as of 12:00 4/2/2019, keeping the gate openings at fully open.
- BoM are forecasting about 25mm over the next 6 hours and potentially 100mm over the next 24 hours. However, the monsoonal conditions still have the potential to generate significant rainfall totals above the current forecast information and we are continuing to monitor.

Forecast

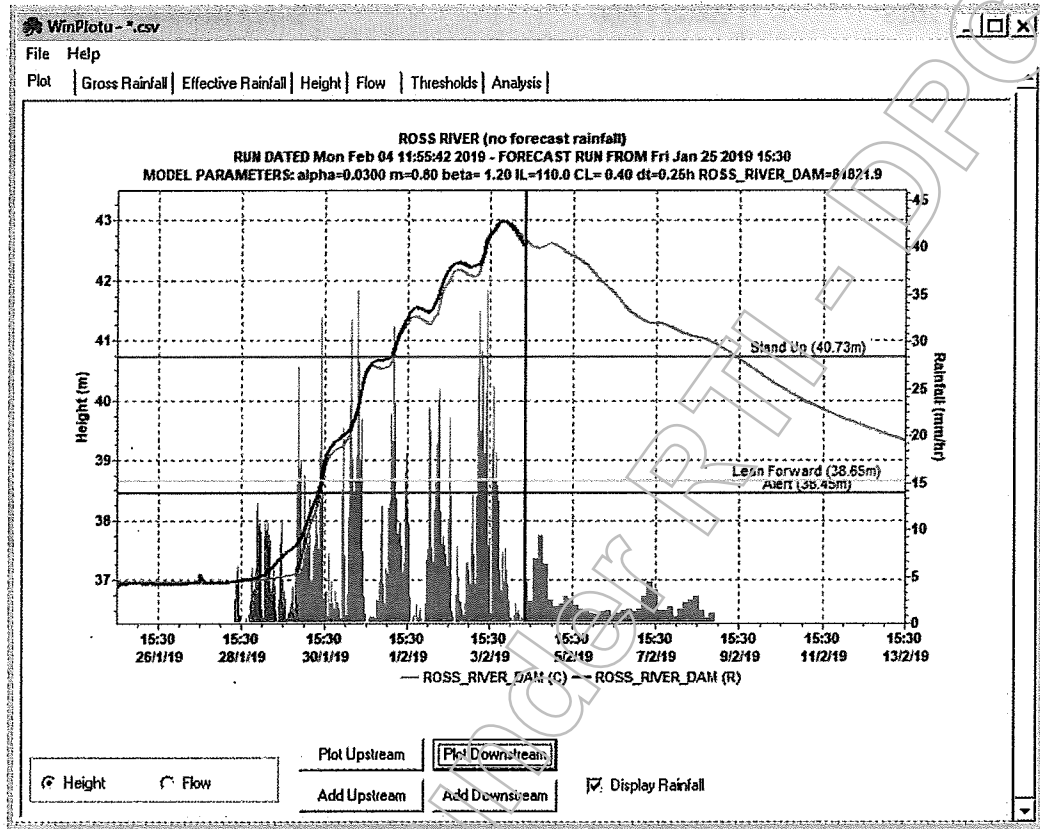
Forecast rainfall 24 hours to 13:00 05/02/2019 (BoM ADFD 25% - issued at 04:00 04/02/2019)



Ross River Dam Flood Guidance

sunwater

Water surface level prediction plot (forecast rainfall based on BoM ADFD 25%)



Note that for falling lake levels, forecast hydrographs are being compared to actual rates of fall from observed lake levels.

Gate Settings

Current Status – all gates are currently fully open and in manual operation as instructed by Townsville City Council. Opening heights and discharge are presented below, discharge at 11:50 was 1,725 m³/s.

Table 1. Gate settings at 11:50 04/02/2019

	Gate 1	Gate 2	Gate 3
Opening height (m)	10.88	11.00	11.02
Discharge (m ³ /s)	556	612	556

Next update

04/02/2019 16:00

Prepared by Lucas Hughes | Operation Centre Duty Officer

Reviewed by Tim Lawrence | Flood Operations Decision Maker

Subject: FW: Correspondence from Ken Pearce
Date: Wednesday, 13 February 2019 at 9:57:28 am Australian Eastern Standard Time
From: Mark Cridland
To: Rachel Hunter
CC: Julia Sheedy
Attachments: image004.png, image002.png, image001.png, image006.png

Hi Rachel

I have spoken with Denise and advised the Inspector General has spoken with Mr Pearce and invited him to make a submission.

We also advised the Inspector General we would refer Mr Pearce's email to him. Below is the referral.

Exempt Sch.3(6)(c)(i) Parliament
privilege

No further action required.



Mark Cridland
Deputy Director-General
Policy Division
Department of the Premier and Cabinet

P 07 3003 9408 M [REDACTED]
Level 30, 1 William Street, Brisbane QLD 4000
PO Box 15185, City East, QLD 4002

From: Rebecca McGarrity
Sent: Wednesday, 13 February 2019 9:54 AM
To: Iain.MacKenzie@igem.qld.gov.au
Cc: Mark Cridland <mark.cridland@premiers.qld.gov.au>; Glenys Jenkin <Glenys.Jenkin@premiers.qld.gov.au>
Subject: Correspondence from Ken Pearce

Hello Iain,

Further to our conversation, please see the attached email from Mr Ken Pearce for your information and consideration.

I note you have phoned Mr Pearce this morning and invited him to make a submission to your review into the North Queensland weather event.

Regards,



Rebecca McGarrity
Executive Director
Social Policy, Policy Division
Department of the Premier and Cabinet
P 07 3003 9156 M [redacted]
Level 30, 1 William Street, Brisbane QLD 4000
PO Box 15185, City East, QLD 4002

From: Ken Pearce <[redacted]>
Sent: Monday, 11 February 2019 10:57 PM
To: [redacted]@mauriceblackburn.com.au; IMF Bentham <[redacted]>; The Premier <The.Premier@premiers.qld.gov.au>; Leader of the Opposition <reception@opposition.qld.gov.au>; Townsville Mayor <Mayor@townsville.qld.gov.au>
Cc: Phil Hassid <[redacted]>; Greg McMahon <[redacted]>; Michael Gillis <[redacted]>; David Stark <[redacted]>; Matt Wordsworth <[redacted]>; Hedley Thomas <[redacted]>; Sam Weir <[redacted]>; Michael Madigan <[redacted]>; Mark Solomons <[redacted]>
Subject: TRIM: BROADCAST/DISASTER/Townsville Flooding - Ross River Dam

Mismanagement of major public infrastructure continues in Queensland

With devastating consequences for the community, costing billions

The outcome of flooding in the Townsville area this last week may have been very different had the Wivenhoe Dam class action proceeded with due diligence. It has been eight years since the 2011 floods – it is simply not that big a task. Even the much bigger banking royal commission was able to be undertaken in less than twelve months.

It is most likely to have meant that a far more professional approach would have been taken in operating the crest gates on Ross River Dam during the recent floods; and that the havoc in the downstream community would have been avoided.

The challenge for operators of dams like Ross River Dam is to minimise downstream flooding; and the implications for the community. They conventionally do this by keeping the water level in the dam as low as prudently possible; and by increasing the discharge from the dam as slowly as prudently possible.

Reservoirs are operated at the lowest possible level in order to maximise the potential to mitigate the flood peak; reduce the prospects of the dam amplifying the flood peak; and reduce the risk of the dam failing.

The evidence is that the level in Ross River Dam rose continuously from the onset of the flood to a peak of about 247% when the discharge from the dam doubled due to the automatics fully opening the crest gates.

Professional operators endeavour to avoid the automatics from taking control of releases as the purpose of the automatics is to limit the risk of a catastrophic dam failure under extreme conditions. In effect the automatics are a fail safe system. While the recent wet weather may be seen as an extreme weather event when compared to normal seasons, it would have been a relatively minor event when compared to the flood which the dam would have been designed to accommodate. The operator's job is to protect the downstream community. What all this means is that the operator is duty bound to have the gates fully open at the point in time when the gates would have otherwise been fully opened

automatically i.e. there is no increase in discharge due to the automatics tripping. Reliance on the automatics for operation of the gates is a high risk operating strategy and is deemed to be professional negligence - it displays a total lack of regard for the downstream community. A sudden doubling of the discharge on the top of downstream floodwater would have caused a very dangerous and destructive surge. Additionally, the peak discharge from the facility would have been a lot higher than it would have been under manual operation under the same circumstances.

I am well qualified to make such comments, as I have in excess of thirty years' dam engineering experience and was one of the engineers responsible for the design of the Wivenhoe Dam facility.

Ross River Dam is owned by the Townsville City Council and apparently operated under some arrangement with SunWater. Flood gate operation is overseen by the Townsville Local Disaster Management Group which is chaired by Mayor Jenny Hill.

I note that the Mayor has said that Council decided to increase the flow above that allowed for in the Emergency Action Plan. The Mayor should be congratulated for Council's foresight in taking control of the situation; however, it is clearly evident that the action was taken far too late in the event. Media reports indicate that the advice of experts was sought. It begs the question as to who the experts were. They were clearly not experts in dam engineering or flood risk management, as the outcome would have been very different.

My advice to the Mayor is to terminate Council's arrangements with SunWater as the corporation takes a very unprofessional approach to the operation of its dams. SunWater nearly created a humanitarian disaster in South East Queensland when operating Wivenhoe Dam during the Millennium Drought; and was responsible for creating huge surges in the Brisbane River in 2011 and in the Callide Valley in 2013 and again in 2015. In 2015 they relied on the automatics to control the opening of the gates and released a surge in Callide Creek that was ten (10) times the bank full capacity of the watercourse.

It is clear that the Ross River Dam operators are inadequately trained for the task at hand. I would suggest to the Mayor that Council engage a dam engineer to oversee the operation of the facility as it is a very high risk activity, especially in view of the dam's foundation issues. While Council may have consulted expert hydrologists and meteorologists, they are unable to provide expert advice on the operation of gated dams as dam engineering is not one of their competencies. It has been my experience that even eminent hydrologists and meteorologists are not aware of dam flood risk management conventions.

The Premier has called the Townsville flood an "unprecedented" weather event, seemingly as an excuse for the devastation wrought on the Townsville community, attempting to shift the blame from the State to mother nature. **It is however clear that Ross River Dam was designed to protect the City of Townsville from floods far in excess of recent flooding; and that the dam would have protected the community if the gates had been professionally operated.** It is about time that the Premier stopped blaming the weather for the havoc caused by the State's unprofessional water bureaucracy.

The approach to date has been to have inquiries which have allowed powerful vested interests within the bureaucracy to spread misinformation, hijack the agenda and sweep the issues under the carpet. e.g. The Premier promised the people in the Callide Valley that the Government would determine the role that Callide Dam played in the 2015 flood event disaster. The Inspector-General of Emergency Management was commissioned to investigate; however, could not be persuaded to address the issue of SunWater's negligence in the operation of the Callide Dam floodgates. He simply failed to deliver on the Premier's commitment in relation to the dam. In response to the resulting outcry, the Chairman of the Reconstruction Commission was commissioned to oversee further studies prior to the 2017 State election. He also could not be induced to consider the issue. The studies were very unprofessional. It is undoubtedly the case that the outcome in the Townsville community would have been very different had the Chairman or the Inspector-General met their obligations to the Premier.

Where is the regulator – at best, fast asleep at the wheel. The regulator's role is to ensure that service providers understand and comply with the law. This means, among other things, ensuring that dam operators have the capacity and capability of operating large dams in compliance with conventional dam engineering principles and practices.

A senior member of the regulator's staff has spoken out about SunWater's inability to function – which begs the question as to why the regulator has not taken action against the corporation. The Director-

General appears to have been captured by SunWater. The current regulator is the Department of Natural Resources, Mines and Energy. The Director-General, Mr James Purtil is in breach of the provisions of the professional engineers act. There are also sufficient grounds to charge Mr Purtil with criminal negligence. The same applies to SunWater's chief executive, Ms Nicole Hollows.

Bureaucratic failure has become far too acceptable to the Government of Queensland, which begs the questions as to how many more people have to die, how many more people and properties have to be devastated, and how much more money has to be wasted before the government will address the real issue – its unprofessional bureaucracy. With the changing weather patterns, it is of critical importance that the government build a very professional public sector. To do this it has to ensure that bureaucrats have the skills necessary to function; and that they are held accountable for poor outcomes.

The pressing of criminal charges against Mr Purtil and Ms Hollows would send a very strong message to the State public sector establishment, and to future aspirants for positions in the public service which are of fundamental importance to the safety of our communities and our standard of living. It would send the message to the the whole world that the Government is determined to build a strong State.

Ken Pearce
Registered Professional Engineer
Mobile:

Released under RTI - (b)(3)

Subject: Ross River Dam correspondence
Date: Thursday, 14 February 2019 at 9:57:33 am Australian Eastern Standard Time
From: Julia Sheedy
To: Rachel Hunter
Priority: High
Attachments: BROADCAST/DISASTER/Townsville Flooding - Ross River Dam.eml, DOC 19-25319 DISASTER LETTER from Michael Lincoln congratulating ~ her officers for the effective and efficient management of the floods in Townsville.pdf, image001.png, image002.png

Hi Rachel,

Here are the two pieces of correspondence that we can find in relation to Ross River Dam and its operations during the recent monsoonal weather event.

Thanks,
Julia



Julia Sheedy
Executive Director
Office of the Director-General
Department of the Premier and Cabinet
P 07 3003 9344 M [REDACTED]
Level 40, 1 William Street, Brisbane QLD 4000
PO Box 15185, City East, QLD 4002

Released under RTI - DPO

Subject: BROADCAST/DISASTER/Townsville Flooding - Ross River Dam

Date: Monday, 11 February 2019 at 10:57:25 pm Australian Eastern Standard Time

From: Ken Pearce

To: Rebecca Gilsenan, IMF Bentham, The Premier, Leader of the Opposition, Townsville Mayor

CC: Phil Hassid, Greg McMahon, Michael Gillis, David Stark, Matt Wordsworth, Hedley Thomas, Sam Weir, Michael Madigan, Mark Solomons

Mismanagement of major public infrastructure continues in Queensland

With devastating consequences for the community, costing billions

The outcome of flooding in the Townsville area this last week may have been very different had the Wivenhoe Dam class action proceeded with due diligence. It has been eight years since the 2011 floods – it is simply not that big a task. Even the much bigger banking royal commission was able to be undertaken in less than twelve months.

It is most likely to have meant that a far more professional approach would have been taken in operating the crest gates on Ross River Dam during the recent floods; and that the havoc in the downstream community would have been avoided.

The challenge for operators of dams like Ross River Dam is to minimise downstream flooding; and the implications for the community. They conventionally do this by keeping the water level in the dam as low as prudently possible; and by increasing the discharge from the dam as slowly as prudently possible.

Reservoirs are operated at the lowest possible level in order to maximise the potential to mitigate the flood peak; reduce the prospects of the dam amplifying the flood peak; and reduce the risk of the dam failing.

The evidence is that the level in Ross River Dam rose continuously from the onset of the flood to a peak of about 247% when the discharge from the dam doubled due to the automatics fully opening the crest gates.

Professional operators endeavour to avoid the automatics from taking control of releases as the purpose of the automatics is to limit the risk of a catastrophic dam failure under extreme conditions. In effect the automatics are a fail safe system. While the recent wet weather may be seen as an extreme weather event when compared to normal seasons, it would have been a relatively minor event when compared to the flood which the dam would have been designed to accommodate. The operator's job is to protect the downstream community. What all this means is that the operator is duty bound to have the gates fully open at the point in time when the gates would have otherwise been fully opened automatically i.e. there is no increase in discharge due to the automatics tripping. Reliance on the automatics for operation of the gates is a high risk operating strategy and is deemed to be professional negligence - it displays a total lack of regard for the downstream community. A sudden doubling of the discharge on the top of downstream floodwater would have caused a very dangerous and destructive surge. Additionally, the peak discharge from the facility would have been a lot higher than it would have been under manual operation under the same circumstances.

I am well qualified to make such comments, as I have in excess of thirty years' dam engineering experience and was one of the engineers responsible for the design of the Wivenhoe Dam facility.

Ross River Dam is owned by the Townsville City Council and apparently operated under some arrangement with SunWater. Flood gate operation is overseen by the Townsville Local Disaster Management Group which is chaired by Mayor Jenny Hill.

I note that the Mayor has said that Council decided to increase the flow above that allowed for in the Emergency Action Plan. The Mayor should be congratulated for Council's foresight in taking control of the situation; however, it is clearly evident that the action was taken far too late in the event. Media reports indicate that the advice of experts was sought. It begs the question as to who the experts were. They were clearly not experts in dam engineering or flood risk management, as the outcome would have been very different.

My advice to the Mayor is to terminate Council's arrangements with SunWater as the corporation takes a very unprofessional approach to the operation of its dams. SunWater nearly created a humanitarian disaster in South East Queensland when operating Wivenhoe Dam during the Millennium Drought; and was responsible for creating huge surges in the Brisbane River in 2011 and in the Callide Valley in 2013 and again in 2015. In 2015 they relied on the automatics to control the opening of the gates and released a surge in Callide Creek that was ten (10) times the bank full capacity of the watercourse.

It is clear that the Ross River Dam operators are inadequately trained for the task at hand. I would suggest to the Mayor that Council engage a dam engineer to oversee the operation of the facility as it is a very high risk activity, especially in view of the dam's foundation issues. While Council may have consulted expert hydrologists and meteorologists, they are unable to provide expert advice on the operation of gated dams as dam engineering is not one of their competencies. It has been my experience that even eminent hydrologists and meteorologists are not aware of dam flood risk management conventions.

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Where is the regulator – at best, fast asleep at the wheel. The regulator's role is to ensure that service providers understand and comply with the law. This means, among other things, ensuring that dam operators have the capacity and capability of operating large dams in compliance with conventional dam engineering principles and practices.

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Bureaucratic failure has become far too acceptable to the Government of Queensland, which begs the questions as to how many more people have to die, how many more people and

properties have to be devastated, and how much more money has to be wasted before the government will address the real issue – its unprofessional bureaucracy. With the changing weather patterns, it is of critical importance that the government build a very professional public sector. To do this it has to ensure that bureaucrats have the skills necessary to function; and that they are held accountable for poor outcomes.

The pressing of criminal charges against Mr Purtill and Ms Hollows would send a very strong message to the State public sector establishment, and to future aspirants for positions in the public service which are of fundamental importance to the safety of our communities and our standard of living. It would send the message to the the whole world that the Government is determined to build a strong State.

Ken Pearce
Registered Professional Engineer
Mobile:

Released under RTI - DP3

To

Ms Anastacia Palaszczuk

Premier of Queensland

PO Box 15185

City East 4002

Dear Madame

Congratulations to you and your officers for the effective and efficient management of the floods in Townsville. Consider the following:-

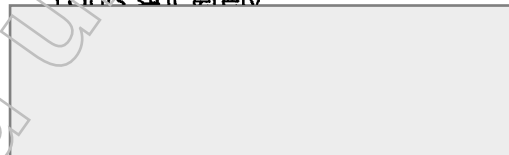
Find out all the relevant details of the operation of the Ross River dam by all means but do not let it degenerate into a hunt for a scape goat.

Exercise extreme care attributing man made effects from this flood on to the Great Barrier Reef. The flood is a natural occurrence. Man may believe he controls the world but there are appropriate limits to his abilities.

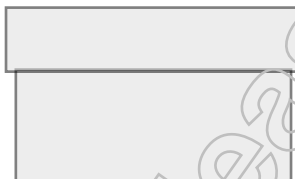
Please contemplate flood mitigation by turning excess water back across the Great Divide Range. This can be planned to take a hundred years or more. Economists need to be beaten off these proposals even if ecologists can consider something different.

I remain

Yours sincerely



From



Released Under the Official Information Act / DPIC

Subject: Ross River Dam correspondence
Date: Thursday, 14 February 2019 at 9:59:35 am Australian Eastern Standard Time
From: Rachel Hunter
To: 'Denise.Spinks@ministerial.qld.gov.au'
Priority: High
Attachments: BROADCAST/DISASTER/Townsville Flooding - Ross River Dam.eml, DOC 19-25319 DISASTER LETTER from Michael Lincoln congratulating ~ her officers for the effective and efficient management of the floods in Townsville.pdf, image001.png, image002.png

Hi Denise,

Here are the two pieces of correspondence in relation to Ross River Dam and its operations during the recent monsoonal weather event.

We are monitoring both issues and will escalate any correspondence.

Regards

Rachel



Rachel Hunter
A/Director-General
Office of the Director-General
Department of the Premier and Cabinet
P 07 3003 9387
Level 40, 1 William Street, Brisbane QLD 4000
PO Box 15185, City East, QLD 4002

Released under RTI - DPC

Subject: BROADCAST/DISASTER/Townsville Flooding - Ross River Dam

Date: Monday, 11 February 2019 at 10:57:25 pm Australian Eastern Standard Time

From: Ken Pearce

To: Rebecca Gilsenan, IMF Bentham, The Premier, Leader of the Opposition, Townsville Mayor

CC: Phil Hassid, Greg McMahon, Michael Gillis, David Stark, Matt Wordsworth, Hedley Thomas, Sam Weir, Michael Madigan, Mark Solomons

Mismanagement of major public infrastructure continues in Queensland

With devastating consequences for the community, costing billions

The outcome of flooding in the Townsville area this last week may have been very different had the Wivenhoe Dam class action proceeded with due diligence. It has been eight years since the 2011 floods – it is simply not that big a task. Even the much bigger banking royal commission was able to be undertaken in less than twelve months.

It is most likely to have meant that a far more professional approach would have been taken in operating the crest gates on Ross River Dam during the recent floods; and that the havoc in the downstream community would have been avoided.

The challenge for operators of dams like Ross River Dam is to minimise downstream flooding; and the implications for the community. They conventionally do this by keeping the water level in the dam as low as prudently possible; and by increasing the discharge from the dam as slowly as prudently possible.

Reservoirs are operated at the lowest possible level in order to maximise the potential to mitigate the flood peak; reduce the prospects of the dam amplifying the flood peak; and reduce the risk of the dam failing.

The evidence is that the level in Ross River Dam rose continuously from the onset of the flood to a peak of about 247% when the discharge from the dam doubled due to the automatics fully opening the crest gates.

Professional operators endeavour to avoid the automatics from taking control of releases as the purpose of the automatics is to limit the risk of a catastrophic dam failure under extreme conditions. In effect the automatics are a fail safe system. While the recent wet weather may be seen as an extreme weather event when compared to normal seasons, it would have been a relatively minor event when compared to the flood which the dam would have been designed to accommodate. The operator's job is to protect the downstream community. What all this means is that the operator is duty bound to have the gates fully open at the point in time when the gates would have otherwise been fully opened automatically i.e. there is no increase in discharge due to the automatics tripping. Reliance on the automatics for operation of the gates is a high risk operating strategy and is deemed to be professional negligence - it displays a total lack of regard for the downstream community. A sudden doubling of the discharge on the top of downstream floodwater would have caused a very dangerous and destructive surge. Additionally, the peak discharge from the facility would have been a lot higher than it would have been under manual operation under the same circumstances.

I am well qualified to make such comments, as I have in excess of thirty years' dam engineering experience and was one of the engineers responsible for the design of the Wivenhoe Dam facility.

Ross River Dam is owned by the Townsville City Council and apparently operated under some arrangement with SunWater. Flood gate operation is overseen by the Townsville Local Disaster Management Group which is chaired by Mayor Jenny Hill.

I note that the Mayor has said that Council decided to increase the flow above that allowed for in the Emergency Action Plan. The Mayor should be congratulated for Council's foresight in taking control of the situation; however, it is clearly evident that the action was taken far too late in the event. Media reports indicate that the advice of experts was sought. It begs the question as to who the experts were. They were clearly not experts in dam engineering or flood risk management, as the outcome would have been very different.

My advice to the Mayor is to terminate Council's arrangements with SunWater as the corporation takes a very unprofessional approach to the operation of its dams. SunWater nearly created a humanitarian disaster in South East Queensland when operating Wivenhoe Dam during the Millennium Drought; and was responsible for creating huge surges in the Brisbane River in 2011 and in the Callide Valley in 2013 and again in 2015. In 2015 they relied on the automatics to control the opening of the gates and released a surge in Callide Creek that was ten (10) times the bank full capacity of the watercourse.

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Premier of Queensland

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Please contemplate flood mitigation by turning excess water back across the Great Divide Range. This can be planned to take a hundred years or more. Economists need to be beaten off these proposals even if ecologists can consider something different.

I remain

[Redacted signature]

From

[Redacted name and address]

Released under the Official Information Act / DPC

Dave Stewart

From: PURTILL James [redacted]@dnrme.qld.gov.au>
Sent: Wednesday, 6 February 2019 6:34 PM
To: Dave Stewart
Subject: Fwd: Communications Log
Attachments: image483952.png; ATT00001.htm; image142290.png; ATT00002.htm; image580026.png; ATT00003.htm; image681819.png; ATT00004.htm; SUMMARY OF KEY COMMUNICATIONS BETWEEN SUNWATER AND TCC RELATING TO ROSS RIVER DAM GATE OPERATIONS.pdf; ATT00005.htm

Sent from my iPhone

Begin forwarded message:

From: Colin Bendall <[redacted]@sunwater.com.au>
Date: 6 February 2019 at 5:42:04 pm AEST
To: "james.purtill [redacted]@dnrme.qld.gov.au)" <[redacted]>
Cc: Nicole Hollows <[redacted]@sunwater.com.au>
Subject: Communications Log

James,

As requested

Please find attached Comms Log on Key Communications between Sunwater and TCC relating to Ross River Dam Gate Operations, Apology this took a while.

**Note that the above log is not a comprehensive and exhaustive list of all communications. This log is a preliminary record requiring further verification and may be subject to change.

Regards

Colin

Colin Bendall
EGM Operations and Services

Page 62 redacted for the following reason:

Access Deferred

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