



ATTACHMENTS

UNDER SEPARATE COVER

Ordinary Council Meeting

23 February 2021



NARRABRI SHIRE
DISCOVER THE POTENTIAL

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Boggabri Flood Study

Narrabri Shire Council
1599-01-J1, 29 January 2021



Report Title	Boggabri Flood Study
Client	Narrabri Shire Council
Report Number	1599-01-J1

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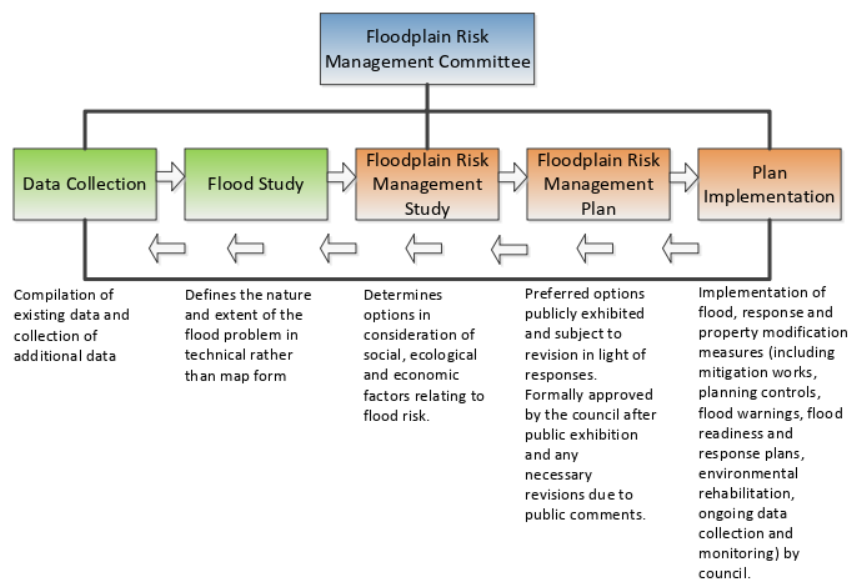
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Foreword

The NSW Government's Flood Prone Land Policy provides a framework for managing development on the floodplain. The primary objective of the policy is to develop sustainable strategies for managing human occupation and use of the floodplain using risk management principles. Under the Policy, the management of flood liable land remains the responsibility of local government. The State Government subsidises flood mitigation works to alleviate existing problems and provides specialist technical advice to assist Councils in the discharge of their floodplain management responsibilities.

The NSW Government's Floodplain Development Manual (2005) (the Manual) has been prepared to support the NSW Government's Flood Prone Land Policy. The Manual provides Council's with a framework for implementing the policy to achieve the policy's primary objective. The framework is shown below.



The Boggabri Flood Study constitutes the first stage of the Floodplain Risk Management process and assesses the risk of regional flooding from the Namoi River and Cocks Creek. It has been prepared by consultants WRM Water & Environment Pty Ltd for Narrabri Shire Council.

Acknowledgements and limitations

This project was prepared with financial assistance from the NSW Government's Floodplain Management Program. This document does not necessarily represent the opinions of the NSW Government or the Office of Environment and Heritage.

While all due effort has been made to ensure the reliability of flood model results, all models have limitations (Ball et al., 2019). The accuracy of any model is a function of the quality of the data used in the model development including topographical data, drainage structure data and calibration data. Modelling is by nature a simplification of very complex systems and results of flood model simulations should be considered as a best estimate only. There is, therefore, an unknown level of uncertainty associated with all model results that should be considered when utilising the outputs from this study.

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1 Introduction

1.1 BACKGROUND

The township of Boggabri is located within the Narrabri Shire Council in the northwest of New South Wales (NSW). Narrabri Shire Council has commissioned WRM Water & Environment Pty Ltd (WRM) to prepare a flood study for Boggabri in accordance with the NSW Floodplain Development Manual (DIPNR, 2005). Boggabri sits adjacent to the Namoi River and Cocks Creek. The location of Boggabri and the catchments of the Namoi River and Cocks Creek is shown in Figure 1.1.

The primary objective of the flood study is to improve understanding of flood behaviour and impacts, and better inform management of flood risk in the study area in consideration of the available information.

1.2 ADOPTED APPROACH

The Boggabri Flood Study involves detailed investigations of both Cocks Creek and the Namoi River and includes:

- identifying key infrastructure and flooding issues;
- reviewing and compiling available flood related data;
- establishing a computer based hydrological model of the Cocks Creek catchment and the Namoi River catchment downstream of Gunnedah and calibrating the model to historical events;
- establishing a computer based hydraulic model (TUFLOW) of the Namoi River and the Cocks Creek floodplain and calibrating the model to historical flood peaks;
- estimating the design flood discharges for the Namoi River and the Cocks Creek from the hydrological model and an annual series flood frequency analysis of the recorded peak flows;
- assessing the sensitivity of flooding behaviour to vegetation changes and potential climate change effects;
- preparing peak flood depth, extent and level maps for a range of design events;
- assessing the provisional hydraulic categories and undertake mapping of provisional hazard and preliminary emergency response planning classifications for Boggabri; and
- assessing flood damage costs for existing conditions.

The hydrological and hydraulic models were calibrated to the recorded rainfall and stream flow data for the 1997, 1998 and 2000 floods, as well as the major historic floods in 1971 and 1955.

1.3 REPORT STRUCTURE

The report is structured as follows:

- Section 2 describes the drainage characteristics of the Namoi River and Cocks Creek catchments;
- Section 3 describes the data available for the flood study, including previous flood studies conducted for Boggabri; information on available gauges in the study area; available precipitation data; available ground level data; data on structural assets; and feedback from the community on historic flooding;
- Section 4 describes the development and calibration of the hydrological model;

- Section 5 describes the development and calibration of the hydraulic model;
- Section 6 presents the design discharge estimates for both Namoi River and Coxs Creek;
- Section 7 presents the design event flood mapping and sensitivity analysis;
- Section 8 provides flood damage estimates for existing conditions;
- Section 9 summarises the findings for the study;
- Section 10 is a list of references;
- Appendix A shows the hydrological model calibration result hydrographs;
- Appendix B shows the hydraulic model calibration event mapping;
- Appendix C shows the hydraulic model design event mapping;
- Appendix D shows the provisional hydraulic hazard category maps for the study area based on the NSW Floodplain Management Manual; and
- Appendix E shows the provisional hydraulic hazard category maps for the study area based on the Australian Institute for Disaster Resilience.

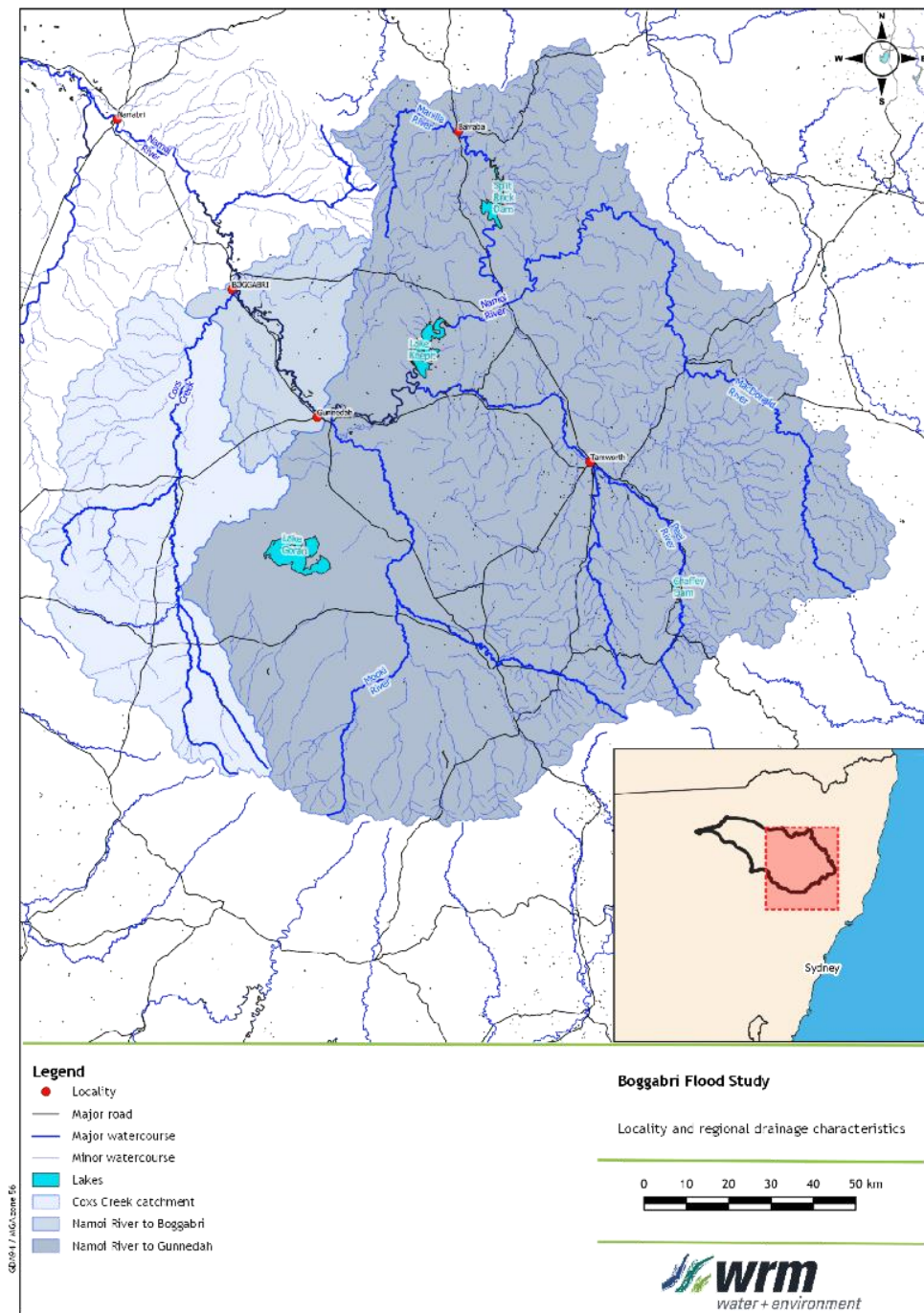


Figure 1.1 - Locality and regional drainage characteristics

2 Drainage characteristics

2.1 CATCHMENT OVERVIEW

The township of Boggabri is located within the Namoi River basin (see Figure 1.1). The Namoi River Basin, a part of the Barwon-Darling River system, extends over an area of 42,000 km² from the Great Dividing Range in the east to Walgett in the west. The major tributaries upstream of Boggabri include the Macdonald River, Manilla River, Peel River, Mooki River and Cocks Creek.

There are three major water supply dams in the catchment including Chaffey Dam on the Peel River, Split Rock Dam on the Manilla River, and Keepit Dam on the Namoi River. A description of the three dams is as follows:

- Keepit Dam, the largest water supply dam in the catchment, is located about 56 river kilometres upstream of Gunnedah. It was completed in 1960 (following a 20 year construction period) with a capacity of 425,000 ML. The catchment area of Keepit Dam is 5,700 km², or about 25% of the catchment area of the Namoi River to Boggabri.
- Chaffey Dam was completed in 1979 with a capacity of 69,000 ML. Its capacity was increased to 100,500 ML in 2016. The catchment area draining to Chaffey Dam is only 420 km² and therefore it does not have a significant impact on flooding at Boggabri. The Peel River drains into the Namoi River downstream of Keepit Dam.
- Split Rock Dam was completed in 1987 and has a capacity of 397,390 ML. The catchment draining to Split Rock Dam is 1,650 km². The Manilla River drains into the Namoi River upstream of Keepit Dam.

2.1 STUDY AREA DRAINAGE

2.1.1 Namoi River

Figure 1.1 shows the drainage characteristics of the Namoi River. The Namoi River has a catchment area of 17,100 km² to Gunnedah and 18,500 km² to Boggabri (excluding Cocks Creek). Downstream of Gunnedah, the Namoi River channel meanders along the eastern side of the Kamilaroi Highway across a broad floodplain. At Boggabri, the floodplain is approximately 5.5 km wide.

The Namoi River overflows into several flood channels between Gunnedah and Boggabri (see Figure 2.1). The most upstream flood channel is Deadmans Gully, which breaks out of the Namoi River channel about 10 km downstream of Gunnedah. It drains along the western floodplain before draining back into the Namoi River about 3 km upstream of Boggabri. Deadmans Gully, which is likely a remnant, or prior channel of the Namoi River, has little channel capacity or vegetation and is not a significant visual feature of the floodplain. Deadmans Gully also receives flows from Collygra Creek.

The Namoi River overflows to another remnant channel, Gulligal Lagoon, about 16 km upstream of Boggabri. Gulligal Lagoon has a well-defined channel between the Namoi River and the Kamilaroi Highway where it loses channel definition. It has little to no catchment area and only flows when the Namoi River is in flood. It drains back into the Namoi River about 6 km upstream of Boggabri.

Barbers Lagoon, which is also likely a remnant Namoi River channel, breaks out of the eastern side of the Namoi River channel about 6 km upstream of Boggabri. It drains in a northerly direction along a well-defined floodway channel before turning westward back to the Namoi River about 3 km and 7 km downstream of Boggabri via separate flood channels. Several minor watercourses including Bollol Creek and Driggle Draggie Creek drain into Barbers Lagoon from the east.

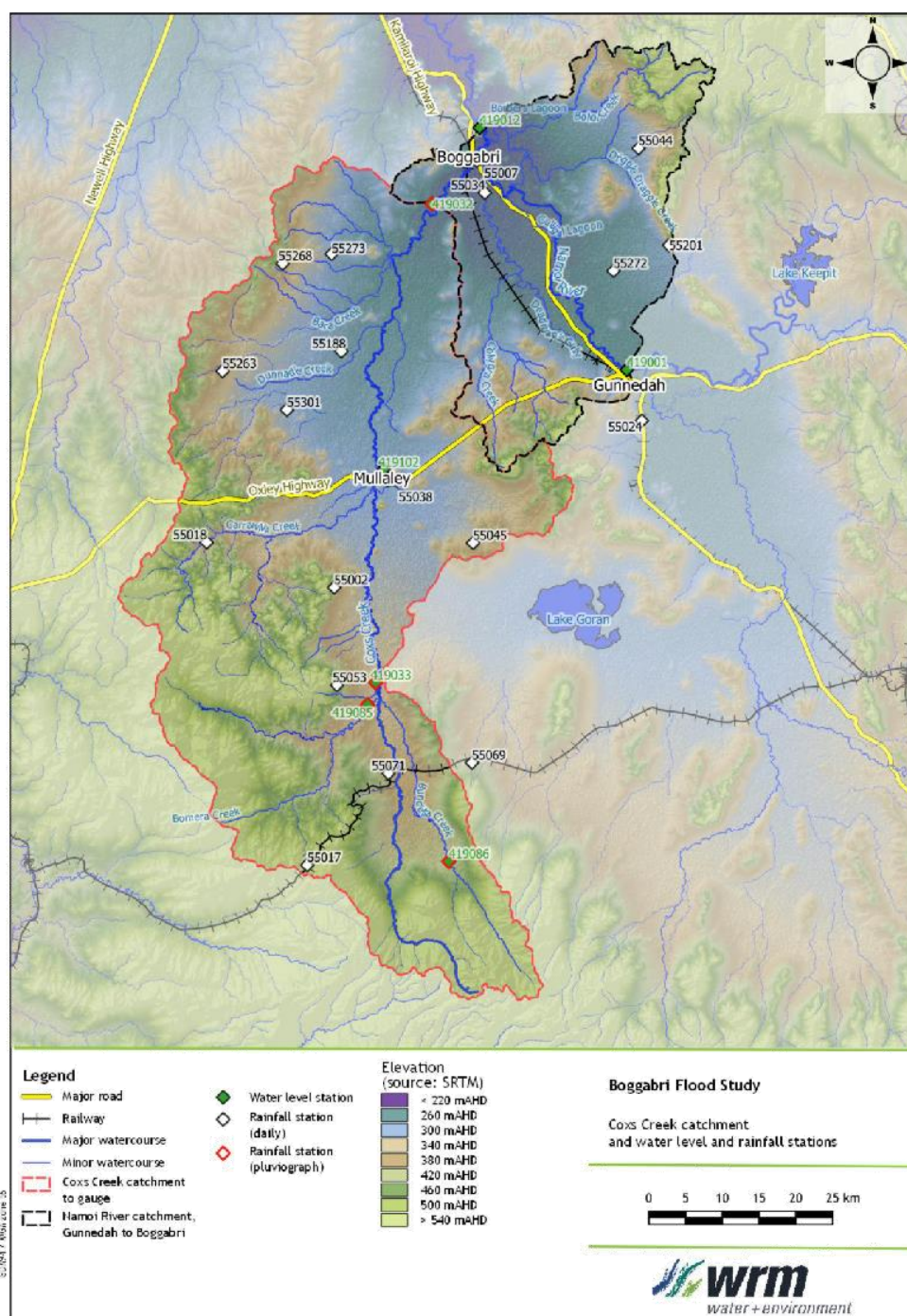




Figure 2.1 - Study area catchment and locations of rainfall and water level gauges



The floodplain narrows to about 1 km wide downstream of Barbers Lagoon due to a large rock formation known as Gins Leap, or Coo-loo-bindi. This narrowing of the floodplain forms a significant constriction to flood flows.

The Namoi River floodplain is used extensively for crop irrigation with many farm paddocks laser levelled and protected from flooding by earthen levees. These levees are managed under The Floodplain Management Plan for the Upper Namoi Valley Floodplain 2019 (plan), which commenced on 7 June 2019. The plan includes management zones, rules and assessment criteria for granting or amending approvals for flood works within the plan area.

2.1.2 Coxs Creek

Figure 2.1 shows the layout of the Coxs Creek catchment. It includes the major tributaries of Bundella Creek, Bomera Creek and Garrawilla Creek upstream of Mullaley and Dunnadie and Barra Creek downstream of Mullaley. The total area drained by the Coxs Creek to Boggabri is 3,878 km².

The catchment commences about 120 km to the south of Boggabri at a peak elevation of around 1,100 mAHD before draining into flat agricultural land as it gets closer to Mullaley at 315 mAHD. The floodplain downstream of Mullaley is very flat at a slope of 0.1%. The floodplain is extensively cropped with several paddocks containing flood protection levees. These levees are managed under the Lower Coxs Creek Floodplain Management Plan.

3 Available data

3.1 OVERVIEW

Available data for the calibration of the hydrological and hydraulic models consist of:

- previous reports;
- recorded water levels at the stream gauging stations and at surveyed locations across the floodplain;
- stream gauging station rating curves and recorded stream gaugings that convert recorded water levels to stream flows;
- recorded rainfall (daily and instantaneous pluviograph data);
- topographic data; and
- data on structural assets.

In addition, a questionnaire was sent to the community to provide information on historical flooding to assist with model calibration. A summary of the available data including the previous assessments at the site is outlined below.

3.2 PREVIOUS FLOOD STUDIES

A number of studies relating to flooding and drainage in and around Boggabri have been undertaken since the 1960's. A brief description of these studies is given below.

3.2.1 Carroll to Boggabri Flood Study and Compendium of data (SMEC, 2003)

The SMEC (2003) study was prepared to support the development of the Carroll to Boggabri Floodplain Management Plan (FMP) (DNR, 2006). Available data on recorded flood discharges and levels were reported and hydraulic modelling of the Namoi River floodplain was undertaken using the MIKE11 hydrodynamic modelling package. The model was calibrated to the 1955 and 1998 historical flood events and validated against 1984 and 2000 flood data. The estimated SMEC (2003) discharges for the 1955 event at Gunnedah has been used for model calibration in this study. Peak flood level data surveyed for the 1998 and 1955 flood were also used (see Section 5.3).

The report includes references to numerous historical studies and calculation folders prepared for the Namoi River of relevance to this study. Initial discussions with the Department of Environment, Energy and Science (DEES) indicates that these reports are not available.

3.2.2 Upper Cocks Creek Floodplain Management Plan (DNR, 2005)

This report was prepared to assess the community-owned strategies to manage flood risk and flood management issues and support the natural function of the floodplain environment. It is concerned with the floodplain of the Cocks Creek between Bundella and Mullaley and provides a framework for improving the drainage of the floodplain system, as well as resolving landuse management issues.

3.2.3 Background document to the Floodplain Management Plan for the Upper Namoi Valley Floodplain 2019 (NSW Dept of Industry, 2019)

This report was prepared to support the development of the Upper Namoi Valley Floodplain Management Plan, which replaced the Carroll to Boggabri Floodplain Management Plan. No additional data was provided in this report in relation to flooding at Boggabri. The hydraulic modelling of the Namoi River floodplain developed for the SMEC (2003) study was used for this study.

3.2.4 Boggabri Sewage Treatment Plant Flood Impact Assessment (Lyall & Associates, 2018)

This report was prepared for Narrabri Shire Council to determine peak flood levels at the Boggabri Sewage Treatment Plant. A TUFLOW hydraulic model was developed for the study. The model was calibrated to historical peak flood level data for the 1955 flood, which was obtained from a flood inundation photo provided by the Water Resources Commission (DNR, 2007). The 1955 flood photograph is shown in Figure 3.1. Flood marks shown in the photograph have been used to assist in model calibration in this study.

3.2.5 Additional reports

Data for model development and calibration was also obtained from a flood study undertaken for Boggabri Coal (WRM, 2009) and for the Narrabri Flood Study (Kinchill, 1991).

3.3 STREAM FLOW GAUGING STATION DATA

Stream water levels have been recorded in the study area at various locations by WaterNSW (and other government agencies) since 1891. Table 3.1 summarises the water level recording stations within the study area. The commencement date, highest gauged level and recorded peak level is also shown. The locations of the water level stations are shown in Figure 1.1.

Table 3.1 - Stream gauges within the study area

Station name	Station number	Commence -ment date	Highest gauged level (mAHD)	Date of highest gauging	Peak recorded level (mAHD)	Date of peak level
Namoi River						
Gunnedah	419001	Nov 1891 ^a -	263.585	Jul 1998	263.867	Feb 1971 ^c
Boggabri	419012	Nov 1911 ^b -	239.524	Nov 2000	241.366	Feb 1955 ^c
Coxs Creek						
Boggabri	419032	Jun 1965 -	248.039	Nov 2000	248.216	Nov 2000
Tambar Springs	419033	Jun 1965 -	341.586	Feb 1992	343.086	Jan 1996
Tambar-Premier Road (Bomera Ck)	419085	Jun 1995 -	343.628	Jan 1996	349.623	Jul 1998
Bundella (Bundella Ck)	419086	Dec 1995 -	420.736	Jan 1996	423.014	Jan 1996
Tourable	419102	Aug 2010 -	289.458	Jan 2013	290.107	Dec 2010

^a - Historical water level available for the 1864 event

^b - Predicted peak discharge data only available post 1937, partially derived based on historic rating curves

^c - SMEC (2003) reports higher peak flood levels occurred

The following is of note:

- The Coxs Creek at Boggabri gauge (GS419032), located approximately 9 km upstream of the Coxs Creek and Namoi River confluence, would represent the total Coxs Creek catchment flows. It is located within the study area and is the primary stream gauge to represent historical discharges and to determine design discharges at Boggabri from Coxs Creek. The catchment area to the gauge is shown in Figure 2.1.

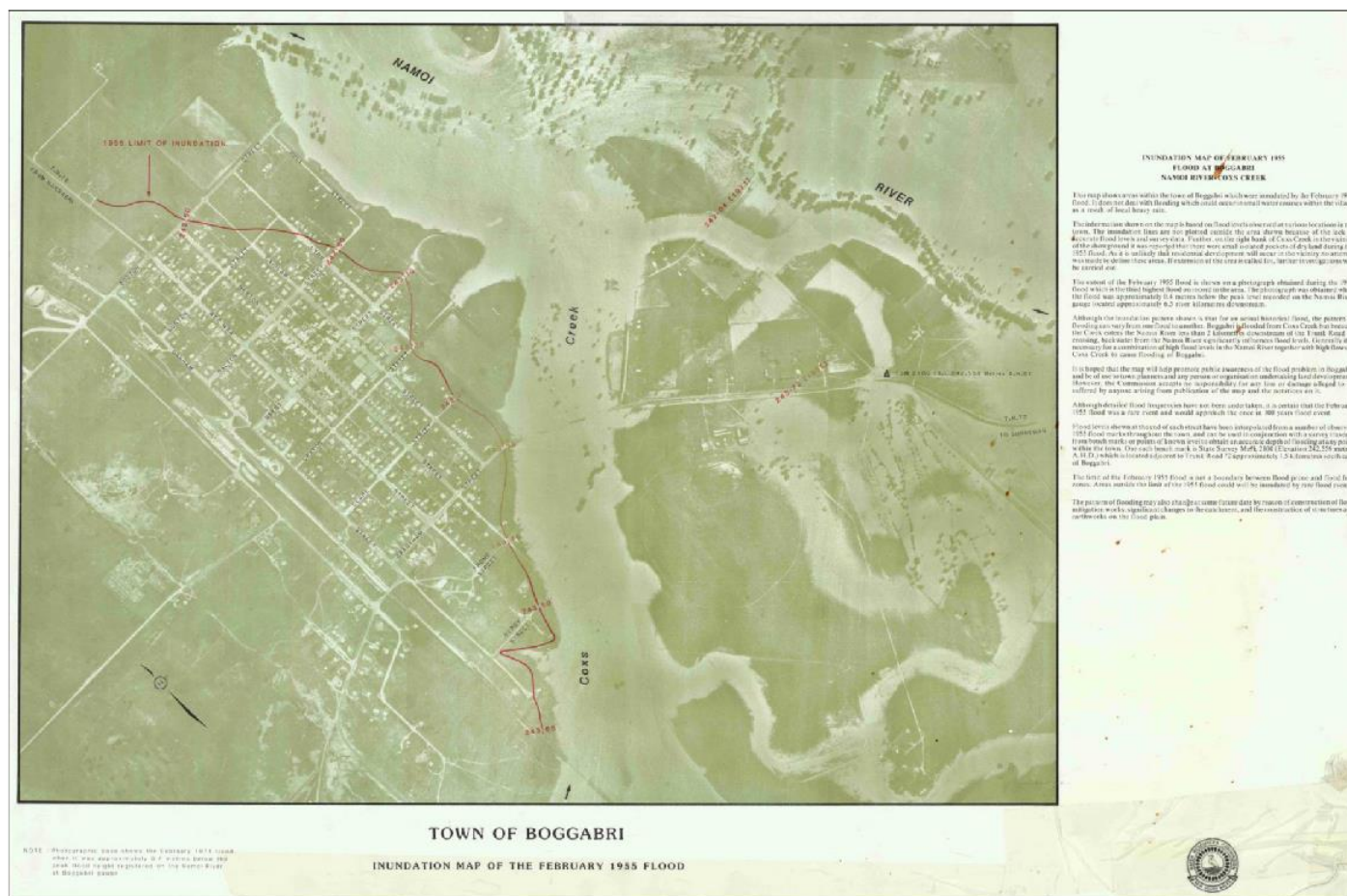


Figure 3.1 - Inundation map of the February 1955 flood

- The Namoi River at Boggabri gauge (GS419012), located approximately 4 km downstream of Boggabri, would represent the total discharge draining to Boggabri from both the Namoi River and Coxs Creek. It is located within the study area and is the primary stream gauge to represent historical and design discharges at Boggabri from the Namoi River including Coxs Creek.
- The Namoi River at Gunnedah gauge (GS419001), located approximately 37 km upstream of Boggabri, represents the catchment flows from the Namoi River catchment upstream of Gunnedah.

The four remaining Coxs Creek gauges (GS419033, GS419085, GS419086 and GS419102) are in the upper headwaters of Coxs Creek and have been used to assist in the calibration of the hydrological model.

Stream flows at each gauging station are derived from the recorded water level and a water level-discharge rating curve. The rating curve has been developed from historical stream flow measurements (gaugings). The rating curve at a station provides a reliable estimate of stream flow in the range of water levels that have stream flow gaugings. The reliability is lower in the range of water levels with no or few stream gaugings, which usually occur at higher water levels (as flood events are infrequent). Above the highest gauged level, the rating curve would be the least reliable as it relies on an extrapolation of the curve using limited ground level data and analysis. Table 3.1 shows that the highest recorded peak water level is generally well above the highest gauged water level at all stations except for the Coxs Creek at Boggabri.

WaterNSW would create a new rating curve for a station when stream flow measurements indicate a change has occurred. These changes are mostly due to changes at low flows due to sedimentation/aggradation of the bed. However, high flow ratings are also altered when flood gaugings have been taken above or near the previous highest stream gauging. WaterNSW do not update the historical flood peaks in the dataset using the updated rating curves.

3.3.1 Namoi River at Gunnedah

Figure 3.2 shows the WaterNSW rating curve (Table 330.02) and historical stream flow measurements (gaugings) for the Namoi River at Gunnedah gauge. The six highest historical flood peaks at the gauge are also shown. A total of 930 gaugings have been undertaken over the period of record with the highest gauging undertaken in July 1998 at a gauge height of 8.7 mRL (263.585 mAHD).

The highest recorded water level (available on the WaterNSW website) occurred in February 1971 at 8.982 mRL (263.867 mAHD). A review of the SMEC (2003) report suggests that flood peaks in 1864 (9.84 mRL), 1908 (9.65mRL), 1910 (9.4mRL) and 1955 (9.6mRL) exceeded the 1971 flood peak. Further, SMEC (2003) suggest that all the historical peak flood discharges prior to 1998 were predicted to be much higher than what is provided on the WaterNSW website (WaterNSW, 2020). The predicted 1955 flood peak discharge from SMEC (2003), which is shown on Figure 3.2, is some 3.5 times larger than the next highest recorded flood peak.

Figure 3.2 also shows the rating curves used to derive the 1971 (Table 150) and 1984 (Table 285) events. It is of note that the 1984 peak discharge had a similar peak water level to the 1997 event but has a much lower peak discharge. The high flow rating after this time was adjusted following the July 1998 high flow gauging but the historical flood peak discharges were not readjusted. The 1984 and 1971 historical peak discharges have been adjusted using the latest high flow rating (Table 330.02) for model calibration. The SMEC (2003) estimate of the 1955 flood peak of 9,000 m³/s does not fit on any of the WaterNSW rating curves. It is expected there is considerable uncertainty with this estimate. An interpolated high flow curve that would be required to achieve the SMEC (2003) estimate of the 1955 event is also shown in Figure 3.2.

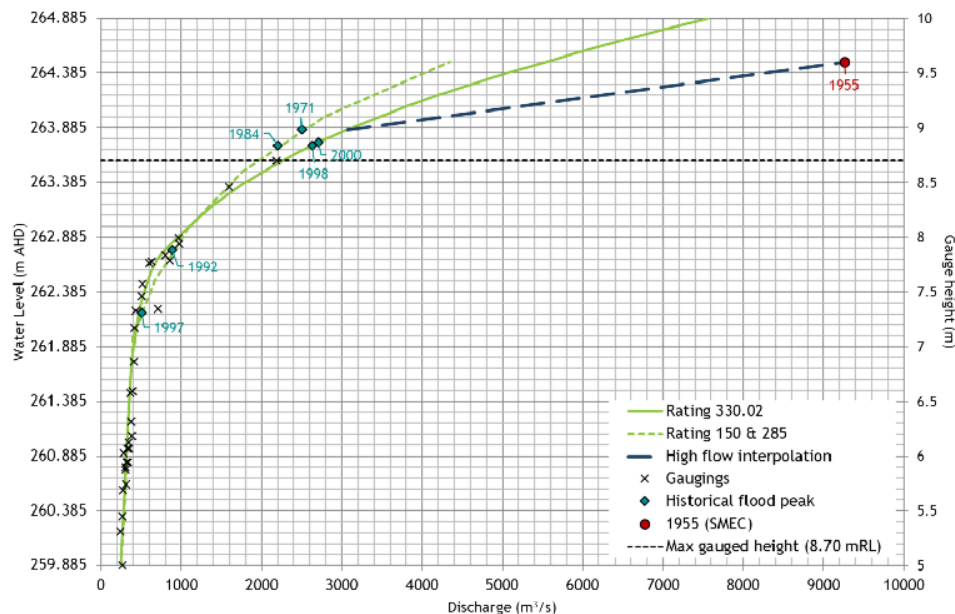


Figure 3.2 - Rating curve and gauging history for Namoi River at Gunnedah (GS419001)

The highest gauging at the Namoi River at Gunnedah gauge was 2,187 m³/s. The rating curve relies on extrapolated estimates above these flow rates. The reliability of the current rating and historical flood peaks for the very large events at the Gunnedah gauge is poor.

3.3.2 Namoi River at Boggabri

Figure 3.3 shows the latest WaterNSW rating curve (Table 137) and historical stream flow measurements (gaugings) for the Namoi River at the Boggabri stream gauge. The six highest historical flood peaks at the gauge are also shown. A total of 721 gaugings have been undertaken over the period of record with the highest gauging undertaken in November 2000 at a gauge height of 8.674m mRL (239.524 mAHD).

Five of the historical flood peaks are higher than the highest stream gauging and are therefore within the extrapolated section of the rating curve. Further, the 1971 and 1955 flood peaks do not lie on the extrapolated curve; the peak discharge for these events was derived using earlier curves (Table 54 and Table 85). The rating curve derived using the hydraulic model, at the gauge is also shown in Figure 3.3. Further discussion on how this rating was derived is given in Section 5. However, this curve suggests that the 1971 and 1955 peak discharges are much higher than what was derived using the using earlier curves (Table 54 and Table 85). For the subsequent analysis, these historical discharges were shifted using the TUFLOW derived extension to the latest rating curve.

Some gaps in the data meant the record was not complete. Large flood peaks prior to 1971 consisted of peak flows only, which were derived using the earlier (incorrect) rating curves. Peak water level data was not available. To overcome this problem, the historical peak water levels for the large floods were derived from their associated rating curves and the latest rating curve (or TUFLOW derived curve) was then applied to determine the adjusted historical discharge.

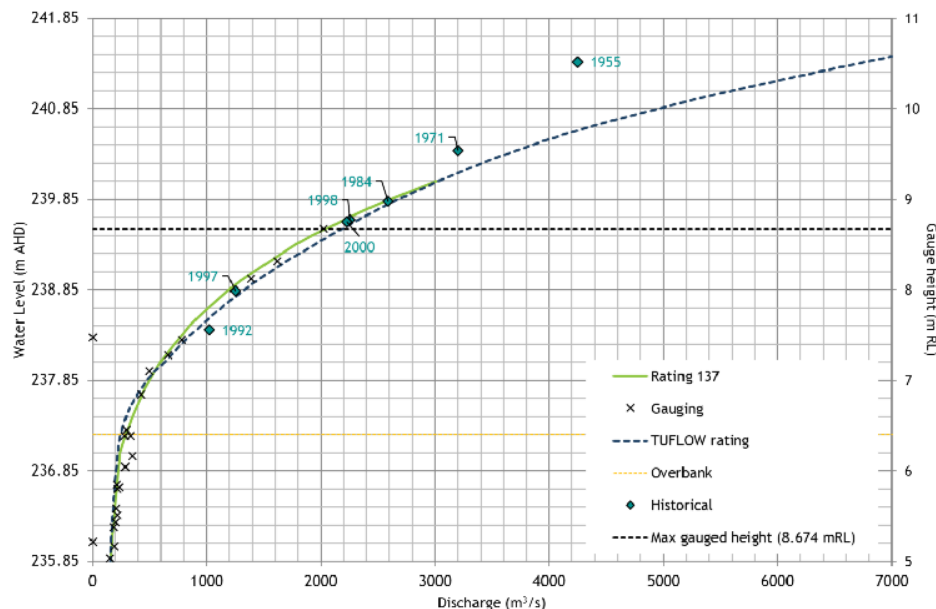


Figure 3.3 - Rating curve and gauging history for Namoi River at Boggabri (GS419012)

3.3.3 Coxs Creek at Boggabri

Figure 3.4 shows the latest WaterNSW rating curve (Table 126) and historical stream flow measurements (gaugings) for the Coxs Creek at Boggabri stream gauge. A total of 280 gaugings have been undertaken over the period of record with the highest gauging undertaken in November 2000 at a gauge height of 7.96 mRL (248.039 mAHD). The highest recorded water level occurred in the same month at 8.137 mRL (248.216 mAHD).

The five highest historical flood peaks are also shown in Figure 3.4. Three of these (1997, 1998 and 2000) recorded higher flood peaks than the highest stream gauging and therefore the predicted peak discharges are within the extrapolated section of the rating curve with a low level of reliability. It is of note that the 1984 peak discharge had a similar peak water level to the other three events but has a much lower recorded peak discharge. The high flow rating after this time was adjusted following the July 1998 high flow gauging but the historical flood peak discharges were not readjusted. The rating curve used to define the 1984 flood peak (Table 100) is also shown in Figure 3.4.

3.3.4 Coxs Creek at Tambar Springs

Figure 3.5 shows the latest WaterNSW rating curve (Table 244.02) and historical stream flow measurements (gaugings) for the Coxs Creek at Tambar Springs gauge. A total of 268 gaugings have been undertaken over the period of record with the highest gauging undertaken in February 1992 at a gauge height of 7.1 mRL (341.586 mAHD). The curve is extrapolated above this level. The highest recorded flood peak (that is available from the WaterNSW website) occurred in January 1996 at a level of 8.6mRL (343.086 mAHD), some 1.5 m above the highest recorded gauging. It would be expected that the reliability of historical peak discharges above a gauge level of 7.1 mRL would be poor.

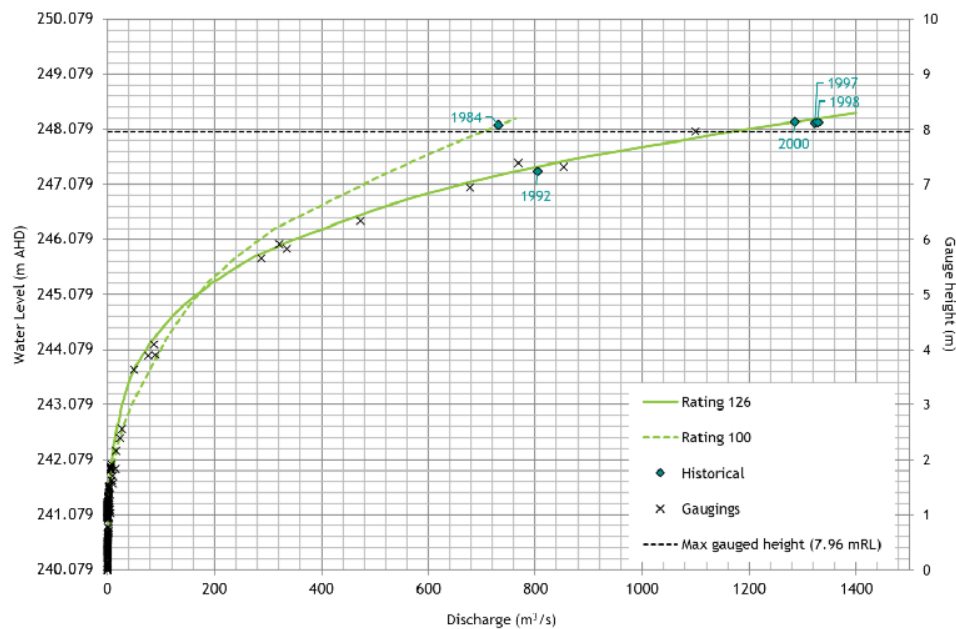


Figure 3.4 - Rating curve and gauging history for Coxs Creek at Boggabri (GS419032)

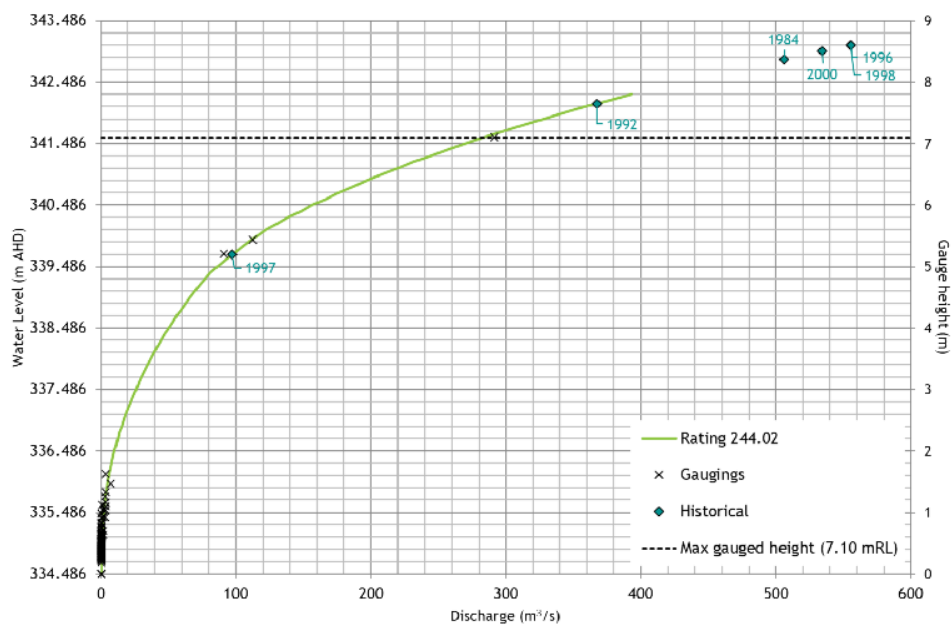


Figure 3.5 - Rating curve and gauging history for Coxs Creek at Tambar Springs (GS419033)

3.3.5 Bomera Creek at Tambar-Premier Road

Figure 3.6 shows the latest WaterNSW rating curve (Table 28) and historical stream flow measurements (gaugings) for the Bomera Creek at Tambar Premier Road gauge. A total of 97 gaugings have been undertaken over the period of record with the highest gauging undertaken in January 1996 at a gauge height of 2.97 mRL (346.628 mAHD). The curve is extrapolated above this level. The highest recorded flood peak occurred in July 1998 at a level of 5.965mRL (349.623 mAHD), some 3 m above the highest recorded gauging. It would be expected that historical peak discharge estimates for this site would be poor.

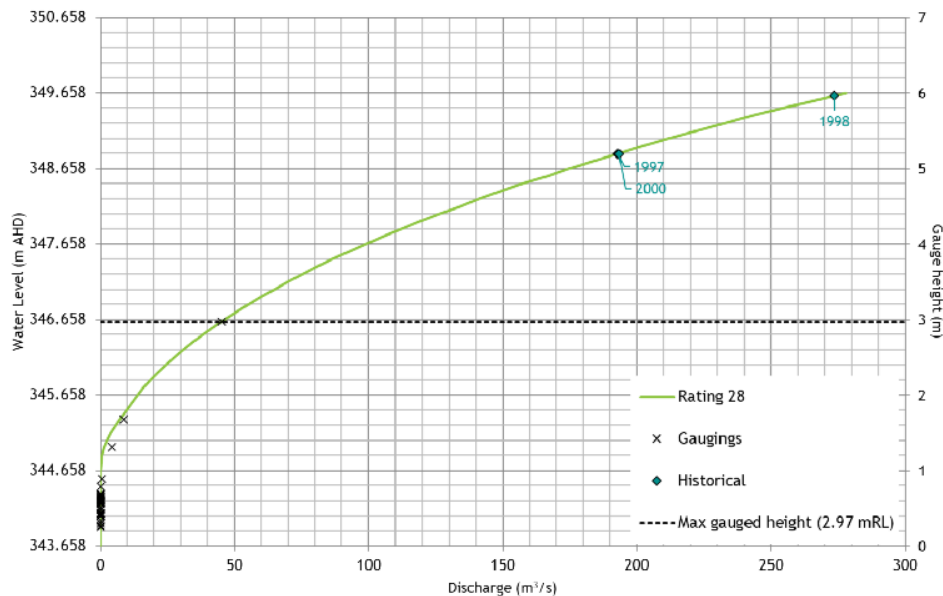


Figure 3.6 - Rating curve and gauging history for Bomera Creek at Tambar Premier Road (GS419085)

3.3.6 Bundella Creek at Bundella

Figure 3.7 shows the latest WaterNSW rating curve (Table 30) and historical stream flow measurements (gaugings) for the Bundella Creek at Bundella gauge. A total of 102 gaugings have been undertaken over the period of record with the highest gauging undertaken in January 1996 at a gauge height of 1.384 mRL (420.736 mAHD). The curve is extrapolated above this level. The highest recorded flood peak occurred in January 1996 at a level of 3.662mRL (423.014 mAHD), some 2.3 m above the highest recorded gauging. It would be expected that historical peak discharge estimates for this site would be poor.

3.3.7 Coxs Creek at Tourable

Figure 3.8 shows the latest WaterNSW rating curve (Table 6) and historical stream flow measurements (gaugings) for the Coxs Creek at Tourable gauge. A total of 47 gaugings have been undertaken over the period of record with the highest gauging undertaken in January 2013 at a gauge height of 5.398m mRL (289.458 mAHD). The curve is extrapolated above this level. The highest recorded flood peak occurred in December 2010 at a level of 6.047mRL (290.107 mAHD). This gauge was only installed in 2010 and no significant flood events occurred in the catchment since this time for use in model calibration.

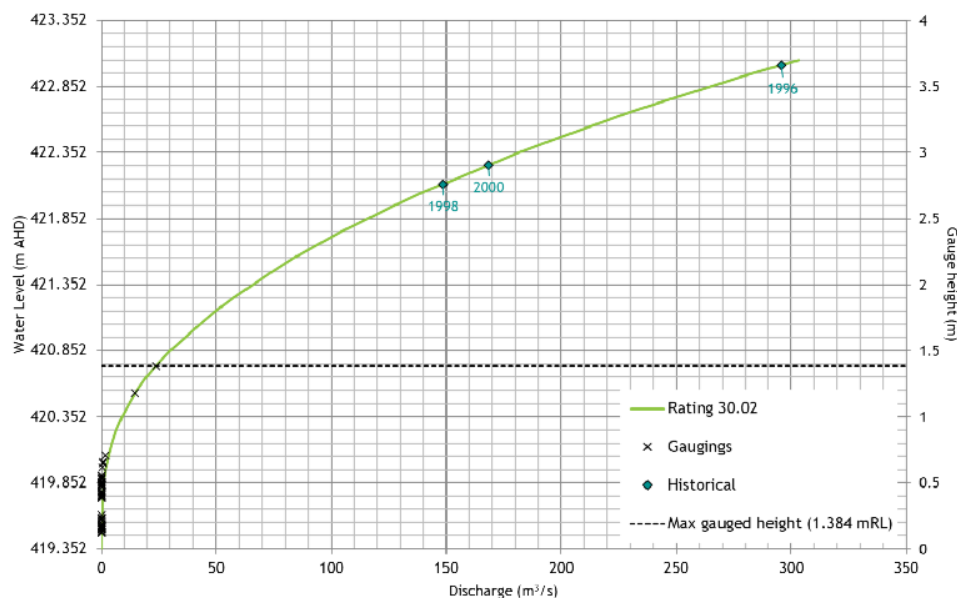


Figure 3.7 - Rating curve and gauging history for Bundella Creek at Bundella (GS419086)

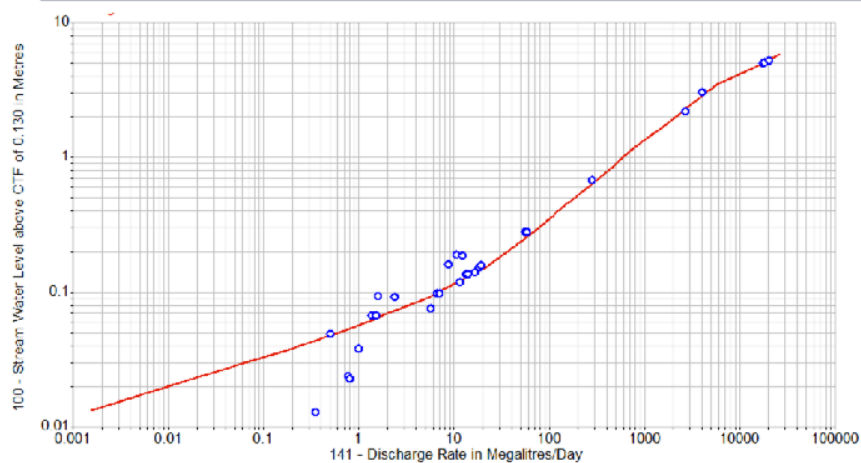


Figure 3.8 - Rating curve and gauging history for Coxs Creek at Tourable (GS419102)

3.4 RAINFALL DATA

Table 3.2 lists the available rainfall stations in the study area with data available for the highest historical flood events and the calibration events. The locations of the rainfall stations are shown in Figure 2.1. WaterNSW (2020) provided the sub-daily instantaneous tip data for four stations. The Commonwealth Bureau of Meteorology (BOM, 2019) provided daily rainfall for the other BOM stations.

Table 3.2 - Rainfall data availability for highest historical flood events

Station No.	Station name	Observ. Interval	1955	1971	1984	1992	1997	1998	2000
419032	Coxs Creek at Boggabri	instant					✓	✓	✓
419033	Coxs Creek at Tambar Springs	instant			✓	✓	✓	✓	✓
419085	Bomera Creek at Tambar-Premier Road	instant					✓	✓	✓
419086	Bundella Creek at Bundella	instant					✓	✓	✓
55024	Gunnedah Resource Centre	daily	✓	✓	✓	✓	✓	✓	✓
55002	Mullaley (Bando)	daily	✓	✓	✓	✓	✓	✓	✓
55007	Boggabri Post Office	daily	✓	✓	✓	✓	C	C	✓
55017	Premier (Eden Moor)	daily	✓	✓	✓	✓	✓	✓	✓
55018	Mullaley (Garrawilla)	daily	✓	✓	✓	✓	✓	✓	✓
55020	Ghoolendaadi	daily	✓	✓					
55021	Goolhi	daily	✓						
55029	Lignum	daily	✓	✓	✓				
55033	Mayfield	daily	✓	✓	✓				
55034	Boggabri (Milchengowrie)	daily	✓	✓	✓	✓	✓	✓	✓
55038	Mullaley Post Office	daily	✓	✓	✓	✓	✓	✓	✓
55044	Boggabri Retreat	daily	✓	✓	✓	✓	✓	✓	i
55045	Curlewis (Pine Cliff)	daily	✓	✓	✓	✓	✓	✓	✓
55053	Tambar Springs PO	daily	✓	✓	✓	✓	✓	✓	✓
55059	Wandobah	daily	✓	✓					
55069	Yannergee (Dobroyd)	daily	✓	✓	✓	✓	✓	✓	✓
55071	Premier Post Office	daily		✓	✓	✓	✓	C	✓
55185	Wongarina	daily		✓					
55188	Mullaley (Derwentville)	daily							✓
55201	Kelvin (Kahana)	daily	✓	✓	✓	✓	✓	✓	✓
55263	Mullaley (Keigho)	daily		✓	✓	✓	C	C	✓
55268	Boggabri (Be-Bara)	daily		✓	✓	✓	✓	✓	✓
55271	Balmoral	daily		✓	✓	✓			
55272	Gunnedah (Colstoun South)	daily		✓	✓	✓			✓
55273	Boggabri (Neotsfield)	daily		✓	✓	✓	✓	✓	✓
55281	Brentwood	daily	✓						
55301	Mullaley (Kirkbright)	daily		✓	✓	✓	✓	C	✓

C - includes cumulative values, excluded from analysis

I - incomplete series, excluded from analysis

3.5 GROUND LEVEL SURVEY

Figure 3.9 shows the location and extent of the available ground level data.

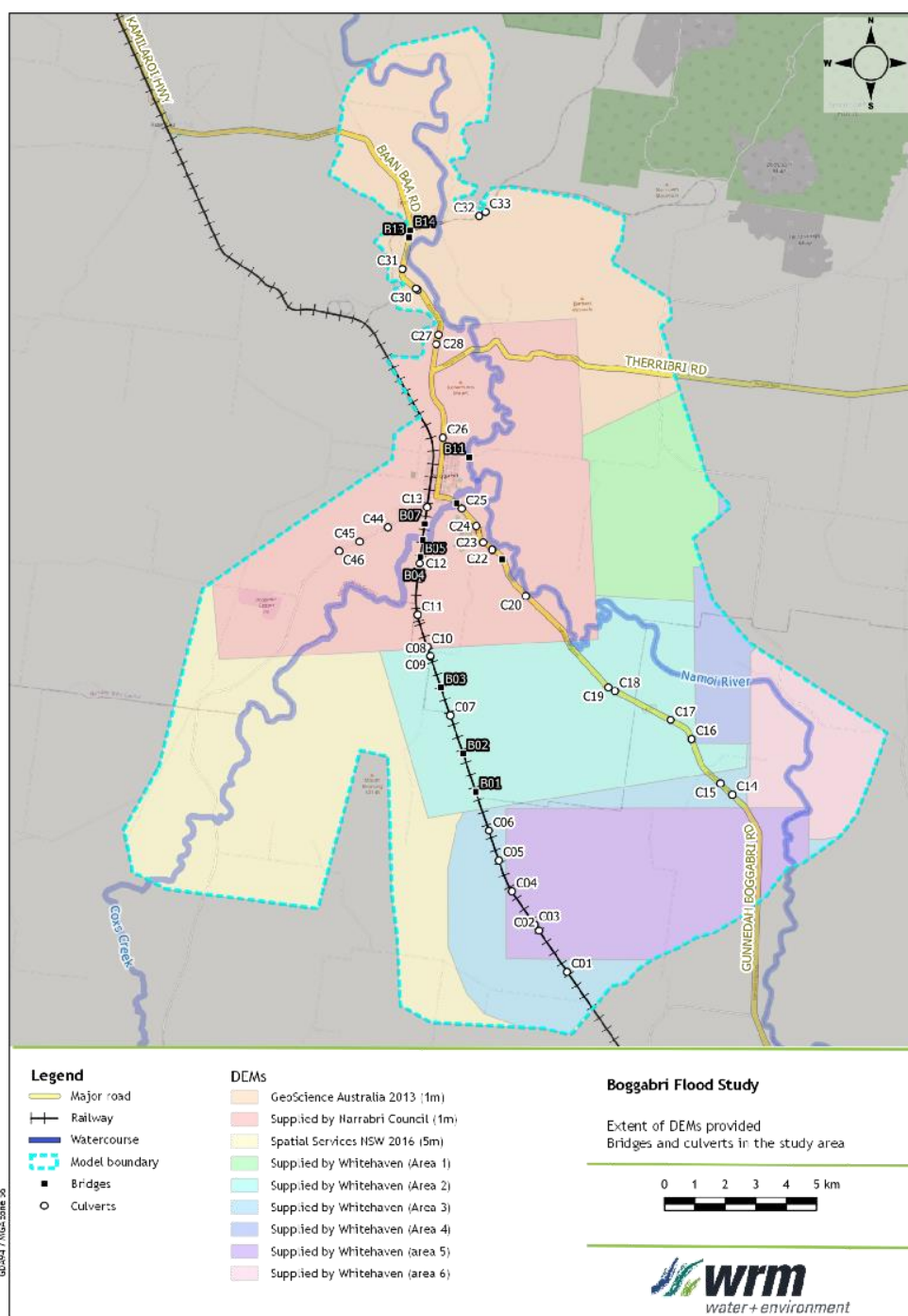


Figure 3.9 - Overview of ground data availability, bridges and culverts in the study area

A description of the data is as follows:

- The Narrabri Shire Council data was derived from LiDAR (Light Detection and Ranging) from an ALS50 (Airborne Laser Scanner) flown on 22 January 2014. It has an accuracy of 0.3 m (95% confidence limit (CI)) vertical and 0.8 m (95% CI) horizontal and was provided as an ESRI grid with a 1 m resolution.
- The Geoscience Australia data (sourced from the ICSM platform “Elevation and Depth - Foundation Spatial Data” (ELVIS, 2019)) was derived from LiDAR flown between September and October 2013. It has an accuracy of 0.3 m (95% CI) vertical and 0.8m (95% CI) horizontal and was provided as an ESRI grid with a 1 m resolution.
- The NSW Spatial Services data was derived from photogrammetry flown between July and August 2011 and obtained from ELVIS (2019). It has an accuracy of 0.9 m (95% CI) vertical and 1.25 m (95% CI) horizontal and was provided as an ESRI grid with a 5 m resolution. This data tends to overestimate the elevation compared to the other data sources by approximately 0.4 m, on average. The use of this data will not impact on the estimation of flood levels at Boggabri because it is located upstream. However, the data provides the only coverage of ground levels at the Coxs Creek at Boggabri stream gauge, which means it would not be reliable for use in hydraulic model calibration.
- Whitehaven Coal Limited kindly provided six sets of data:
 - Area 1 was provided without metadata as a Geotif file on a 1 m grid. The file was labelled as September 2015.
 - Area 2 was derived from LiDAR flown in November 2016. It has an accuracy of 0.15 m (95% CI) vertical and 0.8 m (95% CI) horizontal and was provided as an ECW file with 0.25 m resolution.
 - Area 3 was provided without metadata as a DXF file with points at 25 m spacing and 3D lines to represent breaks in the topography, converted to a grid with a 5 m resolution. It was flown in February 2011.
 - Area 4 was provided without metadata as a DXF file with points at 20 m spacing and 3D lines to represent breaks in the topography, converted to a grid with a 1 m resolution. The file was labelled as January 2012.
 - Area 5 and Area 6 were provided without metadata as text files with points spaced at irregular intervals. The files were labelled as September 2019 and May 2019, respectively, and were converted to grids with a 1 m resolution.

The 2014 Narrabri Council and 2014 Geoscience Australia data was given preference over the other datasets because the confidence limits are known. A review of the overlapping areas showed these two datasets and the Whitehaven Area 1, Area 2, Area 5 and Area 6 data matched well and are therefore suitable and given preference next. There were minor differences in the overlapping Whitehaven areas, likely due to the different collection methodologies (LiDAR versus photogrammetry). Although the differences were minor, the Whitehaven Area 3 and Area 4 were given a lower preference. The NSW Spatial Services data was given the lowest preference, given its lower accuracy. This data was only used in the upper reaches of Cox Creek and therefore should not impact on the estimation of peak flood levels at Boggabri but would impact on the hydraulic calibration at the Coxs Creek at Boggabri stream gauge.

3.6 BRIDGE AND CULVERT DETAILS

A total of 62 relevant structures were identified in the study area. Table 3.3 summarises the key features of each structure and the respective data source. Figure 3.9 shows the locations of all structures excluding those at Boggabri, while the structures in Boggabri are shown in Figure 3.10.

Table 3.3 - Bridge and culvert details

ID	Structure type	Dimensions (m) (h-height, w-width, L-length, D-diameter)	U/S invert (mAHD)	D/S invert (mAHD)	Source	Location/reference
B01	Bridge	1 x 0.8h x 3.2w x 5.2L	-	-	ARTC	Western rail line
B02	Bridge	1 x 0.8h x 3.2w x 5.2L	-	-	ARTC	Western rail line
B03	Bridge	2 x 1.1h x 3.2w x 7.6L	-	-	ARTC	Western rail line
B04	Bridge	1 x 1.6h x 3.2w x 3.5L	-	-	estimated	Western rail line
B05	Bridge	2 x 2.2h x 4w x 7.6L	-	-	ARTC	Western rail line
B06	Bridge	13 x 5.85h x 3.66w x 156L	-	-	ARTC	Coxs Creek viaduct
B07	Bridge	10 x 3.07h x 3.66w x 88L	-	-	ARTC	Coxs Creek overflow
B08	Bridge	3 x 1.7h x 10w x 35L	-	-	estimated	Kamilaroi Highway
B09	Bridge	4 x 2.3h x 8.73w x 40.7L	-	-	RMS	Deadman's Gully
B10	Bridge	13 x 5.1h x 11.1w x 261L	-	-	RMS	Bridge over Coxs Creek
B11	Bridge	4 x 6.69h x 3.2w x 60L	-	-	RMS	Boston Street bridge
B12	Bridge	3 x 3.3h x 5w x 130L	-	-	estimated	Iron Bridge
B13	Bridge	3 x 6.5h x 8w x 54L	-	-	RMS	Kamilaroi Highway
B14	Bridge	3 x 6.5h x 8w x 72L	-	-	estimated	Kamilaroi Highway
B15	Bridge	25 x 6.5h x 4w x 1020L	-	-	estimated	Northern rail
B16	Bridge	2 x 7.1h x 10w x 54L	-	-	estimated	North
C01	BC	1 x 2.2h x 4.5w x 7L	251.50	251.10	estimated	Western rail line
C02	BC	1 x 2.2h x 4.5w x 7L	249.40	249.00	estimated	Western rail line
C03	BC	5 x 2.2h x 5w x 7L	249.00	248.90	estimated	Western rail line
C04	BC	1 x 1.8h x 4.5w x 7L	248.35	248.20	estimated	Western rail line
C05	BC	1 x 1.8h x 4.5w x 7L	248.00	247.50	estimated	Western rail line
C06	CBC	1 x 0.9h x 6w x 5.2L	247.30	247.10	ARTC	Western rail line
C07	SPC	20 x 1.5h x 2.7w x 8.3L	245.35	245.30	ARTC	Western rail line
C08	SPC	3 x 0.9D x 8.2L	245.70	245.60	ARTC	Western rail line
C09	SPC	2 x 0.9D x 7.7L	245.50	245.40	ARTC	Western rail line
C10	SPC	3 x 1.4D x 10.6L	245.10	245.00	ARTC	Western rail line
C11	CBC	2 x 0.9h x 1.2w x 5L	244.50	244.40	ARTC	Western rail line
C12	PC	1 x 0.5D x 12L	242.05	241.96	estimated	Western rail line
C13	CBC	1 x 0.9h x 1.8w x 17L	247.10	247.00	ARTC	Western rail line
C14	BC	1 x 0.45h x 0.75w x 24.5L	250.00	249.90	estimated	Kamilaroi Highway
C15	BC	2 x 0.45h x 0.75w x 20L	249.90	249.65	estimated	Kamilaroi Highway
C16	BC	2 x 0.45h x 0.75w x 20L	248.45	248.40	estimated	Kamilaroi Highway
C17	BC	4 x 1.83h x 3.16w x 25L	246.00	245.50	estimated	Kamilaroi Highway
C18	CBC	3 x 0.91h x 2.44w x 8.1L	244.60	244.40	RMS	Kamilaroi Highway
C19	CBC	3 x 1.82h x 2.74w x 8.9L	243.80	243.40	RMS	Kamilaroi Highway
C20	RCBC	1 x 0.3h x 0.7w x 41L	242.30	242.20	RMS	Kamilaroi Highway
C21	RCBC	2 x 1.51h x 2.48w x 18L	241.63	241.49	RMS	Kamilaroi Highway
C22	RCP	2 x 0.9D x 18L	241.63	241.49	RMS	Kamilaroi Highway
C23	RCP	1 x 0.36D x 13L	242.80	242.20	RMS	Kamilaroi Highway
C24	RCP	1 x 0.375D x 14L	242.45	242.40	RMS	Kamilaroi Highway
C25	RCP	1 x 1.75D x 10L	242.10	242.00	RMS	Kamilaroi Highway
C26	CBC	4 x 0.91h x 1.82w x 9.3L	242.70	242.40	RMS	Kamilaroi Highway
C27	RCP	2 x 0.45D x 15L	238.60	238.30	RMS	Kamilaroi Highway
C28	RCP	1 x 0.75D x 19L	237.80	237.60	RMS	Kamilaroi Highway
C29	CBC	3 x 0.92h x 1.81w x 6L	237.30	237.00	RMS	Kamilaroi Highway

ID	Structure type	Dimensions (m) (h-height, w-width, L-length, D-diameter)	U/S invert (mAHD)	D/S invert (mAHD)	Source	Location/reference
C30	CBC	4 x 0.91h x 2.43w x 10.6L	237.30	237.20	RMS	Kamilaroi Highway
C31	CBC	3 x 1.21h x 2.43w x 8L	238.50	238.45	RMS	Kamilaroi Highway
C32	PC	1 x 0.5D x 18L	237.50	236.80	estimated	North
C33	PC	1 x 0.5D x 17L	237.20	237.19	estimated	North
C34	BC	3 x 0.6h x 2.6w x 13.7L	242.40	242.25	WRM	Boggabri
C35	BC	3 x 0.75h x 1.8w x 12.8L	243.40	243.30	WRM	Boggabri
C36	BC	1 x 0.3h x 0.9w x 23.1L	243.00	242.90	WRM	Boggabri
C37	BC	1 x 0.3h x 0.9w x 23.2L	243.55	243.38	WRM	Boggabri
C38	BC	1 x 0.45h x 0.9w x 17L	241.40	241.32	WRM	Boggabri
C39	BC	1 x 0.45h x 0.9w x 12.1L	241.60	241.53	WRM	Boggabri
C40	BC	1 x 0.45h x 0.9w x 20.7L	241.70	241.60	WRM	Boggabri
C41	BC	1 x 0.3h x 0.45w x 6.5L	241.70	241.65	WRM	Boggabri
C42	BC	1 x 0.3h x 0.9w x 17.2L	242.06	242.02	WRM	Boggabri
C43	BC	2 x 0.3h x 0.9w x 15.5L	242.06	242.00	WRM	Boggabri
C44	PC	1 x 1D x 18L	244.40	242.40	estimated	West of Boggabri
C45	PC	1 x 0.5D x 14L	244.40	244.30	estimated	West of Boggabri
C46	PC	1 x 0.5D x 10L	244.20	244.10	estimated	West of Boggabri

BC: box culvert; IBC: (reinforced) concrete box culvert;
PC: pipe culvert; SPC: steel pipe culvert; RCP: reinforced concrete pipe culvert

3.7 COMMUNITY RESPONSE

The local community were sent a letter to advise them of the purpose of the study. A questionnaire was also given to gain an understanding of the community priorities with respect to flooding. It also provided an opportunity to collect anecdotal data on historical flood behaviour. At the time of reporting, 14 responses to the community survey were received. Data on historical flooding was not provided.



Figure 3.10 - Overview of bridges and culverts in central Boggabri

4 XP-RAFTS model development

4.1 OVERVIEW

Flood discharges at Boggabri were estimated using:

- the recorded flows at the Namoi River at Gunnedah stream gauge (GS419001) to estimate upper Namoi River catchment flows; and
- an XP-RAFTS rainfall runoff model (Innovyze, 2019) of the Coxs Creek catchment and the residual catchment downstream of Gunnedah to Boggabri.

XP-RAFTS is a computer model that predicts flood discharge hydrographs from a catchment by routing rainfall excess (the part of rainfall that does not infiltrate into the soil) through a representation of catchment storage. Catchment storage is determined by both surface runoff from a subcatchment as well as linear storage along a channel. The use of subcatchments also allows for the accounting of the areal distribution of rainfall, land use and stream characteristics.

The Laurenson non-linear runoff routing procedure was used to develop a subcatchment runoff hydrograph from recorded rainfall time series data. Catchment parameters such as area, slope, percentage impervious and roughness are used to determine a storage delay coefficient for each subcatchment to produce a discharge hydrograph from the excess rainfall. An initial and continuing rainfall loss model (determined from model calibration) was used to define the rainfall excess. The Muskingum method, which uses a weighting factor and a routing time in hours, was used to determine the channel storage and routing.

This section describes the development and calibration of the XP-RAFTS model. The recorded rainfall and streamflow data outlined in Section 3 was used to calibrate the model. The XP-RAFTS model parameters were determined by matching as closely as possible the recorded and predicted discharge hydrographs at the stations along the Namoi River and Coxs Creek.

4.2 MODEL CONFIGURATION

Figure 4.1 shows the subcatchment and routing link configuration of the XP-RAFTS model. The catchments were delineated by analysing a digital elevation model (DEM) derived from 1 arc second satellite data (SRTM) obtained from Geoscience Australia, as well as satellite imagery. Details of the adopted XP-RAFTS subcatchment and link parameters are given in Table 4.1 and Table 4.2 respectively. These parameters were determined through model calibration as described in Section 4.3. The following is of note:

- A total of 21 subcatchments, ranging in size from 33 km² to 104 km², have been used to represent the waterways and local catchment runoff within the residual catchment area between Gunnedah and Boggabri along the Namoi River;
- A total of 38 subcatchments, ranging in size from 34 km² to 152 km², have been used to represent the drainage of Coxs Creek;
- The Namoi River at Gunnedah (419001) gauge discharge hydrograph was incorporated as a direct inflow to the model at node "Namoi";
- The XP-RAFTS fraction impervious in each subcatchment was assumed to be zero for all subcatchments, except in catchments B50 and B57, which contain Boggabri;
- The township of Boggabri was assumed to be 50% impervious, resulting in a fraction impervious of 0.46% and 0.55% for subcatchments B50 and B57, respectively;
- The catchment slope was determined using the equal area method from SRTM 1 second topographic data;

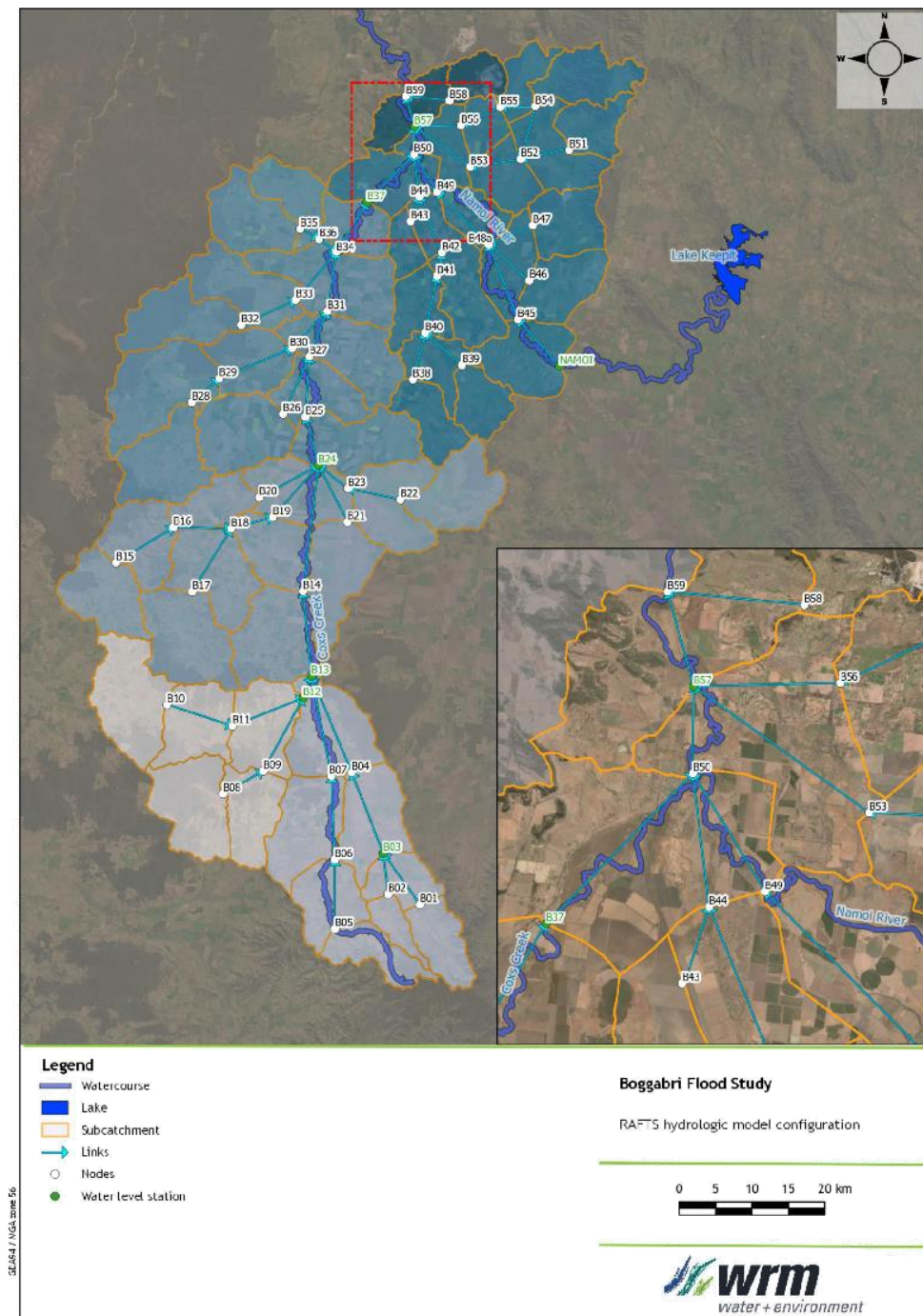


Figure 4.1 - XP-RAFTS model configuration

Table 4.1 - Adopted XP-RAFTS model subcatchment parameters

ID	Area (km ²)	Slope (%)	PERN	ID	Area (km ²)	Slope (%)	PERN
B01	71	1.94	0.020	B31	124	0.23	0.035
B02	34	3.33	0.020	B32	105	0.45	0.035
B03	60	1.26	0.020	B33	109	0.52	0.035
B04	111	0.30	0.040	B34	147	0.18	0.035
B05	69	2.61	0.020	B35	97	0.66	0.035
B06	85	1.02	0.020	B36	70	0.34	0.035
B07	120	0.75	0.040	B37	65	0.30	0.035
B08	123	0.98	0.020	B38	68	0.84	0.040
B09	89	1.48	0.020	B39	61	0.91	0.040
B10	140	0.60	0.020	B40	62	0.78	0.040
B11	97	1.26	0.020	B41	66	0.32	0.040
B12	104	0.36	0.040	B42	89	0.18	0.040
B13	130	0.29	0.040	B43	33	0.14	0.040
B14	127	1.36	0.040	B44	40	0.03	0.040
B15	100	1.06	0.040	B45	105	0.14	0.040
B16	93	0.80	0.040	B46	86	0.22	0.040
B17	136	0.87	0.040	B47	83	1.02	0.040
B18	120	0.41	0.040	B48	0	1.00	0.040
B19	87	1.10	0.035	B48a	77	0.04	0.040
B20	59	0.30	0.040	B49	55	0.14	0.040
B21	117	0.16	0.035	B50	96	0.18	0.040
B22	105	0.59	0.035	B51	61	1.42	0.040
B23	109	0.24	0.035	B52	91	0.46	0.040
B24	108	0.01	0.035	B53	65	0.43	0.040
B25	120	0.22	0.035	B54	84	1.01	0.040
B26	117	0.49	0.035	B55	49	0.62	0.040
B27	82	0.04	0.035	B56	42	0.51	0.040
B28	118	0.68	0.040	B57	63	0.05	0.040
B29	152	0.66	0.035	B58	44	0.61	0.040
B30	86	0.22	0.035	B59	68	0.39	0.040

- the following PERN adaption factors, used to introduce the effect of pervious catchment roughness, were assigned:
 - 0.02 was adopted for the steep subcatchments in the upper reach of Coxs Creek (B01-B03, B05-B06, B08-B11);
 - 0.035 was adopted for the predominantly cropped midland catchments (B19, B21-B27, B29-B37); and
 - 0.040 was adopted for the remaining catchments containing light brush and trees.
- channel routing adopted a constant weighting factor 'X' of 0.20 for the drainage lines draining catchment B50 and a constant weighting factor 'X' of 0.25 for all other catchments; and

Table 4.2 - XP-RAFTS routing link parameters

U/S node	D/S node	Link length (km)	Channel velocity (m/s)	Channel routing K (hrs)	U/S node	D/S node	Link length (km)	Channel velocity (m/s)	Channel routing K (hrs)
B01	B03	10.2	1.60	1.77	B31	B34	11.5	1.04	3.07
B02	B03	9.1	1.60	1.57	B32	B33	9.2	1.04	2.45
B03	B04	17.7	1.60	3.07	B33	B34	10.9	1.04	2.90
B04	B13	20.5	1.60	3.56	B34	B37	13.3	1.04	3.56
B05	B06	12.7	1.60	2.20	B35	B36	4.0	1.04	1.08
B06	B07	17.5	1.60	3.03	B36	B34	6.7	1.04	1.79
B07	B13	19.9	1.60	3.45	B37	B50	13.4	0.60	6.19
B08	B09	6.9	1.60	1.20	B38	B40	8.3	1.00	2.31
B09	B12	18.5	1.60	3.21	B39	B40	7.5	1.00	2.09
B10	B11	12.3	1.60	2.14	B40	B41	9.8	1.00	2.73
B11	B12	18.2	1.60	3.16	B41	B42	7.5	1.00	2.08
B12	B13	6.6	1.60	1.14	B42	B44	15.0	1.00	4.16
B13	B14	17.7	1.60	3.07	B43	B44	4.3	1.00	1.19
B14	B19	25.5	1.04	6.80	B44	B50	8.3	0.60	3.85
B15	B16	12.8	1.60	2.22	B45	B48	18.9	1.00	5.24
B16	B18	10.3	1.60	1.78	B46	B48	7.7	1.00	2.13
B17	B18	15.4	1.60	2.68	B47	B48	7.3	1.00	2.02
B18	B24	8.5	1.04	2.28	B48	B48a	0.0	1.00	0.00
B19	B24	15.2	1.04	4.07	B48	B49	0.0	1.00	0.00
B20	B24	10.7	1.04	2.86	B49	B50	9.6	0.60	4.45
B21	B24	13.0	1.04	3.46	B50	B57	7.9	1.00	2.18
B22	B23	8.3	1.04	2.21	B51	B52	7.1	1.00	1.98
B23	B24	10.3	1.04	2.75	B52	B53	10.5	1.00	2.92
B24	B25	10.0	1.04	2.68	B53	B57	21.1	1.00	5.87
B25	B27	14.2	1.04	3.79	B54	B55	6.7	1.00	1.85
B26	B27	10.0	1.04	2.68	B55	B56	7.3	1.00	2.03
B27	B31	8.7	1.04	2.32	B56	B57	15.4	1.00	4.28
B28	B29	5.9	1.04	1.59	B57	B59	7.2	1.00	1.99
B29	B30	14.0	1.04	3.74	B58	B59	8.5	1.00	2.36
B30	B31	8.9	1.04	2.38	NAMOI	B45	12.0	1.00	3.33

- channel routing adopted the following average channel velocities:
 - 1.60 m/s for the upstream Coxs Creek catchments (B1-B18, B20, B28);
 - 1.04 m/s for the downstream Coxs Creek catchments upstream of Boggabri (B19, B21-B37);
 - 0.60 m/s in catchment B50 to account for the slowing effect of the Coxs Creek merging with the Namoi River; and
 - 1.00 m/s for the remaining catchments along the Namoi River in which water tends to extend over the wide floodplain (B38-B49, B51-B59).

4.3 MODEL CALIBRATION DATA

The XP-RAFTS model was used to simulate five historic rainfall events:

- February 1955;
- February 1971;
- February 1997;
- July 1998; and
- November 2000.

The purpose of the model calibration was to match as closely as possible the predicted and recorded flood discharges for all historic events using a single set of model parameters (except for losses).

Both short duration and daily rainfall stations in and near the catchment were used for model calibration (see Table 3.2). The locations of these rainfall stations are shown in Figure 2.1. Each XP-RAFTS subcatchment was assigned the total daily rainfall recorded at the nearest rainfall station and distributed to hourly data using the nearest pluviograph. For the 1955 and 1971 events, short duration rainfall data was not available and therefore daily rainfall equally distributed across the day was used.

Details of the rainfall event simulation periods are given in Table 4.3.

Table 4.3 - Rainfall event and simulation periods

Rainfall event	Simulation period
1955	22 Feb (0900 hours) - 28 Feb (0900 hours)
1971	26 Jan (0900 hours) - 6 Feb (0900 hours)
1997	12 Feb (0900 hours) - 16 Feb (2300 hours)
1998	19 July (2300 hours) - 24 July (2300 hours)
2000	13 Nov (0900 hours) - 24 Nov (0900 hours)

4.3.1 February 1955 event

Table 4.4 shows the daily rainfalls recorded at the 18 rainfall stations in the vicinity of the study area over the six days to 0900 hours on 28 February 1955. The highest total rainfalls occurred in the upper Cocks Creek catchments for this event, with the highest daily rainfall recorded in the 24 hours to 0900 hours on 23 February at Premier Eden Moor (55017) at 134.1 mm. Antecedent rainfall conditions were wet prior to the event, with 20 to 30 mm recorded at several stations and several rainfall events in the previous weeks suggesting a saturated catchment.

Figure 4.2 shows the discharge hydrographs for the Namoi River at Gunnedah (410001) and Boggabri (419012) and the Cocks Creek at Boggabri (419032) gauges over the simulation period. The predicted RAFTS discharge hydrographs at the Boggabri gauges, which are discussed further in Section 4.6, are also shown.

The Gunnedah data was obtained from the SMEC (2003) hydraulic model but the timing was shifted forward by 9 hours to match the recorded peak timing from the Pinneena database. The Boggabri data was obtained from the Pinneena database obtained from WaterNSW but with the peak discharge adjusted to the TUFLOW rating curve shown in Figure 3.3. The Boggabri data was recorded once per day only. The data suggests that two flood peaks occurred for the 1955 event with the largest peak predominantly generated from the Namoi River upstream of Gunnedah. It also suggests that there was a significant attenuation of the Namoi River flood peak between the two gauges.

Table 4.4 - Recorded daily rainfalls for the February 1955 event

Station name	Station No.	Daily rainfall (mm) to 0900 hours						Total rainfall (mm)
		23/02	24/02	25/02	26/02	27/02	28/02	
Gunnedah Resource Center	55024	16	91.9	25.1	36.6	6.4	0	176
Mullaley (Bando)	55002	38.6	132.1	43.9	2.5	5.6	3.8	226.5
Boggabri Post Office	55007	19.6	42.7	20.6	30	0	0.3	113.2
Premier (Eden Moor)	55017	134.1	96.8	18.5	4.6	2	0	256
Mullaley (Garrawilla)	55018	69.1	47.5	53.3	41.7	9.4	0	221
Ghoolendaadi	55020	17.5	47.2	9.7	0	28.7	4.8	107.9
Goolhi	55021	45.7	76.2	29.2	13.2	12.7	0	177
Lignum	55029	38.9	81.3	34.3	21.1	3.8	5.3	184.7
Mayfield	55033	0	19.3	0	0	19.1	0	38.4
Boggabri (Milchengowrie)	55034	16.5	53.6	0	46.7	0	0	116.8
Mullaley Post Office	55038	19.3	59.4	20.1	18	0	0.8	117.6
Boggabri Retreat	55044	15.2	51.8	49.5	55.9	29.7	0	202.1
Curlewis (Pine Cliff)	55045	18.8	78	27.2	20.3	1	7.6	152.9
Tambar Springs Post Office	55053	27.9	180.3	66	14	4.6	1.3	294.1
Wandobah	55059	70.6	17.5	24.4	1	0	0	113.5
Yannergee (Dobroyd)	55069	27.9	108	42.4	21.1	2.5	0	201.9
Kelvin (Kahana)	55201	63.2	42.2	43.9	29.5	0	0	178.8
Brentwood	55281	108.5	56.4	8.1	5.8	6.1	55.9	240.8

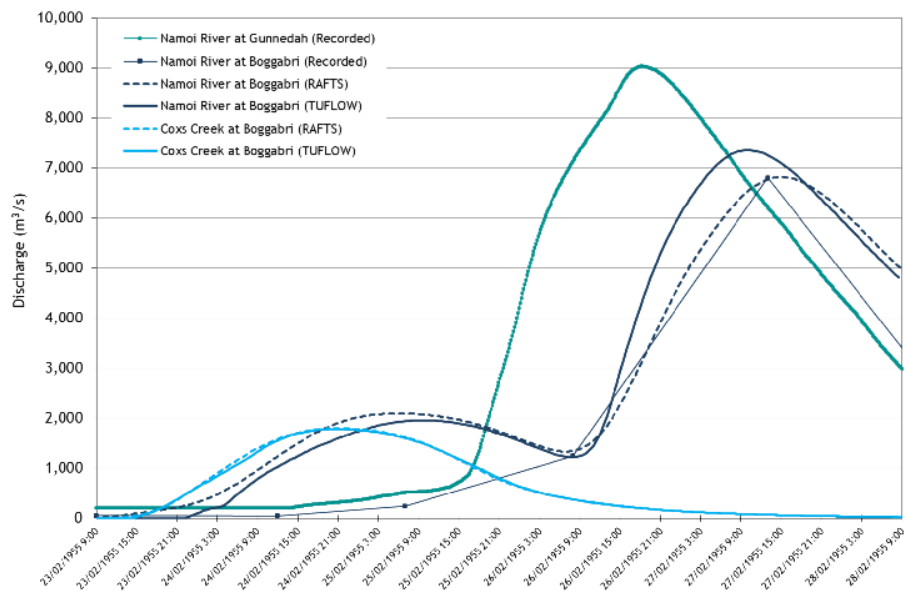


Figure 4.2 - Recorded Namoi River at Gunnedah and Boggabri and predicted Namoi River at Boggabri discharge hydrographs, February 1955 event

4.3.2 February 1971 event

Table 4.5 shows the daily rainfalls recorded at the 22 rainfall stations in the vicinity of the study area over the 11 days to 0900 hours on 6 February 1971. Another flood peak occurred soon after this date, but it was lower than the initial peak and therefore not simulated. The highest total rainfalls occurred in the upper Cocks Creek catchments for this event, with the highest daily rainfall recorded in the 24 hours to 0900 hours on 31 January at Tambar Springs Post Office (55053) at 133.1 mm. Antecedent rainfall conditions were dry prior to the event, with rainfall only recorded at the Kelvin Kahana (55201) station.

Figure 4.3 shows the discharge hydrographs for the Namoi River at Gunnedah (410001) and Boggabri (419012) and the Cocks Creek at Boggabri (419032) gauges over the simulation period. The predicted RAFTS discharge hydrographs at the Boggabri gauges, which are discussed further in Section 4.6, are also shown. The Gunnedah data was obtained from the Pinneena database obtained from WaterNSW but with the discharges adjusted using the latest WaterNSW rating curve (Table 330.02) (see Figure 3.2). The Boggabri data was also obtained from the Pinneena database but with the peak discharges adjusted to the TUFLOW rating curve shown in Figure 3.3. Only one reading per day was available for the event at Boggabri.

The data suggests that the Namoi River and Cocks Creek peaks for the 1971 event may have occurred within a few hours of each other because the Namoi River at Boggabri peak was much higher than that recorded at Gunnedah. No data was available at the Cocks Creek gauge to confirm this.

Table 4.5 - Recorded daily rainfalls for the February 1971 event

Station name	Station No.	Daily rainfall (mm) to 0900 hours											Total rainfall (mm)
		27/ 01	28/ 01	29/ 01	30/ 01	31/ 01	01/ 02	02/ 02	03/ 02	04/ 02	05/ 02	06/ 02	
Gunnedah	55024	4.3	0.8	42.7	18.8	38.9	69.1	0	0	0.5	4.8	30.5	210.4
Mullaley (Bando)	55002	0	0	109.2	12.2	57.4	90.7	3.8	0	8.1	23.1	28.2	332.7
Boggabri Post Office	55007	0	0	64.8	44.7	38.1	59.7	0	0	0.5	18.8	14.5	241.1
Premier (Eden Moor)	55017	0	32.3	0	0	44.5	61	0	10.2	0	2.5	39.4	189.9
Mullaley (Garrawilla)	55018	0	0	0	72.1	55.9	3	0	3	21.3	41.4	15	211.7
Ghoolendaadi	55020	42.9	0	45.7	25.7	39.6	0	0	20.3	0	38.1	35.6	247.9
Mayfield	55033	0	0	65.3	36.6	19.3	82	0	0	2.5	0	51.3	257
Boggabri (Milchengowrie)	55034	20.3	0	59.7	33.8	35.8	57.9	0	0	0	9.9	14.2	231.6
Mullaley Post Office	55038	0	0	30	25.4	92.7	0	0	0	9.4	2.3	26.7	186.5
Boggabri Retreat	55044	2	68.1	27.7	16.5	0	86.4	0	0	0	10.9	15	226.6
Curlewis (Pine Cliff)	55045	2	0	32.5	39.1	52.8	84.6	0	0	9.7	12.7	19.3	252.7
Tambar Springs PO	55053	0	0	50.3	6.1	133.1	4.1	0	9.7	35.3	0	0	238.6
Wandobah	55059	0	7.6	35.6	58.4	87.6	62.2	0	7.6	19.1	20.3	0	298.4
Yannergee (Dobroyd)	55069	0	0	89.9	3.8	34.3	57.7	5.6	0	11.9	10.2	8.9	222.3
Premier Post Office	55071	0	0	47	5.8	76.7	56.9	0	0	3.6	23.1	20.6	233.7
Kelvin (Kahana)	55201	13.7	43.2	44.7	28.7	93.5	0	0	2.8	0	17.8	16.3	260.7
Mullaley (Keigho)	55263	5.6	0	17	18.3	60.5	58.4	0	0	8.1	38.9	14	220.8
Boggabri (Be-Bara)	55268	5.6	0	39.4	34.3	48.3	77	0	0	3.6	10.7	28.7	247.6
Balmoral	55271	0	0	14.2	14.7	79.2	42.4	5.8	0	15.2	0	25.1	196.6
Gunnedah (Colstoun Sth)	55272	0	0	41.9	21.6	28.2	81.3	0	0	0	0	33.5	206.5
Boggabri (Neotsfield)	55273	5.1	0	47.5	17.5	50.5	101.6	0	0	2.5	8.1	39.4	272.2
Mullaley (Kirkbright)	55301	0	0	19.1	30.5	35.3	70.9	0	0	0	10.7	27.4	193.9

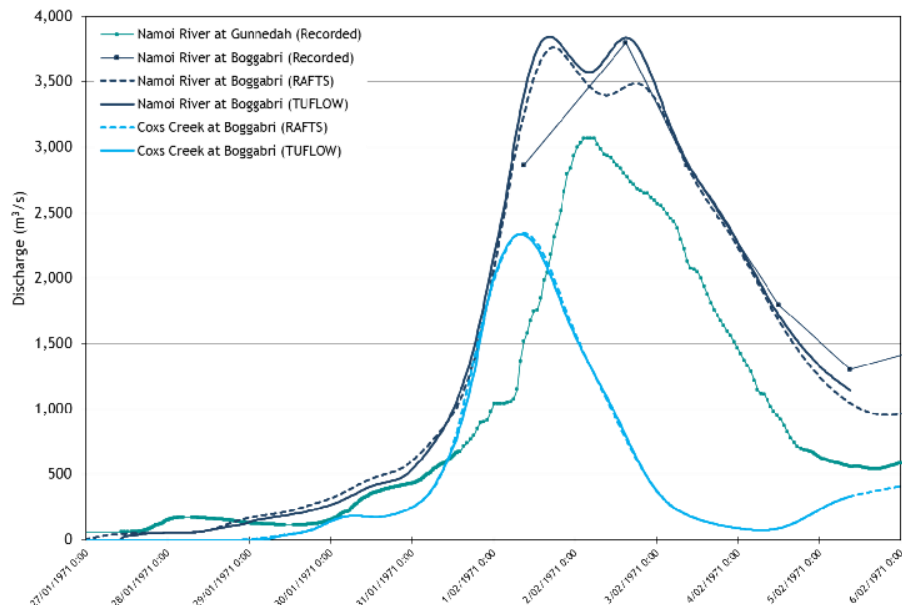


Figure 4.3 - Recorded Namoi River at Gunnedah and Boggabri and predicted Namoi River at Boggabri discharge hydrographs, February 1971 event

4.3.3 February 1997 event

Table 4.6 shows the daily rainfalls recorded at 19 rainfall stations in the vicinity of the study area over the three days to 0900 hours on 14 February 1997. Significant rainfalls were recorded over this period with the highest rainfalls occurring in the Mullaley area. Much lower rainfalls occurred around Boggabri and in the upper headwaters of the catchment. Rainfall conditions prior to the February 1997 event were generally dry with only 4.5 mm recorded at the Mullaley (Kirkbright) station and only 0.56 mm recorded at the Bundella Creek at Bundella station in the two days prior to 12 February, and no rainfall recorded at the Cocks Creek at Boggabri gauge.

Figure 4.4 shows the recorded subdaily rainfalls, redistributed to hourly intervals, at the four gauges with short duration data (see Section 3.4). The recorded discharge hydrographs at the Namoi River at Gunnedah (419001) and Namoi River at Boggabri (419012) gauges as well as the Cocks Creek at Boggabri (419032) gauge during the event are also shown. Figure 4.4 shows that the February 1997 event was mostly a Cocks Creek flood.

4.3.4 July 1998 event

Table 4.7 shows the daily rainfalls recorded at 17 rainfall stations in the vicinity of the study area over the three days to 0900 hours on 22 July 1998. Rainfalls were generally evenly distributed across the catchment for this event with the highest rainfalls occurring in the 24 hours to 0900 hours on 21 July 1998. Rainfall conditions prior to the July 1998 event were wet with 34 mm recorded at the Cocks Creek at Tambar Springs station, 41 mm recorded at the Bundella Creek at Bundella station and 21.5 mm recorded at the Cocks Creek at Boggabri gauge in two days prior to 20 July.

Table 4.6 - Recorded daily rainfalls for the February 1997 event

Station name	Station No.	Daily rainfall (mm) to 0900 hours			Total rainfall (mm)
		12/02	13/02	14/02	
Coxs Creek at Boggabri	419032	2.5	32.0	24.5	59.0
Coxs Creek at Tambar Springs	419033	7.0	47.5	20.5	75.0
Bomera Creek at Tambar-Premier Road	419085	6.5	43.5	23.5	73.5
Bundella Creek at Bundella	419086	10.0	25.0	12.5	47.5
Gunnedah Resource Center	55024	0.0	40.4	30.4	70.8
Mullaley (Bando)	55002	10.6	53.0	71.0	134.6
Premier (Eden Moor)	55017	13.0	21.0	17.0	51.0
Mullaley (Garrawilla)	55018	10.2	80.4	80.8	171.4
Boggabri (Milchengowrie)	55034	0.0	51.2	21.4	72.6
Mullaley Post Office	55038	8.1	65.6	62.6	136.3
Boggabri Retreat	55044	0.0	17.4	14.2	31.6
Curlewis (Pine Cliff)	55045	11.8	64.0	84.2	160.0
Tambar Springs Post Office	55053	9.4	31.6	34.0	75.0
Yannergee (Dobroyd)	55069	12.8	24.6	36.6	74.0
Premier Post Office	55071	10.6	25.0	35.8	71.4
Kelvin (Kahana)	55201	24.2	35.5	0.0	59.7
Boggabri (Be-Bara)	55268	4.0	14.4	9.0	27.4
Boggabri (Neotsfield)	55273	2.6	15.8	3.4	21.8
Mullaley (Kirkbright)	55301	10.5	25.0	98.5	134.0

Figure 4.5 shows the recorded subdaily rainfalls, redistributed to hourly intervals, at the four gauges with short duration data (see Section 3.4). The recorded discharge hydrographs at the Namoi River at Gunnedah (419001) and Namoi River at Boggabri (419012) gauges as well as the Coxs Creek at Boggabri (419032) gauge during the event are also shown. The rainfall was generally confined to a 31 hour period to 1100 hours on 21 July for this event. Two flood peaks occurred at Boggabri, the first peak from Coxs Creek and the second and larger peak from the Upper Namoi River catchment.

4.3.5 November 2000 event

Table 4.8 shows the daily rainfalls recorded at 21 rainfall stations in the vicinity of the study area over the eight days to 0900 hours on 20 November 2000. Significant rainfalls were recorded over most days for this event. Rainfall conditions prior to the November 2000 event were moderately wet with 7.5 mm recorded at the Coxs Creek at Tambar Springs station, 8.5 mm recorded at the Bundella Creek at Bundella station, and 7 mm recorded at the Coxs Creek at Boggabri gauge in the day prior to 13 November.

Figure 4.6 shows the recorded subdaily rainfalls, redistributed to hourly intervals, at the four gauges with short duration data (see Section 3.4). The recorded discharge hydrographs at the Namoi River at Gunnedah (419001) and Namoi River at Boggabri (419012) gauges as well as the Coxs Creek at Boggabri (419032) gauge during the event are also shown. The flood event was produced by multiple smaller storm bursts in the Coxs Creek catchment followed by a larger Namoi River flood.

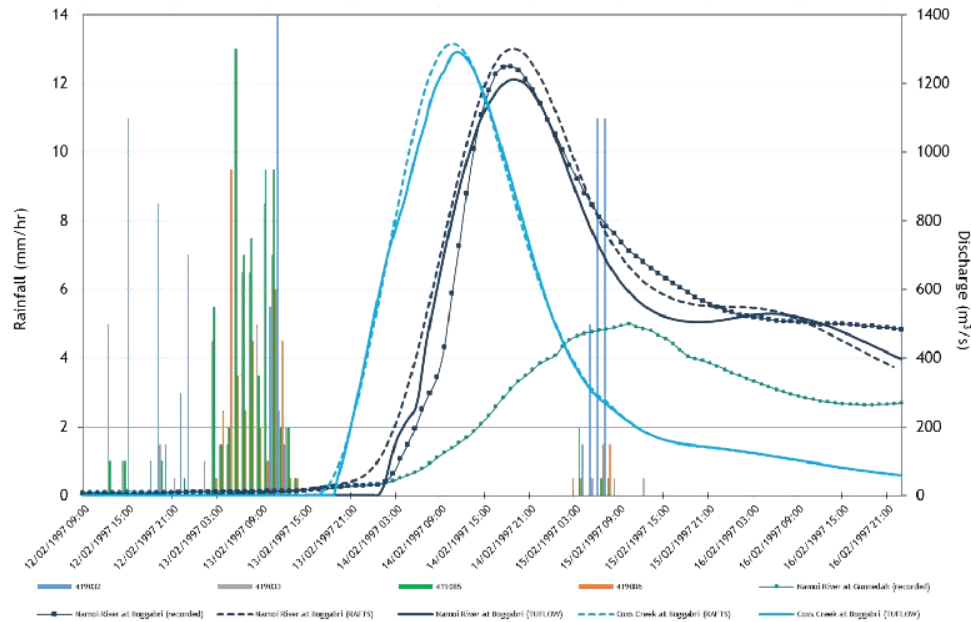


Figure 4.4 - Recorded hourly rainfalls and discharge hydrographs, February 1997 event

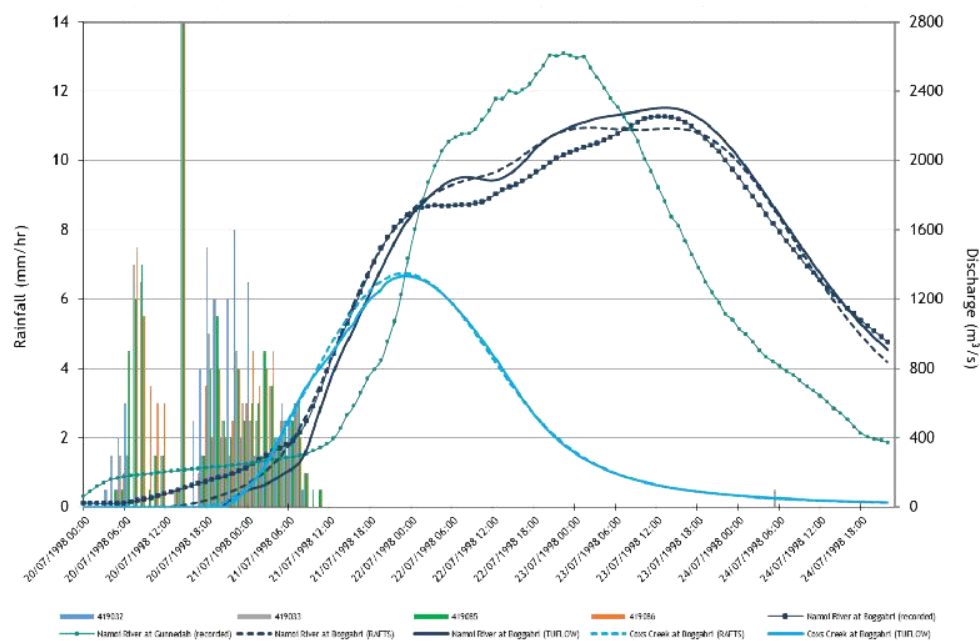


Figure 4.5 - Recorded hourly rainfalls and discharge hydrographs, July 1998 event

Table 4.7 - Recorded daily rainfalls for the July 1998 event

Station name	Station No.	Daily rainfall (mm) to 0900 hours			Total rainfall (mm)
		20/07	21/07	22/07	
Coxs Creek at Boggabri	419032	7	60.5	0	67.5
Coxs Creek at Tambar Springs	419033	17	67	0	84
Bomera Creek at Tambar-Premier Road	419085	18.5	65.5	1	85
Bundella Creek at Bundella	419086	15	75.5	0.5	91
Gunnedah Resource Center	55024	12.4	66.4	1.6	80.4
Mullaley (Bando)	55002	12.4	70	0	82.4
Premier (Eden Moor)	55017	6	67	5	78
Mullaley (Garrawilla)	55018	53.2	41.8	26.6	121.6
Boggabri (Milchengowrie)	55034	3.4	79	12	94.4
Mullaley Post Office	55038	13.2	67.4	3.6	84.2
Boggabri Retreat	55044	0	45	6.2	51.2
Curlewis (Pine Cliff)	55045	15.4	79.2	3.4	98
Tambar Springs Post Office	55053	12.4	85	2.2	99.6
Yannergee (Dobroyd)	55069	15.2	69	2.8	87
Kelvin (Kahana)	55201	2	55	12.6	69.6
Boggabri (Be-Bara)	55268	10.4	74.2	3.4	88
Boggabri (Neotsfield)	55273	6.6	66.4	3.4	76.4

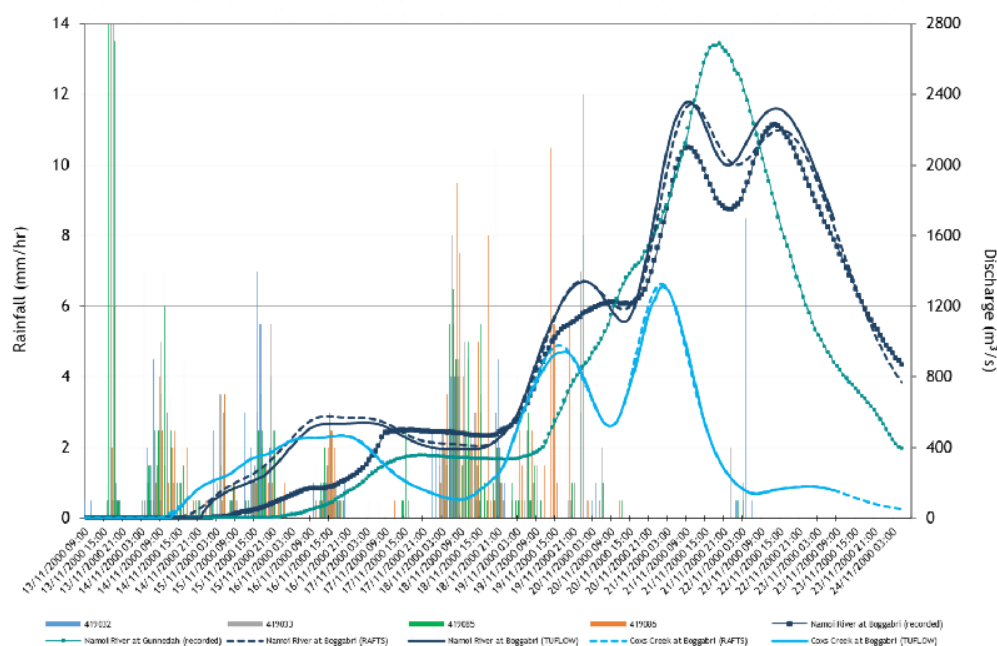


Figure 4.6 - Recorded hourly rainfalls and discharge hydrographs, November 2000

Table 4.8 - Recorded daily rainfalls for the November 2000 event

Station name	Station No.	Daily rainfall (mm) to 0900 hours								Total rainfall (mm)
		13/11	14/11	15/11	16/11	17/11	18/11	19/11	20/11	
Coxs Creek at Boggabri	419032	13.5	21.5	7.0	27.5	8.5	14.5	24.5	1.5	117.5
Coxs Creek at Tambar Springs	419033	27.9	69.5	33.0	23.5	11.0	30.5	39.0	27.0	257.5
Bomera Creek at Tambar-Premier Road	419085	23.8	78.0	32.0	18.5	10.0	24.5	36.5	18.5	238
Bundella Creek at Bundella	419086	33.8	14.8	31.0	16.2	12.0	24.5	59.0	36.5	223
Gunnedah Resource Centre	55024	20.6	8.8	18.6	30.8	12.6	19.4	20.6	16.8	148.2
Mullaley (Bando)	55002	40.0	13.2	60.4	42.0	13.2	28.0	51.6	104.2	352.6
Boggabri Post Office	55007	16.5	12.8	7.0	39.0	8.6	8.0	25.4	2.0	119.3
Premier (Eden Moor)	55017	29.0	12.0	25.0	15.0	11.0	8.0	61.0	99.0	260
Mullaley (Garrawilla)	55018	21.6	14.2	51.2	32.2	11.4	39.0	37.0	73.0	279.6
Boggabri (Milchengowrie)	55034	20.2	4.4	9.2	39.4	10.6	2.4	30.2	4.2	120.6
Mullaley Post Office	55038	22.2	5.4	27.4	31.0	11.0	18.2	36.2	30.8	182.2
Boggabri Retreat	55044	10.5	18.0	0.0	35.5	10.0	6.0	15.0	3.0	98
Curlewis (Pine Cliff)	55045	29.6	5.6	23.4	28.4	12.6	18.2	37.6	78.2	233.6
Tambar Springs Post Office	55053	42.0	55.0	42.0	35.0	15.0	28.2	65.6	45.0	327.8
Yannergee (Dobroyd)	55069	45.6	18.6	43.0	24.6	13.8	16.4	50.8	15.4	228.2
Premier Post Office	55071	12.0	26.0	30.0	25.2	12.0	25.0	52.0	8.2	190.4
Kelvin (Kahana)	55201	14.2	11.6	12.6	34.6	10.6	10.0	18.4	8.4	120.4
Mullaley(Keigho)	55263	14.0	19.6	36.6	46.0	10.4	40.8	19.8	42.0	229.2
Boggabri (Be-Bara)	55268	22.0	14.0	21.0	41.0	11.0	33.0	24.0	5.0	171
Boggabri (Neotsfield)	55273	17	24.8	10	28	9	17.8	39.8	7.4	153.8
Mullaley (Kirkbright)	55301	10	4	42	37	12.5	32	22	35.5	195

4.4 TRANSMISSION LOSSES

During model calibration, it was not possible to match the recorded Namoi River at Boggabri discharge hydrograph using the recorded Namoi River at Gunnedah discharge hydrograph without the inclusion of a transmission loss. Apart from the 1971 event, where the Namoi River and Cocks Creek peaks appear to coincide at Boggabri, the Namoi River at Boggabri peak is lower than at Gunnedah even including the Cocks Creek flows. The peak at Boggabri is 14% lower than the Gunnedah peak for the 1998 event, 17% lower for the 2000 event and 25% lower for 1955.

To match the recorded peak at the Boggabri gauge, 8% of the Namoi River flow was diverted from XP-RAFTS model nodes at B45, B48 and B49 (see Figure 4.1). These locations are approximately 25%, 50% and 75% of the distance along the Namoi River between Gunnedah and Boggabri. These flows were assumed to soak into the underlying aquifer and not report back to the river.

4.5 RAINFALL LOSSES

Table 4.9 shows the rainfall losses adopted in the XP-RAFTS model for each calibration event. The rainfall losses were adjusted to match the recorded flood peak and volume (shape) at all stream gauges. A higher priority was given to matching the Cocks Creek at Boggabri gauge data given its relevance to flooding in Boggabri and the fact that the upstream gauges are generally poorly rated (see Section 3.3).

Table 4.9 - Calibrated initial and continuing rainfall losses, calibration events

Event	Initial loss (mm)	Continuing loss (mm/hr)
February 1955	25	1.3
February 1971	60	0.4
February 1997	52	1
July 1998	15	1 ^a
November 2000	30	2

^a 2.2mm/hour adopted for the catchment upstream of Mullaley

4.6 MODEL CALIBRATION RESULTS

Figure A 1 to Figure A 15 in Appendix A show the recorded and predicted discharge hydrographs along the Cocks Creek at the three upstream stream gauges Bomera Creek at Tambar-Premier Road (419085), Cocks Creek at Tambar Springs (419033) and Bundella Creek at Bundella (419086) as well as the two downstream gauges Cocks Creek at Boggabri (419032) and Namoi River at Boggabri (419012) for the five calibration events. Data is only available at the Namoi River at Boggabri gauge for the 1955 and 1971 events.

The hydrologic model was able to replicate the hydrographs for the upstream gauges (Bundella Creek at Bundella (419086), Bomera Creek at Tambar-Premier Road (419085), and Cocks Creek at Tambar Springs (419033)) reasonably well. A good agreement was achieved at the Cocks Creek at Tambar Springs (419033) gauge for the 1998 and 2000 events. The match for the 1997 event at this station is poor due to the low discharges. This event was generated mostly from the catchment downstream of this gauge.

The timing, peak and flood volume of the recorded and predicted hydrographs at the Cocks Creek at Boggabri gauge (419032) are in good agreement for the 1997, 1998 and 2000 calibration events, suggesting the rainfall losses and channel routing parameters adopted for the Cocks Creek catchment are reasonable.



At the Namoi River at Boggabri (419012) gauge, the recorded and predicted discharge hydrographs are in reasonable agreement for the 1955, 1997, 1998 and 2000 events which suggests that the adopted transmission and routing losses between Gunnedah and Boggabri are sound for these events.

Two flood peaks are predicted for the 1971 event, with the first peak associated with the Coxs Creek and the rising limb of the Namoi River flood and the second associated with the Namoi River peak and the falling limb of the Coxs Creek flood. The second peak is marginally lower than the recorded flood peak. Recorded data is not available for the first peak.

5 Hydraulic model development

5.1 OVERVIEW

The two-dimensional TUFLOW hydrodynamic model (BMT, 2020) was used to simulate the flow behaviour of Cocks Creek and Namoi River and their tributaries in the vicinity of Boggabri.

TUFLOW represents hydraulic behaviour on a fixed grid by solving the full two-dimensional depth-averaged momentum and continuity equations for free surface flow (BMT, 2018). The model automatically calculates breakout points and flow directions within the study area. An adaptive time step is used by the computational engine to maintain simulation stability. A grid size of 10 m was adopted for this study.

A description of the development and calibration of the TUFLOW model that has been used to estimate design flood levels at Boggabri is outlined below.

5.2 MODEL CONFIGURATION

Figure 5.1 shows the extent of the hydraulic model. The model includes:

- a digital elevation model (DEM) of the available topographic data;
- Manning's 'n' roughness values for surfaces within the study area;
- a global soil type to account for infiltration losses;
- inflow and outflow boundaries; and
- road and rail culvert and bridge data.

Descriptions of these are given in the following sections.

5.2.1 Topographic data

The LiDAR/DEM datasets were merged into a single DEM. Based on the metadata information on vertical accuracy (see Section 3.4), the following preference order (best to poorest) was adopted:

- 1 data supplied by Narrabri Council, 2014;
- 2 data from GeoScience Australia, 2014;
- 3 area 2 supplied by Whitehaven, 2016;
- 4 area 1 supplied by Whitehaven, 2015;
- 5 area 4 supplied by Whitehaven, 2012;
- 6 area 5 supplied by Whitehaven, 2019;
- 7 area 6 supplied by Whitehaven, 2019;
- 8 area 3 supplied by Whitehaven, 2011; and
- 9 data from NSW Spatial Services, 2011.

5.2.2 Bathymetric data

The project DEM represents the water level in the Namoi River at the time of the survey rather than the watercourse bed. A review of the Namoi River at Boggabri (419012) gauge cease-to-flow level showed that the depth of water at was about 2.3 m above the bed. This level was supported by the overlapping areas from the 2019 lidar data provided by Whitehaven, which was taken when there was no flow in the Namoi River.

To account for this, the bed level of the Namoi River has been lowered by 2.3 m over a constant width of 25 m for the entire length of the model area. No changes were made to the Cocks Creek bed as it has no water on the bed at time of survey.

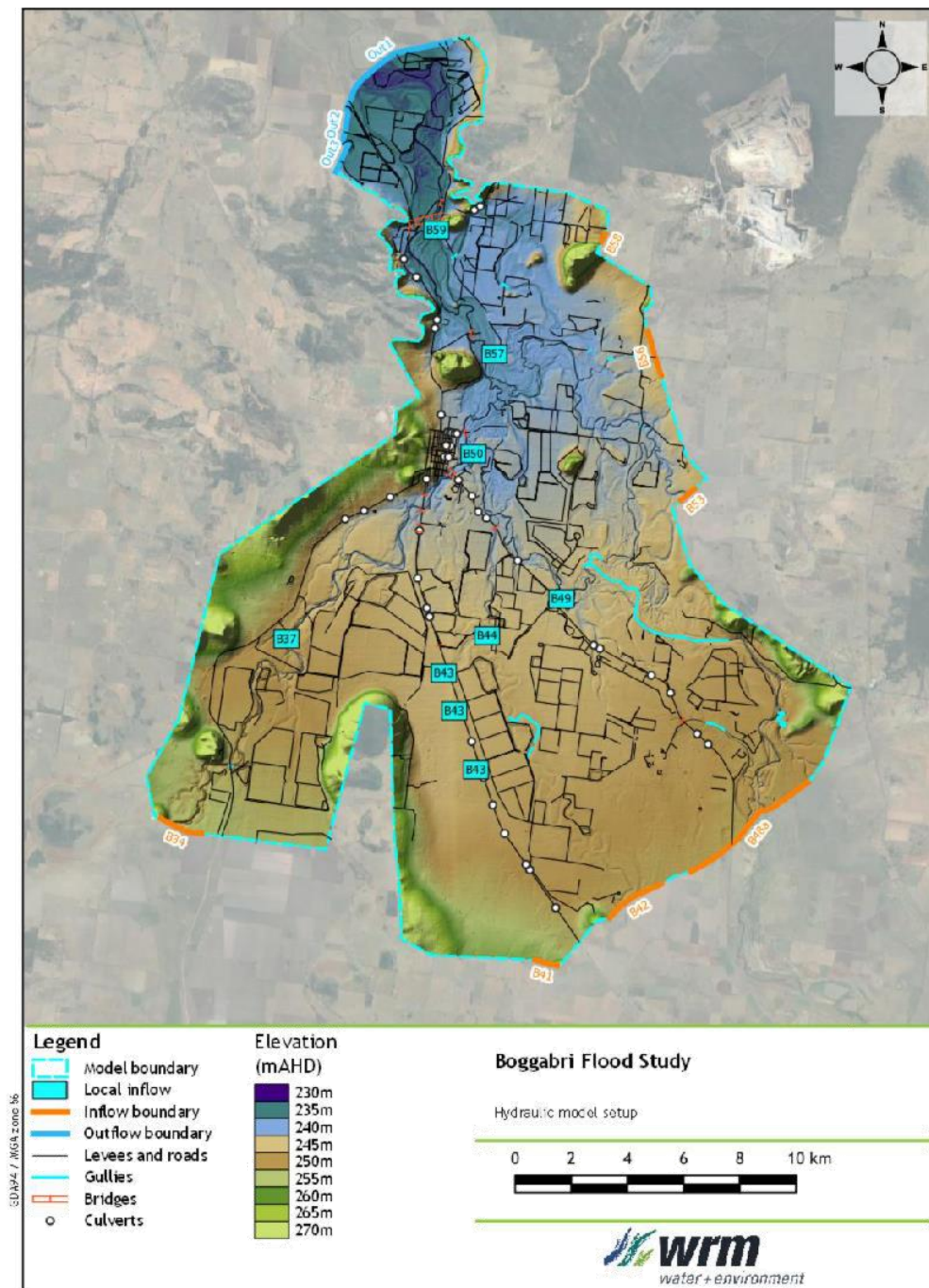


Figure 5.1 - TUFLOW model configuration, general overview

5.2.3 Manning's 'n' values

The model uses Manning's 'n' values to represent hydraulic resistance (notionally channel or floodplain roughness). Discrete regions of continuous vegetation types and land uses were mapped, and appropriate roughness values assigned to each region. Vegetation and land use mapping were based on Google Satellite and ESRI Satellite imagery as well as the project DEM. The Manning's 'n' values were selected during model calibration and were applied to all model scenarios.

Table 5.1 shows the Manning's 'n' values adopted for use in the hydraulic model. Figure 5.2 shows the discrete regions where specific Manning's 'n' values have been applied. The dominant land use in the area of interest is for crops and has been applied for any area not discretely mapped otherwise.

Table 5.1 - Manning's 'n' parameters

Region	Manning's 'n' value
Floodplain (crops)	0.040
Channel	0.030
Overbank	0.050
Vegetation	0.070
Road/rail	0.025

5.2.4 Model boundaries

Figure 5.1 shows the locations of the inflow and outflow boundaries of the hydraulic model. Seven inflow boundaries were used to represent the Namoi River and the Cops Creek as well as several minor watercourses draining the model. A further seven local subcatchment inflows were used within the hydrodynamic model boundary. Due to the uncertainty of the exact drainage lines in local catchment B43, the local inflow boundaries B43 were configured to proportionally distribute the inflows along the rail line. The inflow hydrographs were derived using the XP-RAFTS hydrological model described in Section 4.

Three outflow boundaries have been assigned across the Namoi River floodplain approximately 18.8 km downstream of the "Namoi River at Boggabri" (GS419012) gauge (measured along the Namoi River centreline). The outflow boundaries were specified as TUFLOW generated discharge-head (Q-H) relationships based on the tailwater slopes assigned as $I = 0.01\%$ for all outflow boundaries.

A sensitivity analysis using a downstream tailwater slope of 0.03% showed the impacts at to be negligible at the Namoi River at Boggabri gauge.

5.2.5 Infiltration losses

As described in Section 4.4, it was not possible to match the recorded Namoi River at Boggabri discharge hydrograph using the recorded Namoi River at Gunnedah discharge hydrograph without the inclusion of a transmission loss. To match the recorded peak, 8% of the Namoi River flow was diverted from XP-RAFTS model nodes at B45, B48 and B49 (see Figure 4.1). The TUFLOW model upstream boundary corresponds to Node B48, which means that two XP-RAFTS transmission losses of 8% have occurred prior to the flows entering the TUFLOW model.

To incorporate the remaining transmission loss in the TUFLOW model to match the third XP-RAFTS model transmission loss, the Green-Ampt infiltration model inbuilt into TUFLOW was applied. This infiltration model assumes a variation of the infiltration rate over time as a result of soils saturating at a wetting front and is based on the soil's hydraulic conductivity, suction, porosity and initial soil moisture content.

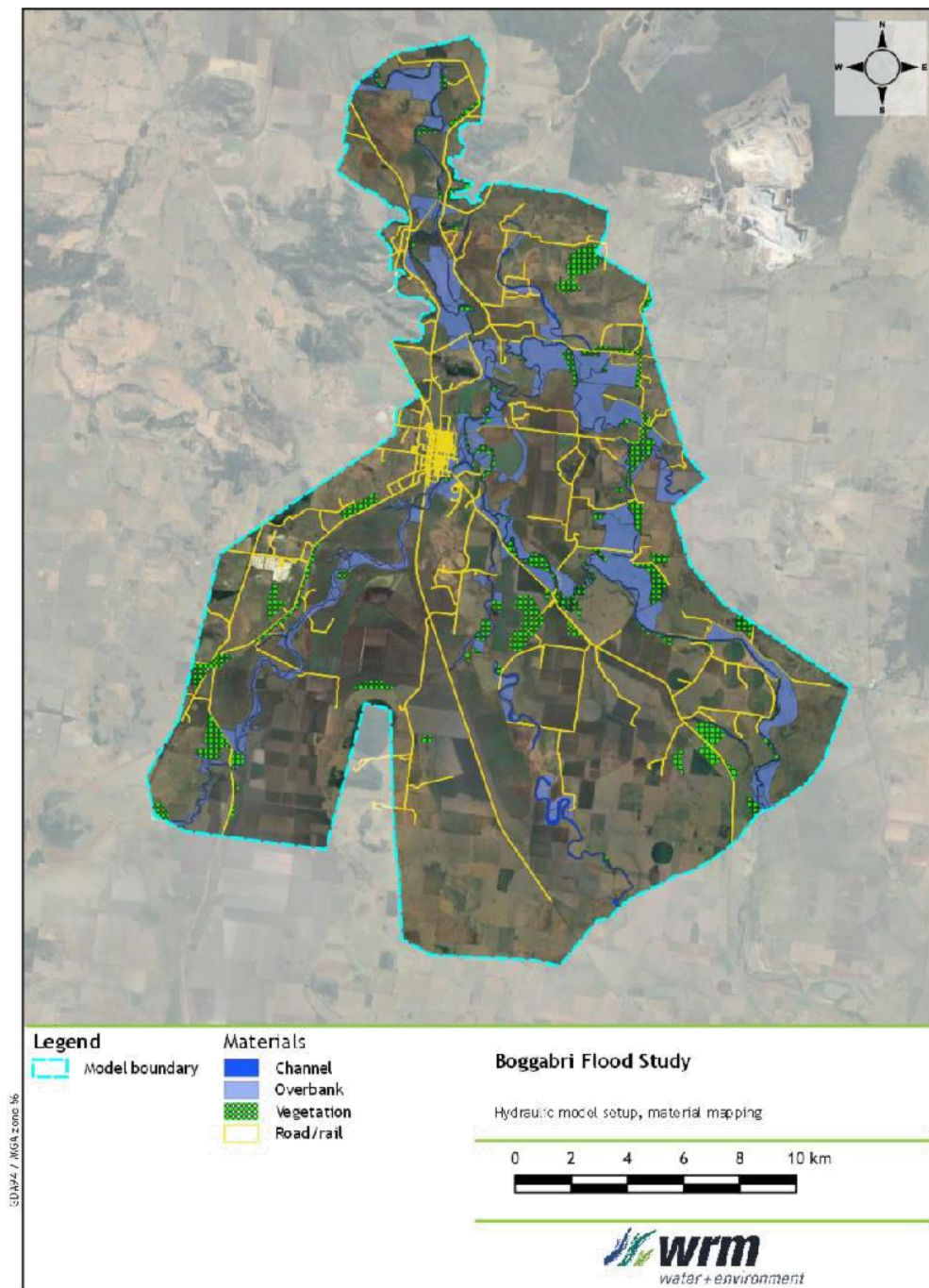


Figure 5.2 - TUFLOW model configuration, material mapping

According to the NSW SEED datahub (SEED, 2019), the prevailing soil type in the study area are vertosol soils with a clay content of 35%. The “clay loam” soil type as predefined by the United States Department of Agriculture (USDA), as outlined in Table 5.2, was applied to the model as a global parameter. The initial moisture content, i.e. the fraction of the soil that is initially wet, was assumed to be 0.

Table 5.2 - Green-Ampt infiltration parameters, USDA ‘clay loam’ soil type

Suction (mm)	Hydraulic conductivity (mm/hr)	Porosity (fraction)
208.8	1.0	0.309

5.2.6 Bridge, culvert and levee structures

Section 3.6 describes the locations and details of the bridge and structures in the study area. Culverts were modelled as 1D structures assuming a roughness value of 0.015, entry and exit loss coefficients of 0.5 and 1 respectively. Rectangular structures were modelled with height and width contraction coefficients of 0.7 and 1 respectively.

Bridge structures were modelled as layered flow constrictions within the 2D domain. Layer 1 represents the bridge piers and underside of the bridge. Layer 2 represents the bridge structure and is 100% blocked and Layer 3 represents the hand rail. Details of the modelled bridge structures is given in Table 5.3.

Table 5.3 - Bridge structure losses

ID	Width (m)	Length (m)	Layer 1 (underside of bridge)		Layer 2 (bridge structure)		Layer 3 (handrail)	
			Obvert (mAHD)	% blockage	Structure depth (m)	% blockage	Depth (m)	% blockage
B01	3.2	5.2	247.5		0.80	100		
B02	3.2	5.2	246.7		0.80	100		
B03	3.2	7.6	247	10.5	0.40	100		
B04	3.2	3.5	243.9		0.40	100		
B05	4	7.6	243.6	10.5	0.80	100		
B06	3.66	156	244.1	6.15	0.80	100		
B07	3.66	88	243.07	8.2	1.43	100		
B08	10	35	249.7	4.6	0.80	100	0.5	50
B09	8.73	40.7	242.8	5.9	0.80	100	0.5	50
B10	11.1	260.6	244.4 to 245.18	3.7	0.80	100	1	50
B11	3.2	60	242.19	4	0.50	100	3	15
B12	5	130	239.8	1.25	0.80	100	2	50
B13	8	54	245.6 to 246.1	3	1.00	100	2	10
B14	8	72	243.8	2.3	2.00	100	3	45
B15	4	1020	243.8 to 244.5	1.9	2.00	100	1	15
B16	10	54	235.8	2	0.80	100		

Where the height of a structure was provided, this value added to the ground level was assumed as the obvert level of a structure (L1 obvert). Where this information was not supplied, a depth of the overlying layer (L2 depth) of 0.8 m was assumed. Bridge form loss coefficients for the bridge opening (layer 1), the bridge deck (layer 2) and the rail guards (layer 3) were assumed as 0.1, 1.56 and 0.5, respectively.

Gullies, elevated road and railways as well as levee structures in the project area were modelled as a TUFLOW Z-shape polyline with the crest or invert levels defined from the underlying DEM.

For the 1955 and 1971 calibration events, the levees were removed from the topography as it was understood they were constructed post 1971.

The Boggabri/Maules Creek rail bridge and embankment are recent developments that were not represented in the topographic data. The ground elevation has been adjusted manually to account for these changes for the post 1971 analyses.

5.3 MODEL CALIBRATION

Appendix B shows the flood depths, extents, and levels across the study area for the 1955, 1971, 1997, 1998 and 2000 flood event. A discussion of the model calibration for each event is given below.

5.3.1 February 1955 event

Figure 5.3 shows the recorded and predicted peak water level hydrographs at the Namoi River at Boggabri gauge. Table 5.4 show comparisons of TUFLOW predicted flood levels at the surveyed peak flood level locations across the floodplain for the 1955 flood. The source of the surveyed flood peaks is also shown. The locations of the surveyed points are shown in Appendix B.

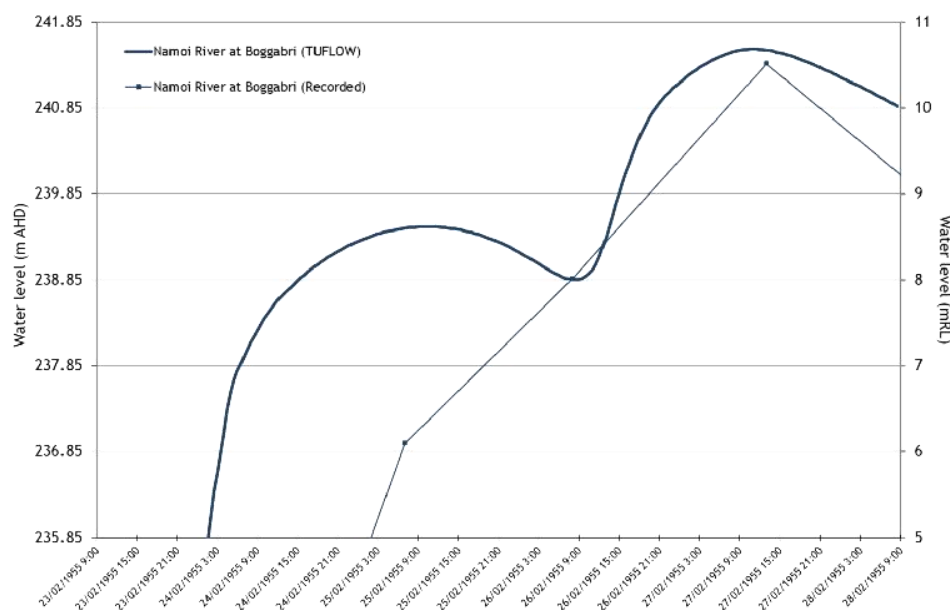


Figure 5.3 - Recorded and predicted Namoi River at Boggabri water level hydrographs, February 1955 event

Table 5.4 - Comparison between surveyed and predicted peak flood levels, 1955 event

ID	Location	Source	Surveyed level (mAHD)	Predicted flood level (mAHD)	Difference (m)
419012	Gauge	G	241.37	241.54	0.17
A	Rail line	D	243.65	243.80	0.15
B	Derby Street	D	243.50	243.54	0.04
C	Frome Street	D	243.45	243.44	-0.01
D	Grantham Street	D	243.35	243.17	-0.19
E	Clare Street	D	243.30	243.13	-0.17
F	Caxton Street	D	243.20	243.07	-0.13
G	Brent Street	D	243.10	243.07	-0.03
H	Dalton Street	D	242.90	242.88	-0.02
I	Boston Street	D	242.50	242.64	0.14
J	Floodplain east	D	243.73	243.83	0.10
K	Floodplain U/S	S	248.54	248.99	0.45
L	Floodplain U/S	S	249.96	250.37	0.41
M	Floodplain U/S	S	250.92	251.36	0.44
N	Floodplain U/S	S	249.64	250.41	0.77
O	Floodplain U/S	S	246.32	246.73	0.41
P	Floodplain D/S	S	240.30	240.67	0.37
Q	Floodplain D/S	S	239.30	239.58	0.28
R	Floodplain D/S	S	239.24	239.58	0.34
S	Floodplain D/S	S	240.80	240.93	0.13
T	Floodplain D/S	S	240.00	239.34	-0.66

G - Gauge, D - DNR, 2007 (flood map), S - SMEC, 2003,

Data available for the calibration includes intermittent (manually read) peak flood levels at the Namoi River at Boggabri gauge as well as at 10 flood marks surveyed throughout Boggabri (see Figure 3.1) sourced from survey conducted by the then NSW Water Resources Commission (year unknown). An additional 11 peak flood levels were sourced from the SMEC (2003) study and a flood study prepared for Boggabri Coal (WRM,2009).

A good calibration was achieved for the 1955 event. At the Namoi River at Boggabri gauge, the predicted flood peak from Coxs Creek was much higher than what was recorded, likely due to the use of daily rainfalls to estimate discharges. A reduction of the model inflows at Gunnedah of approximately 10% would be required in order to meet the level at gauge.

However, the predicted and recorded Namoi River flood peak from Gunnedah, which occurred some 48 hours later, matches reasonably well. The predicted peak flood levels at Boggabri, identified by flood points A to J, vary from 0.145 m high to 0.185 m low when compared to the surveyed levels. However, the peak flood extent matches very well with Figure 3.1. Conversely, the predicted peak flood levels across the Namoi River floodplain are generally higher than the surveyed levels. While levees have been removed from the model for the 1955 calibration, changes in ground levels that have not been accounted for may also have occurred in the area, affecting the flood levels.

5.3.2 February 1971 event

Figure 5.4 shows the recorded and predicted peak water level hydrographs at the Namoi River at Boggabri gauge for the 1971 event. Table 5.5 shows comparisons of the predicted peak flood levels and the surveyed peak flood at the gauge and another location identified on the 1955 flood map. The location of the gauge and the surveyed peak level are shown in Appendix B.

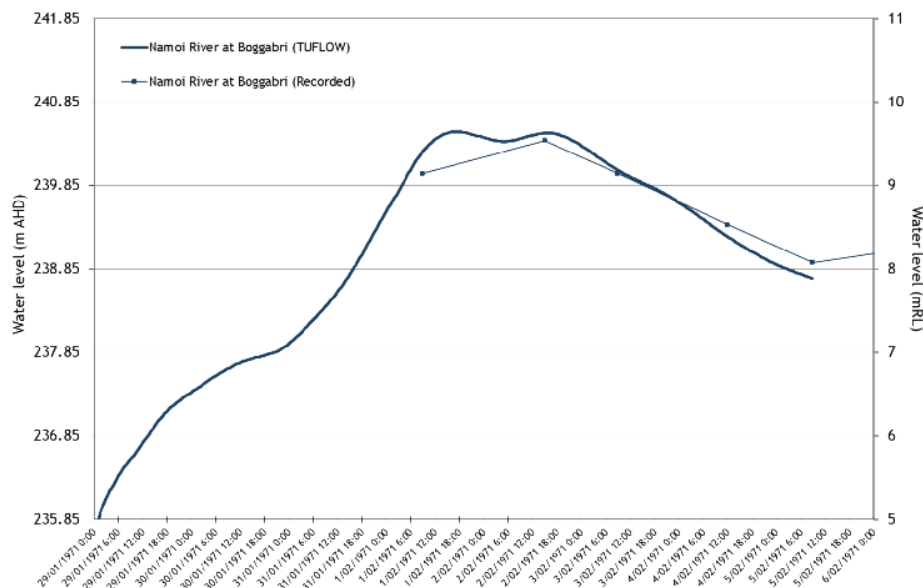


Figure 5.4 - Recorded and predicted Namoi River at Boggabri water level hydrographs, February 1971 event

Table 5.5 - Comparison between surveyed and predicted peak flood levels, 1971 event

Surveyed point	Source	Surveyed level (mAHD)	Predicted flood level (mAHD)	Difference (m)
419012	Gauge	240.39	240.50	+0.11
A-71	1955 flood map	242.04	242.93	+0.89

Two flood peaks were predicted at the gauge with the first peak (from Cocks Creek) approximately equal with the second peak from the upper Namoi River. There was less than 24 hours between peaks for this event with Cocks Creek flows significantly contributing to the second Namoi River flood peak.

The calibration to the A-71 peak flood level is poor. It would appear that this level is not associated with the flood peak. Based on the notes supplied with the 1955 flood map, the flood extent shown on the 1955 flood map was taken of the 1971 event when the flood level at the Boggabri gauge was 0.4 m below the peak. The predicted flood level and flood extent corresponds very well with the surveyed flood peak and flood extent at this time.

5.3.3 February 1997 event

Figure 5.5 shows the recorded and predicted peak water level hydrographs at the Namoi River at Boggabri gauge for the 1997 event. The predicted water level peak is within 0.02 m of the recorded peak for this event.

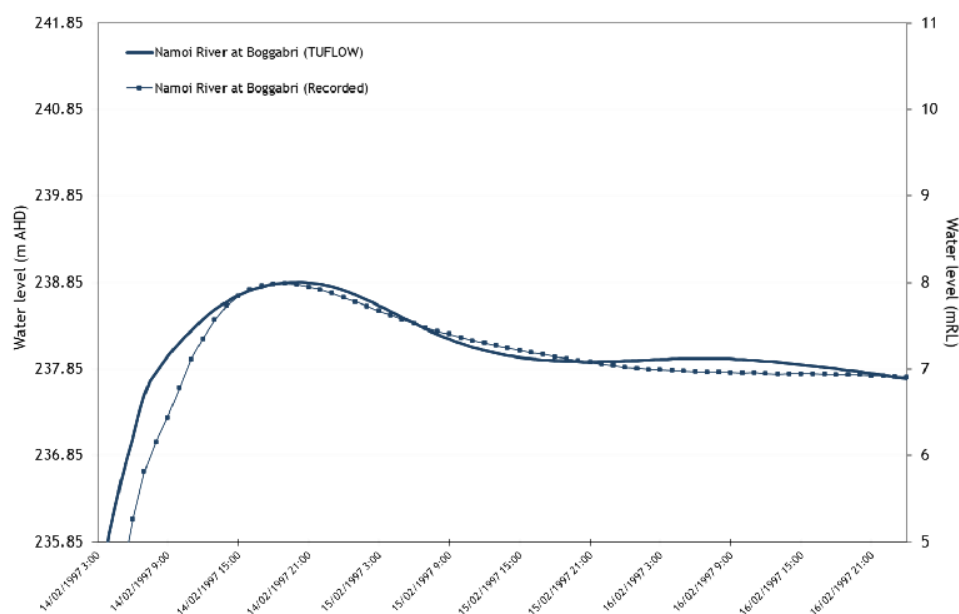


Figure 5.5 - Recorded and predicted Namoi River at Boggabri water level hydrographs, February 1997 event

5.3.4 July 1998 event

Figure 5.6 shows the recorded and predicted peak water level hydrographs at the Namoi River at Boggabri for the 1998 event. Table 5.6 shows comparisons of TUFLOW predicted flood levels and the surveyed peak flood across the floodplain for the event. The source of the surveyed flood peaks is also shown. The locations of the surveyed points are shown in Appendix B.

Table 5.6 - Comparison between surveyed and predicted peak flood levels for the 1998 event

Surveyed point	Source	Surveyed level (mAHD)	Predicted flood level (mAHD)	Difference (m)
419012	Gauge	239.63	239.71	0.08
A	SMEC, 2003	250.58	250.62	0.04
B	SMEC, 2003	248.90	248.81	-0.09
C	SMEC, 2003	245.77	245.83	0.06
D	SMEC, 2003	243.48	242.45	-1.03
E	SMEC, 2003	242.12	242.43	0.31
F	SMEC, 2003	242.02	242.39	0.37
G	SMEC, 2003	240.04	240.75	0.71
H	SMEC, 2003	239.66	240.74	1.08

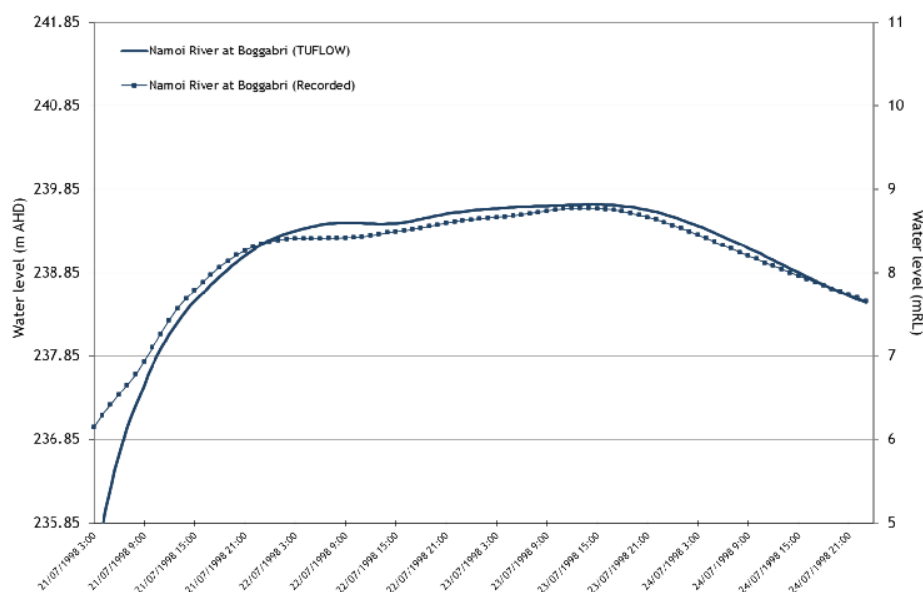


Figure 5.6 - Recorded and predicted Namoi River at Boggabri water level hydrographs, July 1998 event

A good calibration was achieved for the 1998 flood with predicted timings and peak flood levels in excellent agreement with the recorded values at the Namoi River at Boggabri gauge.

5.3.5 November 2000 event

Figure 5.7 shows the recorded and predicted peak water level hydrographs at the Namoi River at Boggabri gauge for the 2000 event. The predicted water level peak is within 0.12 m of the recorded peak for this event.

5.3.6 Summary

Overall, a good calibration was achieved using a single set of model parameters for all design events using both the XP-RAFTS and TUFLOW models. As shown in Table 5.7, the predicted peak discharges using the XP-RAFTS corresponds well to the recorded data, which suggests that the adopted transmission losses for the flows between Gunnedah and Boggabri are reasonable.

The predicted Namoi River at Boggabri Gauge discharges using the TUFLOW model are moderately higher than the recorded data, particularly for the 1955 event, but still reasonable. There is a high level of uncertainty surrounding the adopted peak discharge at Gunnedah for the 1995 event. The models are expected to be suitably calibrated to estimate design discharges at Boggabri.

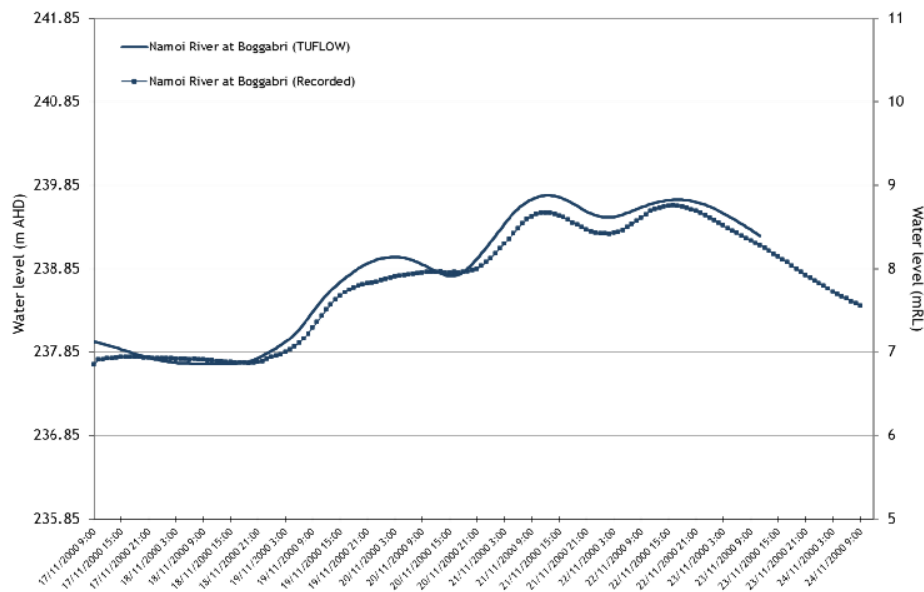


Figure 5.7 - Recorded and predicted Namoi River at Boggabri water level hydrographs, November 2000 event

Table 5.7 - Historical peak discharge comparison for Namoi River at Boggabri (419012), recorded, XP-RAFTS and TUFLOW

Event	Peak discharge (m ³ /s)		
	Recorded	XP-RAFTS	TUFLOW
1955	6,774 ^a	6,819 (0.7%)	7,355 (7.9%)
1971	3,712 ^b	3,762 (1.3%)	3,844 (3.4%)
1997	1,253	1,301 (3.7%)	1,212 (-3.4%)
1998	2,256	2,191 (-3.0%)	2,305 (2.1%)
2000	2,227	2,349 (5.2%)	2,360 (5.6%)

^a adjusted from 4,247 using WRM rating (see Figure 3.3)

^b adjusted from 3,199 using WRM rating (see Figure 3.3)

6 Estimation of design discharges

6.1 FLOOD FREQUENCY AND TERMINOLOGY

In this report, the frequency of floods is referred to in terms of their Annual Exceedance probability (AEP). The frequency of floods may also be referred to in terms of their Average Recurrence Interval (ARI). The relationship between AEP and ARI is given in Table 6.1.

Table 6.1 - Design events investigated

Annual exceedance probability (AEP) %	Average recurrence interval (ARI) years
20%	4.48
10%	9.49
5%	20
2%	50
1%	100
0.5%	200
0.2%	500
Probable Maximum Flood (PMF)	Theoretical maximum flood

The AEP of a flood represents the percentage chance of its being equalled or exceeded in any one year. A 1% AEP flood, which is equivalent to a 100 year ARI, has a 1% chance of being equalled or exceeded in any one year and would be experienced, on the average, once in 100 years.

6.2 METHODOLOGY

6.2.1 Overview

The model calibration showed that Boggabri is prone to flooding from both Coxs Creek and the Namoi River and the highest flood peak can occur for either source. Two flood peaks occurred for most historical floods. For all the historical floods investigated, the peak flood levels along Coxs Creek at Boggabri were dominated by Coxs Creek flows (first flood peak) and not the second peak due to backwater flooding the Namoi River. Therefore, the Coxs Creek design discharges will be determined using the calibrated XP-RAFTS model validated against design discharges estimated from an annual series flood frequency analysis (FFA) of the recorded flows at the Coxs Creek at Boggabri gauge.

Along the Namoi River at Boggabri (to the north of Caxton Street), the peak flood levels were determined by a combination of both. The Namoi River and Coxs Creek flood peaks did not coincide for any of the historical floods investigated. However, the rising limb of the upper Namoi River flood increased the first peak from Coxs Creek and the falling limb of the Coxs Creek flood increased the second Namoi River peak.

A detailed joint probability analysis between the Namoi River and Coxs Creek catchment flood events is required to provide a fully informed relationship between the two flood scenarios. For Boggabri, an annual series flood frequency analysis (FFA) of the recorded flows at the Namoi River at Boggabri gauge provides a direct measure of flood exceedance probabilities taking into consideration both sources of flooding as it is downstream of the confluence. Therefore, the FFA at the gauge provides a suitable proxy for a joint

probability analysis and it provides the most appropriate methodology to determine design discharges from the Namoi River at Boggabri.

The methodology used to define the Coxs Creek and Namoi River design discharges at Boggabri is outlined below.

6.2.2 Coxs Creek

The calibrated XP-RAFTS model was used to estimate design discharges for Coxs Creek and the residual Namoi River catchment downstream of Gunnedah for the 20%, 10%, 5%, 2% and 1% AEP events and the PMF. The design discharges for the more frequent events were validated against the FFA design discharge estimates for the Coxs Creek at Boggabri gauge.

Design discharges were determined using the ensemble methodology defined in Australian Rainfall & Runoff (ARR) (Ball, et al, 2019). An ensemble of 10 temporal patterns is modelled for each storm duration to derive a range of estimated peak discharges for each location and AEP of interest. For each location and AEP, the storm duration with the highest median peak discharge of the ensemble is selected and the temporal pattern that produces the peak discharge just above the ensemble median is used for design event modelling.

6.2.3 Namoi River

The Namoi River design flood discharges were estimated by routing the Gunnedah discharge hydrograph through the XP-RAFTS model (with the Coxs Creek design rainfalls of the same AEP). The design flood discharges at the Gunnedah gauge were determined from an annual series FFA of the recorded flows with the flood hydrograph shape based on the February 1955 discharge hydrograph shape scaled to match the flood peak.

The timing of the Gunnedah flood hydrograph was adjusted within the XP-RAFTS model so that the predicted flood peak at the Namoi River at Boggabri gauge matched the design discharge at the gauge determined from an annual series FFA of the recorded flows. In effect, the flows from falling limb of the Coxs Creek flood hydrograph were used to supplement any short fall in design flows from the upper Namoi River, in a similar manner to what was observed for the calibration events.

6.2.4 Namoi River PMF

It is not possible to estimate the Probable Maximum Flood (PMF) using the FFA methodology at Boggabri because the PMF is beyond the credible limit of extrapolation.

The methodology recommended for the estimation of PMF in the ARR guidelines is a rainfall-based procedure. This requires the development of a rainfall runoff routing model of the entire Namoi River catchment. Given that the Namoi River catchment has average annual rainfalls varying between 650 mm and 1,300 mm, elevations varying over a range of 800 m, three large water supply dams, substantial differences in topographic and flow characteristics as well over 20 stream gauges, the development of a rainfall runoff routing model would be a substantial task and is not considered warranted.

Instead, a regression equation developed by Watt et al. (2018) was used to derive an alternative PMF discharge estimate for the Namoi River at Gunnedah, which was then routed down to Boggabri using the methodology described above. The regression equation was based on an analysis of extreme flood estimates for inflows to storages within the Coastal GTSMR region of Queensland and northern New South Wales, with catchment areas varying from less than 10 km² to over 100,000 km².

The regression equation from Watt et al. (2018) adopted for the determination of the PMF is as follows:

$$PMF = 226 \times A^{0.586}$$

where A = catchment area (km²)

With a catchment area of 17,655 km² to the model inflow node at Gunnedah, the estimated PMF discharge is 69,626 m³/s, or some 9.3 times the 1% AEP event at Gunnedah predicted by the FFA.

6.3 ANNUAL SERIES FLOOD FREQUENCY ANALYSIS

6.3.1 Methodology

A Log-Pearson Type III (LP III) distribution was fitted to the annual series of recorded (and inferred) peak flood discharges at the three gauges using the Bayesian inference methodology recommended in Australian Rainfall and Runoff (AR&R) (Ball et al., 2019) using the FLIKE software. This methodology allows the user to more accurately consider historic data outside the gauged record, as well as allowing the user to censor low flows to improve the fit for the larger events. The FFA was based on a calendar year.

ARR recommends the use of prior information for any FFA involving the LP III distribution unless there is evidence that the regional prior is not applicable to the catchment of interest. The prior information has been developed as part of the Regional Flood Frequency Estimation (RFFE), which calculates the mean, standard deviation and skew of the regional LP III model. The use of prior information in the FFA was found to produce a poor fit to the data and has therefore not been used for any of the gauges.

6.3.2 Namoi River at Boggabri gauge

Table 6.2 shows the recorded and inferred annual series data used for the FFA, together with the source of the data. The following is of note regarding the available data:

- WaterNSW website¹ was used to define annual peaks from 1979.
- Peak water levels for the 1955 and 1971 events were obtained from the Pinneena database and translated to discharges using the rating table used at that time or the TUFLOW derived rating curve shown in Figure 3.3.
- Peak annual discharges were obtained from Kinhill (1991) for the period from 1937 to 1978 (excluding 1955 and 1971) as well as the years 1913 and 1914. The recorded water levels over this period could not be obtained from Water NSW. This data was used without modification.
- SMEC (2003) provided an additional peak flood level of 10.66 m for the 1910 event. No information is given on how this data was sourced. However, it is consistent with the recorded data at Gunnedah (419001) and Narrabri (419002 & 419003). The 1910 event was assumed to be the largest event prior to 1937.
- Due to the uncertainty regarding the 1910 value it was included in the FFA as a historical event outside the period of record, exceeding the highest recorded value. Values between 1910 and 1936 were included as censored values.
- Nine low flows below 49 m³/s were censored from the dataset using the Grubbs Beck test.

Figure 6.1 shows the annual series FFA of the recorded flows at the Namoi River at Boggabri gauge (GS419012). The expected range of design discharges from the FFA is given in Table 6.3.

¹ <https://realtimedata.watersw.com.au/water.stm>

Table 6.2 - Combined data set for peak annual discharges at Namoi River at Boggabri

Year	Peak Discharge (m ³ /s)	Year	Peak Discharge (m ³ /s)	Year	Peak Discharge (m ³ /s)	Year	Peak Discharge (m ³ /s)
1910	7,349 ^{s,a}	1957	37 ^k	1978	604 ^k	1999	338 ^p
1937	139 ^k	1958	362 ^k	1979	102 ^w	2000	2,227 ^w
1938	201 ^k	1959	126 ^k	1980	40 ^w	2001	71 ^w
1939	176 ^k	1960	358 ^k	1981	209 ^w	2002	64 ^w
1940	216 ^k	1961	192 ^k	1982	54 ^w	2003	53 ^w
1941	793 ^k	1962	1,377 ^k	1983	257 ^w	2004	349 ^w
1942	1,192 ^k	1963	436 ^k	1984	2,647 ^a	2005	361 ^w
1943	77 ^k	1964	2,014 ^k	1985	327 ^w	2006	42 ^w
1944	351 ^k	1965	85 ^k	1986	285 ^w	2007	144 ^w
1945	106 ^k	1966	140 ^k	1987	141 ^w	2008	568 ^w
1946	106 ^k	1967	92 ^k	1988	202 ^w	2009	54 ^w
1947	550 ^k	1968	541 ^k	1989	940 ^w	2010	918 ^w
1948	516 ^k	1969	292 ^k	1990	721 ^w	2011	989 ^w
1949	654 ^k	1970	325 ^k	1991	636 ^w	2012	1,145 ^w
1950	1,863 ^k	1971	3,712 ^{p,a}	1992	1021 ^w	2013	278 ^w
1951	300 ^k	1972	83 ^k	1993	338 ^w	2014	49 ^w
1952	1,091 ^k	1973	141 ^k	1994	20 ^w	2015	23 ^w
1953	105 ^k	1974	2,234 ^k	1995	158 ^w	2016	436 ^w
1954	479 ^k	1975	205 ^k	1996	430 ^w	2017	40 ^w
1955	6,774 ^{p,a}	1976	2,616 ^k	1997	1,253 ^w	2018	41 ^w
1956	2,824 ^k	1977	1,366 ^k	1998	2,256 ^w	2019	47 ^w
						2020	190 ^w

^s - SMEC, 2003, ^k - Kinhill, 1991, ^w - WaterNSW, ^p - Pinneena ^a - adjusted value.

Table 6.3 - FFA design discharge estimates, Namoi River at Boggabri

AEP	FFA discharge (m ³ /s)		
	Expected parameter quantile	Lower 90% confidence limit	Upper 90% confidence limit
20%	981	734	1,318
10%	1,825	1,337	2,530
5%	3,026	2,126	4,539
2%	5,313	3,406	9,227
1%	7,701	4,527	15,463
0.5%	10,789	5,734	25,517
0.2%	16,176	7,458	46,797

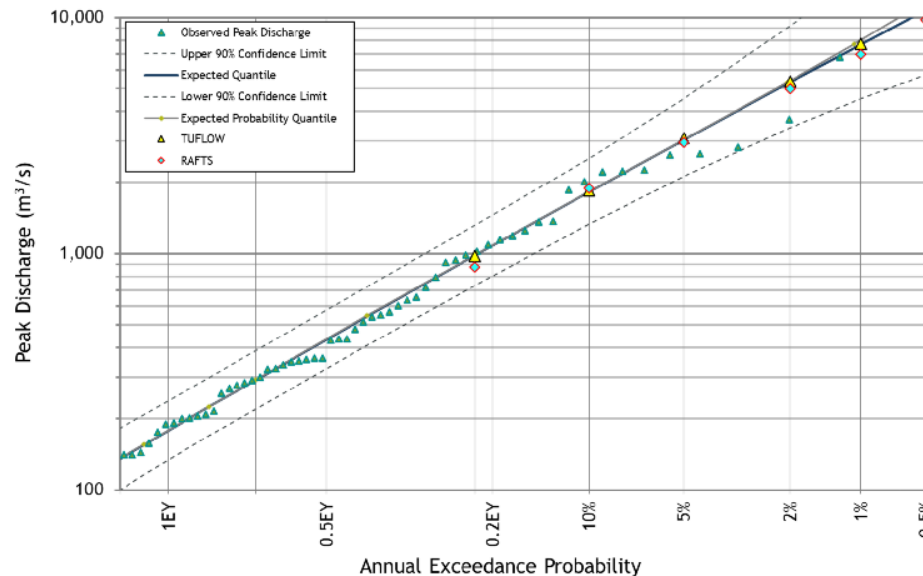


Figure 6.1 - Namoi River at Boggabri Annual series flood frequency curve, 1937 to 2020 plus 1910

6.3.3 Namoi River at Gunnedah gauge

Table 6.4 shows the recorded and inferred annual series data used for the FFA, together with the source of the data for the Namoi River at Gunnedah gauge. The following is of note regarding the available data:

- WaterNSW website data was used to define annual peaks from 1971 to present except for 1971, 1974, 1976 and 1984.
- The latest WaterNSW rating curve (Table 330.2) and the recorded peak water levels were used to adjust the peak discharges for the 1971, 1974, 1976 and 1984 events. Figure 3.2 shows that the high flow rating adopted by WaterNSW for these historical events has been superseded following more recent flood gaugings.
- Peak discharge data for 1969 and 1970 were obtained from the Pinneena database.
- Between 1893 and 1968, peak water level data supplied by WaterNSW were converted to a peak discharge using the latest WaterNSW rating curve (Table 330.2).
- For years between 1891 and 1968 where no instantaneous flood peaks were recorded, the peak daily discharge volume for each year, obtained from the Pinneena database, was converted to an instantaneous peak using the relationship shown in Figure 6.2. This relationship was determined by plotting the daily peak volume against the instantaneous peak discharge for years where data was available (1969 to 2020). A good fit or $R^2=0.9955$ was achieved for the correlation. The years where instantaneous flood peaks were not available were generally non-flood years.
- WaterNSW provided an additional peak flood level of 9.85 m for the 1864 event. SMEC (2003) note that there is no confirmation of the source of this height given that it was some 30 years prior to the gauge having been installed. With a recorded water level exceeding that of the 1955 event, the 1864 event was included in the analysis as a historical event outside the period of record, exceeding the highest recorded value. Values between 1864 and 1893 were included as censored values.

- One low flow value below 6 m³/s was censored from the dataset using the Grubbs Beck test.

Table 6.4 - Combined data set for peak annual discharges, Namoi River at Gunnedah

Year	Peak Discharge (m ³ /s)	Year	Peak Discharge (m ³ /s)	Year	Peak Discharge (m ³ /s)	Year	Peak Discharge (m ³ /s)
1893	449 ^w	1925	97 ^w	1957	38 ^w	1989	748 ^w
1894	376 ^w	1926	100 ^w	1958	442 ^w	1990	706 ^w
1895	226 ^w	1927	174 ^w	1959	137 ^w	1991	656 ^w
1896	155 ^w	1928	469 ^w	1960	460 ^w	1992	890 ^w
1897	338 ^w	1929	258 ^w	1961	193 ^c	1993	117 ^w
1898	355 ^w	1930	410 ^w	1962	1,024 ^w	1994	22 ^w
1899	201 ^w	1931	1,037 ^c	1963	397 ^w	1995	73 ^w
1900	3,000 ^w	1932	159 ^w	1964	2,234 ^w	1996	639 ^w
1901	362 ^c	1933	536 ^w	1965	49 ^c	1997	503 ^w
1902	117 ^c	1934	680 ^w	1966	141 ^c	1998	2,633 ^w
1903	541 ^c	1935	442 ^w	1967	55 ^c	1999	184 ^w
1904	367 ^c	1936	422 ^w	1968	594 ^w	2000	2,709 ^w
1905	92 ^c	1937	190 ^w	1969	217 ^p	2001	91 ^w
1906	35 ^c	1938	261 ^w	1970	386 ^p	2002	118 ^w
1907	751 ^c	1939	224 ^w	1971	3,069 ^a	2003	38 ^w
1908	5,777 ^w	1940	348 ^w	1972	79 ^w	2004	405 ^w
1909	483 ^c	1941	962 ^c	1973	137 ^w	2005	110 ^w
1910	4,618 ^w	1942	842 ^w	1974	1,861 ^a	2006	46 ^w
1911	398 ^c	1943	387 ^w	1975	243 ^w	2007	169 ^w
1912	65 ^w	1944	433 ^w	1976	2,459 ^a	2008	836 ^w
1913	449 ^w	1945	354 ^w	1977	997 ^w	2009	23 ^w
1914	51 ^w	1946	114 ^w	1978	643 ^w	2010	705 ^w
1915	368 ^w	1947	345 ^w	1979	153 ^w	2011	874 ^w
1916	528 ^w	1948	418 ^w	1980	41 ^w	2012	987 ^w
1917	571 ^w	1949	558 ^w	1981	139 ^w	2013	309 ^w
1918	376 ^w	1950	1,863 ^w	1982	79 ^w	2014	55 ^w
1919	68 ^w	1951	378 ^c	1983	233 ^w	2015	32 ^w
1920	842 ^w	1952	680 ^w	1984	2,636 ^a	2016	436 ^w
1921	1,299 ^w	1953	107 ^w	1985	350 ^w	2017	46 ^w
1922	126 ^w	1954	477 ^w	1986	338 ^w	2018	48 ^w
1923	300 ^w	1955	5,556 ^w	1987	83 ^w	2019	6 ^w
1924	410 ^w	1956	2,639 ^w	1988	119 ^w	2020	159 ^w

^w - WaterNSW, ^p - Pinneena, ^c - correlation, ^a - adjusted

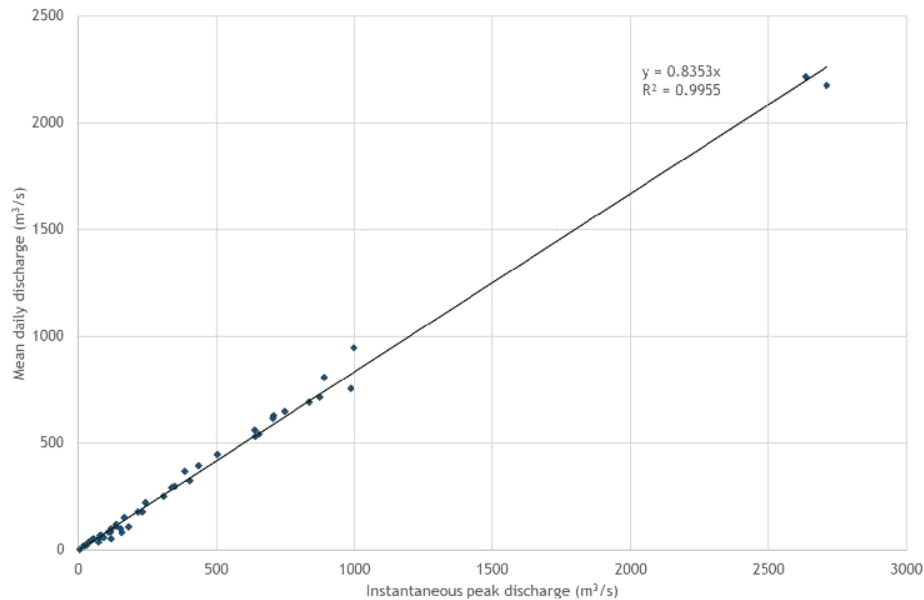


Figure 6.2 - Namoi River at Gunnedah relationship between instantaneous flood peak discharge and mean daily discharge, 1969 to 2020

Figure 6.3 shows the annual series FFA of recorded flows at the Namoi River at Gunnedah gauge (GS419001). The expected range of design discharges from the FFA is given in Table 6.5.

Table 6.5 - FFA design discharge estimates, Namoi River at Gunnedah

AEP	FFA discharge (m³/s)		
	Expected parameter quantile	Lower 90% confidence limit	Upper 90% confidence limit
20%	943	756	1,191
10%	1,727	1,336	2,299
5%	2,867	2,121	4,075
2%	5,117	3,501	8,075
1%	7,566	4,857	12,993
0.5%	10,860	6,515	20,371
0.2%	16,908	9,181	35,873

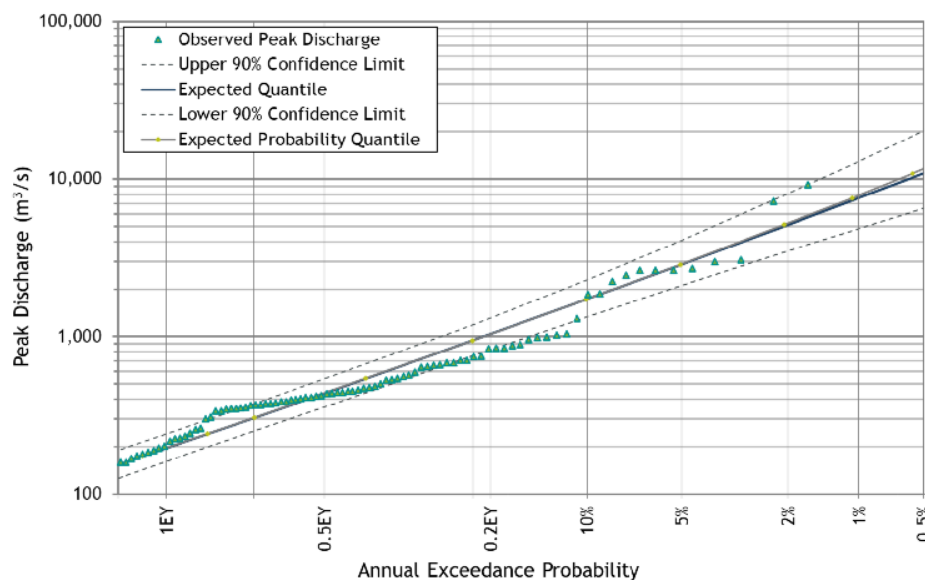


Figure 6.3 - Namoi River at Gunnedah annual series flood frequency curve, 1891 to 2020 plus 1864

6.3.4 Coxs Creek at Boggabri

Table 6.6 shows the recorded and inferred annual series data used for the FFA, together with the source of the data for the Coxs Creek at Boggabri gauge.

Table 6.6 - Combined data set for peak annual discharges at Coxs Creek at Boggabri

Year	Peak Discharge (m³/s)	Year	Peak Discharge (m³/s)	Year	Peak Discharge (m³/s)	Year	Peak Discharge (m³/s)
1965	74 ^k	1979	9 ^w	1993	312 ^w	2007	135 ^w
1966	35 ^k	1980	4 ^w	1994	5 ^w	2008	58 ^w
1967	145 ^k	1981	143 ^w	1995	186 ^w	2009	56 ^w
1968	160 ^k	1982	4 ^w	1996	311 ^w	2010	565 ^w
1969	182 ^k	1983	187 ^w	1997	1,271 ^a	2011	177 ^w
1970	20 ^k	1984	1,246 ^a	1998	1,276 ^a	2012	224 ^w
1971	1,545 ^k	1985	44 ^w	1999	318 ^w	2013	368 ^w
1972	59 ^k	1986	5 ^w	2000	1,287 ^a	2014	11 ^w
1973	114 ^k	1987	137 ^w	2001	6 ^w	2015	0 ^w
1974	1,539 ^k	1988	187 ^w	2002	15 ^w	2016	113 ^w
1975	78 ^k	1989	609 ^w	2003	11 ^w	2017	0 ^w
1976	654 ^k	1990	702 ^w	2004	207 ^w	2018	0 ^w
1977	480 ^k	1991	562 ^w	2005	320 ^w	2019	82 ^w
1978	128 ^w	1992	804 ^w	2006	0 ^w	2020	199 ^w

^w - WaterNSW, ^p - Pinneena, ^k - Kinhill, 1991, ^a - adjusted

The following is of note regarding the available data:

- WaterNSW website data was used to define annual peaks from 1978 to present except for 1984, 1997, 1998 and 2000.
- The latest WaterNSW rating curve (Table 126) and the recorded peak water level were used to adjust the peak discharges for the 1984 event. Figure 3.4 shows that the high flow rating adopted by WaterNSW for this historical event has been superseded following more recent flood gaugings.
- Between 1965 and 1977, peak annual discharges were obtained from Kinhill (1991). The Kinhill (1991) peaks for 1971 and 1974 were adjusted by first converting the discharge to a water level using the rating in place at that time (Table 95) and then reconvertting these water levels to a discharge using the latest WaterNSW rating curve (Table 126). The recorded water levels over this period could not be obtained from WaterNSW.
- The 1955 peak discharge was determined by calibrating the flood models to the surveyed floodmarks in Boggabri (shown in Figure 3.1). It was included in the FFA as a historical event outside the period of record, exceeding the highest recorded value. Values between 1955 and 1965 were included as censored values.
- 15 low flows below 35 m³/s were censored from the dataset using the Grubbs Beck test.

Figure 6.4 shows the annual series FFA of recorded flows at the Coxs Creek at Boggabri gauge (GS419032). The expected range of design discharges from the FFA is given in Table 6.7.

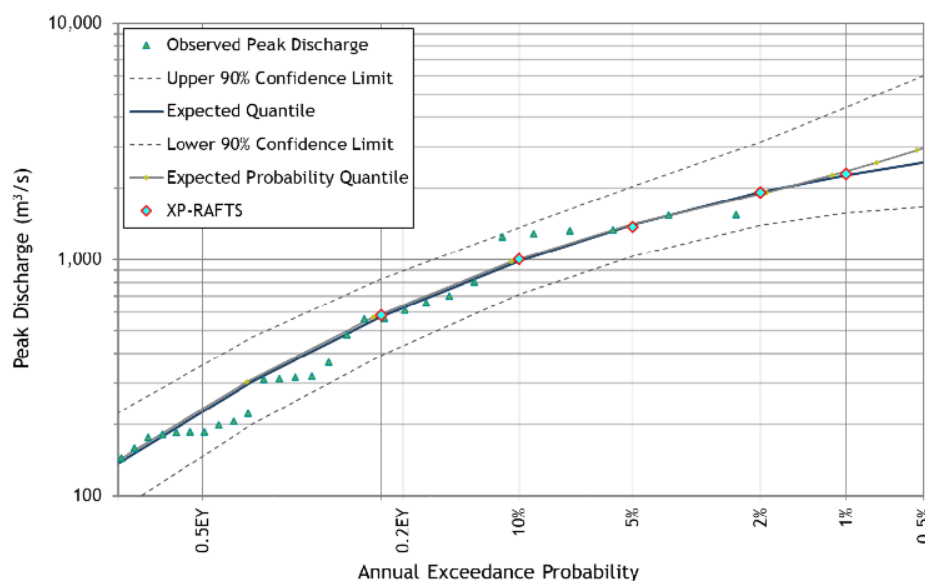


Figure 6.4 - Coxs Creek at Boggabri annual series flood frequency curve, 1965 to 2020 plus 1955

Table 6.7 - FFA design discharge estimates, Coks Creek at Boggabri

AEP	FFA discharge (m ³ /s)		
	Expected parameter quantile	Lower 90% confidence limit	Upper 90% confidence limit
20%	571	392	827
10%	983	713	1,361
5%	1,405	1,033	2,038
2%	1,924	1,391	3,134
1%	2,268	1,568	4,407
0.5%	2,566	1,666	6,016
0.2%	2,891	1,732	8,529

6.4 DESIGN EVENT MODELLING

6.4.1 Design rainfalls

Table 6.8 show the design rainfalls for the Coks Creek to Boggabri catchment. Design rainfall for events up to the 0.2% AEP event were obtained from BOM² (2016 design rainfalls) for the centroid of the Coks Creek catchment (Lat: -31.205, Lon: 149.835) on 1st October 2020.

Table 6.8 - Coks Creek to Boggabri catchment design rainfalls

Duration (hrs)	Rainfall depth (mm)							
	20% AEP	10% AEP	5% AEP	2% AEP	1% AEP	0.5% AEP	0.2% AEP	PMP
6	58.8	69.5	80.1	94.8	106	119	135	-
9	67.6	79.5	91.4	108	121	135	153	-
12	74.7	87.8	101	119	133	148	169	615
18	85.9	101	117	137	154	172	196	-
24	94.6	112	129	153	172	192	220	730
30	102	121	140	167	188	210	241	-
36	107	128	150	179	202	227	261	850
48	117	141	166	199	226	254	294	960

The probable maximum precipitation (PMP) rainfall depths were estimated using the generalised tropical storm method revised (GTSMR), (BOM, 2003b) from the Bureau of Meteorology (BOM). The parameters used to determine GTSMR rainfalls include:

- Located in the coastal zone;
- Annual Moisture Adjustment Factor, AMAF equals to 0.64;
- Winter Moisture Adjustment Factor, WMAF equals to 0.60;
- Decay Amplitude Factor, DAF equals to 0.82;
- Topographical Adjustment Factor (TAF) equals to 1.25.

² <http://www.bom.gov.au/water/designRainfalls/revised-ifd/>

Note that aerial reduction factors are already applied to the PMP rainfalls due to the catchment area already being incorporated into the PMP rainfall estimation methodology. For the storms up to and including the 0.2% AEP event, aerial reduction factors have been applied depending on AEP and duration as outlined in the ARR guidelines (Ball et al., 2019).

6.4.2 Selection of appropriate rainfall losses

The NSW Office of Environment and Heritage (OEH) in conjunction with WMA Water (2019) have reviewed the ARR design inputs for use in design flood estimation in NSW. This review was to address concerns raised by practitioners of the underestimation bias in the standard ARR 2016 methodology for deriving design events and to develop advice on any changes needed in the methods or parameters used for flood estimation in NSW.

The study recommended that practitioners use the average of calibration losses from the actual study if available. For Boggabri, the initial losses for the three calibration events with short duration rainfall data (1997, 1998 and 2000) ranged from 15 mm to 52 mm and the continuing loss ranged from 1 mm/hr to 2 mm/hr. In comparison, the ARR datahub initial loss for the catchment is 46 mm (excluding pre-burst). The ARR data hub continuing loss is 1.9 mm/hr.

For this study, the rainfall losses have been derived by matching the XP-RAFTS design discharges to the FFA discharges at Coxs Creek at Boggabri gauge (419032). The losses for the 0.5% and 0.2% AEP events were logarithmically interpolated using the methodology described in ARR (Ball et al., 2019), with an AEP of the PMP determined to be 1 in 250,000 based on the Coxs Creek catchment size. The adopted rainfall losses for each event are given in Table 6.9.

Table 6.9 - Adopted rainfall losses

Design event (AEP)	Initial loss (mm)	Continuing loss (mm/hr)
20%	66	2.0
10%	66	2.0
5%	66	2.0
2%	53	2.0
1%	53	2.0
0.5%*	30.4	1.5
0.2%*	14.6	1.1
PMF	0	0

*interpolated

6.4.3 Coxs Creek design discharge comparison

Table 6.10 show the design discharges for the Coxs Creek at Boggabri estimated using the XP-RAFTS model together with the corresponding critical durations and temporal patterns. Comparisons to the FFA design discharge estimates are also shown. The comparisons are shown graphically in Figure 6.4.

The table shows that the two discharge estimates are consistent for the 20%, 10%, 5% and 2% AEP events but the XP-RAFTS discharges are moderately higher for the larger events but are still within the confidence limits of the FFA estimate. Given the limited period of record available, the confidence limits for the extreme event are large due to the high level of uncertainty. On this basis, the XP-RAFTS discharges have been adopted for the assessment of Coxs Creek flows.

Table 6.10 - XP-RAFTS and FFA design discharge comparison, Cocks Creek at Boggabri

AEP	XP-RAFTS			FFA discharge (m ³ /s)		
	Design discharge (m ³ /s)	Critical duration (hours)	Corresponding Temporal Pattern	Expected parameter quantile	Lower 90% confidence limit	Upper 90% confidence limit
20%	582	36	8	571	392	827
10%	1,003	48	9	983	713	1,361
5%	1,373	48	9	1,405	1,033	2,038
2%	1,920	24	3	1,924	1,391	3,134
1%	2,303	24	3	2,268	1,568	4,407
0.5%	3,480	24	9	2,566	1,666	6,016
0.2%	4,760	24	5	2,891	1,732	8,529
PMF	23,670	36	GTSMR	-	-	-

6.4.4 Namoi River at Gunnedah hydrograph

Figure 6.5 shows the shape of the recorded discharge hydrographs at the Namoi River at Gunnedah gauge for five historical events. For ease of comparison, each hydrograph has been scaled to peak at a discharge of one. The results show that the shapes of the top half of the historical floods (0.5 to 1 discharge unit) are relatively similar particularly for the rising limb. There is considerable variation at the lower half of the hydrograph, which is of less relevance for design event modelling. Given that the 1955 flood was the largest recorded flood on record, the 1955 event hydrograph shape was adopted with the flood peak scaled to match the FFA discharges given in Table 6.5.

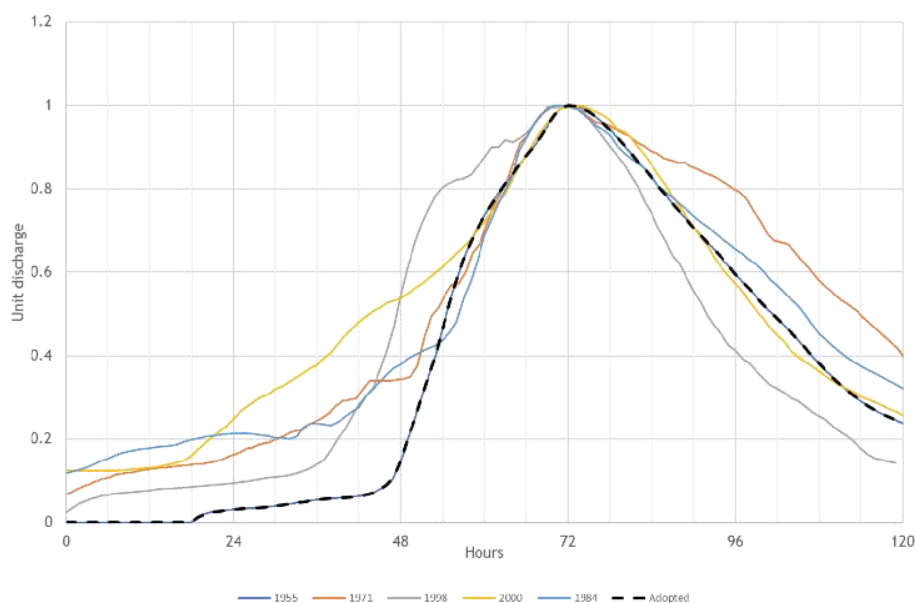


Figure 6.5 - Historical event discharge hydrograph shape, Namoi River at Gunnedah

6.4.5 Namoi River at Boggabri design discharge comparison

Table 6.10 shows the design discharges for the Namoi River at Boggabri estimated using the XP-RAPTS model and the TUFLOW model. Comparisons to the FFA design discharge estimates are also shown. The comparisons are shown graphically in Figure 6.1.

The TUFLOW model, which includes more detailed routing and infiltration/transmission losses than the XP-RAPTS model, produces design discharges that are very similar to the FFA for all design events. Overall, the adopted methodology would appear suitable to define flood discharges from both Coxs Creek and the Namoi River at Boggabri.

Table 6.11 - XP-RAPTS, TUFLOW and FFA design discharge comparison, Namoi River at Boggabri

AEP	XP-RAPTS Design discharge (m ³ /s)	TUFLOW Design discharge (m ³ /s)	FFA discharge (m ³ /s)		
			Expected parameter quantile	Lower 90% confidence limit	Upper 90% confidence limit
20%	880	977	981	734	1,318
10%	1,895	1,845	1,825	1,337	2,530
5%	2,946	3,074	3,026	2,126	4,539
2%	4,977	5,373	5,313	3,406	9,227
1%	6,994	7,744	7,701	4,527	15,463
0.5%	9,758	10,760	10,789	5,734	25,517
0.2%	14,803	16,151	16,176	7,458	46,797
PMF	72,964	71,194	-	-	-

7 Design event flood mapping

7.1 OVERVIEW

The calibrated hydrological and hydraulic models and the design event methodology, described in Section 6.2, has been used to estimate peak depths, levels and extent of flooding for the eight design events from both Namoi River and Cocks Creek.

Predicted flood extents, depths and flood contours for the eight design events are shown in Appendix C.

7.2 DESIGN FLOOD LEVELS

Figure 7.1 shows the longitudinal profile along the centre line of Cocks Creek and the Namoi River adjacent to Boggabri for design events ranging from the 20% AEP to the 0.2% AEP. The section commences upstream of the railway on Cocks Creek and extends downstream of Braymont Road. The longitudinal profile for the February 1955 event is also shown.

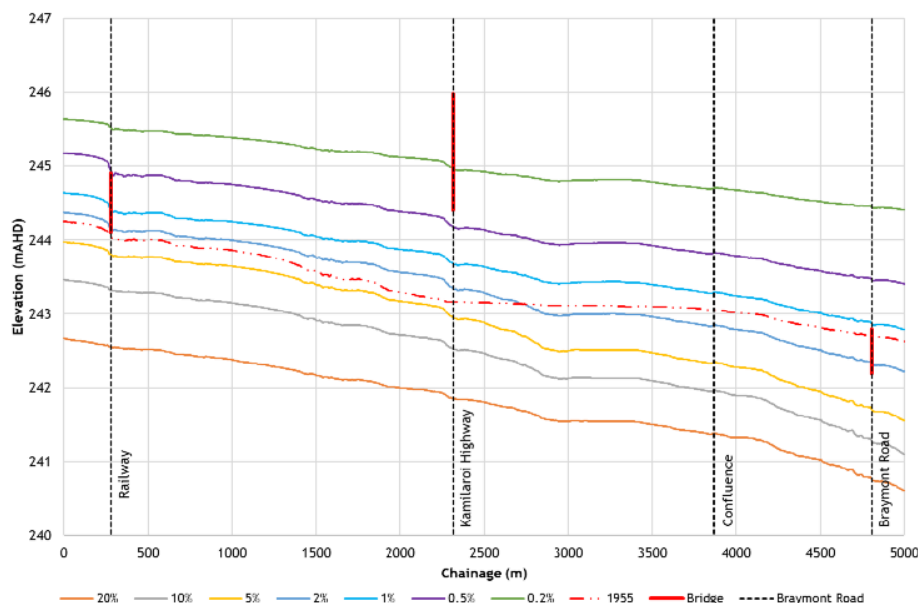


Figure 7.1 - Design and historical event longitudinal flood profiles, Cocks Creek and Namoi River

The following is of note:

- The longitudinal sections show that Cocks Creek flows dominate peak flood levels upstream of the Kamilaroi Highway and for about 600 m downstream and the Namoi River flows dominate peak flood levels below this location.
- For the 20%, 10% and 5% AEP events, property inundation in Boggabri is limited to yard flooding of properties on the southern end of Derby Street and Merton Street. The Kamilaroi Highway to Gunnedah would be inundated to shallow depths.

- For the larger events, the peak flows extend into the eastern streets of Boggabri. Properties along the Kamilaroi Highway to the east of Coxs Creek would be inundated.
- Substantial inundation would occur for the PMF with most of the town inundated.

7.3 SENSITIVITY ANALYSIS

7.3.1 Changes in floodplain roughness

The hydraulic model was used to assess the sensitivity of peak flood levels to changes in floodplain roughness for the 1% AEP event. For the purposes of this assessment the adopted Manning's 'n' values were increased by 25%. The results of the sensitivity analysis showing the increased flood levels for the 1% AEP flood event are shown in Figure 7.2.

The results indicate that a change in floodplain roughness would increase peak 1% AEP flood levels across the study by up to 0.3 m. Note that the floodplain roughness values have been calibrated to five historical floods and as such, this increase would not be expected.

7.3.2 Climate change

7.3.2.1 Overview

Climate change projections vary from source to source, with almost all projections agreeing rainfall intensities will increase across much of Australia as time progresses. Changes to rainfall intensity will impact on flooding characteristics in and around Boggabri and these changes need to be considered as part of the flood risk management process.

7.3.2.2 Research

The NSW and ACT Regional Climate Modelling (NARCLIM) project is a multi-agency research partnership tasked with providing regional climate projections (NSW Government, 2014). NARCLIM modelling has predicted increased maximum and minimum temperatures both in the near future (2020-2039) and far future (2060-2079) for all of NSW (NSW Government, 2014). More hot days are predicted as are extensive seasonal shifts in rainfall (NSW Government, 2014).

Modelling conducted by CSIRO and BOM (2015) predicts the following for Boggabri (Central Slope Region):

- 1 decreased average winter and spring rainfalls, with changes to summer and autumn rainfalls unclear;
- 2 increased minimum, mean and maximum temperatures;
- 3 more hot days and fewer frosts;
- 4 increased rainfall intensity; and
- 5 increased potential evapotranspiration across all seasons.

The latest advice on climate change given in Australian Rainfall and Runoff (Ball et al., 2019) recommends adoption of 4.5 and 8.5 representative concentration pathways (RCPs) from the climate futures tool developed by CSIRO. RCP4.5 and RCP8.5 represent low and high projected changes from global climate models. The 2090 planning horizon has RCP4.5 (low) and RCP8.5 (high) projected changes in rainfall intensity for the Central Slopes region of +10.8% and +22.8% respectively (Geoscience Australia, 2019).

7.3.2.3 Approach

The NSW Office of Environment and Heritage (NSW Government, 2019) has produced a guideline for incorporating the latest version of AR&R into NSW floodplain risk management studies. For consideration of climate change this document specifies:

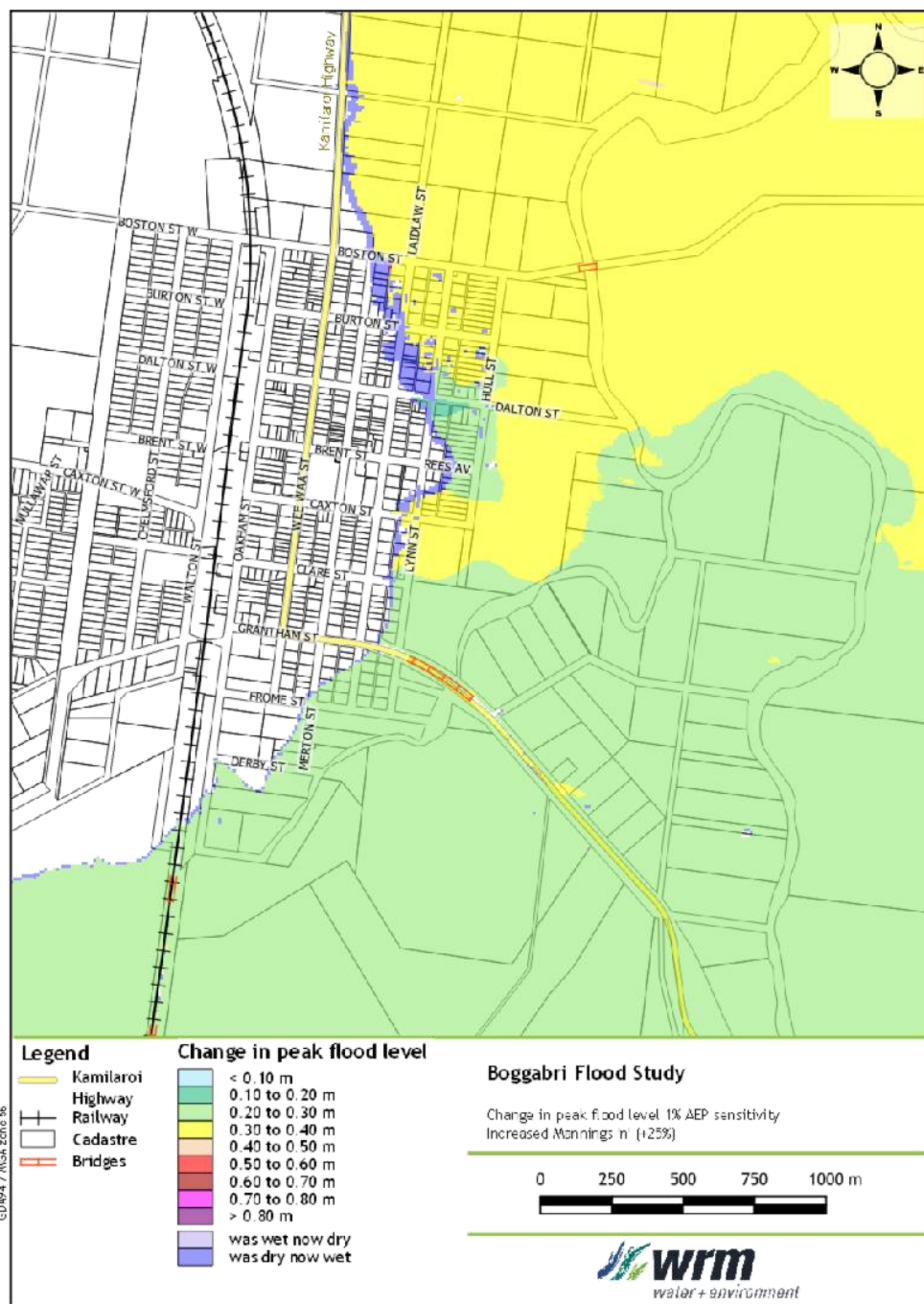


Figure 7.2 - Hydraulic model sensitivity to a 25% increase in Manning's roughness, 1% AEP event

Rather than simulating additional scenarios specifically to consider climate change, the scale of climate change impacts can generally be practically assessed using the 0.5% and 0.2% AEP floods as proxies for the 1% AEP flood, subject to long-term changes in flood-producing rainfall events related to climate change.

7.3.2.4 Impact on flood levels

The critical duration 0.5% AEP rainfall for the Coxs Creek to Boggabri is approximately 11% higher than the 1% AEP rainfall, while the critical duration 0.2% AEP rainfall is approximately 28% higher than the 1% AEP rainfall. Hence the advice given above from AR&R (Ball et al., 2019) and Geoscience Australia (2019) suggests that the 1% AEP (climate change) rainfall intensities lie somewhere between the 0.5% AEP rainfall (RCP4.5) and the 0.2% AEP rainfall (RCP8.5).

Rainfall intensity is not the only factor affecting flooding. The research reproduced in the preceding section also predicts a hotter climate with greater evapotranspiration meaning that it will be likely to be drier at the onset of flooding rainfalls. These changes mean that initial and continuing losses will likely increase, providing some offset to the increased rainfall intensity.

The peak discharge estimate for the 0.5% AEP regional flood at Boggabri is approximately 39% higher than the 1% AEP peak discharge estimate. The 0.2% AEP peak discharge estimate is approximately 109% higher than the 1% AEP peak discharge, suggesting it is too conservative to represent the 1% AEP climate change scenario.

Considering the above and adopting the NSW Government (2019) methodology, the 0.5% AEP estimate is a reasonable representation of the likely impact of climate change on the 1% AEP event, representative of at least the RCP 4.5 scenario.

The results show that climate change could increase peak 1% AEP flood levels up to 0.5 m throughout much of southern Boggabri and up to 0.6 m in northern Boggabri, as shown in Figure 7.3.

7.4 PRELIMINARY FLOOD FUNCTION

Figure D1 to D6 in Appendix D show the provisional hazard categories for 5%, 2%, 1%, 0.5%, 0.2% and PMF design events in the study area. Provisional flood hazards have been defined using the depth and velocity of the floodwaters calculated using the flood model determined in accordance with Figure 7.4 as given in Appendix L of the NSW Floodplain Development (NSW Government, 2005).

The flood hazard maps in Appendix D shows that the high hazard floodway areas are generally located on the undeveloped floodplain area and not within the urban areas of Boggabri with the exception of the southern end of Merton Street and eastern end of Derby Street. The extent of high hazard increases along the eastern fringes of Boggabri for lower AEP (larger) events.

The mapping suggests that the floodway areas along Coxs Creek and the Namoi River would likely be defined by the extent of high hazard shown for the 1% AEP event. The remaining areas below the PMF extent would be flood fringe areas.

7.5 HYDRAULIC HAZARD

The Australian Disaster Resilience Guideline 7-3 Flood Hazard (AIDR, 2017) recommends grouping the floodplain into six hazard categories using flood depth, flood velocity and the depth-velocity product in accordance with Figure 7.5. This figure closely resembles Figure L1 in the Manual (NSW Government, 2005) but further delineates the floodplain based on recent research undertaken on the trafficability of vehicles and the safety of people during flood events.

Figure E1 to E6 in Appendix E shows the hydraulic hazard for the 5%, 2%, 1%, 0.5%, 0.2% and PMF design events in the study area. The mapping is generally consistent with the flood function mapping with the H5 and H6 areas corresponding to the high hazard areas.

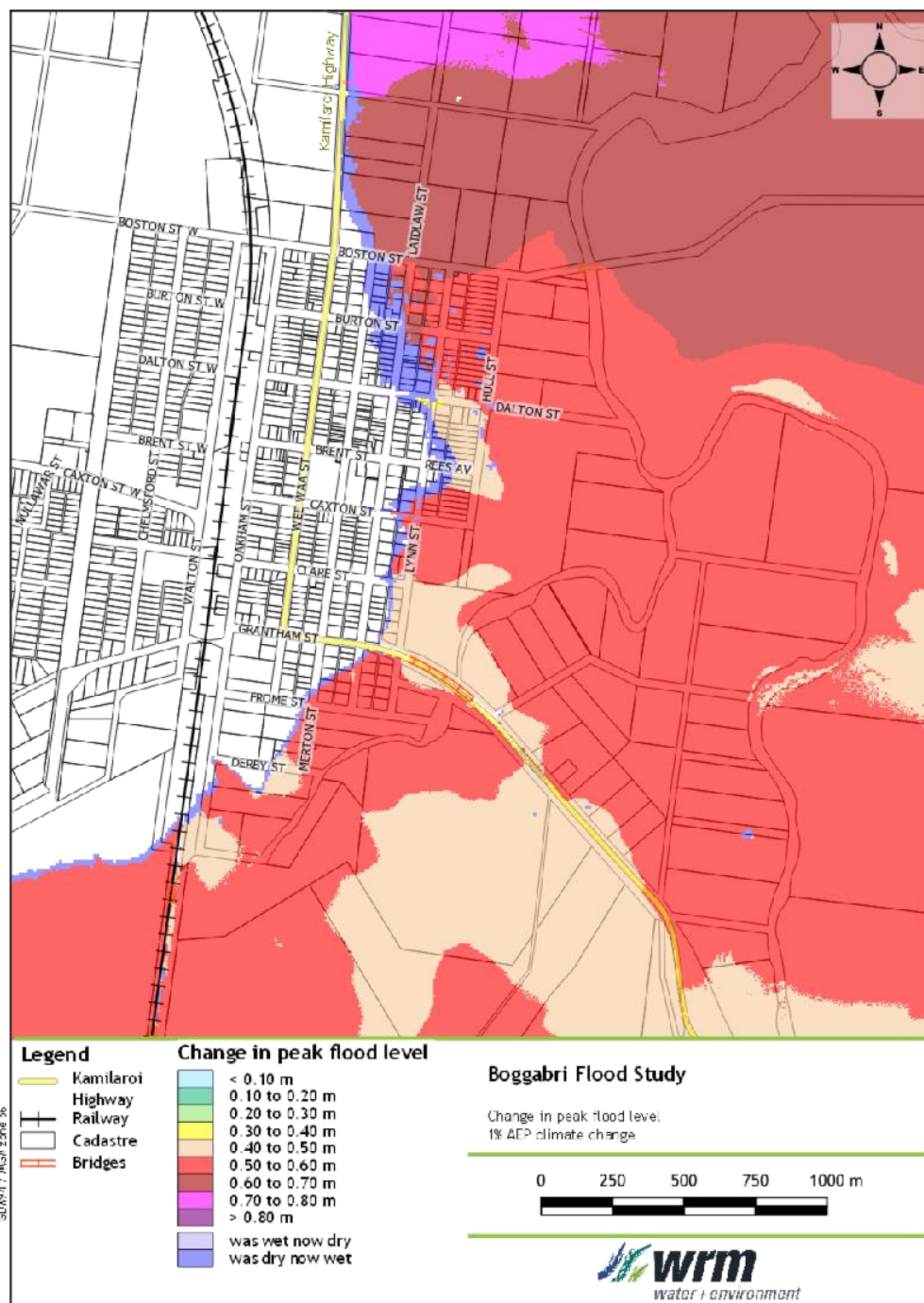


Figure 7.3 - Comparison of the 1% AEP climate change event to the 1% AEP event

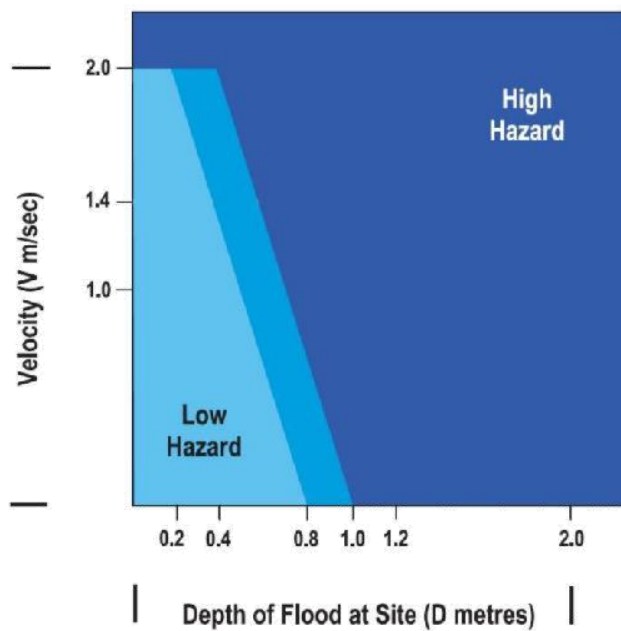


Figure 7.4 - Provisional hydraulic hazard categories (Source: NSW Government, 2005)

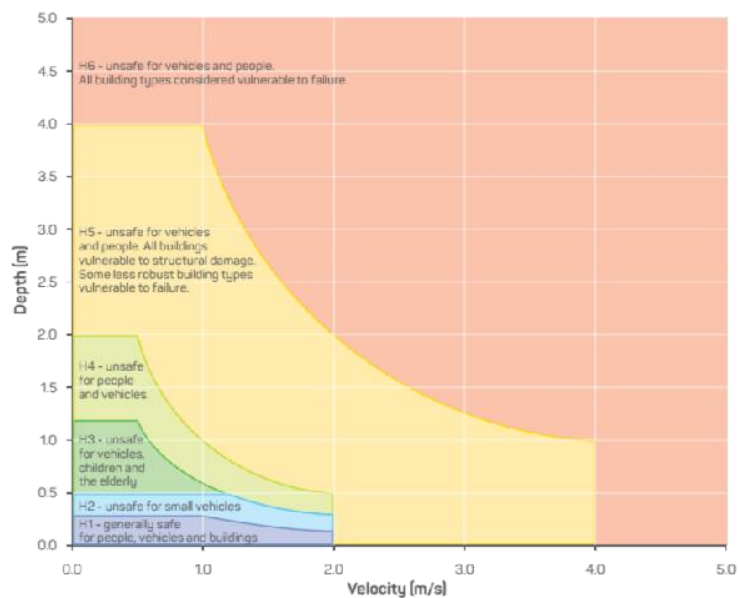


Figure 7.5 - Flood hazard vulnerability curve (source: AIDR, 2017)



7.6 EMERGENCY RESPONSE PLANNING

The flood mapping shows that all the flood prone urban areas of Boggabri have a rising road exit route, should a flood occur. That is, none of the properties would be cut off from rising floodwater. The rural properties located to the immediate east of the Cocks Creek bridge on the Kamilaroi Highway would also be classified as having a rising road exit route.

7.7 FLOOD PLANNING AREA

Figure 7.6 shows the provisional flood planning area for Boggabri. The flood planning area has been defined as the extent of the 0.5% AEP flood, which is generally 0.5 m higher than the 1% AEP flood across Boggabri.

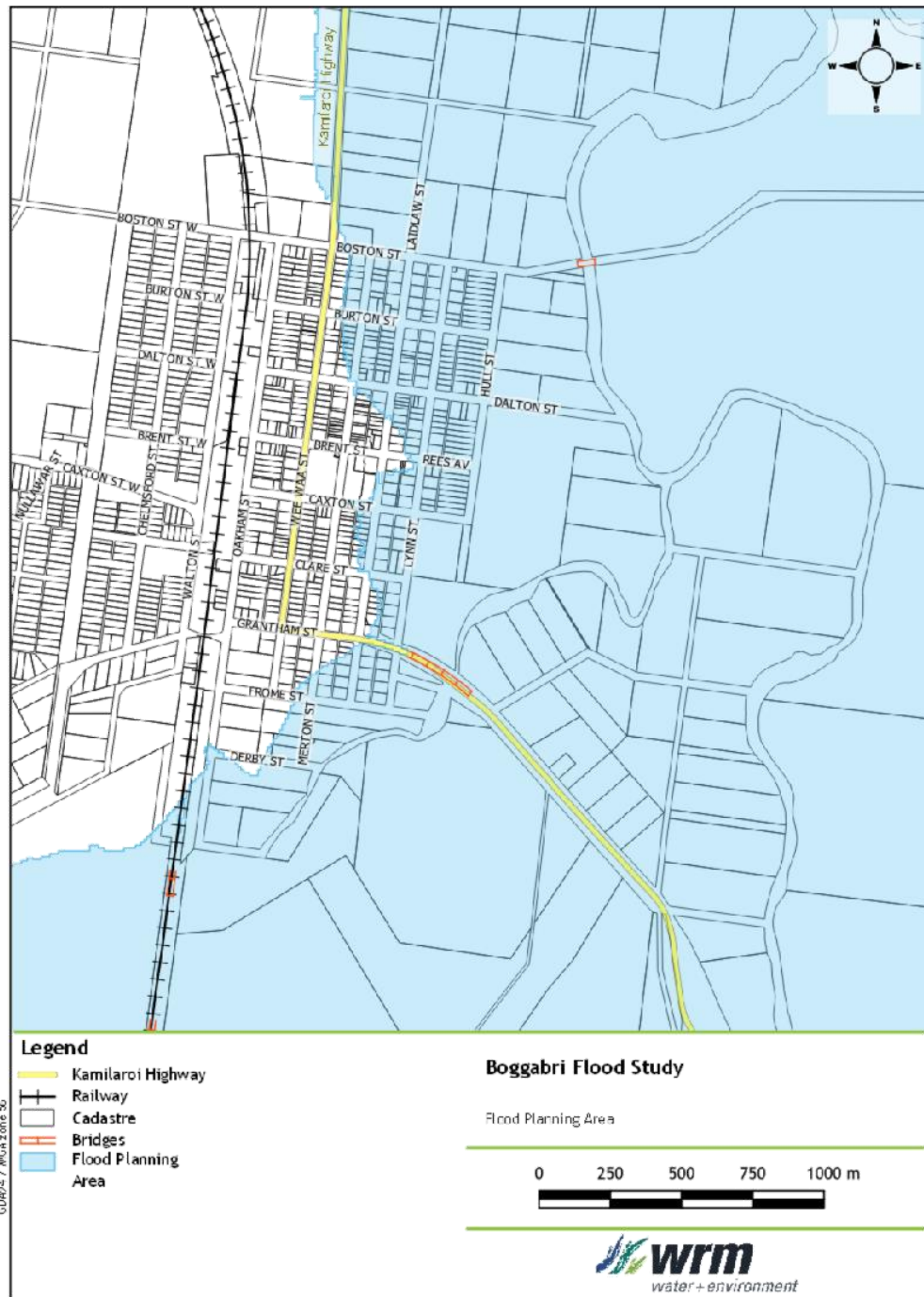


Figure 7.6 - Boggabri flood planning area

8 Flood damage

8.1 TYPES OF FLOOD DAMAGE

The Floodplain Development Manual (NSW Government, 2005) defines the various types of damage caused by flooding, with these damages shown graphically in Figure 8.1. Flood damage can be divided into two major categories: tangible and intangible damages. Tangible damages are the financial costs of flooding and are quantified in dollar terms, while intangible damages are the social and environmental costs of flooding and are reflected in increased levels of emotional stress and psychological and physical illness.

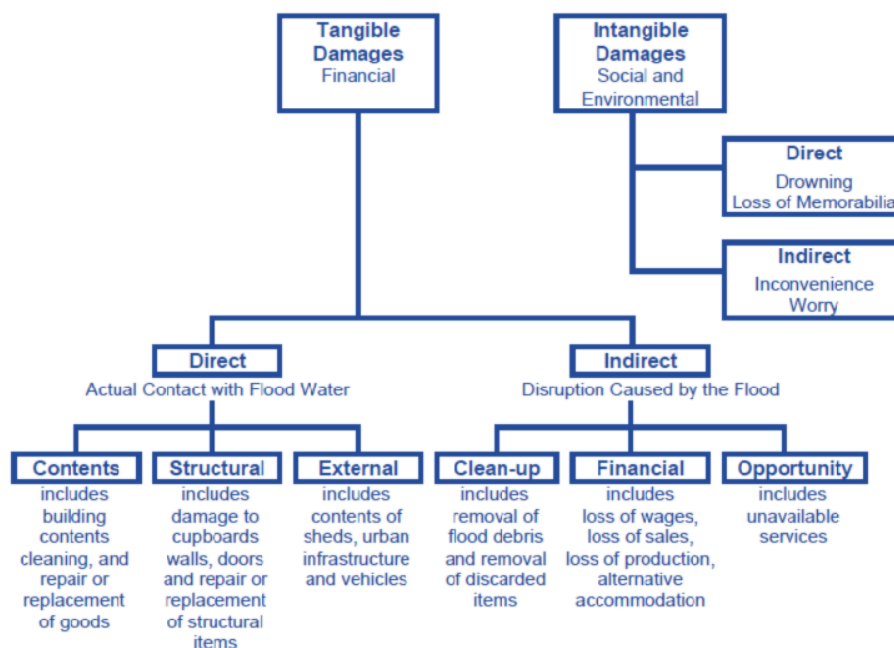


Figure 8.1 - Types of flood damage (Source: NSW Government, 2005)

8.1.1 Tangible damages

Tangible damages can be separated into two major sub-categories:

- direct damage - the loss in value of an object or piece of property caused by direct contact with floodwater; and
- indirect damage - the loss in production or revenue caused by a flood, e.g. the loss of wages, additional accommodation and living expenses and any other extra outlays that occur as a consequence of flood.

Indirect damages are additional to ordinary pre-flood living costs. Indirect damages are typically incurred in the post-flood recovery phase.

8.1.1.1 Direct damage

Direct damage can be incurred either as:

- a replacement cost if a flood-damaged item is discarded;
- a repair cost if the item is repaired; or
- a loss in value if the item is neither discarded nor repaired (repaired items also suffer a loss in value).

In the first case, the direct damage is either the pre-flood value or the replacement cost of the item. In the second case, the damage is the cost of repairs (plus any loss in value). In the third case, the damage is simply the loss in value.

Direct damage is divided into three categories: contents damage, external damage and structural damage (see Figure 8.1):

- contents damage refers to damage to the contents of the main building(s) on a property;
- external damage refers to damage to items external to the main building, e.g. motor vehicles, fences, gardens, the contents of sheds or outbuildings, etc.; and
- structural damage refers to the damage sustained by the fabric of a building (foundations, floors, walls, doors, windows, etc.) and the damage sustained by permanent fixtures in the building, such as built-in cupboards, benches, etc.

8.1.1.2 Indirect damages

Indirect damage is also divided into three categories:

- indirect financial damage refers to the loss of income or increased expenditure caused by a flood;
- clean-up cost refers to the cost of labour and materials required to clean out a flooded building. Typical clean-up activities include the hosing down of walls and floors to remove silt, the taking up of flooded carpets, the removal and discarding of irreparably damaged items, the drying of rooms, etc.; and
- opportunity costs which arise from direct damage to public assets. Because of this damage, a period elapses when the public is not provided with these services or is provided with a reduced level of service.

It is difficult to realistically evaluate opportunity costs. On the one hand, opportunity costs can be estimated in terms of the total operating cost of the facility (wages, maintenance, interest on capital assets, etc.). Society is prepared to pay this cost to provide the services; thus their absence must be worth a corresponding amount. On the other hand, during the aftermath of a flood, public employees often undertake non-duty tasks useful to society when not providing public services (e.g. clean-up operations). For reasons of convenience, opportunity costs are often estimated as the wages cost over the period public facilities are not operating.

8.1.1.3 Potential versus actual damage

Potential damage refers to the damage that would be sustained if no actions were taken by householders, or others, in an attempt to reduce flood damage, i.e. the damage that would occur if the entire population was absent when a flood occurred.

The actual damage sustained at a property is always less than the potential damage. Notwithstanding the shortness or absence of flood warnings, people will attempt to save items by lifting them onto benches or shelves, by shifting motor vehicles, by evacuating their possessions, etc.

Potential and actual damage costs are the same for structural damage, as it is generally impossible to reduce structural damage to buildings in the onset of a flood.

8.1.2 Intangible damages

Intangible damage is difficult to measure and impossible to meaningfully quantify in dollar terms. Nevertheless, it is a very real, significant and often enduring 'cost' that emerges during the recovery phase of a disaster.

The social impacts of flooding include:

- the loss of irreplaceable items, such as family photographs;
- the stress induced by the flood itself;
- temporary evacuation of the home whilst the damage is repaired;
- the disruption caused by the flood to the life of the individual household and to the community as a whole; and
- the effect of floods upon the physical and mental health of those affected.

Research in the past has shown that social impacts can be more important to the victims of floods than the financial losses that they suffer.

8.2 TANGIBLE FLOOD DAMAGE ESTIMATION METHODOLOGY

8.2.1 Overview

Many factors affect flood damage (e.g. depth of inundation, flow velocity, duration of inundation, time of occurrence, debris/sediment loads, water quality etc.). However, other than the depth of inundation, very little guidance and information is available on how to take the relevant factors into account when estimating flood damage.

In most studies, flood damages are related to only the depth of inundation because the other factors are heterogeneous in space and time, difficult to predict, and there is limited information on their quantitative effects (Merz et al., 2010). As a result, flood stage-damage curves are typically used to estimate flood damages. However, accurate flood damage estimates cannot be made without stage-damage curves that are accurate and locally relevant.

Flood damage estimates made from stage-damage curves require the following information:

- property data;
- floor level data;
- ground level data;
- flood level data; and
- stage-damage curves.

8.2.2 Property and floor level data

A property floor level survey was conducted by Fyfe Surveyors early 2020. All properties within Boggabri were surveyed. The floor level survey included relevant property data, such as:

- unique building ID;
- building floor level;
- ground level;
- building coordinates;
- number of floor levels;
- foundation type;
- building type (commercial/residential); and

- miscellaneous comments.

Commercial building sizes were mapped from aerial photographs.

8.2.3 Ground level and flood level data

The ground level at each property was included in the survey data. Design flood levels at each property were assigned by inspecting the building coordinates captured during the property survey against flood surfaces produced above.

8.2.4 Residential stage-damage curves

Flood stage-damage curves (flood damage curves) relate the depth of flooding at a residential property to an estimate of the corresponding flood damage.

For this study, the residential stage-damage curves described in the Residential Flood Damages flood risk management guideline (NSW Government, 2007) have been used to estimate tangible residential flood damages. The NSW Government approach uses a typical damage curve, which allows damages to be estimated for individual dwellings based on the property type. The use of these curves provides a consistent basis for calculation of flood damage between different projects across NSW whilst allowing consideration for local variation through the scale of a typical house and the value of its contents.

The parameters used to define the residential stage-damage curves are given in Table 8.1. Figure 8.2 graphically shows the residential stage-damage curves adopted for the study.

Table 8.1 - Residential flood damage curve values, NSW Government method

Parameter	Value
Regional cost variation factor (from Rawlinsons, 2020)	1.15
Post late 2001 adjustments (AWE adjustment*)	1.94
Post flood inflation factor (No. flooded properties > 700)	1.45
Typical duration of immersion	26 hours
Building damage repair limitation factor	0.95
Typical house size	240 m ²
Average content relevant to site	\$60,000
Contents damage repair limitation factor	0.85
Level of flood awareness	High
Effective warning time	12 hours
Likely time in alternative accommodation	3 weeks

*AWE = Average Weekly Earning

8.2.5 Commercial and industrial stage-damage curves

Although commercial and industrial damage can be a significant component of overall flood damage, to date there has been limited research on non-residential stage-damage curves other than residential stage-damage curves. A possible reason for this is that it is very difficult to provide accurate estimates given that the costs can vary significantly between each commercial property type and use.

For this study, flood damage curves developed by researchers at Australian National University (CRES, 1992) in the 1980's (ANUFLOOD) have been used. In ANUFLOOD, the commercial and industrial damage is defined on the basis of building size and business type. Three building sizes (small/medium/large) and five classes of building value category (1/2/3/4/5) are combined for a total of fifteen different building categories.

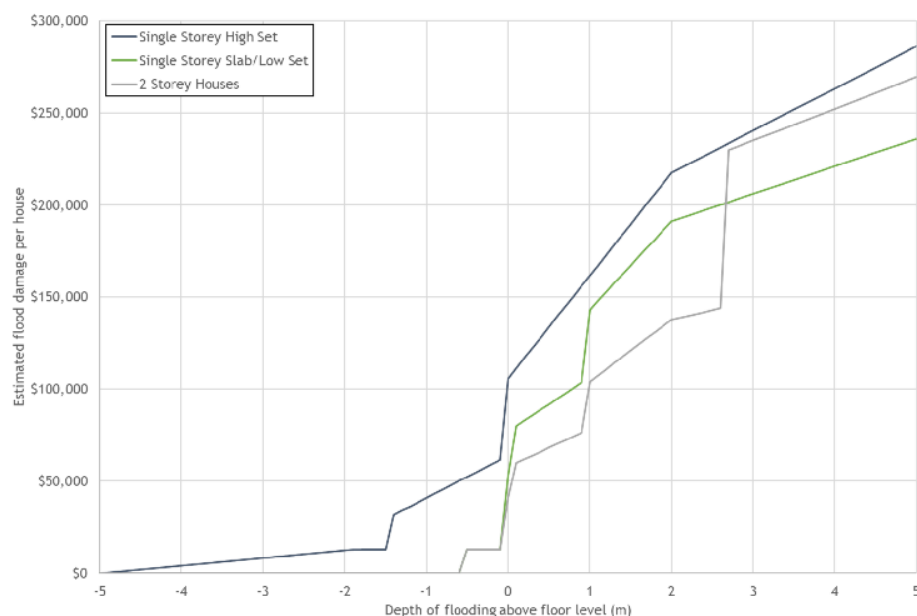


Figure 8.2 - Residential stage-damage curves

In applying these curves, the type of business/industry can be defined based on Australia & New Zealand Standard Industrial Classification Code (ANZIC) (ABS, 2013). The ANZIC value class is assessed from 1 (low value) to 5 (high value). The value class is a subjective estimate of the likely loss that would be sustained if the building was inundated by floodwaters.

Table 8.2 shows ANUFLOOD commercial/industrial stage-damage curves updated to March 2020 prices using changes in the Consumer Price Index (CPI). For each non-residential property, damage is also dependent on the size of the building. ANUFLOOD defines three building size ranges:

- small properties (floor area <186m²);
- medium properties (floor area 186 - 650m²); and
- large properties (floor area >650m²).

For small and medium size properties damage is specified in total dollar values. Damage for large properties is specified as a dollar value per unit floor area. It is not clear what damage components are included and/or excluded in the ANUFLOOD damage values. It appears that damage estimates include structural damages. However, it does not appear that these damage curves include external damages.

The stage-damage curves given in Table 8.2 are potential stage-damage curves. The NSW Government methodology used for the residential stage-damage curves converted potential damages to actual damages, hence a similar conversion was required for the commercial stage-damage curves.

Table 8.2 - Stage-damage curves for commercial properties (Source: CRES 1992)

Depth of Flooding Above Floor Level (m)	Potential Direct Damage (March 2020 Dollar Values)				
	Value Class				
	1 Very Low	2 Low	3 Medium	4 High	5 Very High
Small Properties (Floor Area <186m²) (\$)					
≤ 0.00	0	0	0	0	0
0.25	5,115	10,232	20,461	40,921	81,845
0.75	12,789	25,575	51,153	102,306	204,612
1.25	19,181	38,367	76,728	153,459	306,916
1.75	21,313	42,626	85,255	170,510	341,018
≥ 2.00	22,591	45,186	90,370	180,739	361,479
Medium Properties (Floor Area 186-650m²) (\$)					
≤ 0.00	0	0	0	0	0
0.25	16,201	32,397	64,794	129,586	259,175
0.75	39,217	78,433	156,869	313,738	627,473
1.25	59,677	119,357	238,712	477,489	954,852
1.75	66,069	132,146	264,289	528,579	1,057,158
≥ 2.00	70,334	140,673	281,340	562,681	1,125,362
Large Properties (Floor Area >650m²) (\$/m²)					
≤ 0.00	0	0	0	0	0
0.25	16.26	34.84	74.33	141.7	283.4
0.75	90.59	181.2	357.7	715.4	1,438
1.25	188.1	376.3	757.2	1,507	3,013
1.75	306.6	620.2	1,238	2,474	4,945
≥ 2.00	369.3	738.6	1,477	2,954	5,911

8.2.6 Actual to potential damages

For Boggabri, the available warning time is generally in excess of 24 hours for Namoi River floods and at least 12 hours for Coxs Creek. For this study, the ratio of actual to potential flood damages was varied depending on the depth of flooding, the available warning time and level of flood awareness. This methodology is more realistic than a simpler constant ratio methodology and is consistent with the residential stage-damage methodology. The adopted actual to potential damage ratios were based on Figure 8.3 with flood depths of 0.5 m or less assigned an actual to potential damage ratio of 0.4, while flood depths of 2.0 m or greater were assigned a ratio of 0.7, with the ratio for depths in between linearly interpolated.

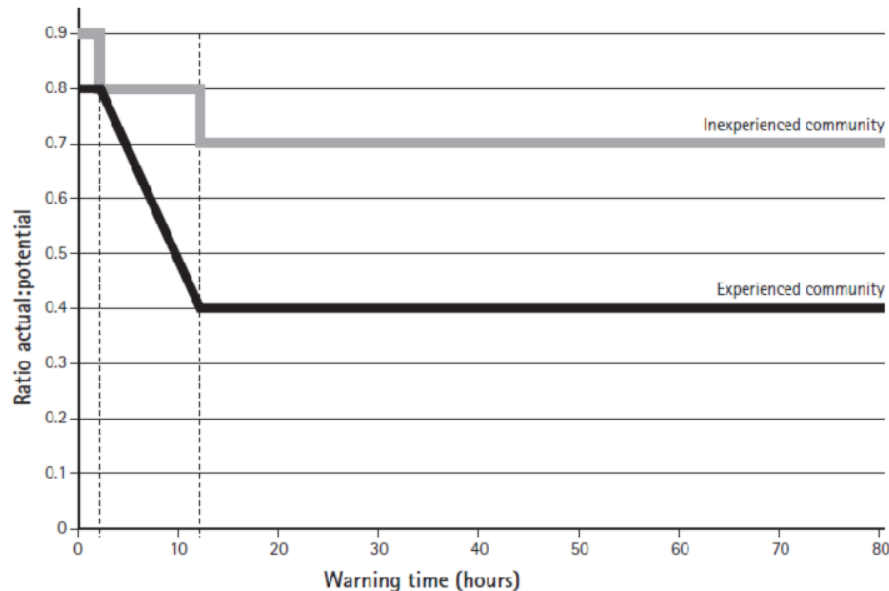


Figure 8.3 - Actual to potential damage ratio relationship (Source: VDNRE, 2000)

8.2.7 Public authority buildings and public utilities

Direct damage to public and community owned buildings and assets must also be considered when estimating overall flood damage. These include:

- hospitals, schools, police and fire stations, and other government owned buildings;
- parks and recreational facilities;
- sporting facilities; and
- communication, electricity, water supply, sewerage and drainage systems.

Ideally, damage to these properties should be estimated on a case by case basis. In the absence of better data, damage to these properties was evaluated using the stage-damage curves given for commercial/industrial damage in Section 8.2.5.

8.2.8 Roads and bridges

Flooding can cause significant damage to roads and bridges. The use of generalised damage rates to calculate road and bridge damage is not applicable as the cost is often closely related to the distance required to travel to access suitable materials (quarries and depots). In the absence of available information, costs due to damage to roads and bridges are not included in this study.

8.2.9 Average annual damage

Over a long period of time, a flood liable community will be subject to a succession of floods. In many years, no floods may occur, or the floods may be too small to cause damage. In some years, the floods will be large enough to cause damage, but the damage will generally be small because the floods are of small to medium size. On rare occasions, major floods will occur and cause great damage.

The average annual damage (AAD) is equal to the total damage caused by all floods over a long period of time divided by the number of years in that period (assuming that the

population and development situation does not change over the period of analysis). By estimating the damage caused by floods of different severity, e.g. the 20%, 10%, 5%, 2%, 1%, 0.2% and 0.5% AEP and extreme flood events from this study, it is possible to combine the likelihood of a flood occurring, with the damage it causes, and so estimate the AAD.

8.3 TANGIBLE FLOOD DAMAGE ESTIMATE

Table 8.3 shows the estimated number of properties flooded above and below floor level and the estimated residential and non-residential building damages for each design flood event (in March 2020 dollar values). The estimated AAD is also shown. A total of 419 buildings were surveyed in the study area. Of the 419 buildings, 346 buildings are residential buildings and the remaining 73 are commercial.

Table 8.3 - Estimated number of flood affected buildings and flood damage

Parameter	Event (AEP)							
	20%	10%	5%	2%	1%	0.5%	0.2%	PMPF
No. residential buildings flooded AGL	-	1	4	15	45	102	154	343
No. residential buildings flooded AFL	-	1	2	5	14	75	135	343
Total residential damages (\$K)	\$0	\$128	\$322	\$1,170	\$3,674	\$10,560	\$21,822	\$92,735
No. non-residential buildings flooded AGL	-	-	-	4	9	9	16	72
No. non-residential buildings flooded AFL	-	-	-	-	7	9	16	72
Total non-residential damages (\$K)	\$0	\$0	\$0	\$0	\$38	\$211	\$863	\$10,036
Building average annual damage	\$275,843							

AGL - above ground level (count includes buildings flooded above both ground level and floor level)

AFL - above floor level

With respect to the 1% AEP flood, the results show that:

- there would be 54 flood affected properties.
- 14 residential buildings would be inundated above floor level;
- nine non-residential buildings would be inundated above floor level; and
- the total flood damage costs would be in the order of \$275,000 (excluding road, bridge and agricultural flood damages).

9 Conclusions

This report documents the flood behaviour in the vicinity of the township of Boggabri in New South Wales. It provides information on design flood discharges, flood levels, depths as well as provisional flood hazard categories for a full range of design flood events.

The flood behaviour was defined using computer based hydrological models to convert design rainfall to stream flow hydraulic models convert stream flow to flood levels and depths. The computer models were calibrated to available data for the February 1955, February 1971, February 1997, July 1998, and November 2000 events and recorded discharge data at the Namoi River at Boggabri and the Coxs Creek at Boggabri stream gauges. The following conclusions can be drawn from the flood study;

- The dominant source of flooding at Boggabri is from Coxs Creek adjacent to Coxs Creek (upstream of the Kamilaroi Highway and for about 600 m downstream) and a combination of Namoi River and Coxs Creek flows downstream of the confluence.
- For the 20%, 10% and 5% AEP events, property inundation in Boggabri is limited to yard flooding of properties on the southern end of Derby Street and Merton Street. The Kamilaroi Highway to Gunnedah would be inundated to shallow depths.
- For the larger events, the peak flows extend into the eastern streets of Boggabri. Properties along the Kamilaroi Highway to the east of Coxs Creek would be inundated.
- Substantial inundation would occur for the PMF with most of the town inundated.
- The extent of high hazard for the 1% AEP event would likely define the floodway areas along Coxs Creek and the Namoi River. The remaining areas below the PMF extent would be flood fringe areas.

With respect to the 1% AEP flood:

- there would be 54 flood affected properties.
- 14 residential buildings would be inundated above floor level;
- nine non-residential buildings would be inundated above floor level; and
- the total flood damage costs would be in the order of \$275,000 (excluding road, bridge and agricultural flood damages).

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Watt et al., 2018	<i>'A quick method for estimating the Probable Maximum Flood in the Coastal GTSMR Zone'</i> , 34th Hydrology and Water Resources Symposium (Melbourne). Barton, A.C.T.: Engineers Australia, pp.901-914, S. Watt, D. Sciacca, M. Hughes and P. Pedruco.
WMA Water, 2019	<i>'Review of ARR design Inputs for NSW Final Report'</i> , Report prepared for the NSW Office of Environment and Heritage by WMA Water, February 2019
WRM, 2009	<i>'Continuation of Boggabri Coal Mine - Namoi River Flood Impact Assessment'</i> Report prepared for Hansen Bailey on behalf of Boggabri Coal Pty Limited by WRM Water & Environment Pty Ltd, December 2009

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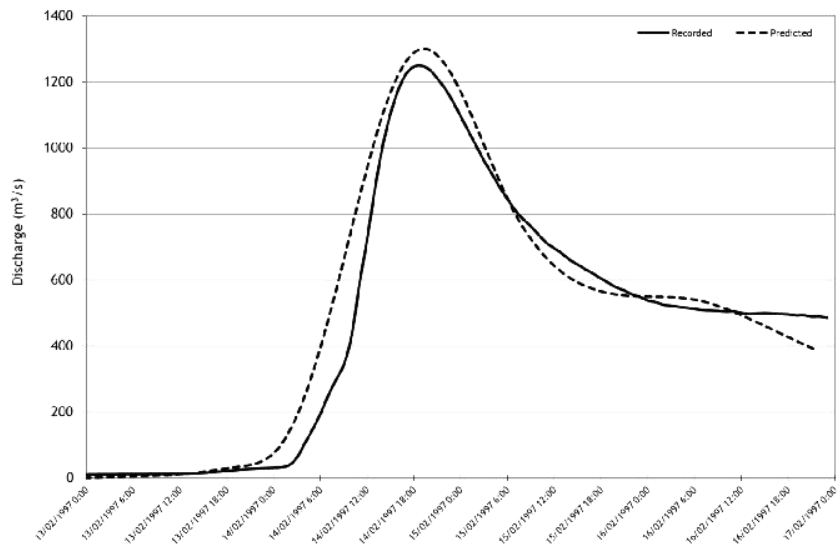


Figure A 1- Namoi River at Boggabri (419012), recorded and predicted discharges, February 1997 event

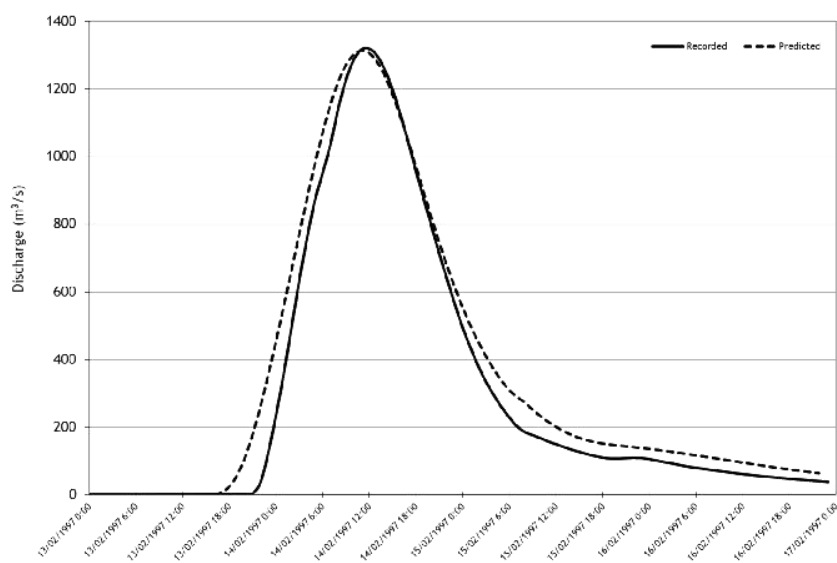


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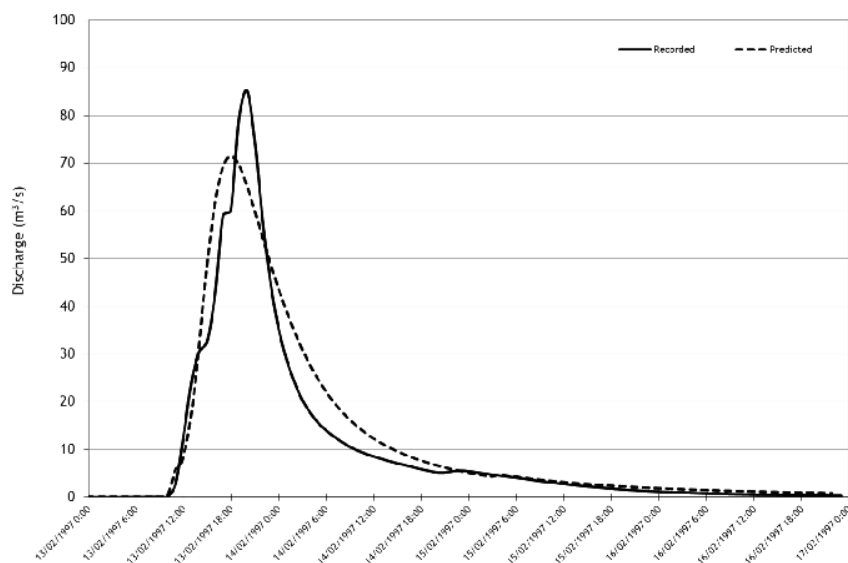


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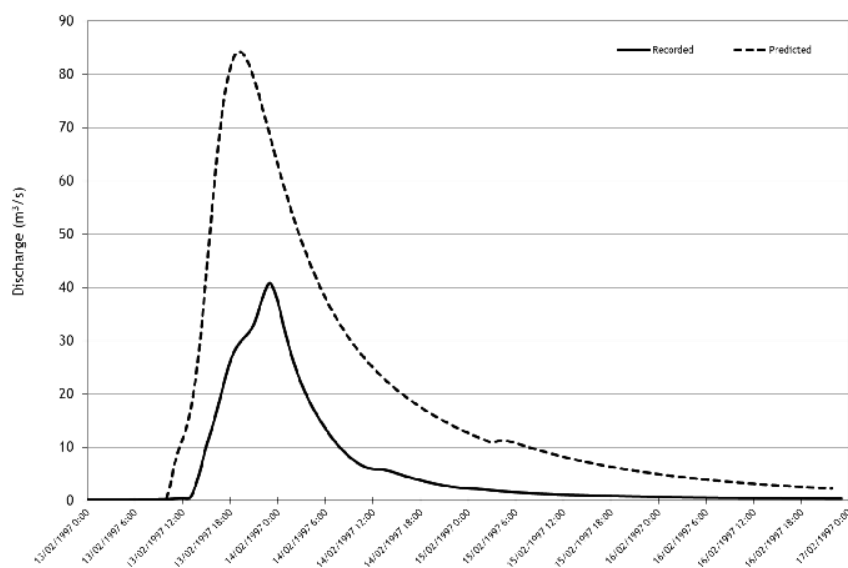


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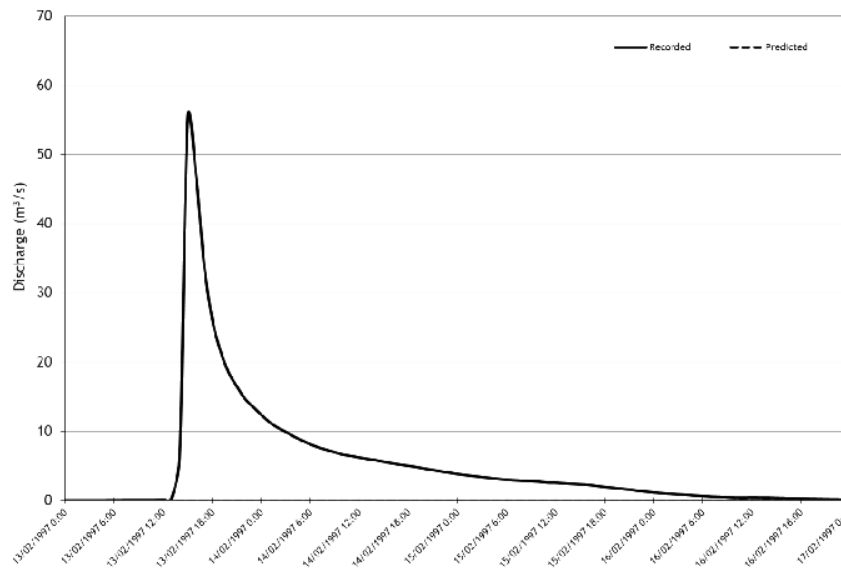


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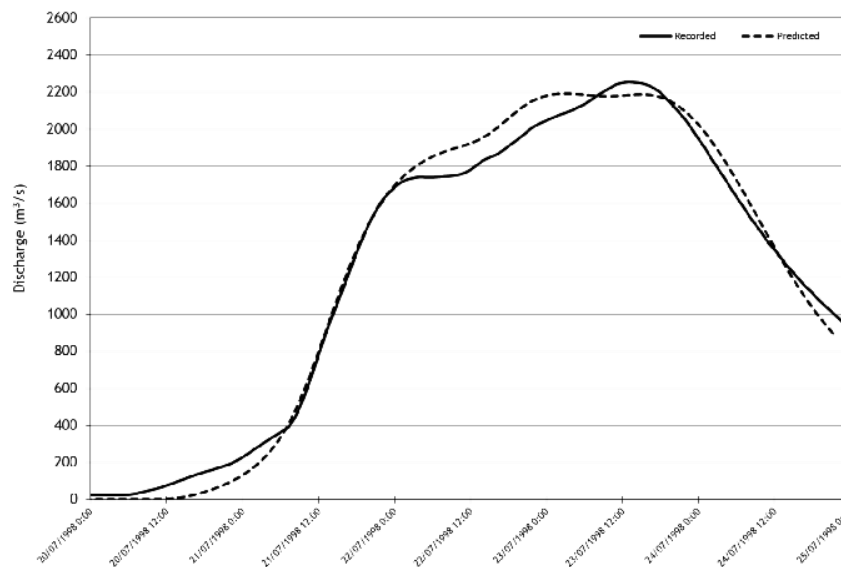


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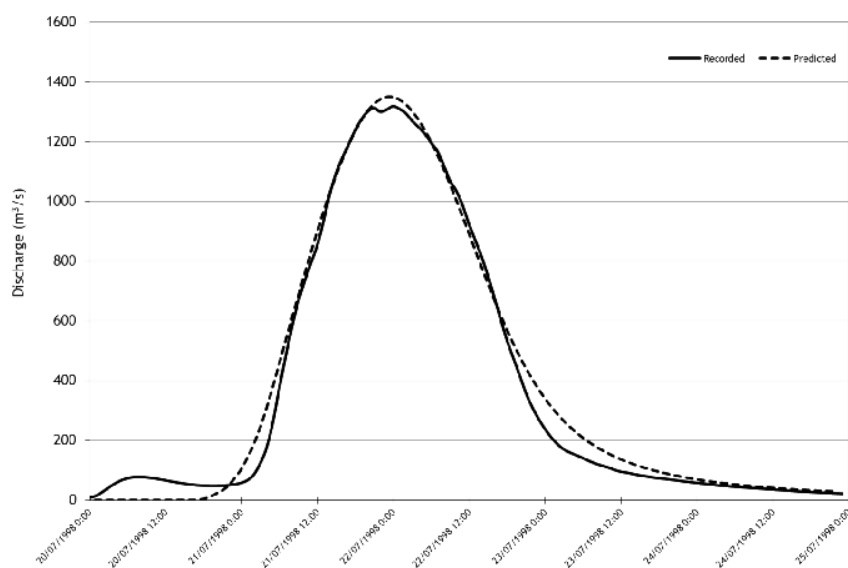


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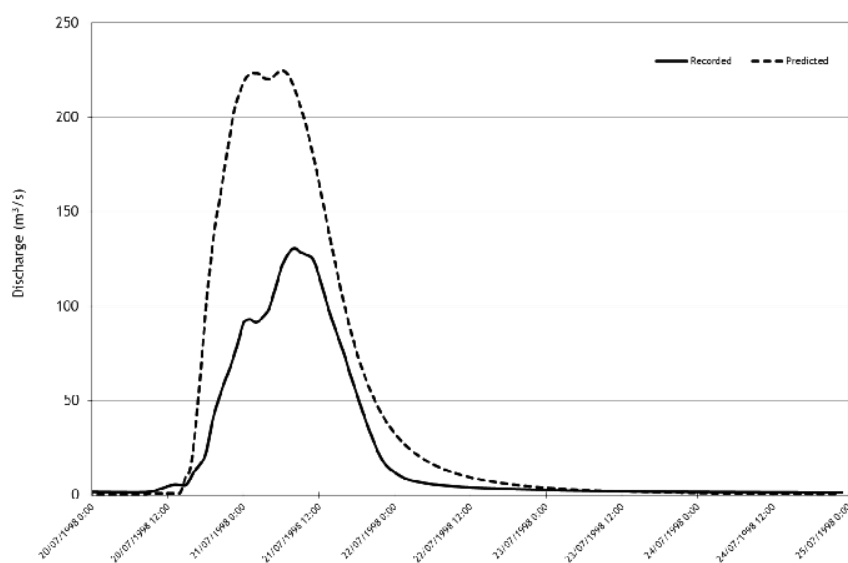


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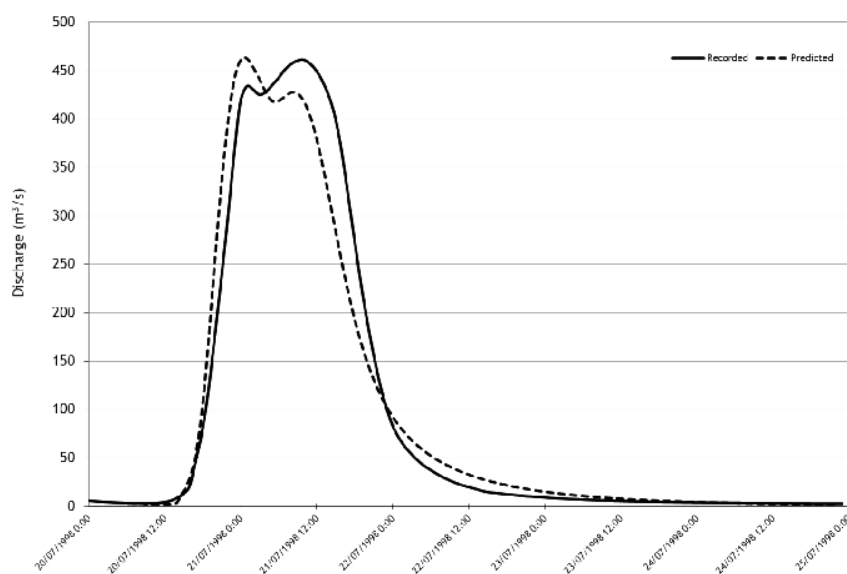


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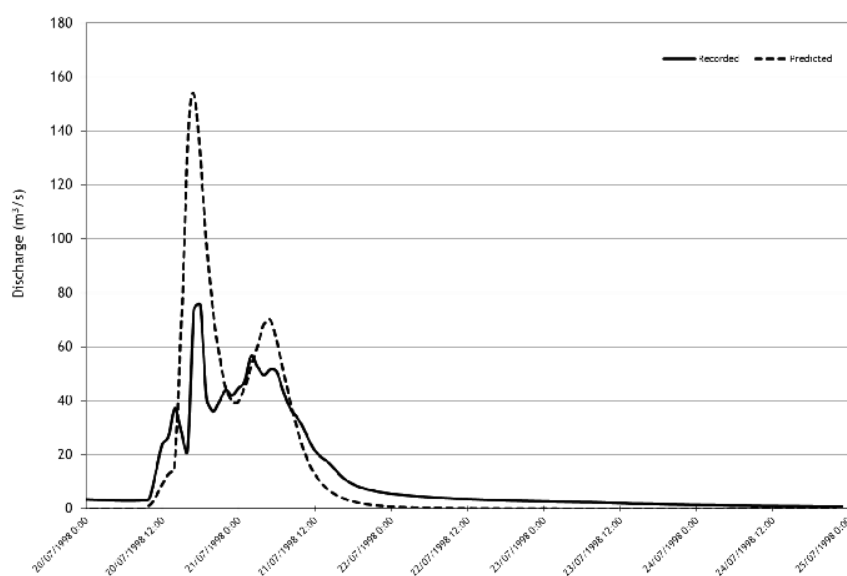


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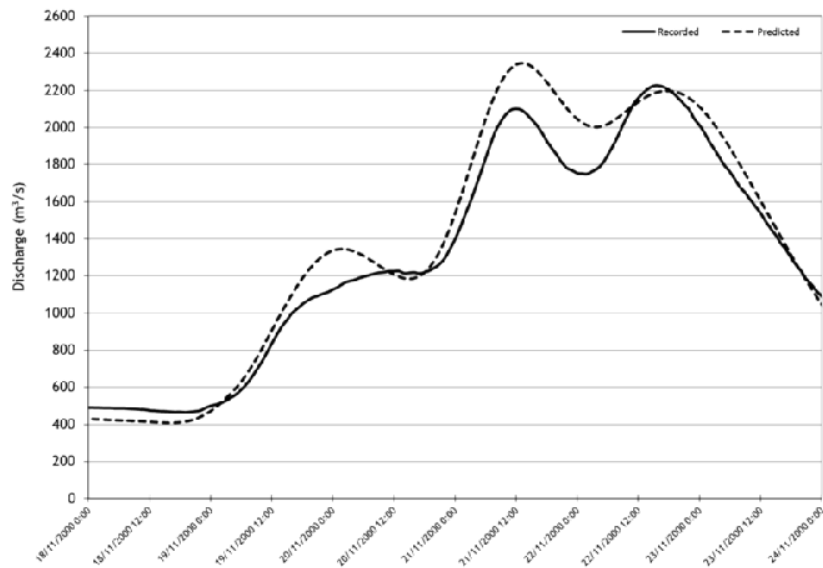


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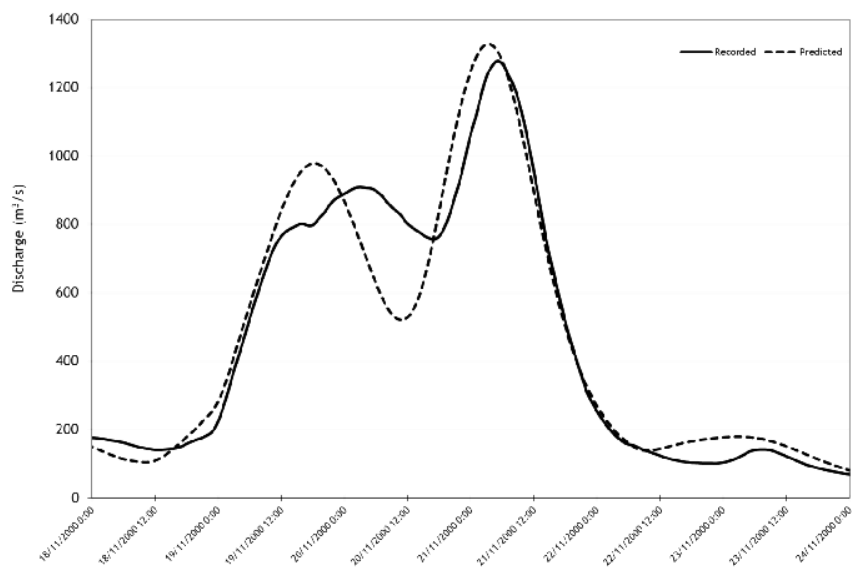


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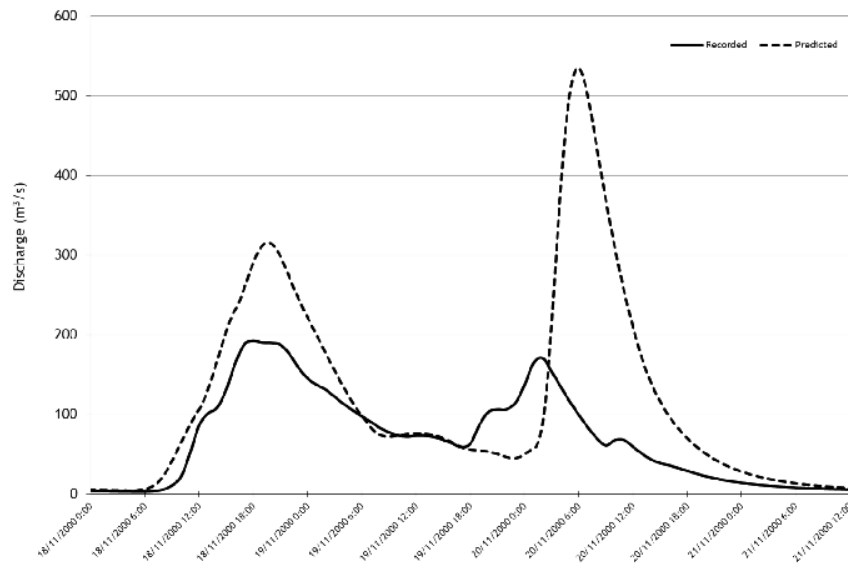


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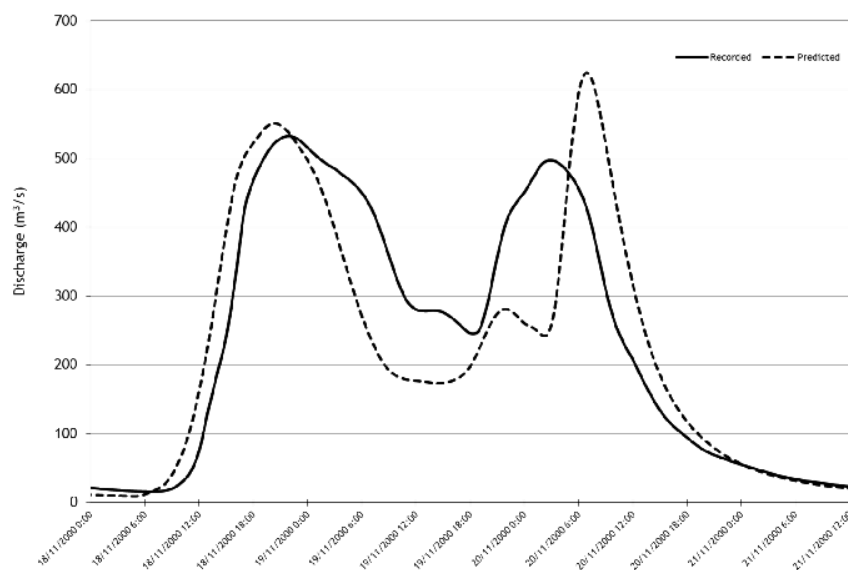


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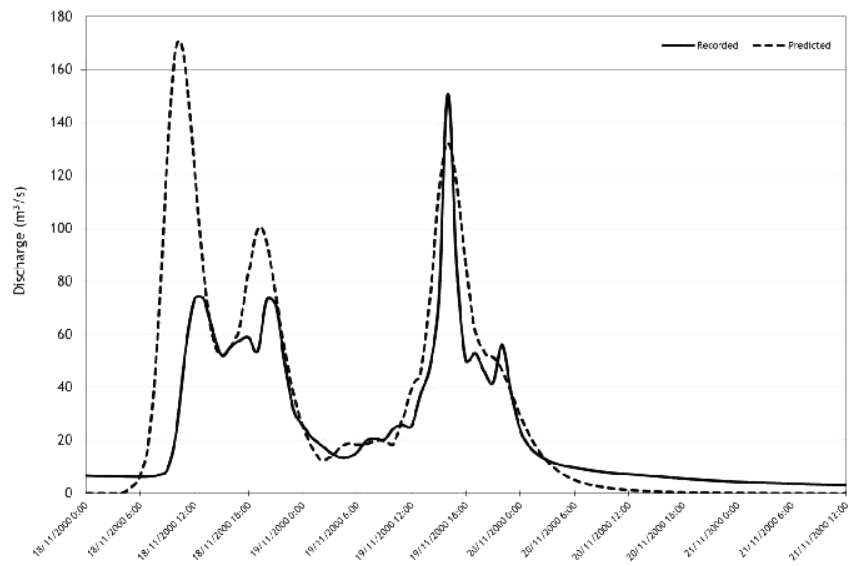
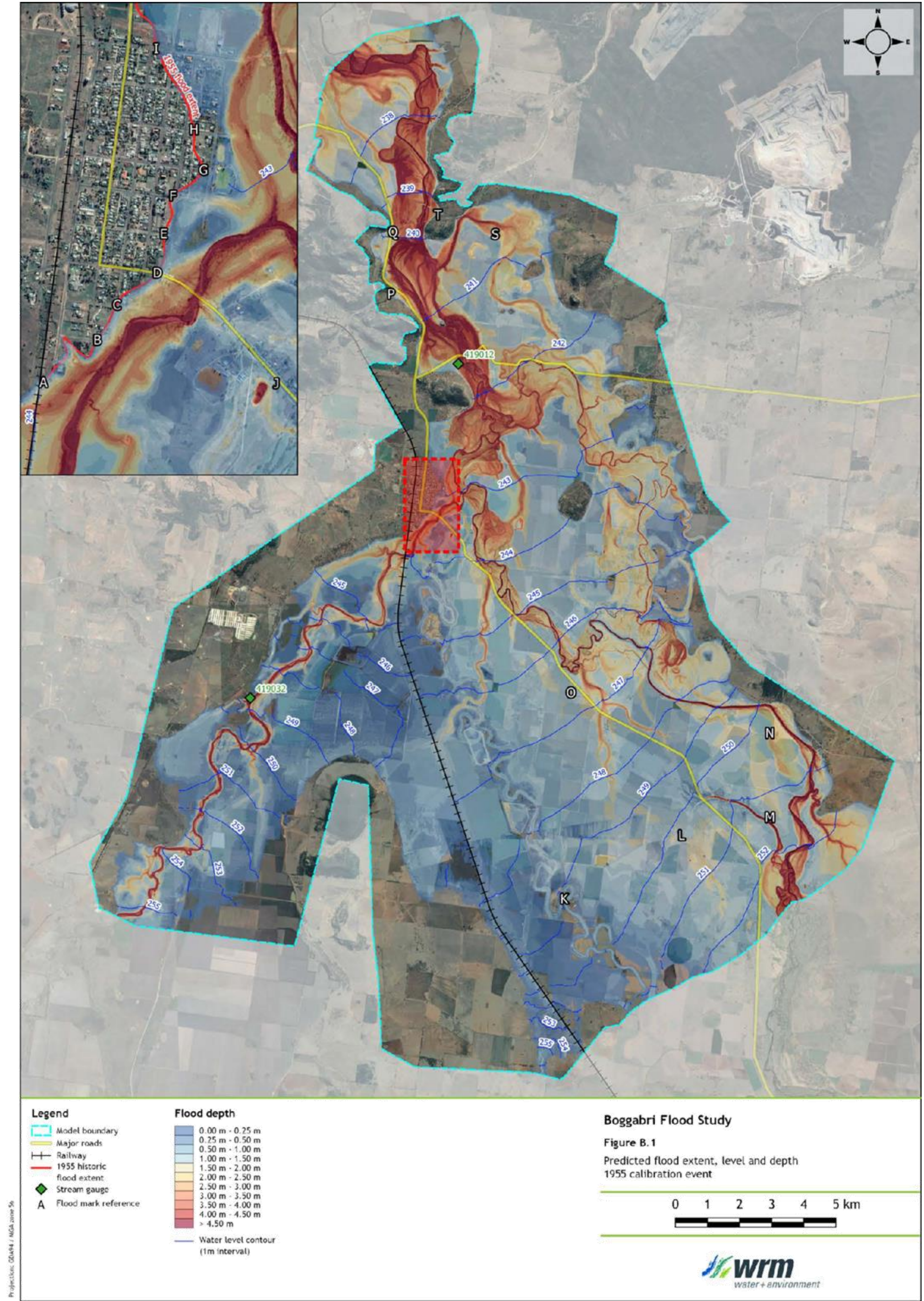
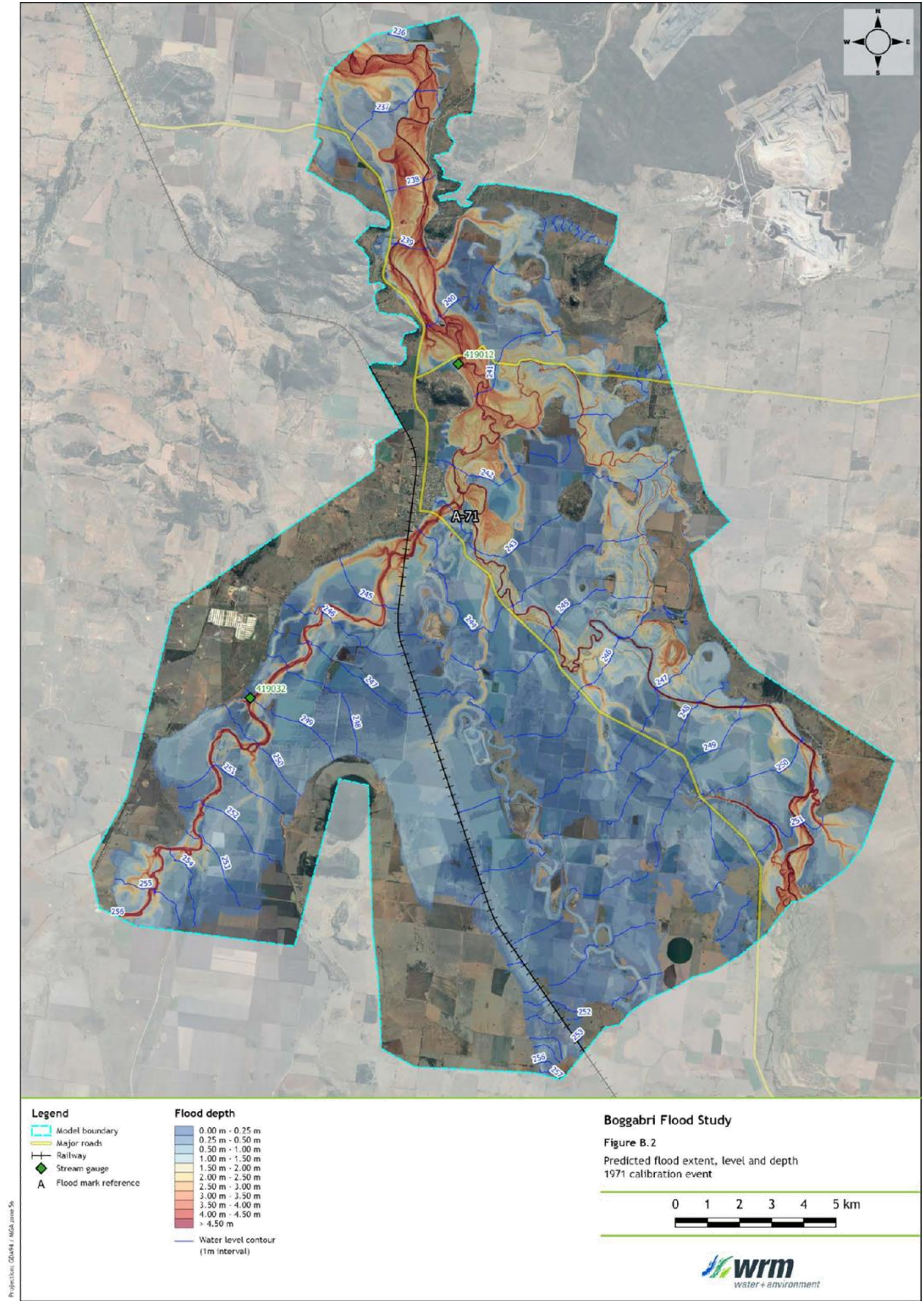


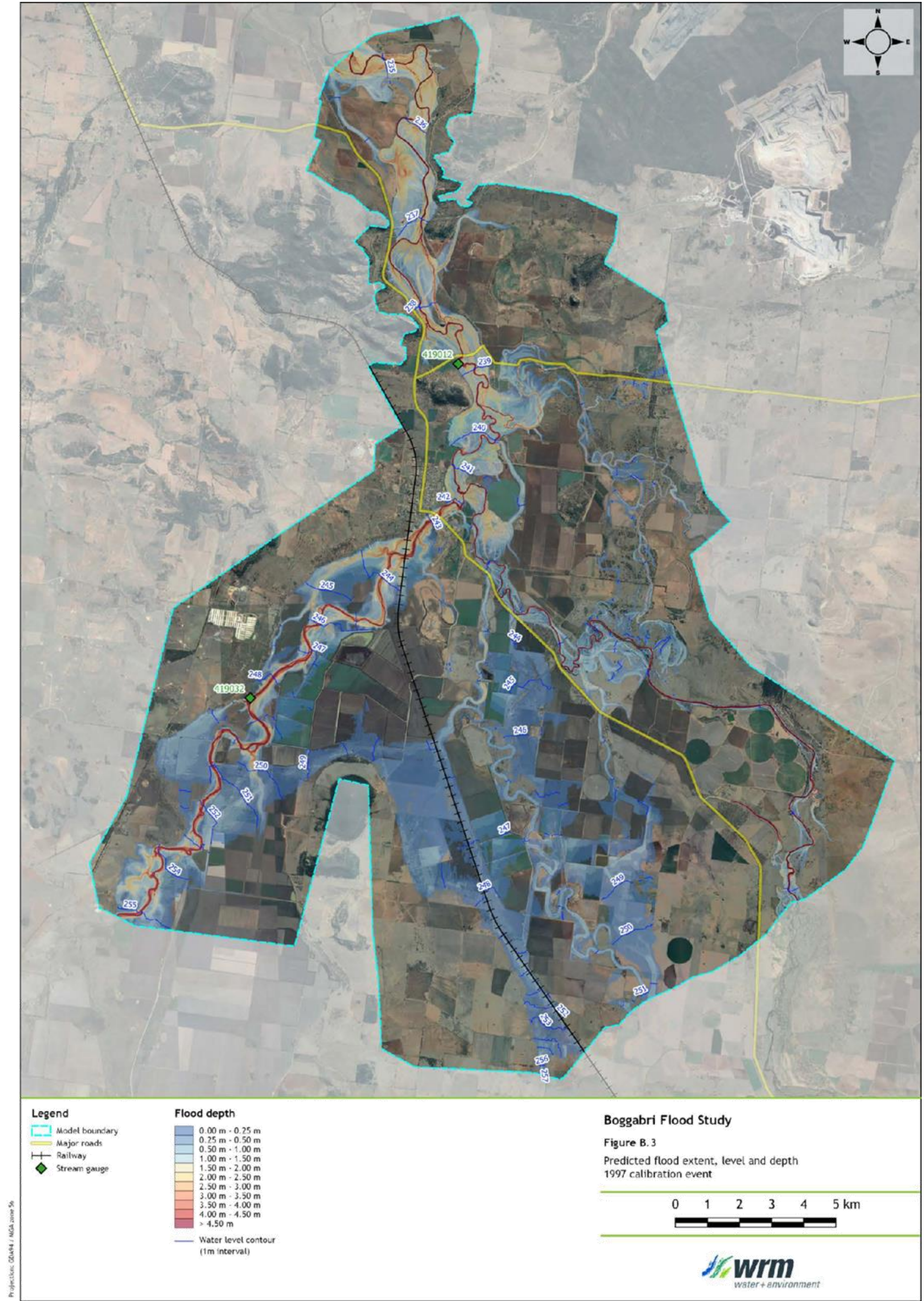
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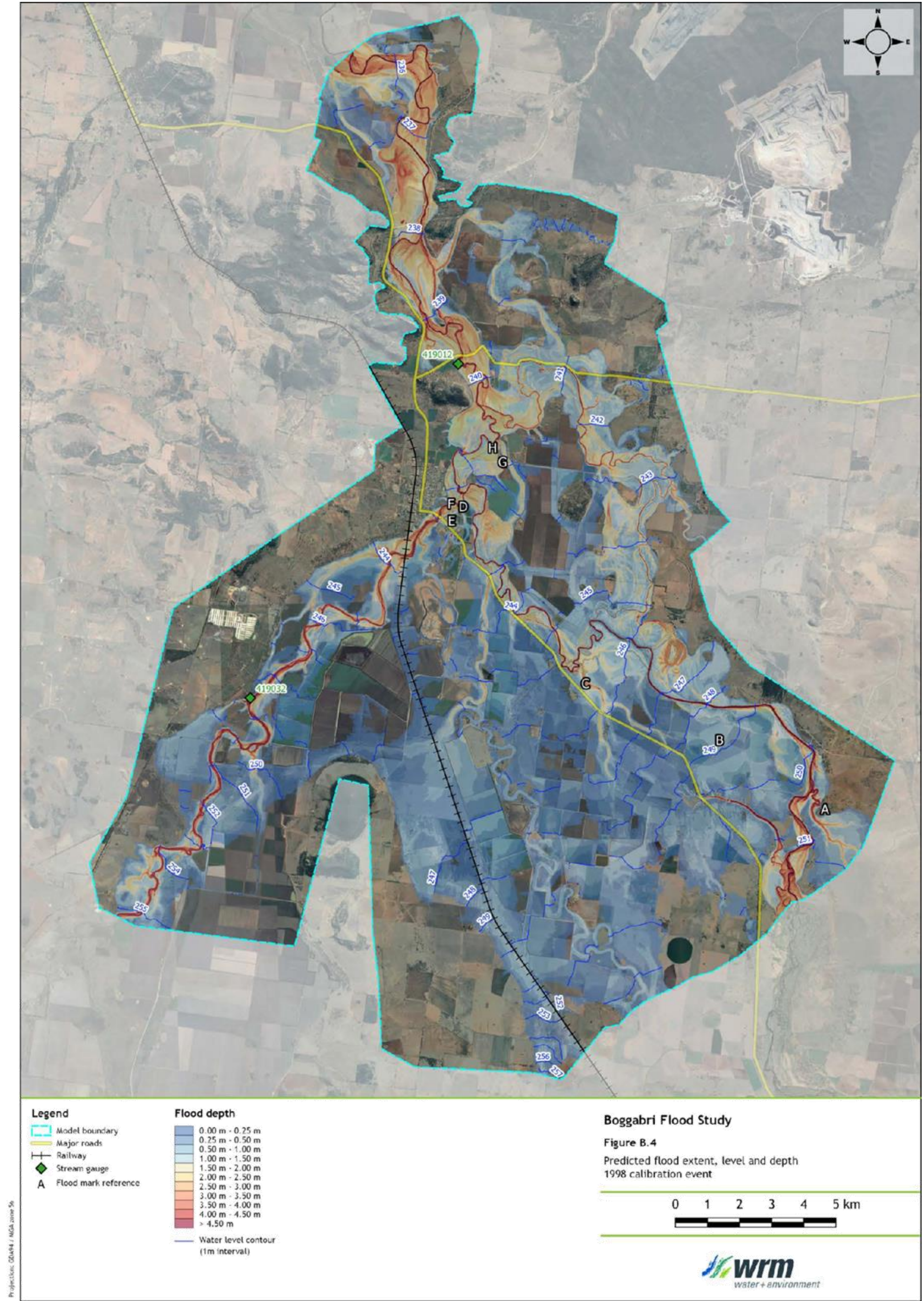
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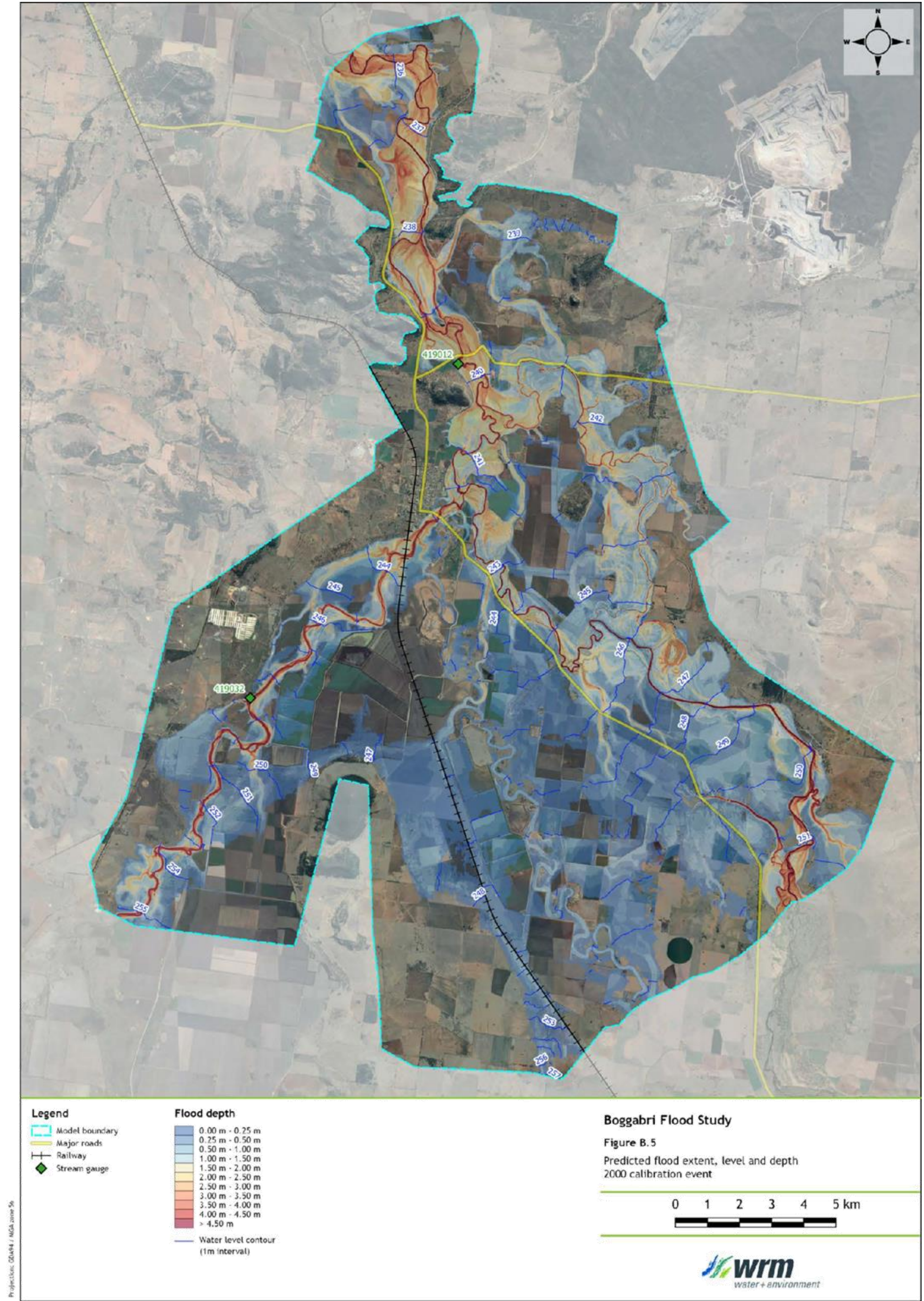
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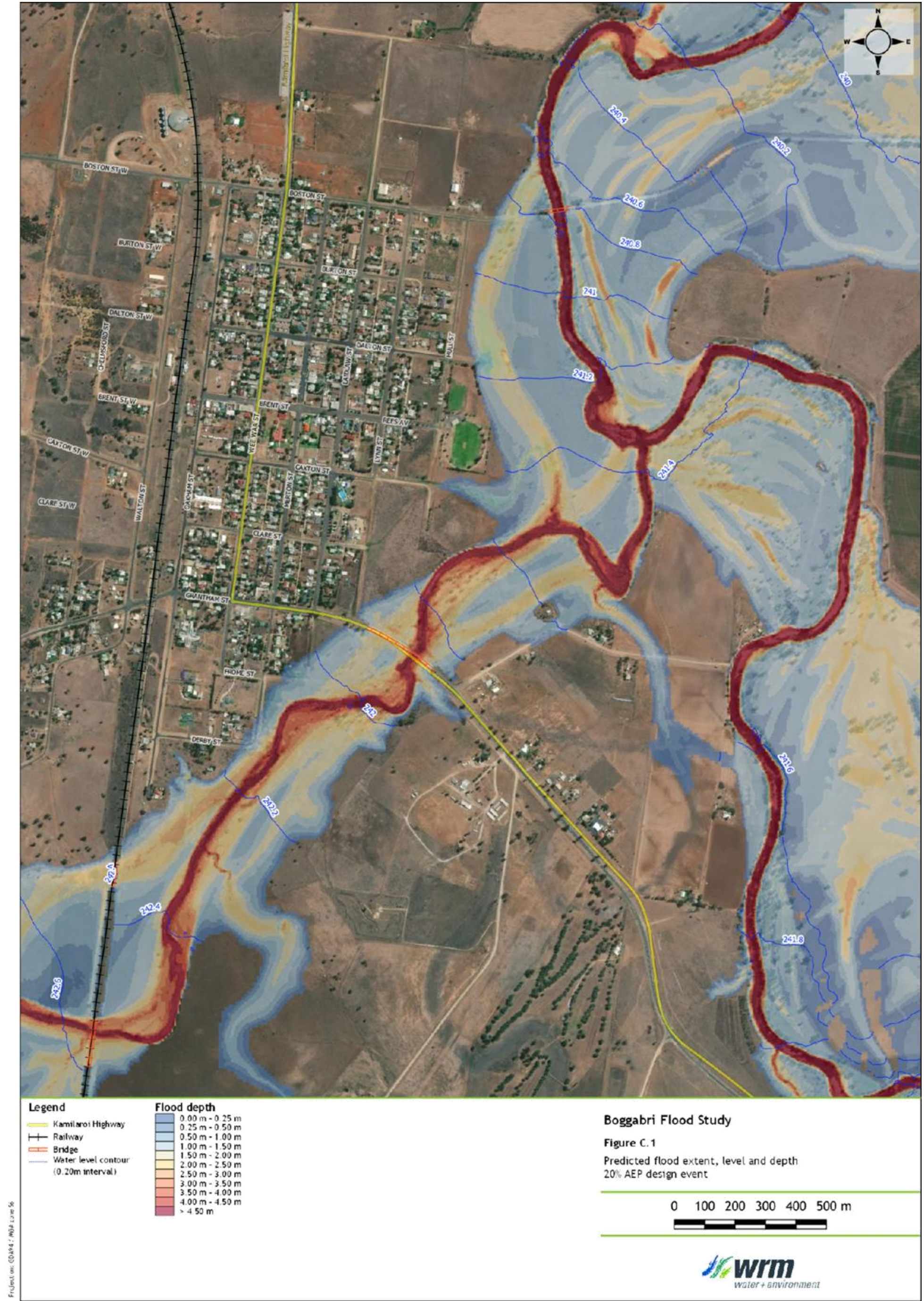




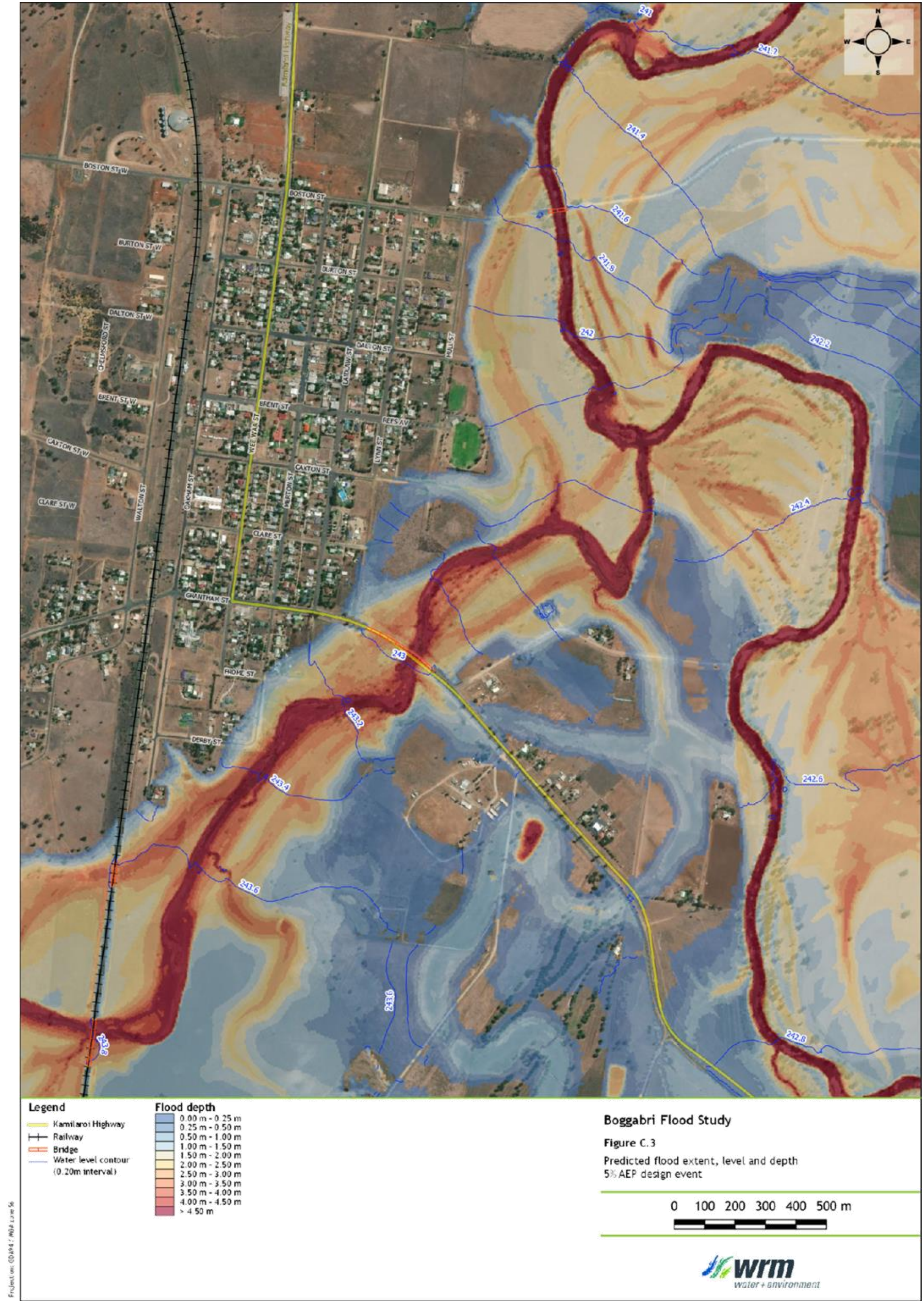


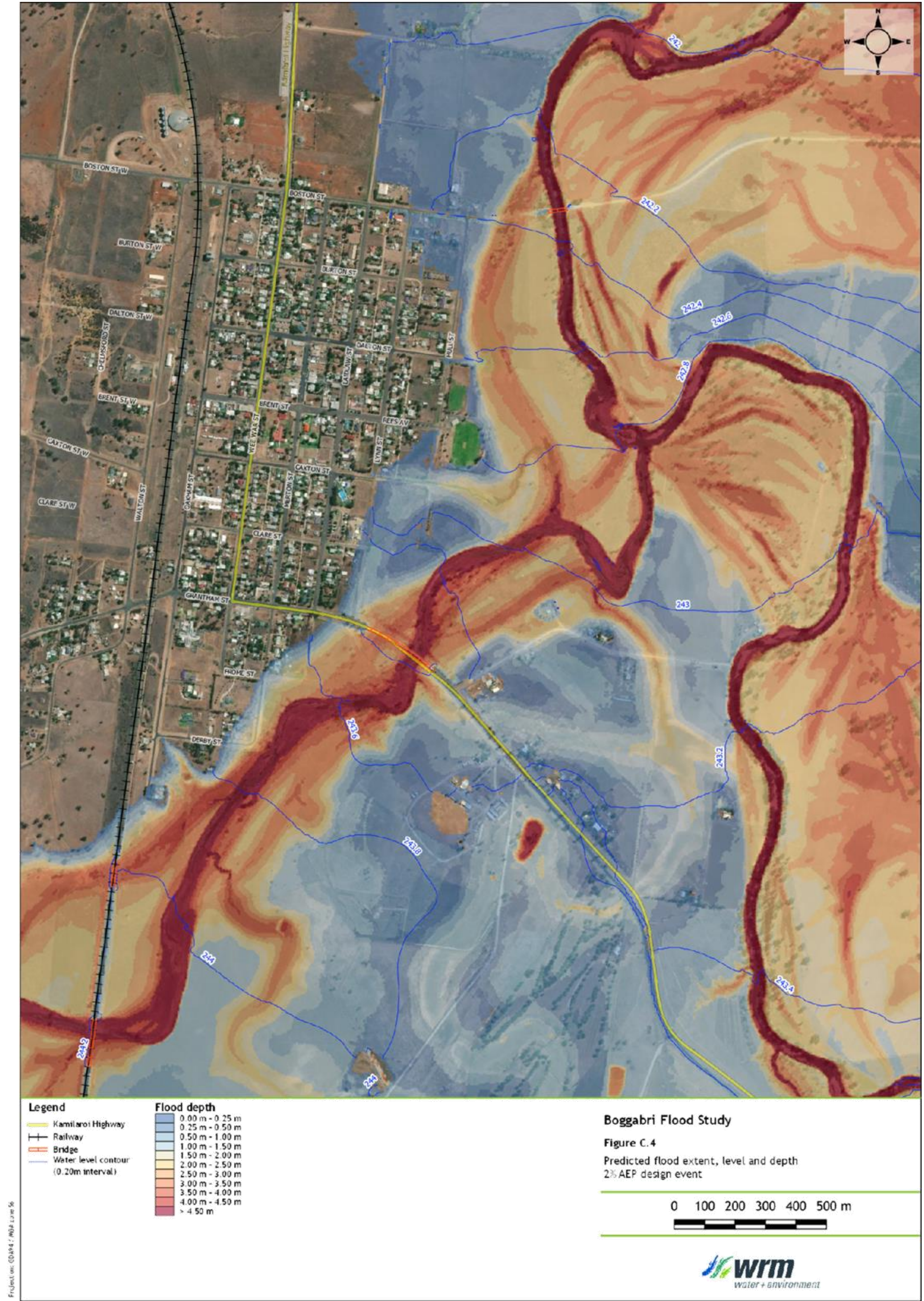
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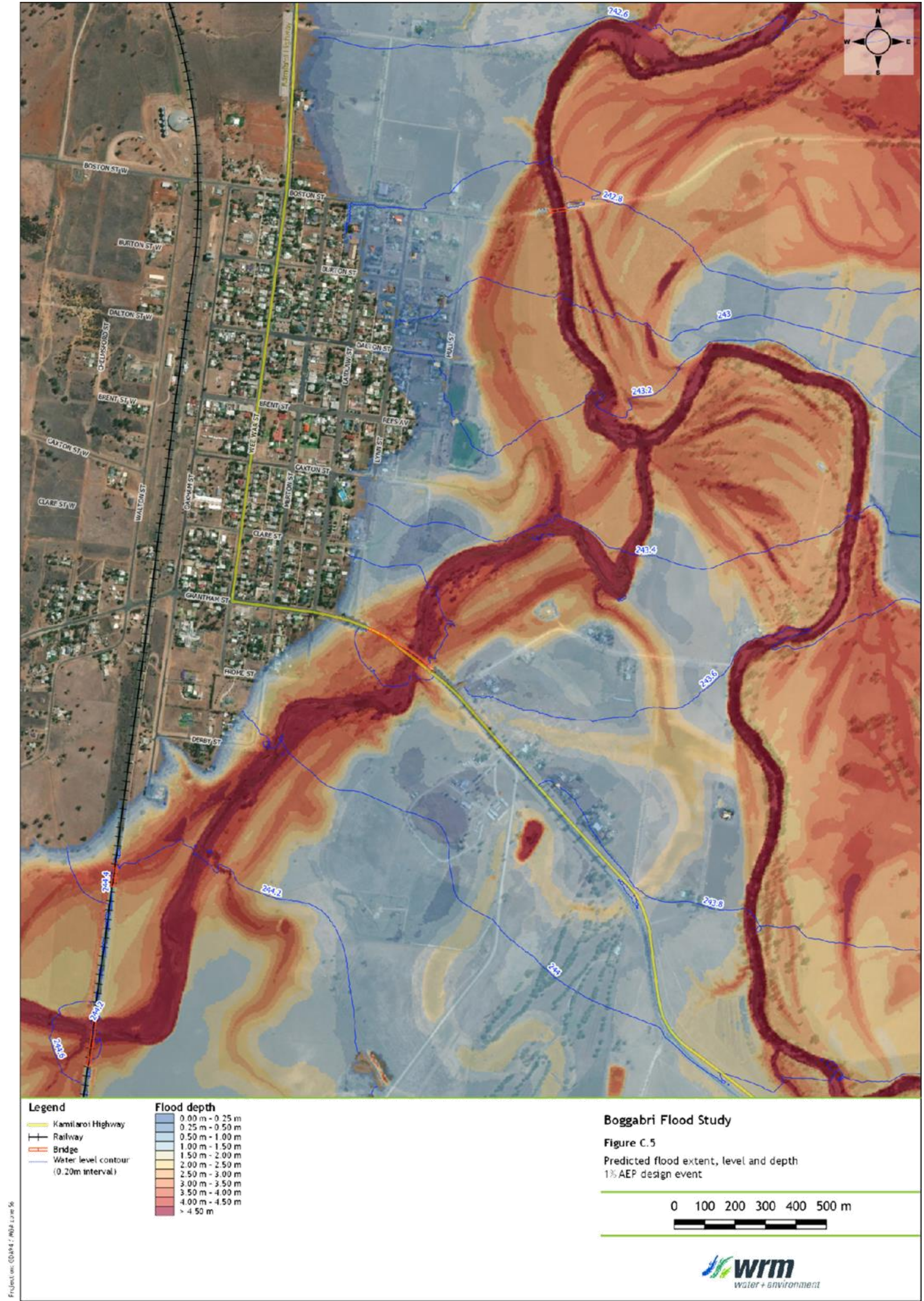
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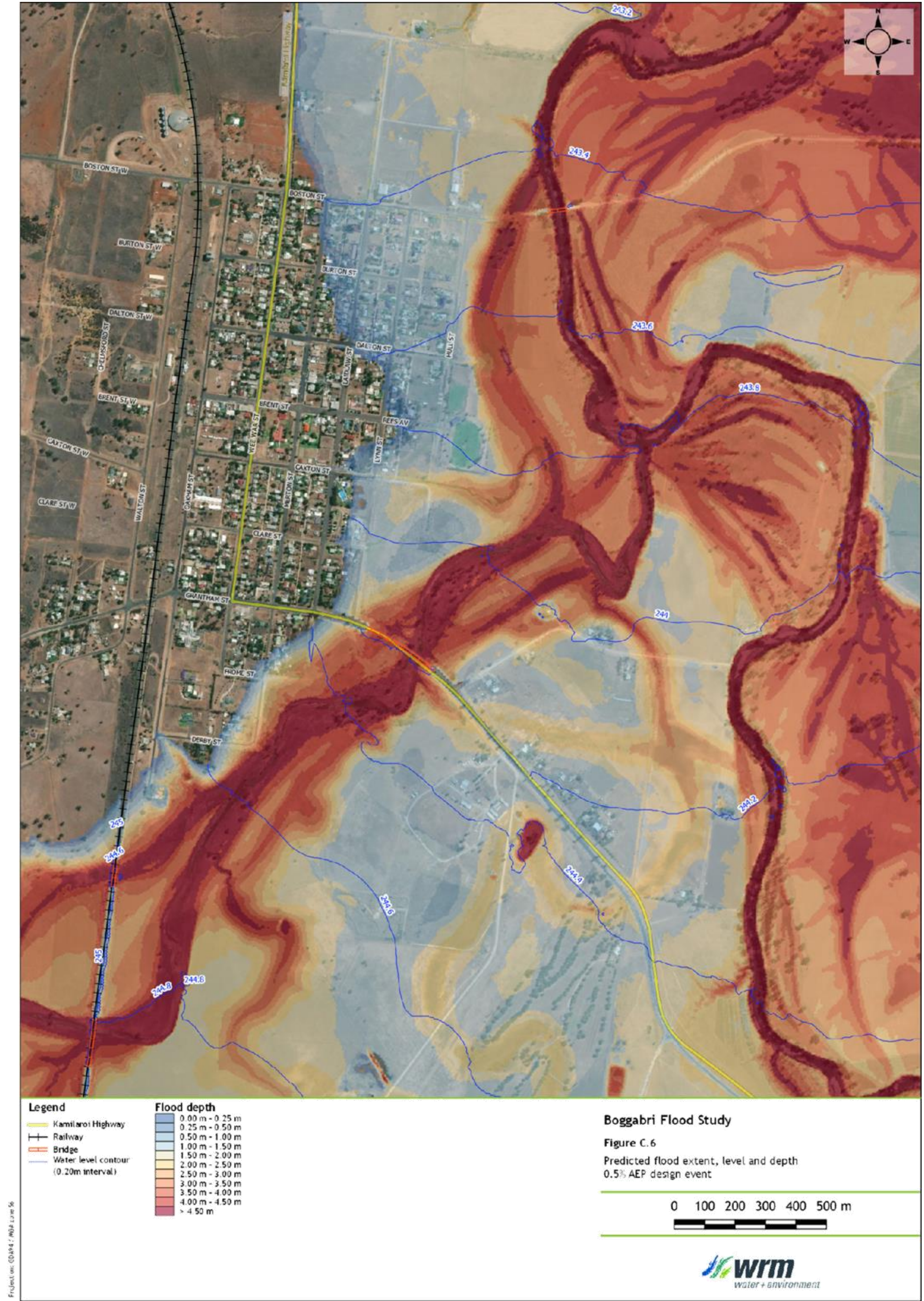


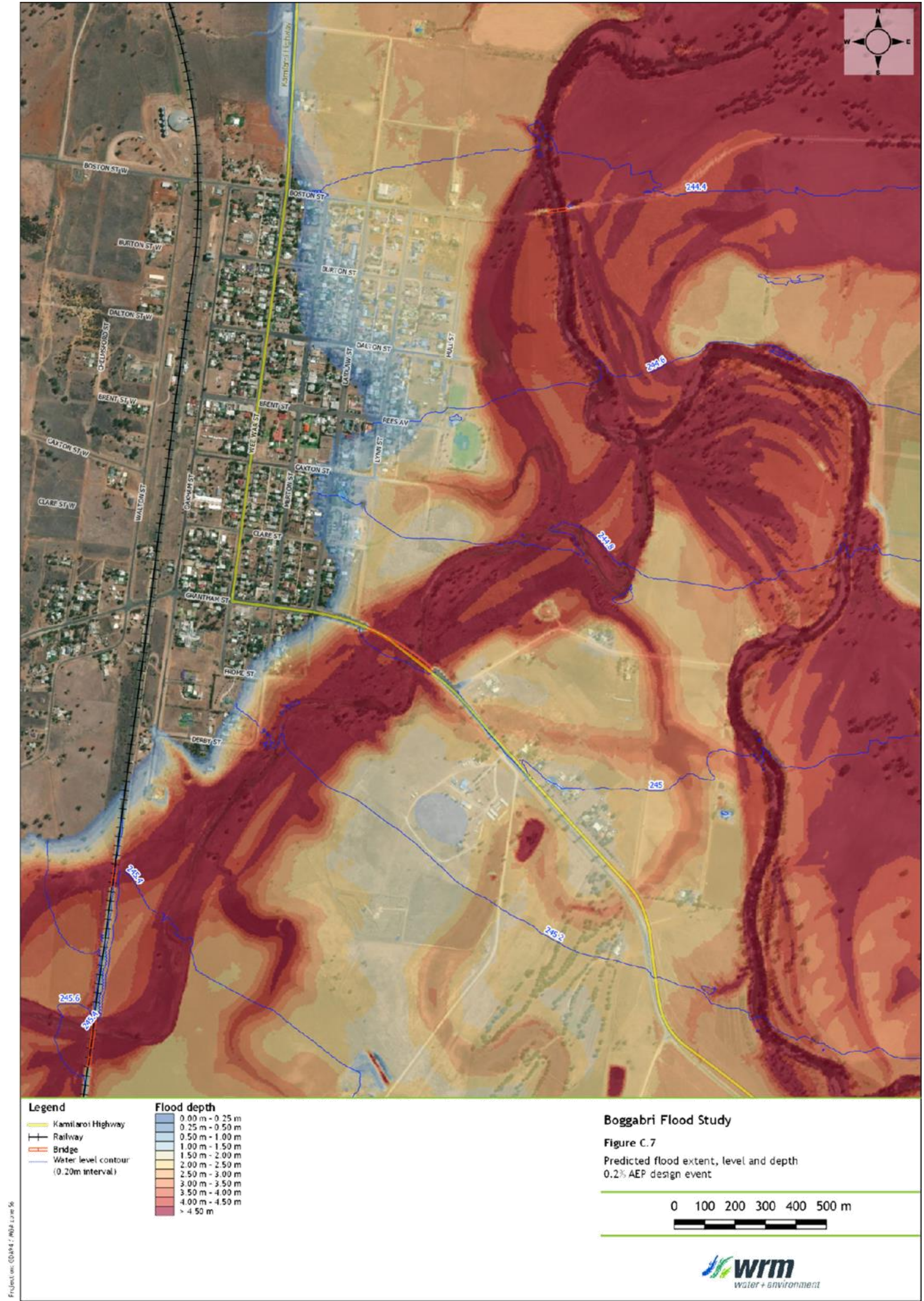


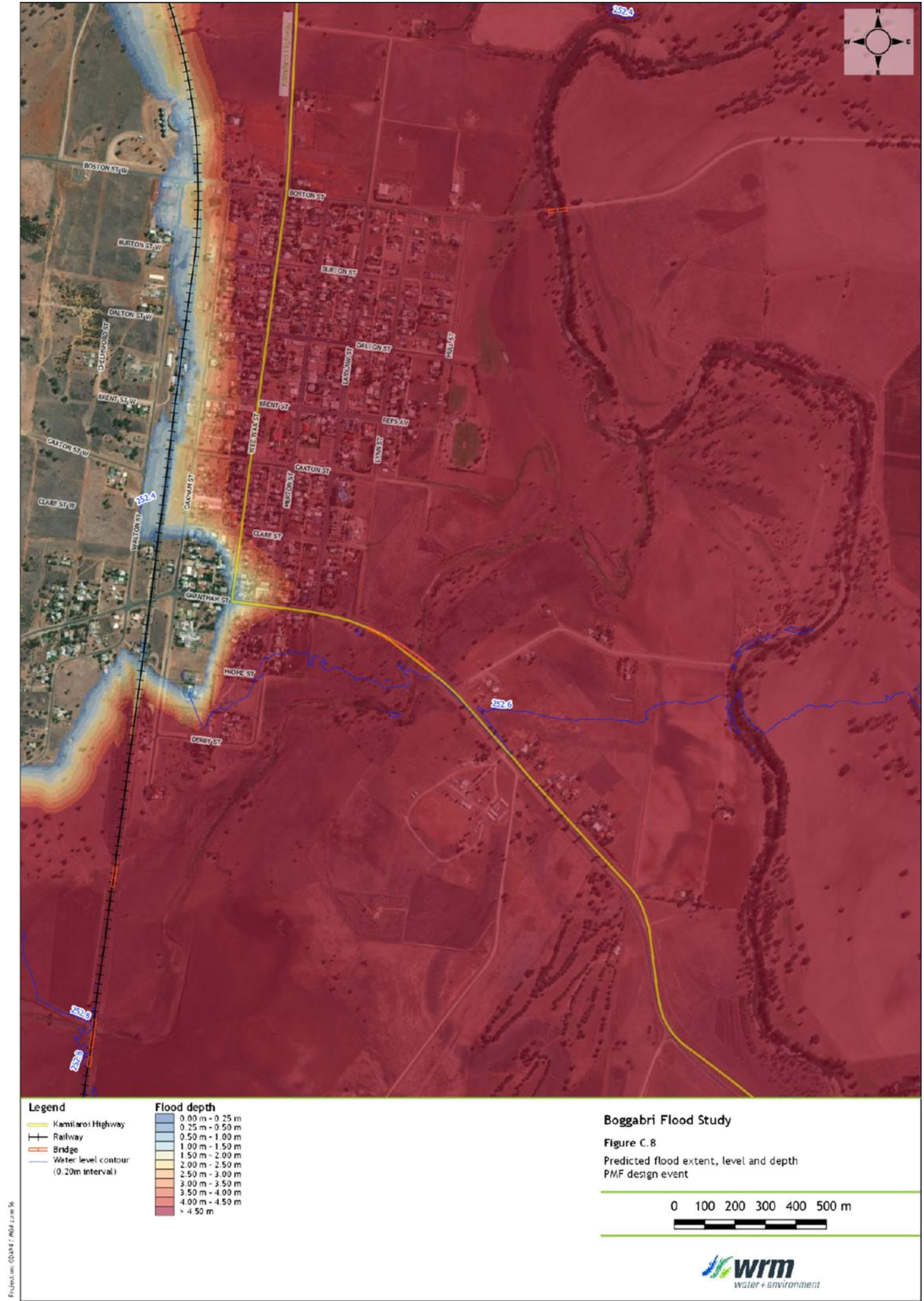






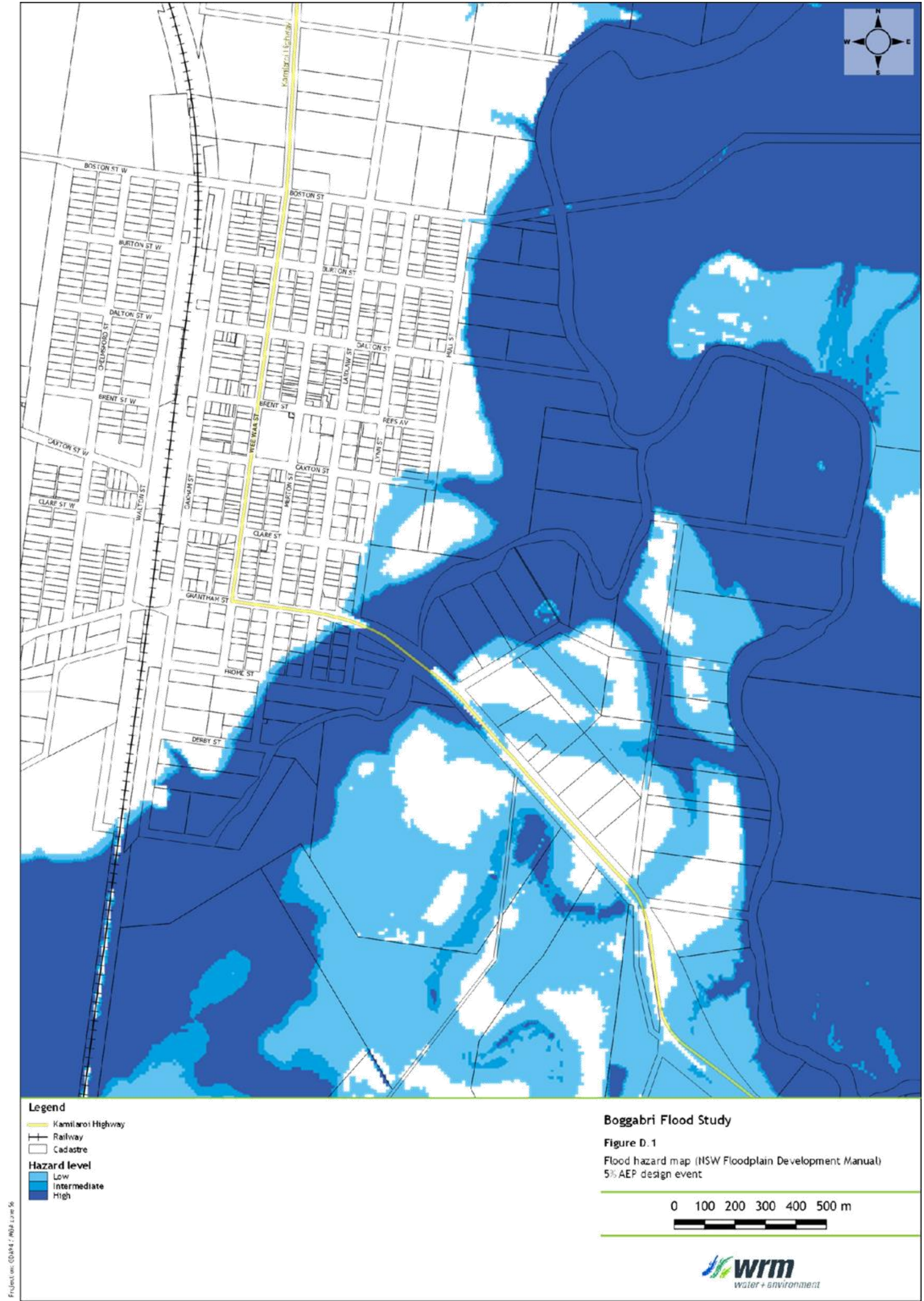


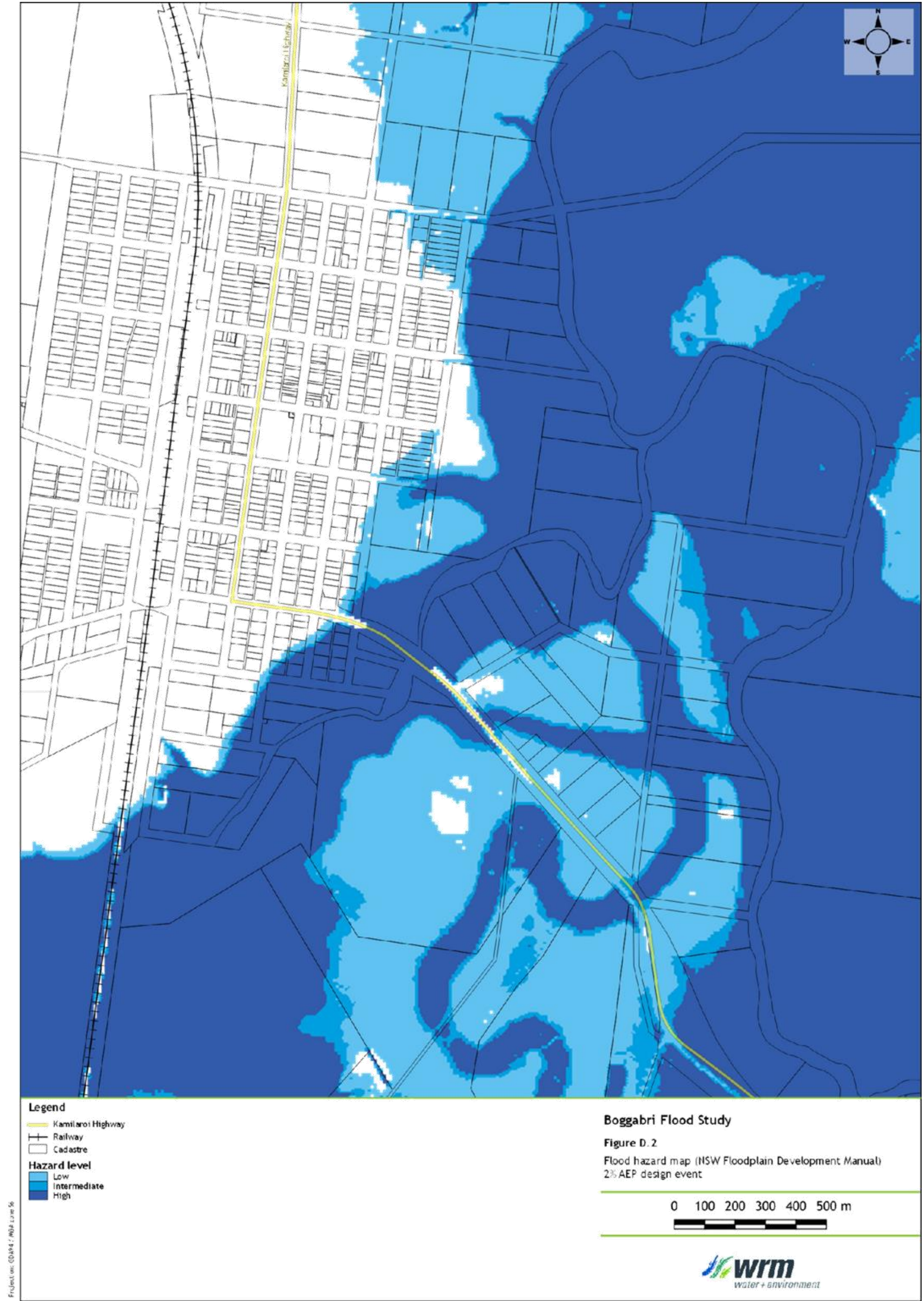


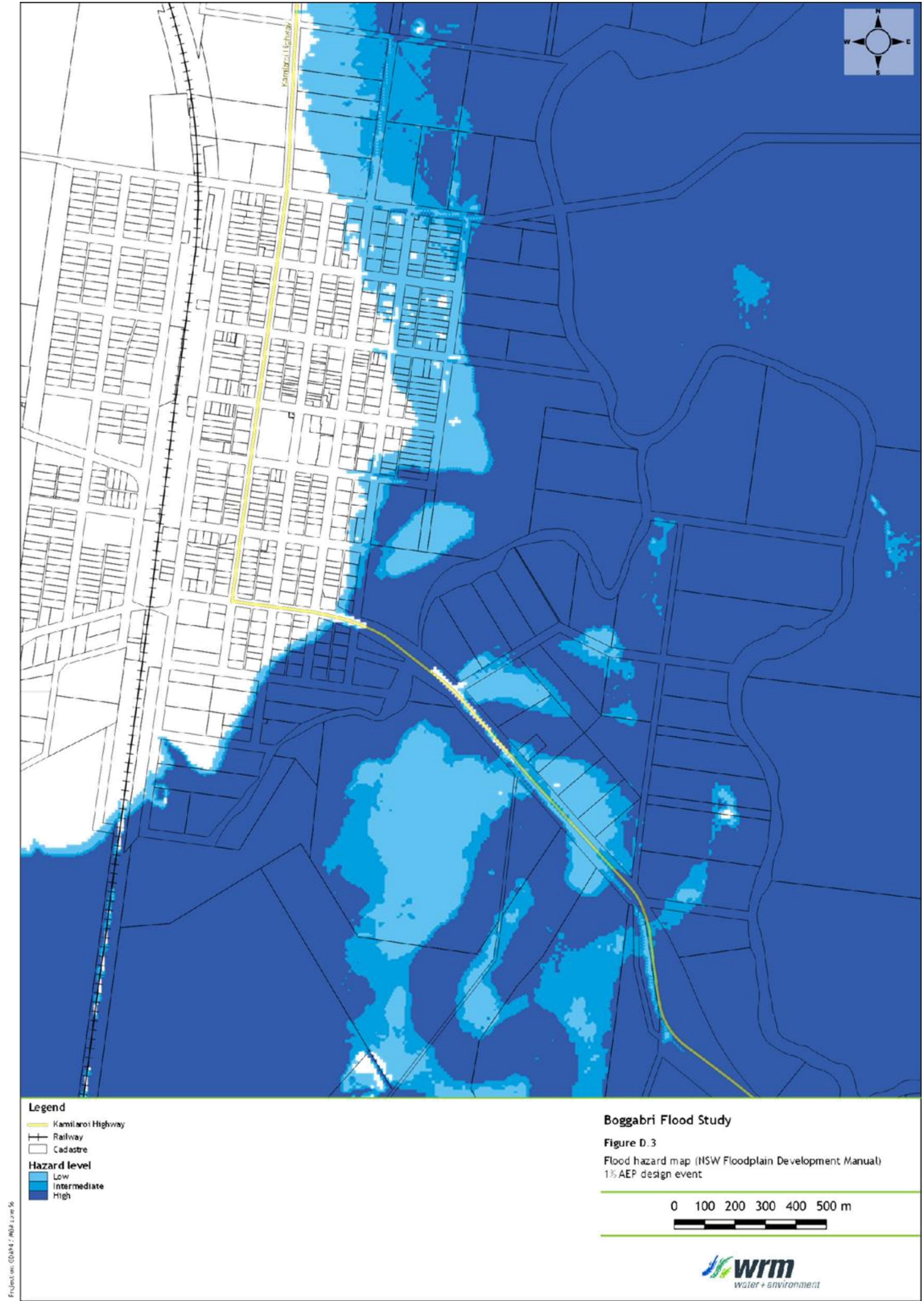


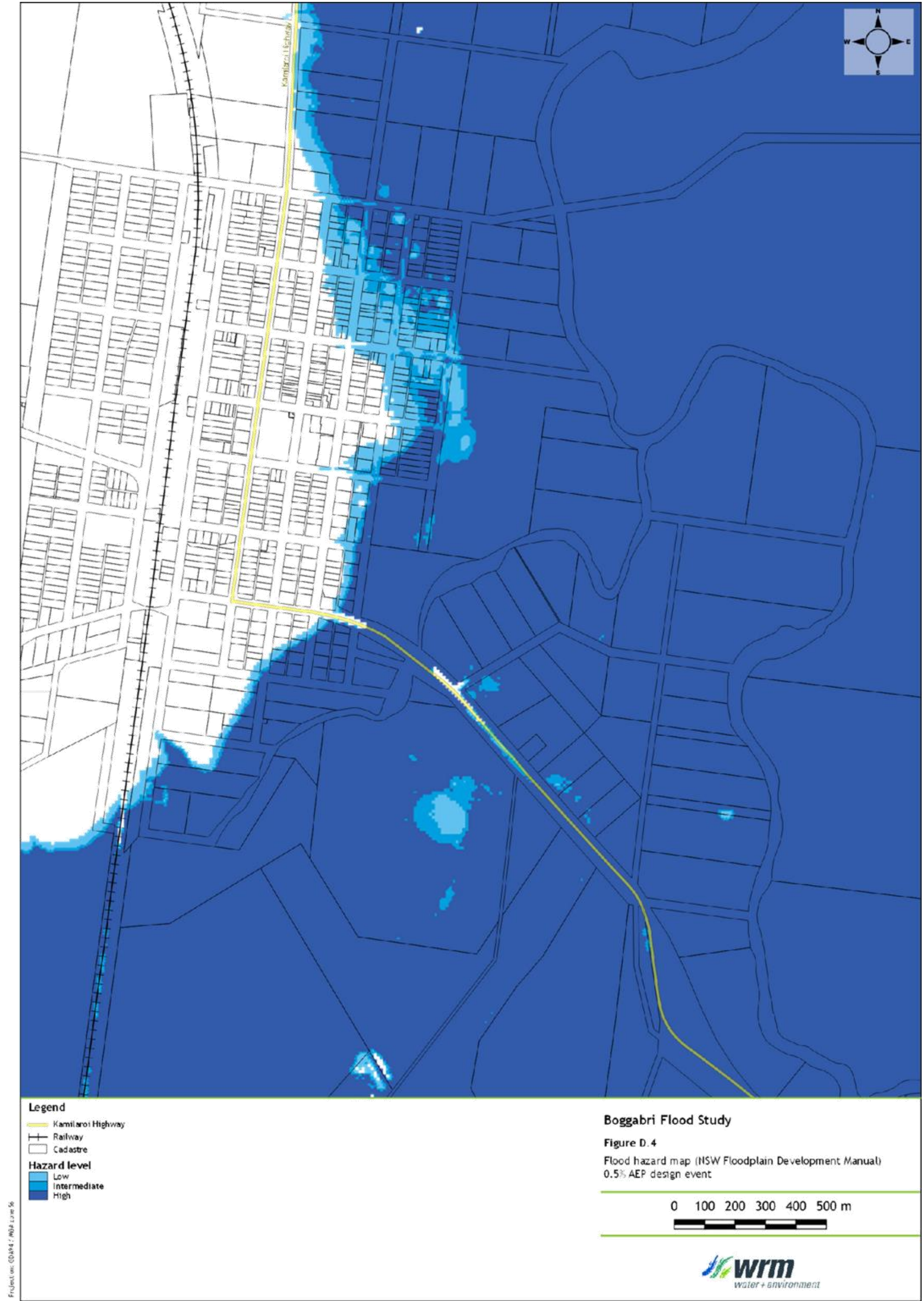
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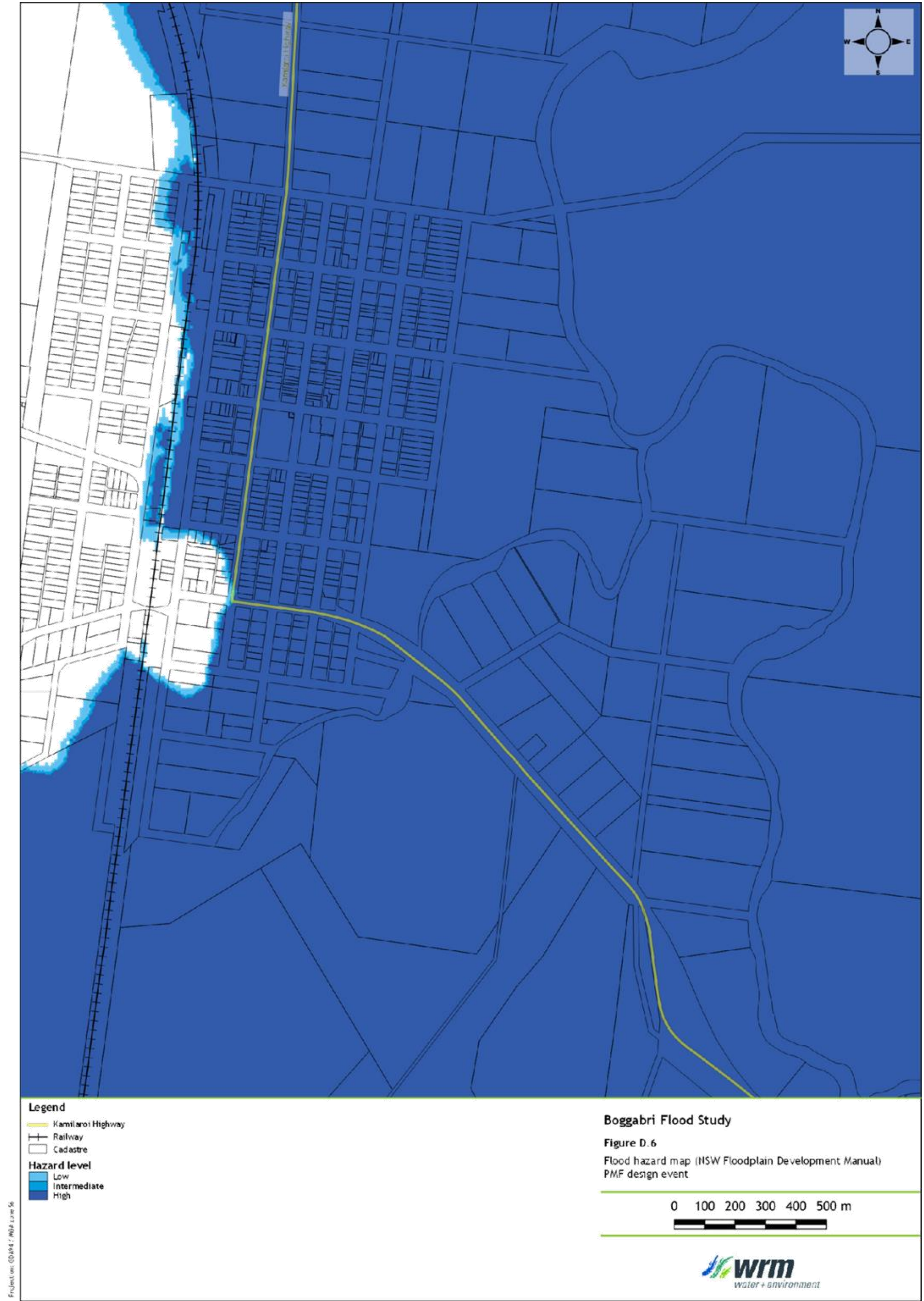








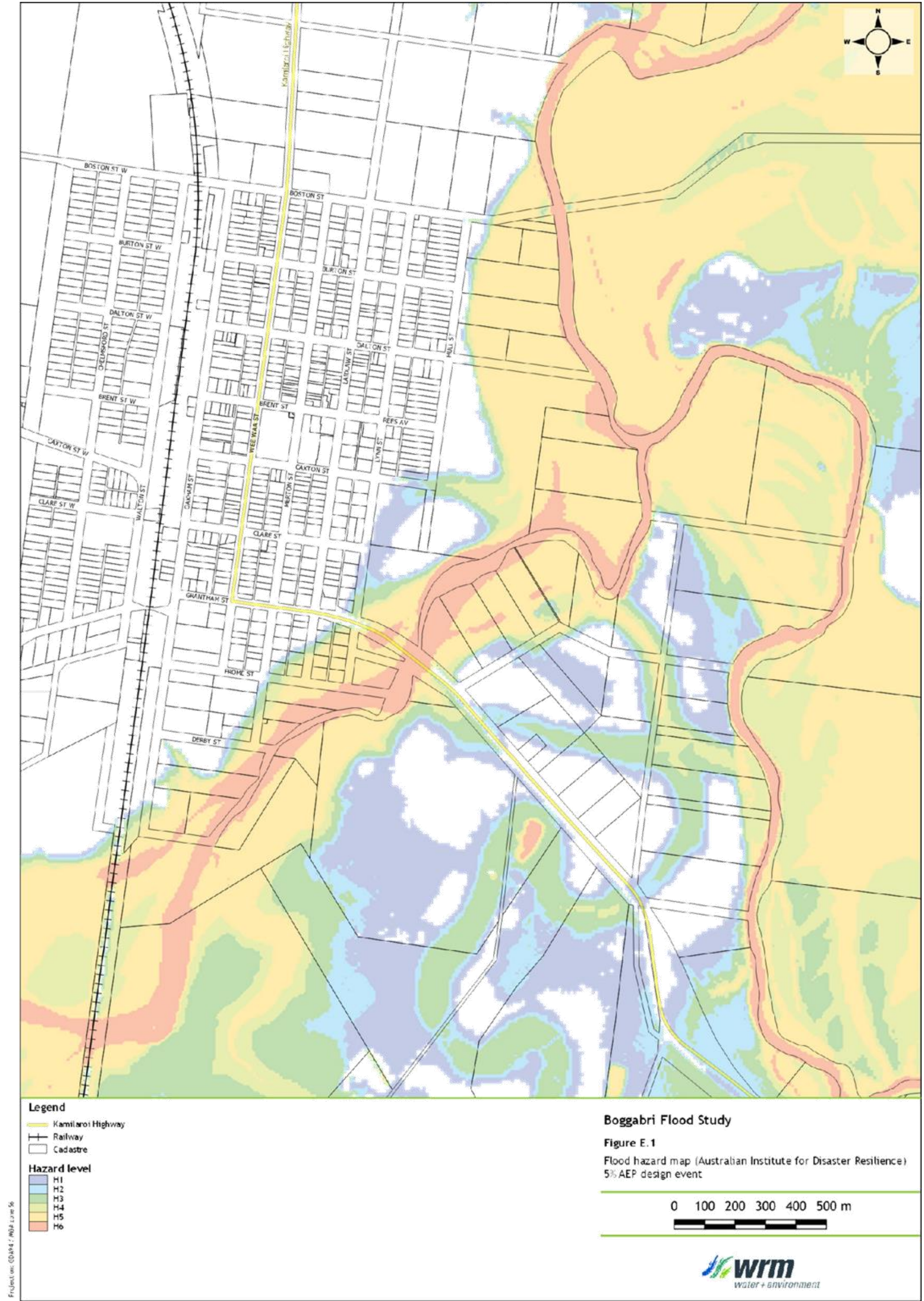


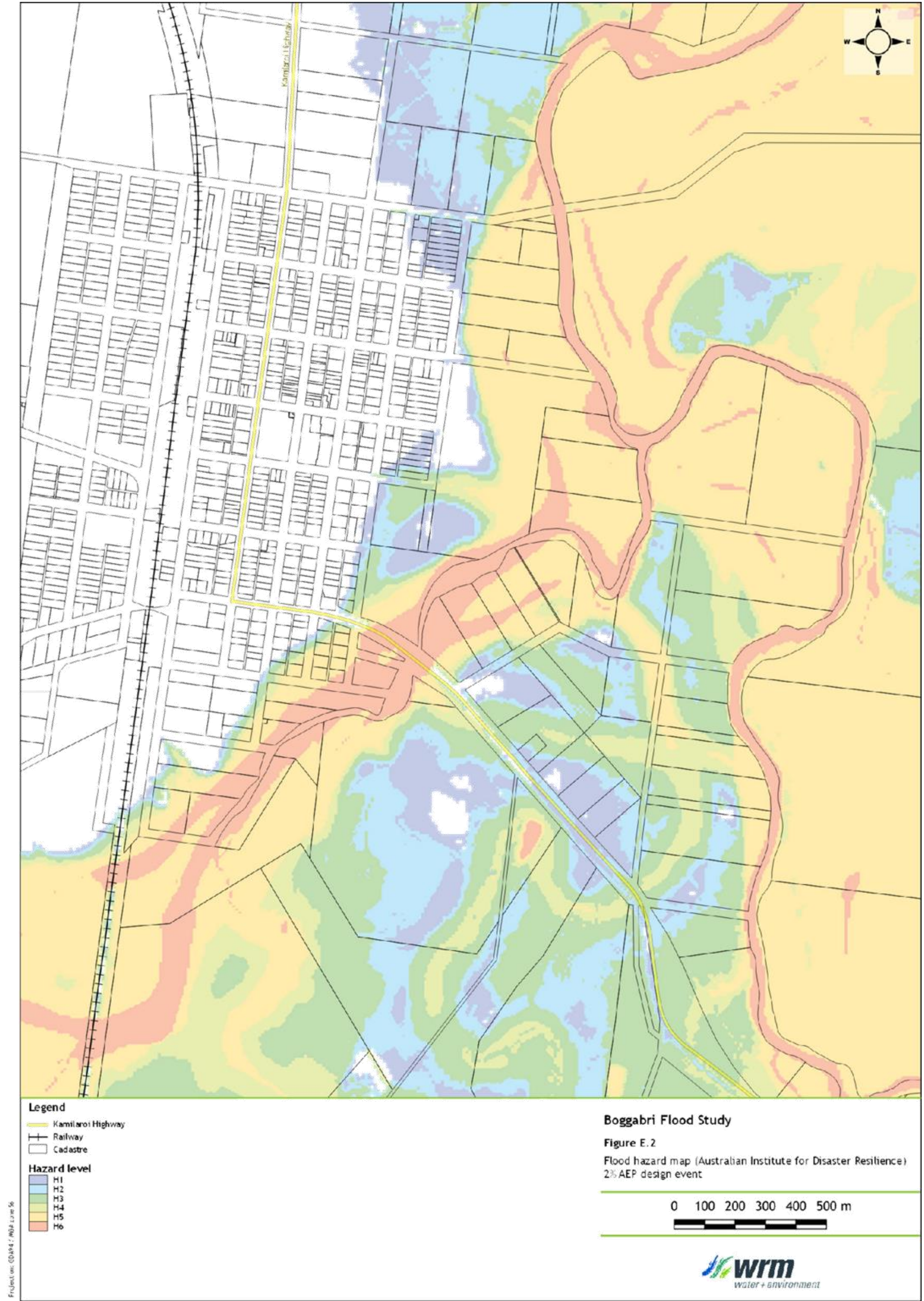


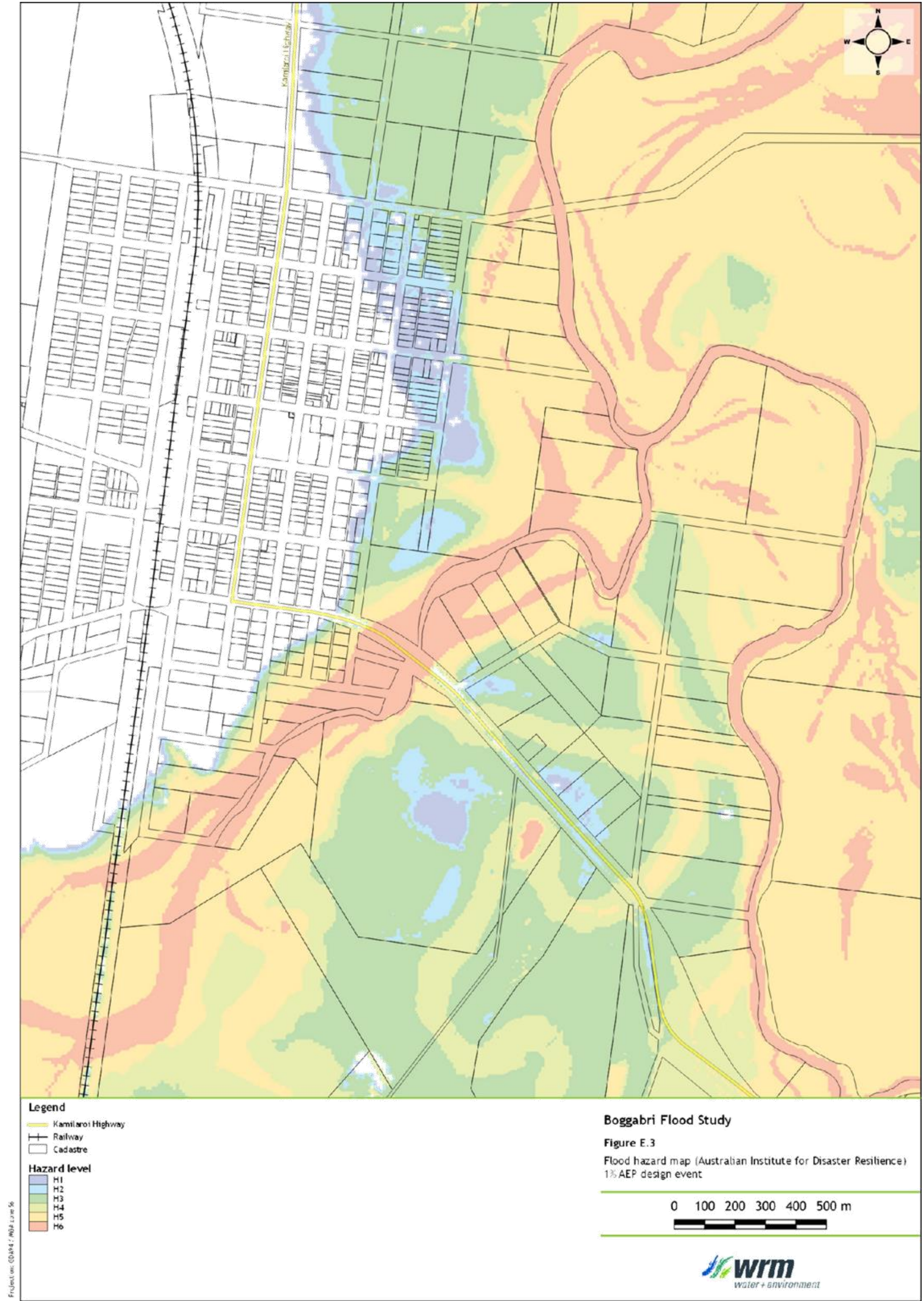


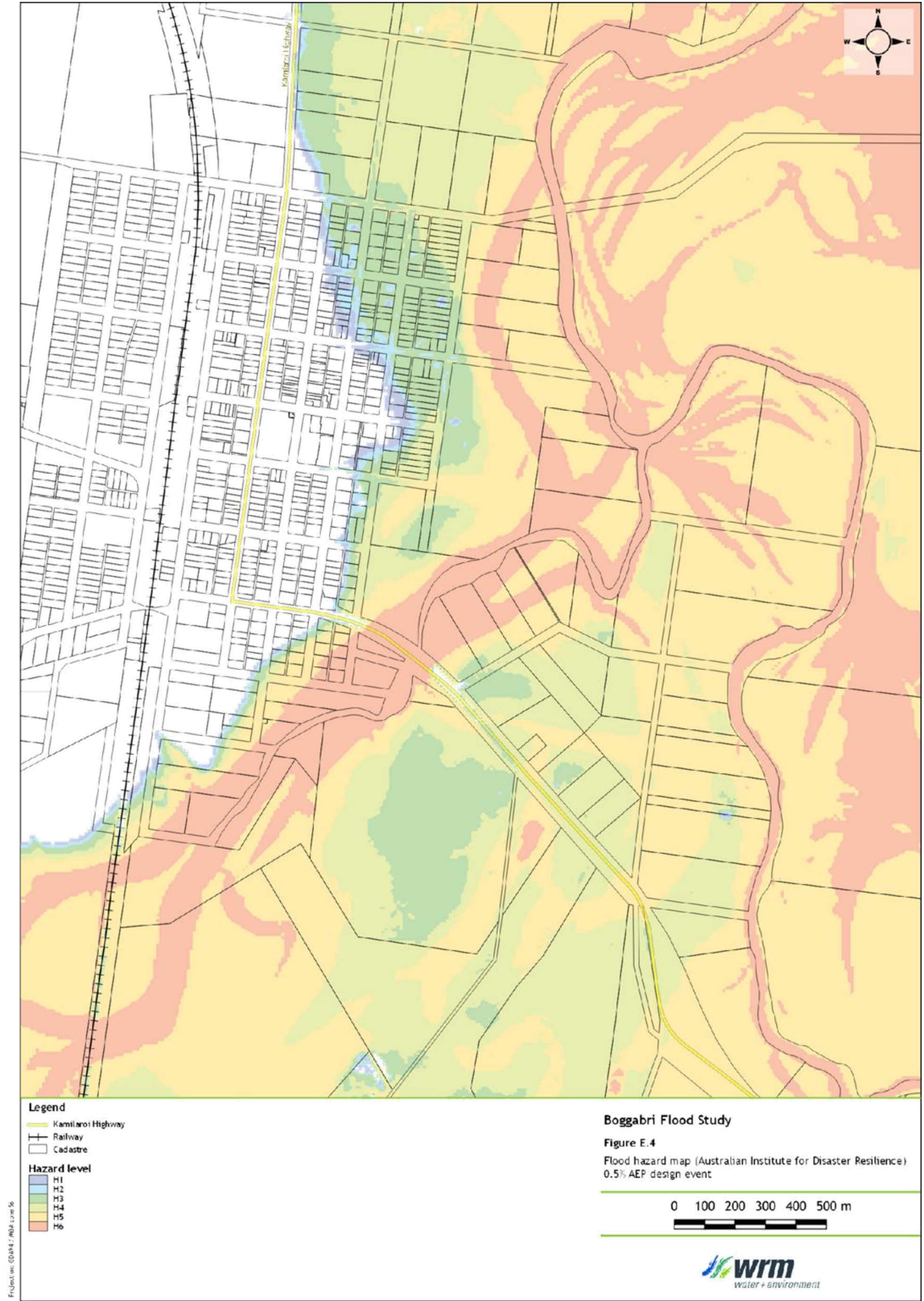
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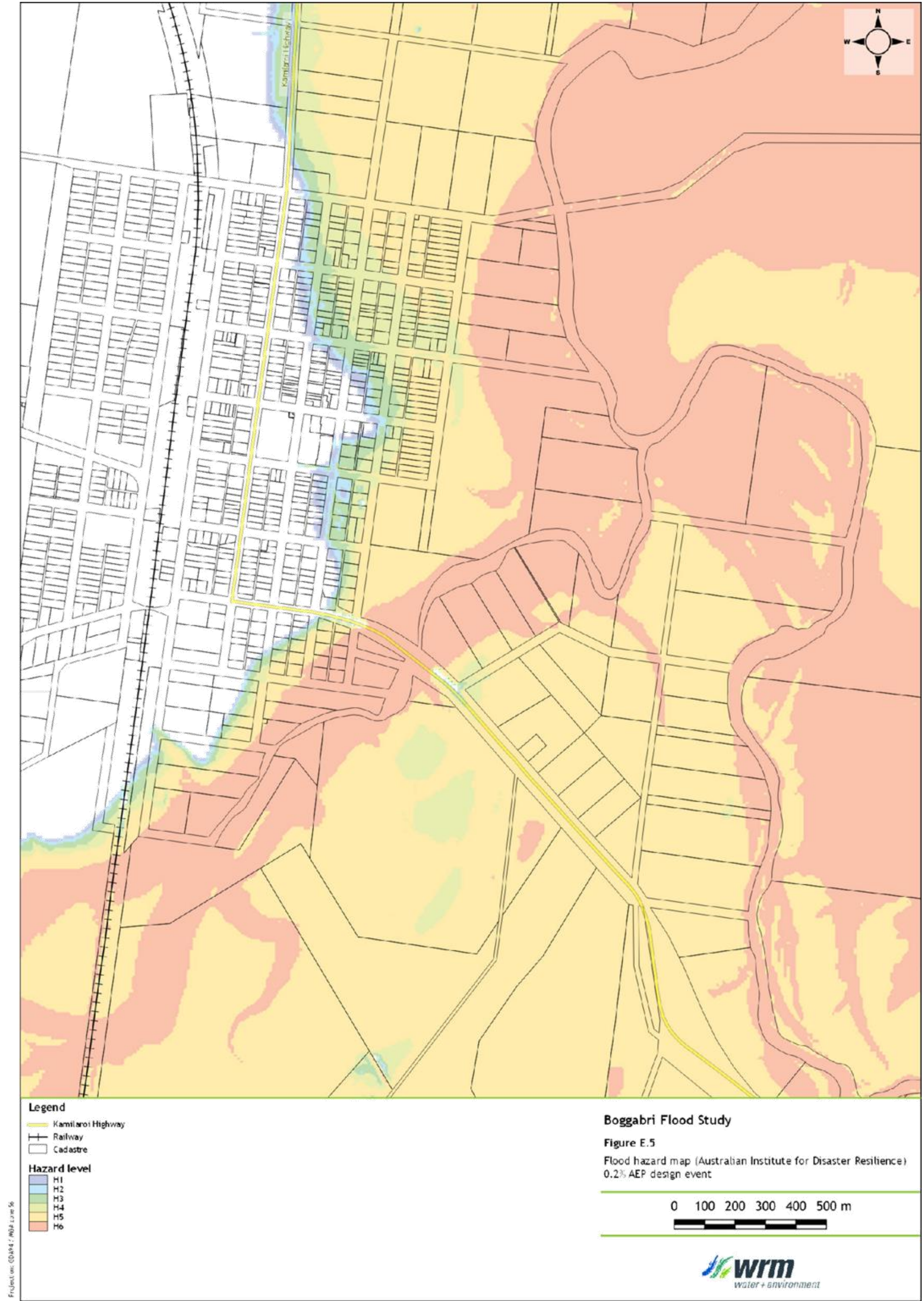
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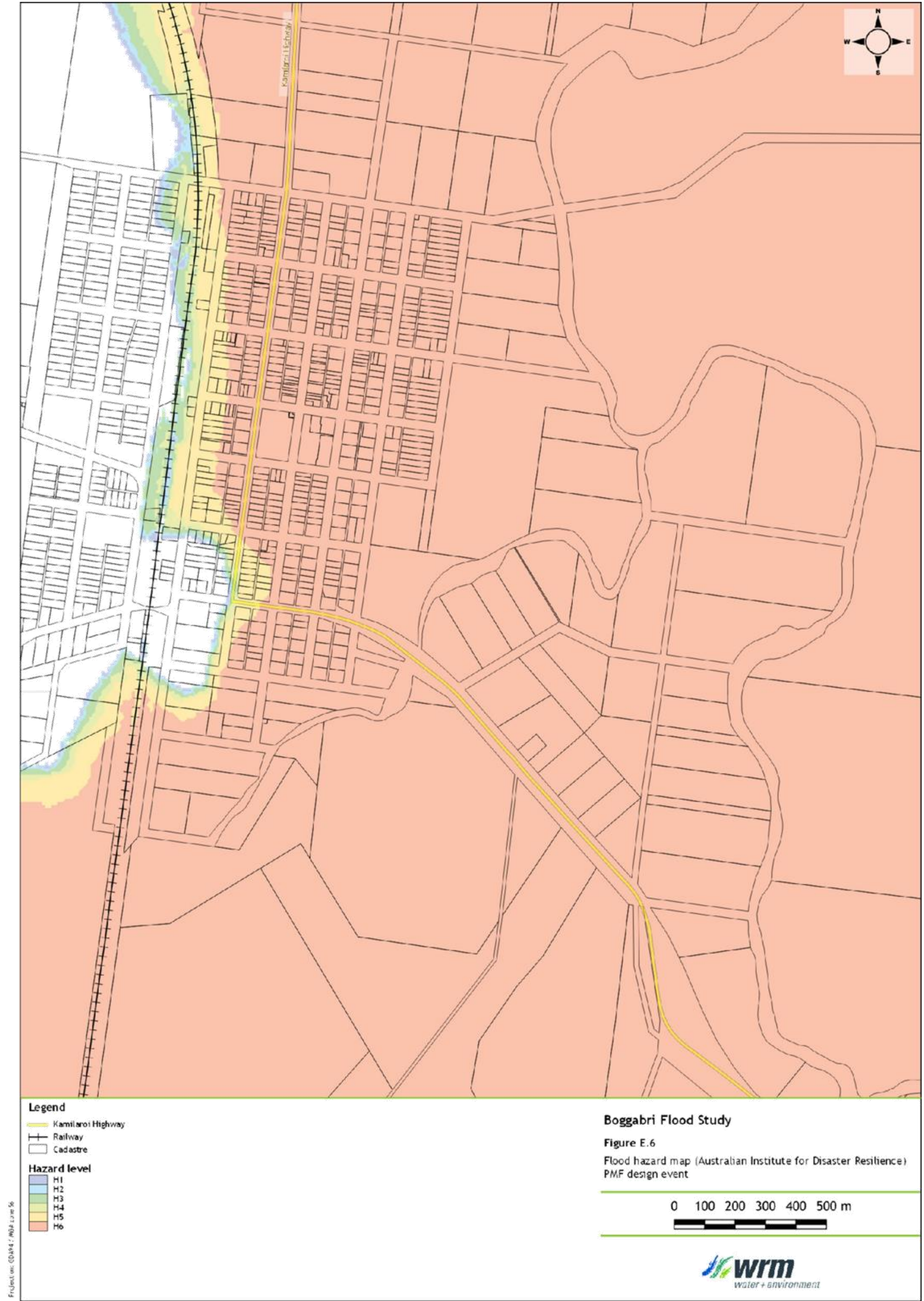












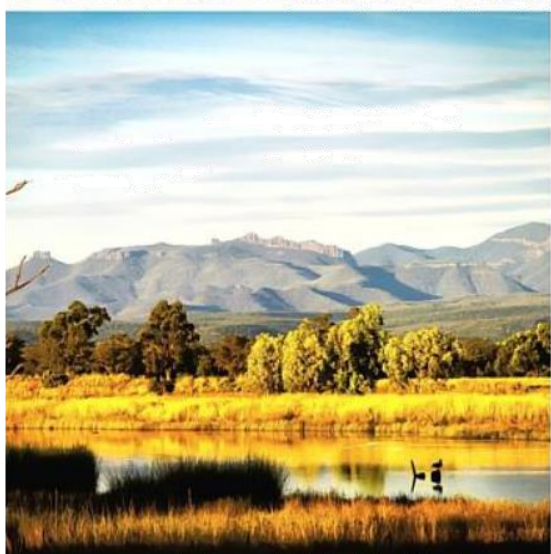
Service Plan

QUARTERLY REPORT



As at **December 2020**





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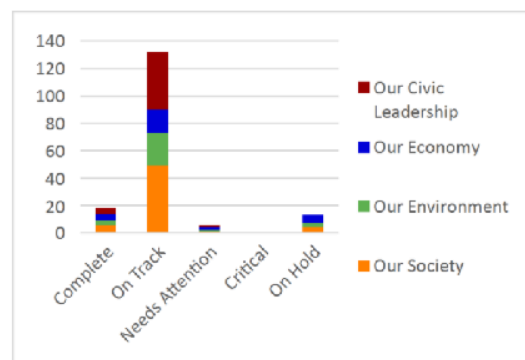
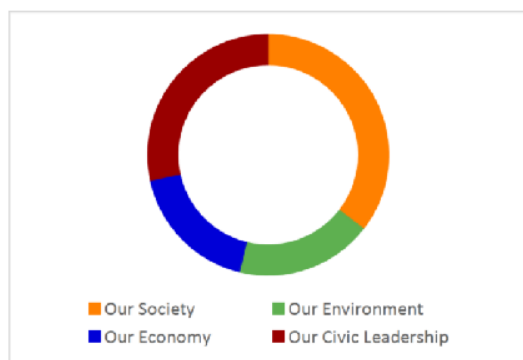
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Executive Summary

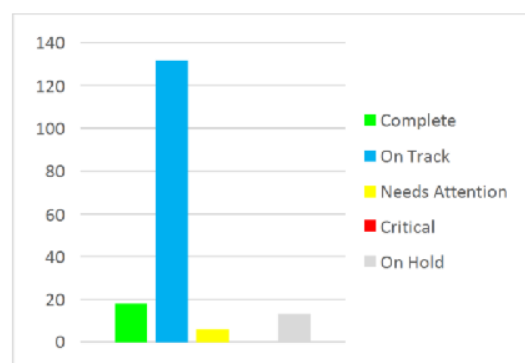
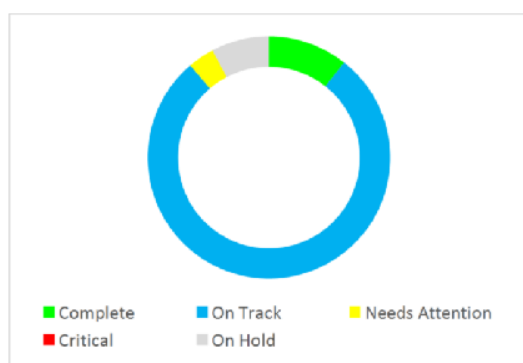
Council's Quarterly Service Report provides the community with an update on Council's progress in achieving its strategic objectives through specific actions, key performance measures and capital works programs. This allows the community to track each service in regards to what it is providing, at what cost and where works are occurring throughout the year.

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	6	49	1	0	4	60
Our Environment	3	24	1	0	3	31
Our Economy	5	17	2	0	6	30
Our Civic Leadership	4	42	2	0	0	48
	18	132	6	0	13	169



Progress by Action - December 2020



Strategic Management

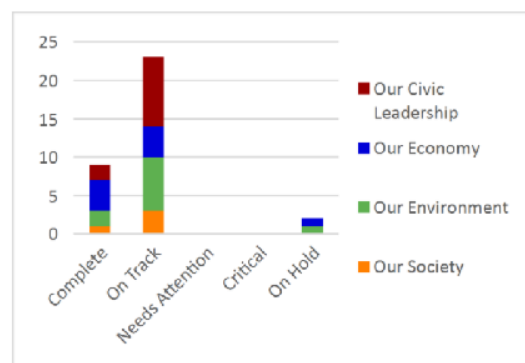
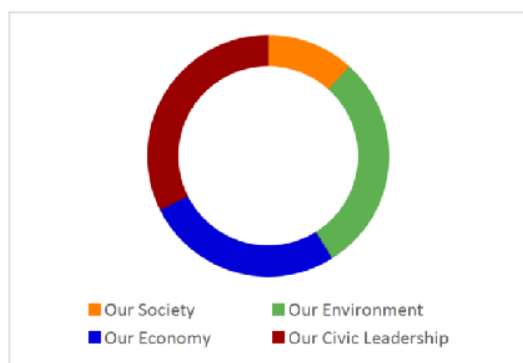
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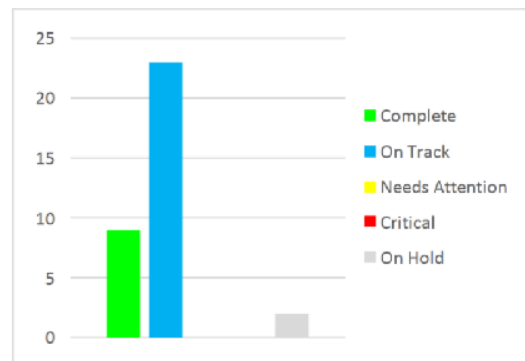
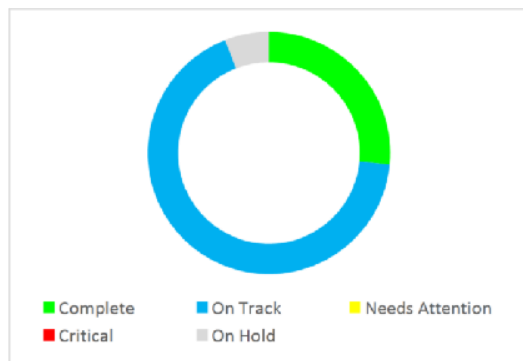
Service Plan Quarterly Report **December 2020**

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	1	3	0	0	0	4
Our Environment	2	7	0	0	1	10
Our Economy	4	4	0	0	1	9
Our Civic Leadership	2	9	0	0	0	11
	9	23	0	0	2	34



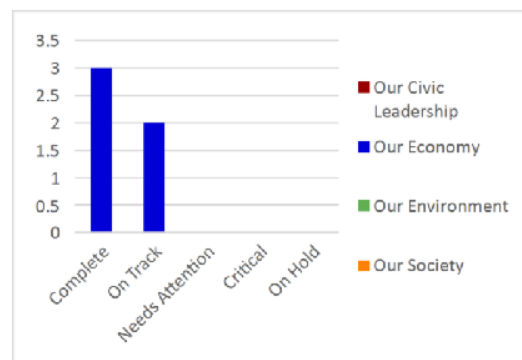
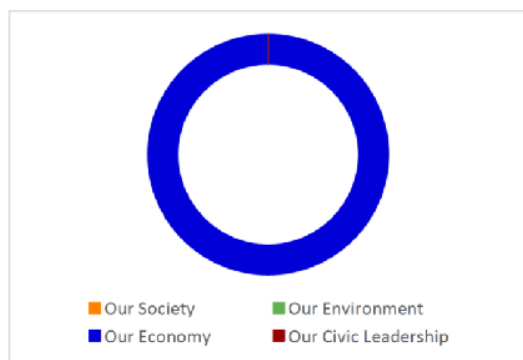
Progress by Action - December 2020



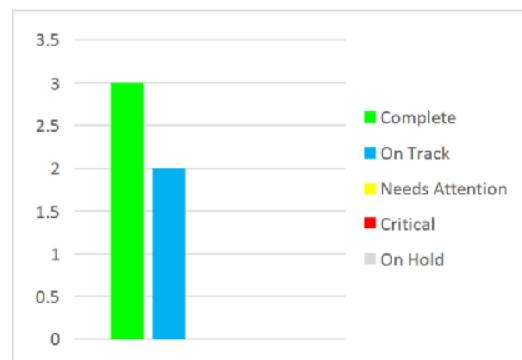
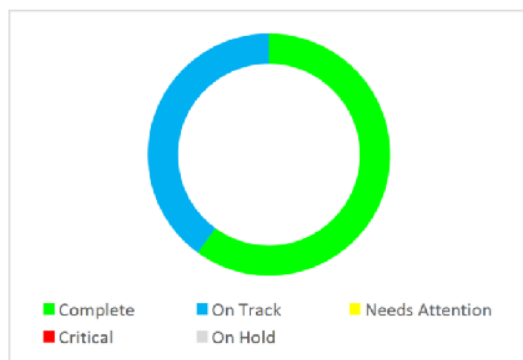
Economic Development Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	0	0	0	0	0
Our Economy	3	2	0	0	0	5
Our Civic Leadership	0	0	0	0	0	0
	3	2	0	0	0	5



Progress by Action - December 2020



Actions	Target	Status	Progress	%
3.2.1.3 - Hold discussions with national logistics companies regarding Narrabri Shire's proposed Industrial and Logistics Hub.	30/06/2021	Complete	Recommended for removal from 2020/2021 Operational Plan; action now redundant with announcement of Narrabri SAP.	50 %
3.2.1.4 - Lobby State & Commonwealth Governments for infrastructure development funding to establish a regional intermodal facility.	30/06/2021	Complete	Council has received a total of \$24.6 million in funding for the Northern NSW Inland Port (N2IP). In the amounts of: - \$16.8 million from the NSW Government; and - \$7.8 million from the Federal Government.	100 %
3.2.2.4 - Partner with industry and Government to facilitate development of a suitable intermodal facility.	30/06/2021	On Track	Received \$16.8 million from the NSW State Governments Growing Local Economies fund for initial infrastructure works at the Northern NSW Inland Port (N2IP) site. The Commonwealth Government, as part of its Budget 2020/2021, announced \$7.8 million in funding for N2IP; for the construction of a 1,800 metre rail siding and slip road. On an ongoing basis working with the Commonwealth Governments Department of Infrastructure, Transport, Cities and Regional Development consultant, EY, on the N2IP IIP project, which has now progressed to the Feasibility study stage.	50 %
3.3.1.1 - Attract and encourage all new investment to Narrabri Shire by providing individual businesses with the required resources to make an informed commercial decision to invest in the Narrabri Shire.	30/06/2021	Complete	Meeting with, taking enquiries from and providing information to a range of businesses in the commercial, industrial and hospitality sectors. Assisted businesses further along with their investment by steering them through Council steps and arranging pre-development application meetings. Recommended for removal from 2020/2021 Operational Plan; to enable focus on priority projects such as the Narrabri SAP.	33 %

Actions	Target	Status	Progress	%
3.3.2.2 - In conjunction with State and Commonwealth Governments promote and facilitate business networking events.	30/06/2021	On Track	Organised and participated in a COVID-19 safe Connecting Business evening where approximately 80 local businesses attended. Businesses were able to connect with each other, listen to speakers as a part of small business month. However, due to the ongoing uncertainty associated with hosting events and the Covid-19 requirements that need to be abided by Council will continue to review opportunities for hosting networking events.	50 %

Economic Development Services – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Maintain or increase Gross Regional Product amount after the construction phase of local resource companies and throughout drought conditions.	> \$1,250,000,000	\$1,823,000,000
Workforce participation rate of LGA is 5% higher than NSW average participation rate	> 66 %	4 %

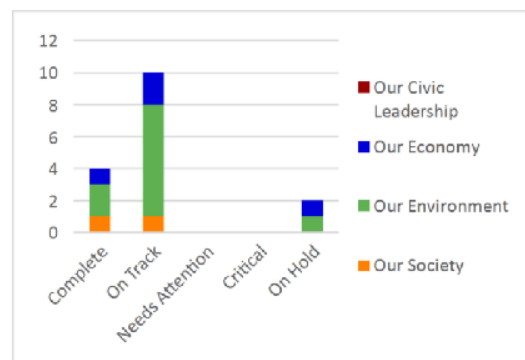
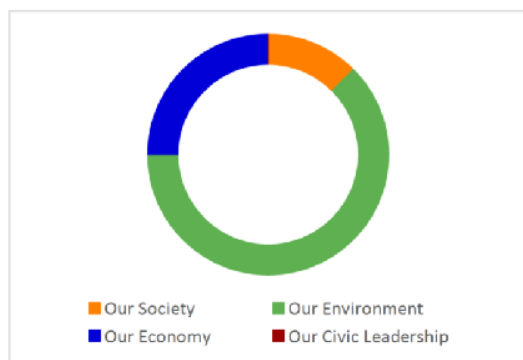
Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
The number of local businesses is maintained or increased.	> 1,760	1,760

Workload Measure	2020/21 Estimated	YTD
Assist organisations by engaging with a combination of prospective and existing business people looking to expand operations in Narrabri Shire.	> 50	28
Promote and market Narrabri Shire to prospective businesses.	> 24	19

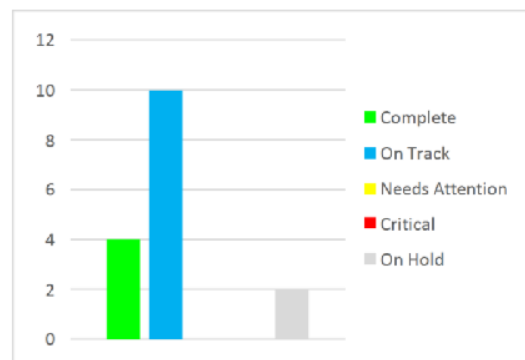
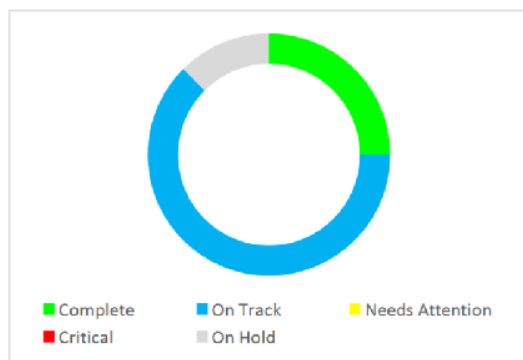
Planning and Environment Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	1	1	0	0	0	2
Our Environment	2	7	0	0	1	10
Our Economy	1	2	0	0	1	4
Our Civic Leadership	0	0	0	0	0	0
	4	10	0	0	2	16



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.2.1.3 - Engage with business owners to ensure shop fronts are well maintained.	30/06/2021	Complete	Recommended for removal from 2020/2021 Operational Plan; to enable focus on priority planning areas.	0 %
1.3.4.24 - Investigate a premiere precinct for gun clubs within the Shire.	30/06/2021	On Track	Council Endorsed planning proposal at September 2020 meeting to go to Planning NSW for Gateway approval.	0 %
2.1.1.2 - Complete an Aboriginal Heritage Study to identify sites for inclusion in the Narrabri LEP.	30/06/2021	Complete	Aboriginal Heritage Study was adopted at December Council meeting and available on website. Completed.	100 %
2.1.2.2 - Undertake comprehensive review of the LEP 2012.	30/06/2021	On Hold	Watching brief being maintained at present. With the announcement of the Narrabri SAP, it is appropriate that the comprehensive of an LEP review be considered in parallel to the SAP investigation to enable scoping of any LEP review to take place. It is envisaged that SAP outcomes will likely recommend necessary changes to Council's LEP in relation to zoning, density, minimum area, and other controls. It should be noted that an LEP review will take at least 18 months to complete.	50 %
2.1.4.8 - Support animal owners through educational materials to maintain animal behaviour that is consistent with the expectations of the community.	30/06/2021	On Track	The Environment and Monitoring team are actively promoting a cyclic rotation of public educational material from OLG and RSPCA on Council's Facebook page and on our website. Our officers are committed to community engagement and work closely with the customer service team to ensure that accurate information reaches the right destination. We have also been actively promoting educational material and responsibilities through local veterinary surgeries. On track.	25 %

Actions	Target	Status	Progress	%
2.1.4.9 - Seek funding to support microchipping, desexing and responsible companion animal program campaigns.	30/06/2021	On Track	A current application for funding for microchipping has been lodged and we are awaiting A current application for funding for microchipping has been lodged and we are awaiting notification on if we have been successful. The Compliance staff are liaising with local veterinary to facilitate a free micro chipping day later in the financial year. On Track.	25 %
2.2.3.3 - Request state regulatory authorities present annually to Council.	30/06/2021	On Track	Council have confirmed a meeting and presentation to planning staff and interested members from the NSW Planning department on the 23/2/21 at 11.30 at the multipurpose room at the swimming pool. On Track.	0 %
2.2.4.1 - Regionally and state significant developments are assessed and reviewed against the principles of ecologically sustainable development and the precautionary principle.	30/06/2021	On Track	Regional and state significant development applications will be reviewed, and submissions prepared in response, as and when these applications are lodged. One submission last quarter for mine extension was made.	0 %
2.2.4.2 - Provide training to Council managers to improve understanding of applying the principles of ecologically sustainable development (ESD).	30/06/2021	Complete	Recommended for removal from 2020/2021 Operational Plan; to enable focus on priority planning areas.	0 %
2.4.1.1 - Lobby for installation of an independent regional dust monitoring system, with a specific site being located in or in close proximity to Boggabri.	30/06/2021	On Hold	The monitoring of will continue and issues will be put to the Namoi Regional Air Quality Advisory Committee, when opportunity arises the committee can lobby and promote the need for an independent dust monitoring system. Member on Committee. Issues put to Committee.	0 %

Actions	Target	Status	Progress	%
2.4.1.2 - Work cooperatively with mining companies and environmental groups to monitor impacts of dust.	30/06/2021	On Hold	There is no change to the previous update. Watching brief is being maintained. Council is continuing to participate in the revised Namoi Regional Air Quality Advisory Committee; as has been the case since its inception in 2017. The Committee provides the avenue for constructive engagement between Council, mining companies, stakeholder groups and the community to discuss and report on matters relating to air quality management in the region. It is noted that statistics provided to the Committee in recent years have indicated positive air quality readings.	0 %
2.4.2.1 - All submissions on extractive industry state significant developments will request no final void as a condition of consent.	30/06/2021	On Track	There is no change to the previous update. Watching brief is being maintained. All submission(s) will request no final void. On track	0 %
2.4.2.2 - All submissions on extractive industry state significant developments will request mine plans as a condition of consent that minimise active mining footprints.	30/06/2021	On Hold	There is no change to the previous update. All future submissions on state significant extractive industry will request the consent be conditioned to require mine plans that minimise the active mining footprint. One submission was made last quarter for a min extension. Currently on hold.	0 %
2.4.4.2 - Participate in public exhibition processes for major state significant developments to protect the community interests.	30/06/2021	On Track	There is no change to the previous update. Relevant staff will participate in the public exhibition of any state significant development applications to ensure review of information and preparation of submissions and to make comment and raise issues, to ensure that the community interest is promoted and protected. Submissions in relation to major state significant development will be discussed and reported to Council. On track.	0 %

Actions	Target	Status	Progress	%
2.4.4.3 - Lobby the NSW Government for monitoring actions to be performed by the regulators at the proponents cost.	30/06/2021	On Track	There is no change to the previous update. All submissions on future state significant extractive industry development will include the request that monitoring actions be performed by the state regulators at the proponent's cost. A request that air quality monitoring be undertaken by the regulator at the proponent's cost will also be referred to the re-established Namoi Regional Air Quality Advisory Committee. On track.	0 %
3.4.1.1 - Maintain available developed land supplies in Boggabri, Wee Waa and Narrabri at numbers greater than the total of new dwellings constructed over the preceding three (3) years.	30/06/2021	On Track	In the last quarter one house was approved in Boggabri. It is considered too early in the financial year to draw any conclusions from these numbers. In terms of land supplies for housing, scoping has recently been undertaken for preparation of a Local Housing Strategy. This strategy will assess current housing and residential land supplies within the region, examine future likely demand and recommend locations for future expansion and/or rezoning. The outcome of the strategy, due by June 2021, will inform this measure and Council's ability to achieve the action.	10 %
3.4.3.4 - Develop Housing Strategy for Narrabri Shire.	30/06/2021	On Hold	Watching brief being maintained. An initial brief for the draft strategy has been completed and discussions have been held with the Department of Planning, Industry and Environment to ascertain the department's direction and requirements. With the announcement of the Narrabri SAP the strategy will need to integrate. It is envisaged that during the next quarter Council will be in a position to understand the scope of the SAP and where the Housing Strategy will integrate.	10 %
3.4.4.1 - Carryout biennial inspections of urban areas to identify properties requiring repair or demolition.	30/06/2021	Complete	Recommended for removal from 2020/2021 Operational Plan; biennial inspections carried out last financial year, this action should be added to the 2021/2022 Operational Plan.	0 %

Actions	Target	Status	Progress	%
3.4.4.2 - Implement an orders program to require action to repair or demolish derelict buildings.	30/06/2021	On Track	Consistent with Council's Compliance Policy, orders are issued on a reactive basis in response to a complaint or as a result of a site inspection. Recruitment is currently underway to fill an existing vacant building surveyor position. Subject to a successful outcome it is proposed to consider the commencement of a proactive program in the fourth quarter.	50 %

Planning and Environment Services – Key Performance Measures

<i>Efficiency Measure 'Doing things right'</i>	2020/21 Estimated	YTD
Number of preventive action, clean up notices, warning letters issued to assets that do not comply with the law.	> 10	0
Average employee / contractor cost per application determined	< \$1,460	\$0
Average processing times for applications from receipt of all information less than 30 days for Development applications	< 30 Days	32 Days
Average processing times for applications from receipt of all information less than 10 days for construction certificates and complying development certificates	< 10 Days	46 Days
Average processing times for applications from receipt of all information less than 7 days for property certificates	< 7 Days	5 Days
Percentage complaints investigation commenced within three (3) working days	> 98 %	0 %
Number of Dangerous Dog Declarations issued	> 3	0
Average time to respond to companion animal complaints	< 7 Days	2 Days
Average time to respond to overgrown complaints	< 7 Days	6 Days
Average time to respond to development complaints	< 7 Days	3 Days

<i>Effectiveness Measure 'Doing the right things'</i>	2020/21 Estimated	YTD
Percentage of food premises found complying with standards	> 90 %	49 %
Greater than 80% positive rating from quarterly survey of at least 20 customers	> 80 %	40 %
Number of outstanding development, building and public health orders	< 0	2
Audit of 10 processed development files indicates full compliance with established processes and legislation.	> 100 %	95 %
Number of valid written complaints received less than 5	< 5	0
Number of micro-chipped animals	> 100	16

Workload Measure	2020/21 Estimated	YTD
Complete food premises inspection program	> 95 %	0 %
Number of applications determined.	> 200	112
Total value of applications determined	> \$15,000,000	\$12,100,753
Number of investigations relating to developmental compliance	> 10	4
Number of swimming pool compliance certificates issued	50	3
Number of 149 Certificates issued	> 450	374
Number of companion animals impounded (incoming animals)	< 190	172
Total number of companion animals registered in year	> 190	9
Number of companion animals rehomed (includes sold and released to organisations for rehoming)	> 70	52
Number of companion animals released to owner	> 90	65
Number of companion animals euthanized	< 135	54
Number of feral animals euthanized	> 50	35
Number of building investigations relating to building compliance	> 10	2

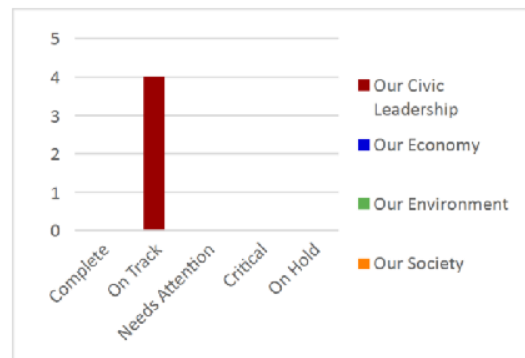
Planning and Environment Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Regulatory - Narrabri Animal Shelter Facility	60,000	22,219	60,000	20 %	The funding that has been allocated to this project has had \$22,387.09 spent to date on maintenance issues associated with plumbing, slab drainage and dividing structures in the holding areas to ensure the pound functions well and enables the staff to meet obligations in the care and wellbeing of the animals. On track.
Total:	60,000	22,219	60,000		

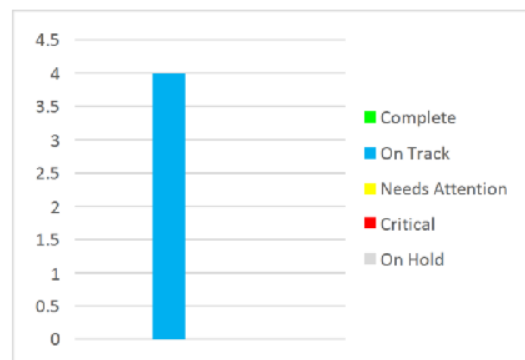
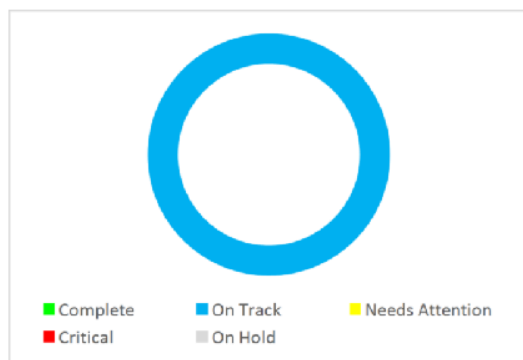
Strategic Management and Governance - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	0	0	0	0	0
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	4	0	0	0	4
	0	4	0	0	0	4



Progress by Action - December 2020

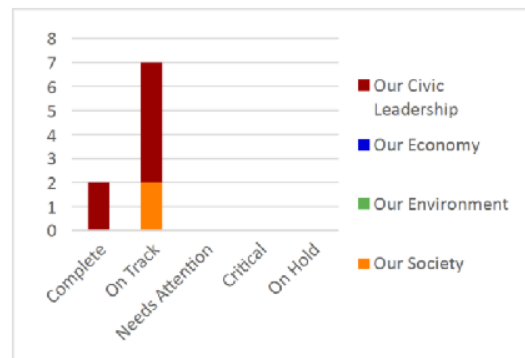
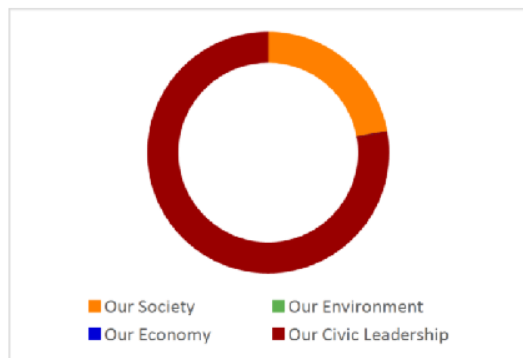


Actions	Target	Status	Progress	%
4.1.4.3 - Carry out Civic ceremonies and functions to celebrate and acknowledge achievements of the community.	30/06/2021	On Track	COVID-19 continues to make holding such functions logistically difficult.	50 %
4.2.2.2 - Expanded services are only implemented after a business case demonstrates long term viability.	30/06/2021	On Track	No new expanded services have been considered.	50 %
4.4.2.7 - Review internal, external and Section 355 Committees to ensure they are relevant, effective and efficient in making decisions.	30/09/2020	On Track	Watching brief maintained. Council currently has one Section 355 Committee, being operated for the Gwabegar Hall. Council reappointed delegates and representatives to internal and external committees in September 2020.	50 %
4.4.2.9 - Maintain and implement a Councillor professional development program.	30/06/2021	On Track	Managing Media for Councillors currently scheduled for end of January 2021. Councillors are encouraged to submit suggestions for professional development.	25 %

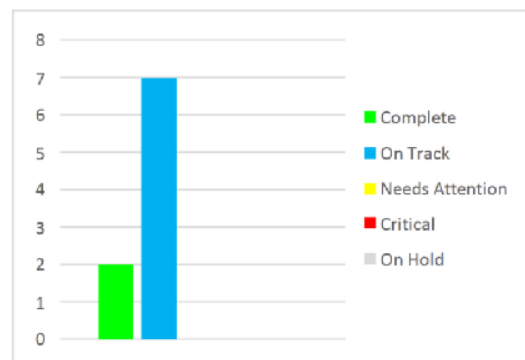
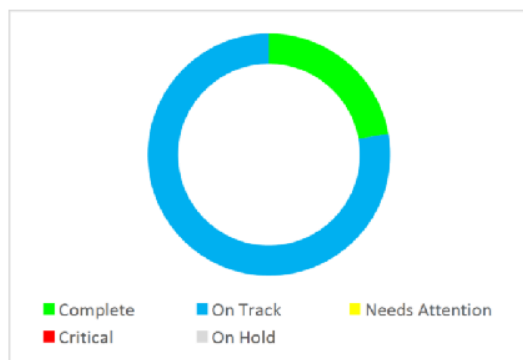
Workforce Management - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	2	0	0	0	2
Our Environment	0	0	0	0	0	0
Our Economy	0	0	0	0	0	0
Our Civic Leadership	2	5	0	0	0	7
	2	7	0	0	0	9



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.1.4.1 - Investigate and develop pathways to engage, train and retain young people in the workforce.	30/06/2021	On Track	A total of 4 school based trainees will commence with Council in February 2021. Additionally, Council has recruited an Apprentice Mechanic and Trainee Design Engineer. Corporate Planning & Workforce are working with service managers to identify further opportunities.	50 %
1.3.4.11 - Council to encourage and support people with a disability to apply for positions at Council.	30/06/2021	On Track	The Executive Manager Corporate Planning and Workforce has met with the Access & Inclusion Advisory Committee to identify and promote opportunities to employ persons with disabilities.	50 %
4.3.3.16 - Finalise the implementation of the Council's WHS management system, Vault and ensure roll-out to effective operational use.	30/06/2021	Complete	Completed in 2019/2020. Recommended for removal from 2020/2021 Operational Plan; action closed out.	100 %
4.3.3.21 - Investigate introduction of Workplace Agreements.	30/06/2021	Complete	Corporate Planning & Workforce staff have conducted a review of Workplace Agreements in place by other Council's in NSW and do not believe there is any benefit to Narrabri Shire for the introduction of an agreement given compliance and other costs.	100 %
4.4.2.12 - Review Workforce Management Plan annually.	30/06/2021	On Track	Corporate Planning & Workforce staff working with various managers and coordinators to identify future needs and undertake gap skill analysis.	50 %
4.4.2.13 - Develop an overarching Council Business Continuity Plan.	30/06/2021	On Track	Council Executive and Managers have completed workshops with Council's consultant on the development of the Business Continuity Plan. Council's consultant is now working with Managers to finalise the document.	50 %
4.4.2.17 - Investigate the viability of implementing LGNSW's Local Government Capability Framework across workforce management and development activities	30/06/2021	On Track	The benefits of the 'Capability Framework' developed by LGNSW have been reviewed by Corporate Planning & Workforce. Implementation of the entire framework is not viable at this time. However, some key concepts will be implemented during this financial year.	50 %

Actions	Target	Status	Progress	%
4.4.2.18 - Review three risk areas as per Council's strategic internal audit plan.	30/06/2021	On Track	Corporate Planning & Workforce staff have engaged internal auditors and specialists to undertake two of the three required audits. Audits are to commence in third quarter 2021.	50 %
4.4.2.19 - Investigate and implement the OLG Risk Management and Internal Audit Framework for Local Councils in NSW.	30/06/2021	On Track	Corporate Planning & Workforce staff are working with the Audit Risk & Improvement Committee to review and implement the OLG Risk Management and Internal Audit Framework. The new requirements take effect from March 2021.	50 %

Workforce Management – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Average length in Recruitment Process	< 60 Days	76 Days
Staff Turnover	< 12 %	7 %
Employee Initiated Staff Turnover	< 10 %	7 %
Employer Initiated Staff Turnover	< 2 %	1 %

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Reduction in Council's cumulative previous three (3) years total Workers Compensation Claims Cost	< \$230,000	\$347,077
Number of Workers Compensation Claims	< 15	8
Number of Lost Time Injuries (Workers Compensation Premium Impacting)	< 10	3
Number of Incidents reported (First Aid/Medical Treatment/Lost Time Event) - Injury	0	7
Number of Incidents reported (Low/Mod/High/Critical) – Plant & Infrastructure	0	20
Risk Management Action Plan Completed	100 %	75 %
StateCover Action Plan Completed	> 25 %	0 %
Audit results for Workplace Health and Safety	> 75 %	59 %

Workload Measure	2020/21 Estimated	YTD
Number of Open Workers Compensation Claims (Rolling Average)	< 15	23
Number of positions recruited for	60	32
Number of Apprenticeships/Traineeships	> 7	1
Number of Grievances processed	0	0
Number of Performance Management cases	0	3
Number of Workplace Inspections Completed	> 40	0
Number of Safety Interactions completed	> 40	0
Number of group training events coordinated	> 4	5
Average number of pays prepared fortnightly (average over last 26 pays)	180	213

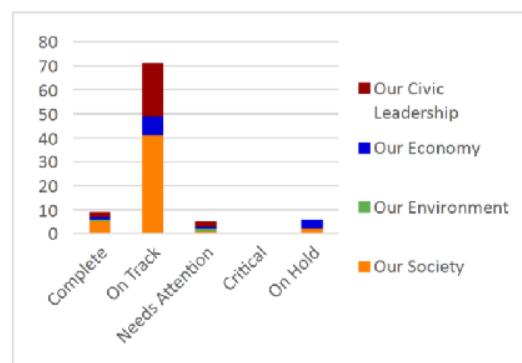
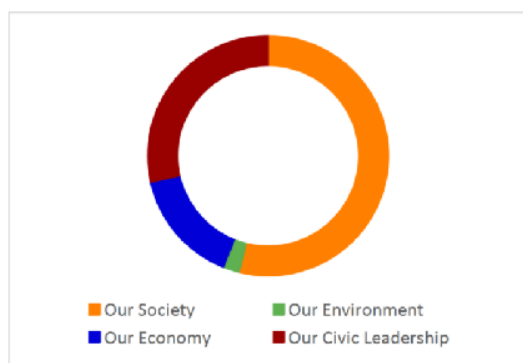
Corporate and Community Services DIRECTORATE



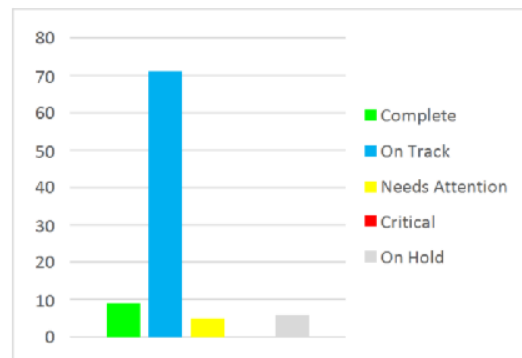
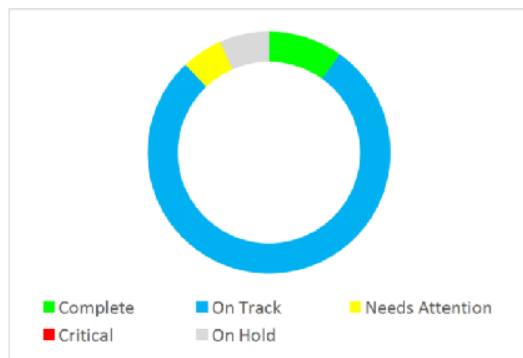
Service Plan Quarterly Report **December 2020**

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	5	41	1	0	2	49
Our Environment	1	0	1	0	0	2
Our Economy	1	8	1	0	4	14
Our Civic Leadership	2	22	2	0	0	26
	9	71	5	0	6	91



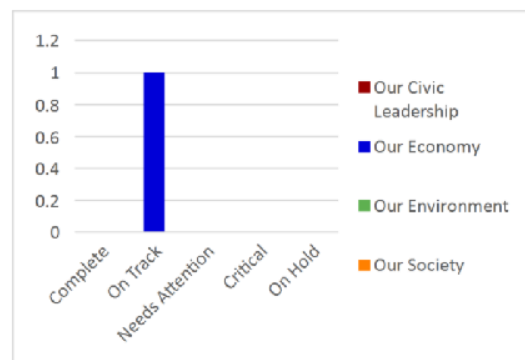
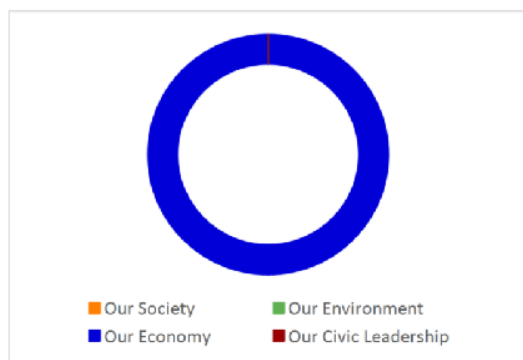
Progress by Action - December 2020



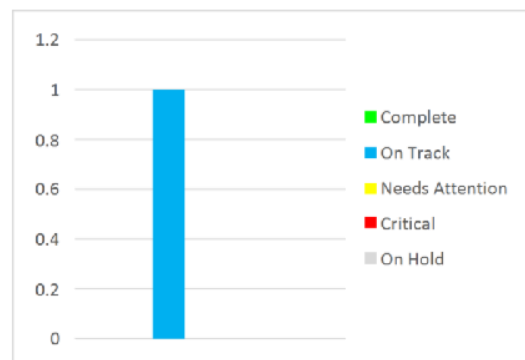
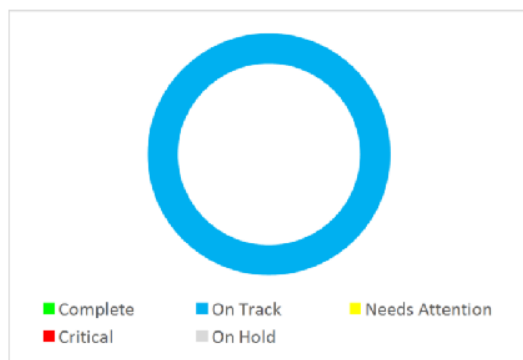
Airport Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	0	0	0	0	0
Our Economy	0	1	0	0	0	1
Our Civic Leadership	0	0	0	0	0	0
	0	1	0	0	0	1



Progress by Action - December 2020



Actions	Target	Status	Progress	%
3.1.4.3 - Conduct review of Airport Master Plan.	30/06/2021	On Track	Watching Brief maintained	25 %

Airport Services – Key Performance Measures

<i>Efficiency Measure</i> <i>'Doing things right'</i>	2020/21 Estimated	YTD
Total Operating Expenses per RPT Passenger	< \$42	\$210

<i>Effectiveness Measure</i> <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Percentage of satisfactory CASA and ATI inspections	> 100 %	75 %
Number of written complaints per annum	< 0	0
Number of reports of feral animals affecting airside operations per annum	< 0	3

<i>Workload Measure</i>	2020/21 Estimated	YTD
Number of airport usages per annum	> 1,900	756
Number of RPT aircraft movements per annum	> 960	178
Number of RPT passengers per annum	> 9,000	887

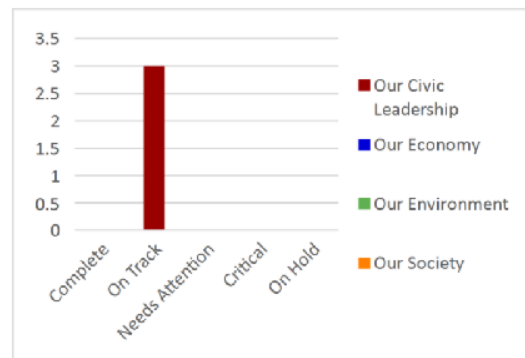
Airport Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Airport - Terminal Improvement	20,000	0	0	0 %	Ongoing improvements to existing terminal.
Airport Capex - New Terminal Building Design	40,000	0	60,000	5 %	Investigations regarding new Manual Of Standards and quotes to be obtained.
Airport Capex - Apron Extension RFS Building - GA, Emergency	598,784	12,421	598,784	5 %	Currently being tendered. Construction due by end of April 2021
Total:	658,784	12,421	658,784		

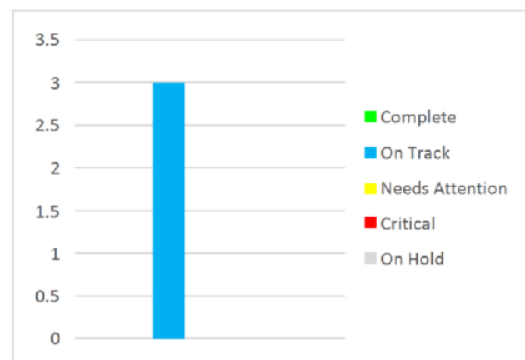
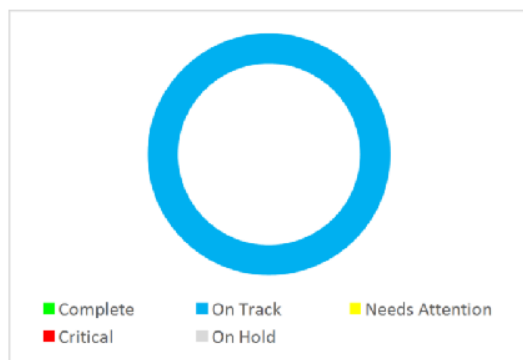
Community Relations - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	0	0	0	0	0
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	3	0	0	0	3
	0	3	0	0	0	3



Progress by Action - December 2020



Actions	Target	Status	Progress	%
4.1.1.2 - Implement new Customer Service Procedures.	30/06/2021	On Track	Customer Service procedures are continually evolving as processes and procedures are refined as efficiencies are developed through the CRM module in TechnologyOne. Further collaboration with other departments is occurring and ideas are being discussed regarding improving customer service procedures across departments.	50 %
4.1.2.1 - Produce relevant "factsheets" on major Council projects and initiatives in a timely manner.	30/06/2021	On Track	Factsheets are being developed to keep the community informed of relevant Council projects, programs and initiatives. Recent examples include the Horsearm Creek Bridge renewal project, Spring Creek Bridge renewal project, Narrabri CBD project, Wee Waa and Boggabri STP projects.	50 %
4.4.2.15 - Ensure that delegations for Council officers are reviewed and updated.	30/06/2021	On Track	Delegations are being maintained by the Customer Relations Team. The Customer Relations team maintains the delegations register and electronic copies of position delegations. Delegations reviews are undertaken in November and May.	45 %

Community Relations – Key Performance Measures

Efficiency Measure <i>'Doing things right'</i>	2020/21 Estimated	YTD
Retrieval of files from depot within a 3 day period	< 3 Days	3 Days
Registration and tasking of daily correspondence to be completed by the end of each working day (% of days)	> 100 %	100 %

Effectiveness Measure <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Compliance with State Records for disposal of hard copy documents	> 100 %	75 %

Workload Measure	2020/21 Estimated	YTD
Number of Records Department correspondence	> 8,250	9,022
Percentage of CRM requests actioned by Customer Service Agents	> 30 %	49 %
Percentage of CRM Telephone Messages taken by Customer Service Agent	20 %	23 %
Percentage of CRM's taken by Customer Service Agent that were a CSR	50 %	28 %

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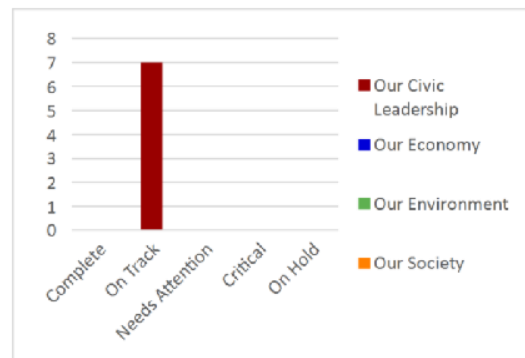
Depot Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Depots - Narrabri Store Office Construction	82,198	0	82,198	5 %	Director Infrastructure to determine requirements for staff under his control. Depot Management group will meet in New year to finalise.
Depots Capex - Wee Waa Security and Lighting	20,000	0	20,000	0 %	Defer to 2021/22, in-line with new Wee Waa Depot Construction.
Total:	102,198	0	102,198		

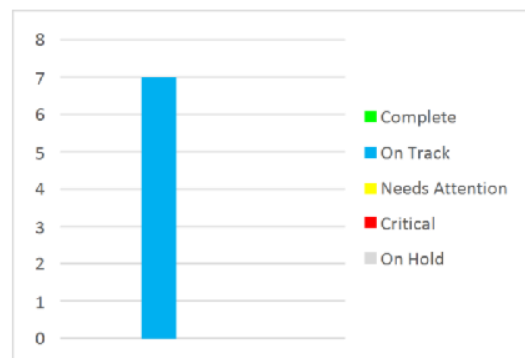
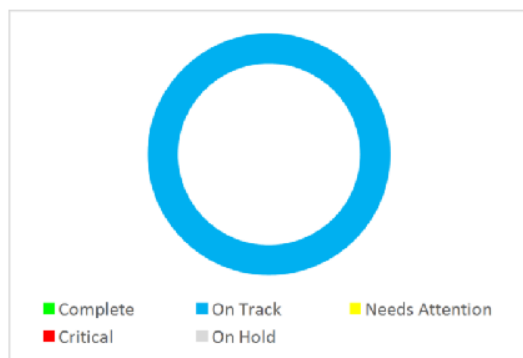
Financial Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	0	0	0	0	0
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	7	0	0	0	7
	0	7	0	0	0	7



Progress by Action - December 2020



Actions	Target	Status	Progress	%
4.2.3.4 - Continuously review the effectiveness and functionality of the Corporate Financial System to identify opportunities for higher utilisation.	30/06/2021	On Track	Staff are constantly adding functionality to the system which is making it more effective.	50 %
4.2.3.5 - Review procurement process to reflect best practice.	30/06/2021	On Track	Staff are constantly reviewing procurement processes to reflect best practice.	50 %
4.4.2.1 - Annually review Council's Rating Structure to ensure equity and fairness in rating distribution.	30/06/2021	On Track	The rating structure is annually reviewed during budget preparations for the following year.	0 %
4.4.2.10 - Review Long-Term Financial Plan annually.	30/06/2021	On Track	The Long-Term Financial Plan is reviewed / updated following quarterly budget reviews and the annual adoption of operational plans.	50 %
4.4.2.11 - Review Asset Management Strategy and Policy annually.	30/06/2021	On Track	Asset Management Strategy and Policy is annually reviewed during budget preparations for the following year.	0 %
4.4.2.14 - Review and monitor Council's financial risk profile across the organisation.	30/06/2021	On Track	Staff are constantly monitoring financial risk.	50 %
4.4.3.1 - Provide more plain English financial reporting through increased use of Council's online platforms.	30/06/2021	On Track	Staff are conscious of terminology used in reporting financial information in an effort to make it more understandable to readers.	50 %

Financial Services – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Rates outstanding (rates, annual charges, interest and extra charges outstanding)	< 9 %	14 %
Accounts receivable – average monthly percentage of accounts outstanding for more than 90 days	< 10 %	7 %
Accounts payable – average monthly percentage of invoices outstanding for more than 40 days	< 5 %	1 %

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Statutory Accounting and Reporting completed by due date	100 %	100 %
All taxation returns completed by due dates	100 %	43 %
Monthly investment portfolio performance meets the policy benchmarks	100 %	100 %
Number of days overdraft facility required	0 Days	0 Days
Rates and water accounts issued by due dates	100 %	100 %
Stocktake variances within 2% of total stock value	100 %	100 %

Workload Measure	2020/21 Estimated	YTD
Average number of water accounts issued per quarter (average over last 4 quarters)	> 4,000	4,114

Financial Services - Statistics

Workload Measure	2020/21 Estimated	YTD
Number of accounts payable transactions processed	16,000	4,114
Number of accounts receivable transactions processed	700	206
Number of stores transactions processed	5,000	1,720
Number of s603 certificates issued	360	113

Information Services – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Keep Internal Network Downtime to less than 5% during working hours	< 5 %	1 %
Keep Email Service downtime to 5% during working hours	< 5 %	1 %

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Increase backup internet connection speeds	> 50 Mb/s	163 Mb/s
Average response time on IT helpdesk emails	< 2 Hours	8 Hours

Workload Measure	2020/21 Estimated	YTD
Number of Office 365 licenses	150	450
Number of Virtual Servers	40	43
Number of Council's Desktop/Laptop Users	170	229

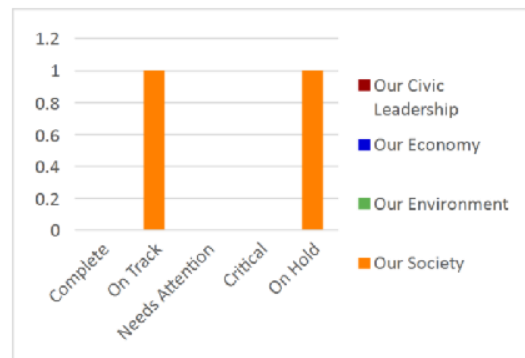
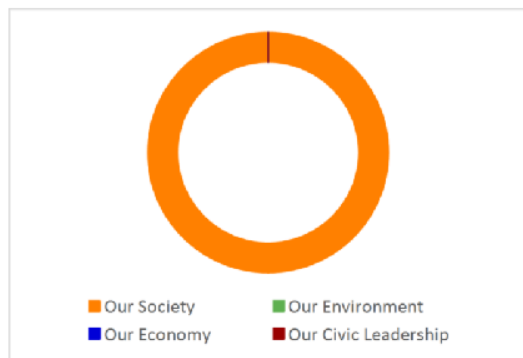
Information Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
IT Capex - Connect Depot with Fibre Optic	142,620	47,250	142,620	80 %	Conduit is ready.
IT Capex - Portable Comms Cabinets (Library/ Depot)	40,000	21,600	40,000	100 %	Project Completed.
IT Capex - Secure Comms Cabinets (Depot & Library)	0	0	0	100 %	Successfully secure IT equipment placed in Depot and Library with installing lockable communication cabinets.
IT Capex - CCTV Cameras (TCT & VIC)	42,500	48,284	42,500	100 %	All cameras are online.
IT Capex - Laptops	12,500	8,060	12,500	80 %	Purchased 4 Laptops and monitors.
IT Capex - Monitors	5,000	2,272	5,000	80 %	Purchased 4 monitors.
IT Capex - Point of Sales Units for TCT	32,000	24,126	32,000	80 %	Waiting for last POS unit + Printer to complete this project.
IT Capex - Mobility Devices	40,000	0	40,000	0 %	Not yet purchased.
Total:	314,620	151,592	314,620		

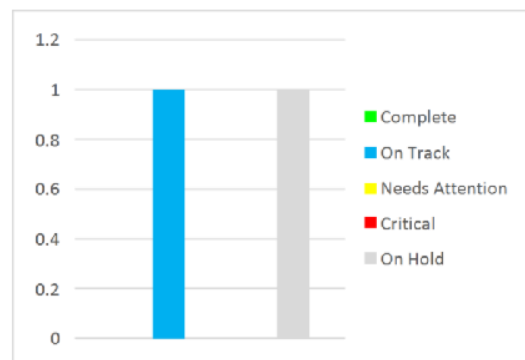
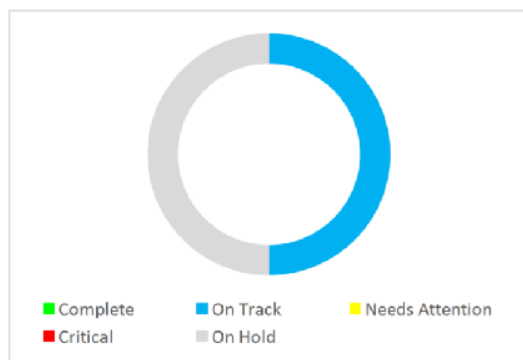
Library Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	1	0	0	1	2
Our Environment	0	0	0	0	0	0
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	0	0	0	0	0
	0	1	0	0	1	2



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.1.1.1 - Develop educational and recreational programs in all branch Libraries at least on a quarterly basis.	30/06/2021	On Track	Visits to primary and pre-schools continue. Weekly Knitting and Brain Training Groups continue. Home Library Service commenced 25th of November with a pleasing response of eight registrations so far. Weekly Storytime at Narrabri Library has commenced. A one off Storytime program was offered to Boggabri and Wee Waa Libraries with attendees from Boggabri but no attendees from Wee Waa. A four week Baby Rhyme Time program was held at the Narrabri Library with a pleasing response. A one off program was offered to Boggabri and Wee Waa Libraries with no attendees. A weekly Special Needs Craft and Colouring In Group commenced.	70 %
1.4.4.2 - Provide Science, Technology, Engineering and Mathematics (STEM) based programming in partnership with scientific leaders in the community.	30/06/2021	On Hold	Enquiries are ongoing as to the best way to move forward with implementing this. Due to COVID 19 it is difficult to plan ahead.	40 %

Library Services – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Maintain Staff Generated Reservations above the specified target for the Narrabri Branch	> 9,000	4,353
Maintain Staff Generated Reservations above the specified target for the Wee Waa Branch	> 1,000	449
Maintain Staff Generated Reservations above the specified target for the Boggabri Branch	> 300	184
Maintain Library usage ie: programs, events or provision of space for meetings and community activities above the specified target for the Narrabri branch	> 400	202
Maintain Library usage ie: programs, events or provision of space for meetings and community activities above the specified target for the Wee Waa branch	> 50	29
Maintain Library usage ie: programs, events or provision of space for meetings and community activities above the specified target for the Boggabri branch	> 10	30
Maintain \$/user ratio below specified target for the Narrabri branch	< \$12	\$11

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Maintain \$/user ratio below specified target for the Wee Waa branch	< \$9	\$20
Maintain \$/user ratio below specified target for the Boggabri branch	< \$35	\$62

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Maintain the number of new members above the specified target for the Narrabri branch	> 250	76
Maintain the number of new members above the specified target for the Wee Waa branch	> 80	15
Maintain the number of new members above the specified target for the Boggabri branch	> 10	6
Gauge overall customer satisfaction with customer service levels, resources, opening hours and facilities	> 95 %	0 %
Number of Library Visits in Wee Waa	> 12,000	2,636

Workload Measure	2020/21 Estimated	YTD
Number of Library Visits in Narrabri	> 28,000	7,432
Number of Library Visits in Boggabri	> 1,500	533
Number of Physical Loans (including renewals) in Narrabri	> 30,000	11,088
Number of Physical Loans (including renewals) in Wee Waa	> 6,000	1,554
Number of Physical Loans (including renewals) in Boggabri	> 3,500	1,521

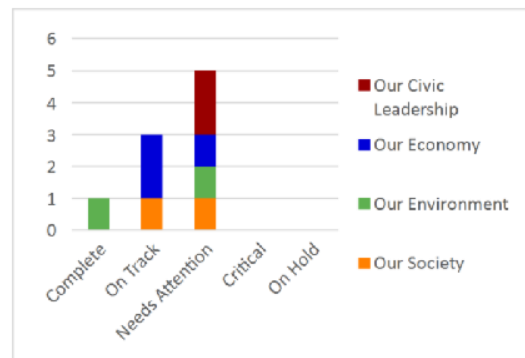
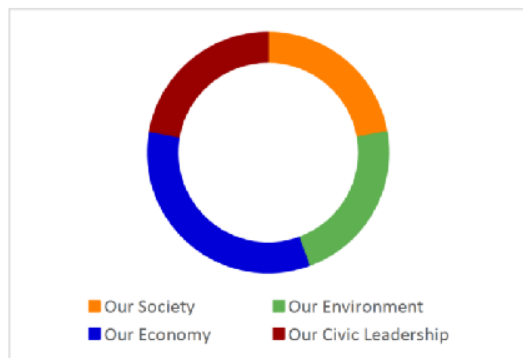
Library Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Libraries - Repair Guttering & Repaint Fascia Boards Boggabri	5,000	4,094	5,000	90 %	Nearly all the component has been completed. The last component is the internal blinds.
Total:	5,000	4,094	5,000		

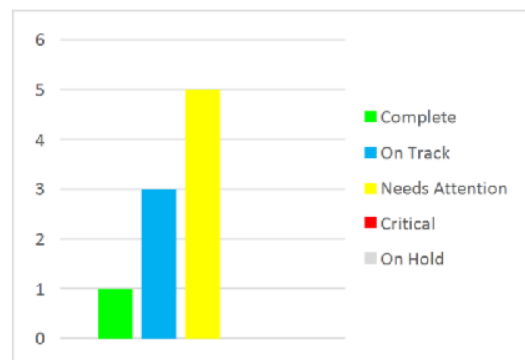
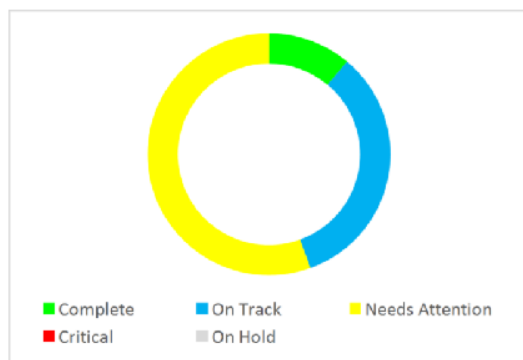
Property Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	1	1	0	0	2
Our Environment	1	0	1	0	0	2
Our Economy	0	2	1	0	0	3
Our Civic Leadership	0	0	2	0	0	2
	1	3	5	0	0	9



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.1.1.7 - Explore options for developing a "Civic Precinct" in the vicinity of the old Boggabri Bowling Club site.	30/06/2021	On Track	Confirmation that Conversion Application successful.	5 %
1.1.2.13 - Conduct annual condition inspections for all land and buildings to maintain public safety.	30/06/2021	Needs Attention	Land and Buildings to be inspected and condition reports to be developed.	5 %
2.1.2.3 - Develop and implement Plans of Management for urban open spaces and environmental areas.	30/06/2021	Needs Attention	Plans of Management to be outsourced.	5 %
2.3.1.3 - Develop and implement plans for installing energy efficient technologies and innovations at identified Council facilities i.e. solar panels, LED lighting, air-conditioning.	30/06/2021	Complete	Project complete.	100 %
3.1.4.2 - Encourage community use of, and support the retention of, existing Narrabri - Brisbane RPT flight arrangement.	30/06/2021	On Track	Continue promoting Fly Corporate RPT services via local Radio and Tourism promotion booklets. Fly Corporate rebranded to Link Airways in August 2020. Flights continue to be limited due to COVID-19.	50 %
3.1.4.5 - Actively seek new revenue streams to support Airport operations.	30/06/2021	Needs Attention	Watching brief being maintained.	5 %
3.4.1.3 - Market and transact developed Shannon Estate blocks and englobo site.	30/06/2021	On Track	Marketing strategy to be developed for current allotments. Lot 25 currently under contract.	5 %
4.2.3.6 - Monitor and update community accessible GIS interface for Council's Capital Works Program.	30/06/2021	Needs Attention	Ongoing monitoring and updating GIS interface for Council's Capital Works Program. Link to website maintained on a quarterly basis.	30 %

Actions	Target	Status	Progress	%
4.3.1.2 - Investigate update and renewal requirements (including assets) for Caravan Parks throughout the Narrabri Shire.	30/06/2021	Needs Attention	Boggabri Caravan Park - Opened as of 26/10/20 Narrabri Big Sky Caravan Park - improvements to plumbing currently being investigated as outside the lease terms.	5 %

Property Services – Key Performance Measures

<i>Efficiency Measure</i> <i>'Doing things right'</i>	2020/21 Estimated	YTD
Reduce overall energy consumption (kilowatt hours)	> 25 %	35 %

<i>Effectiveness Measure</i> <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Response time to unforeseen / urgent repairs	< 3 Days	2 Days
Collection of property leasing and licensing fees and charges	> 80 %	13 %

<i>Workload Measure</i>	2020/21 Estimated	YTD
Attend to, negotiate and update all expiring leases, licences and occupancy agreements (leases per annum)	> 12	0
Update asset layers in GIS	> 500	0
Complete property related Insurance claims	< 10	8
Undertake ongoing condition based assessment of Council buildings	> 50	6
Prepare plans of management, property related policies, property management protocols, structures and frameworks	> 6	1
Preparation of correspondence responding to external enquiries	> 250	63

Property Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Property Services - Buildings Environmental Sustainability Project - Stage 1	18,776	0	18,776	0 %	Budget restrictions does not allow project to progress in 2020/21. Defer project to 2021/22.
Property - Boggabri Courthouse Internal Structure	11,209	8,708	11,209	100 %	Project complete.
Property Services - Council Rental Property Improvements	12,629	0	12,629	20 %	Ongoing general maintenance.
Property Services - Key Management System – Stage 2 & 3	20,000	0	20,000	0 %	Budget restrictions does not allow this project to progress. Project deferred to 2021/22.
Property Services - Narrabri Library External Painting	15,000	0	15,000	5 %	Defer until 2021/2022.
Property Services - Administration Building Refurbishment – Stage 2 (Western Wing)	40,000	0	40,000	0 %	Budget allows for the purchase of Office furniture only at this point in time. A review of office requirements going forward will be conducted prior to forming 2021/22 budget.
Depots Capex - Narrabri Depot Office Workplace Improvements	50,000	0	50,000	0 %	Office requirements currently under review.
Caravan Park - Boggabri Upgrade	0	11,529	0	100 %	Construction completed, defects rectified, CSA currently doing bookings, opened 26/10/20.
Property Capex - Pilliga CWA Rooms Roof Repair/Ceiling Paint	30,000	0	30,000	10 %	Quotes to be obtained.
Property Capex - Town Clock Replacement	16,600	16,600	16,600	100 %	Investigating.
Total:	214,214	36,837	214,214		

Saleyard Services – Key Performance Measures

<i>Efficiency Measure</i> <i>'Doing things right'</i>	2020/21 Estimated	YTD
Net Operational cost per animal sold (\$ per animal)	< \$8	\$28
Net cost of operation to Council (excluding capital)	< \$120,000	\$58,092

<i>Effectiveness Measure</i> <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Survey of agents and customers achieves minimum 80% satisfaction rating	> 80 %	35 %
Zero reported WHS incidents attributable to Council	< 0	0
Non-compliance with the National Saleyards Quality Accreditation (NSQA) annual audit	< 0	1

<i>Workload Measure</i>	2020/21 Estimated	YTD
Number of head sold per annum	> 14,000	2,177
Number of separate uses of truck wash facilities	> 1,500	626
Number of individual sale days per annum	> 23	8

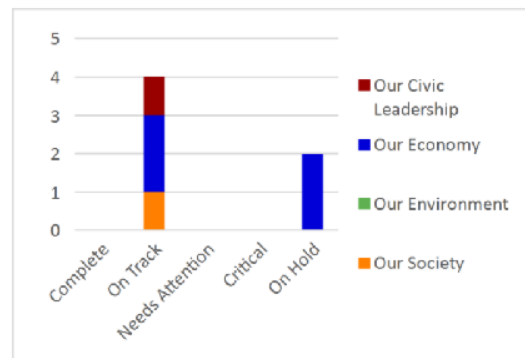
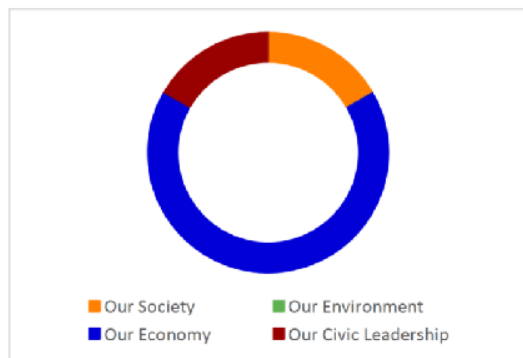
Saleyard Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Saleyards Capex - Infrastructure Renewal	30,000	0	30,000	0 %	General maintenance ongoing.
Total:	30,000	0	30,000		

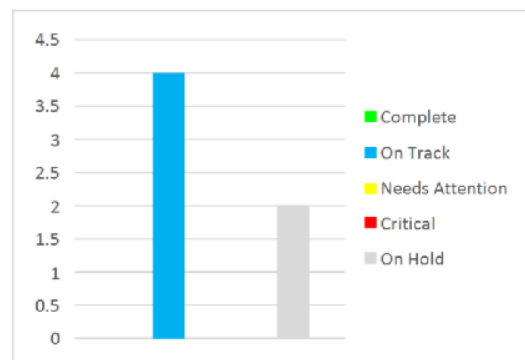
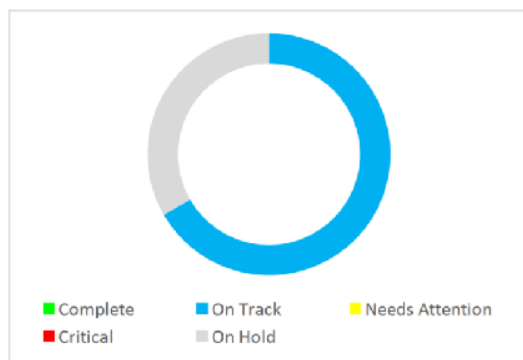
The Crossing Theatre - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	1	0	0	0	1
Our Environment	0	0	0	0	0	0
Our Economy	0	2	0	0	2	4
Our Civic Leadership	0	1	0	0	0	1
	0	4	0	0	2	6



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.2.2.1 - Explore opportunities for the provision of arts and cultural events in all towns and villages.	30/06/2021	On Track	<p>The following opportunities have been developed:</p> <ul style="list-style-type: none"> - Drive In Movie for Boggabri and Wee Waa - these have had to be postponed till March 2021 - With the help of Arts North West we are looking at holding an arts residency at the Wee Waa Museum - We are currently developing an annual art event named CREATE for March 2021. This event will develop over a five year period and includes Art, music, film, lights and literature and includes artists, children, families, businesses and the local community. - The Crossing Theatre is working to secure a travelling art exhibition for July 2021 - It consists of works by Myuran Sukumaran who was part of the Bali Nine and was executed in 2015 - this exhibition is about human rights and choices in life. this exhibition will have the power to attract people from across the region including High Schools. 	60 %
1.2.2.2 - Facilitate cultural shows at The Crossing Theatre.	30/06/2021	On Hold	<p>We are currently working on a new annual event for the shire - CREATE. This is a 16 day event in March and consists of an art exhibition, theatre and film. It also included activities for kids and adults.</p> <p>We are also close to confirming an exhibition by Bali Nine member, Myuran Sukumaran, titled 72 Hours (May 2021). This exhibition consists of the paintings he did in the last 72 hours of his life before being executed. The lessons of this exhibition are about choices in life and also the importance of humanity. The Crossing Theatre plans to have high visitation from High Schools.</p>	60 %

Actions	Target	Status	Progress	%
3.1.1.1 - Review the brand and market position of The Crossing Theatre.	30/06/2021	On Track	<p>The Market Position of The crossing Theatre's services is currently quite strong in regards to performances, conferencing, venue hire, cinemas and the café. The new events for 2021 are more arts based which will strengthen our position in regards to cultural and community activities/events</p> <p>The COVID restrictions for the above mentioned services are starting to ease so we envisage stronger engagement by outside stakeholders.</p>	50 %
3.1.1.2 - Identify external funding opportunities to assist with the provision of events through The Crossing Theatre.	30/06/2021	On Track	<p>- The Crossing Theatre has secured \$3000 from Create NSW for the performance by an Australian unit of differently-abled musicians hailing from the Northern Rivers of New South Wales.</p> <p>- With the help from the Tourism and Community Development section, \$10K has been secured for a event which involves the main street businesses. This event will be part of the event CREATE in March 2021. The Crossing Theatre is working with council's Small Business Liaison Officer to produce the event.</p>	40 %
3.1.1.3 - Identify opportunities for corporate, association, not for profit and government organisations to host regional and rural conferencing in Narrabri Shire.	30/06/2021	On Hold	Due to COVID restrictions, strengthening partnerships and identifying opportunities for conferencing has been put on hold.	5 %
3.1.1.4 - Develop and maintain relationships with national and international touring promoters.	30/06/2021	On Hold	Until COVID 19 restrictions are eased, it is not viable to host any performances that are of a national or international standard.	5 %
4.2.1.5 - Investigate opportunities in line with Council Policy to offer more economical use of The Crossing Theatre facilities.	30/06/2021	On Track	<p>Increased art exhibitions and cultural events have been developed and are currently being implemented.</p> <p>These include:</p> <ul style="list-style-type: none"> - an arts festival, CREATE - National touring exhibition, 72 Hours - theatre and music performances 	50 %

The Crossing Theatre – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Venue to fiscally operate at no more than 5.25% of General Rates revenue	< 5 %	7 %
Operating Costs per paying venue patron	< \$12	\$23
Increase Event Space Utilisation % per available day for Riverside Room	> 23 %	5 %
Increase Event Space Utilisation % per available day for Auditorium	> 15 %	8 %
Increase Event Space Utilisation % per available day for Exhibition Room	> 14 %	8 %
Increase Event Space Utilisation % per available day for Gallery Lounge	> 8 %	8 %

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Increase Cinema Patronage by 5%	> 28,220	2,827
Increase Cafe Patronage by 5%	> 6,695	6,442

Workload Measure	2020/21 Estimated	YTD
Increase User Pay Events by 5%	> 201	64
Number of User Live Events held	> 29	1
Number of events held in Riverside Room	> 75	13
Number of events held in Auditorium	> 55	18
Number of events held in Exhibition Room	> 42	21
Number of events held in Gallery Lounge	> 32	19

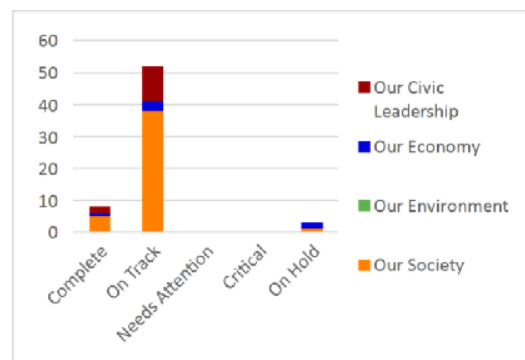
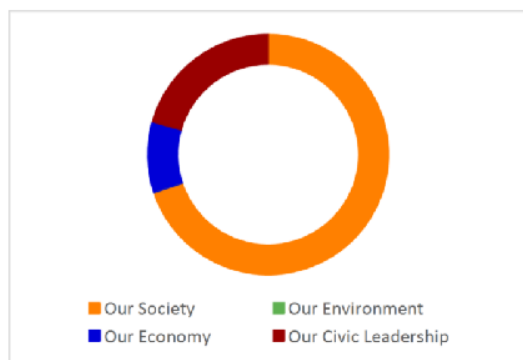
The Crossing Theatre – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
The Crossing Theatre - Band Room Refurbishment (incl Storage)	62,397	368	62,397	5 %	Currently obtaining quotes for work.
TCT Capex - Cinema's Refurbishment	97,691	64,016	97,691	100 %	Project Completed.
TCT Capex - Renew Kitchen Equipment	25,000	14,480	20,000	80 %	Installation of a new fryer and combination oven has been completed.
TCT Capex - Hearing Loop	90,000	0	45,000	0 %	Hearing Loop to be completed in 2021.
Total:	275,088	78,865	225,088		

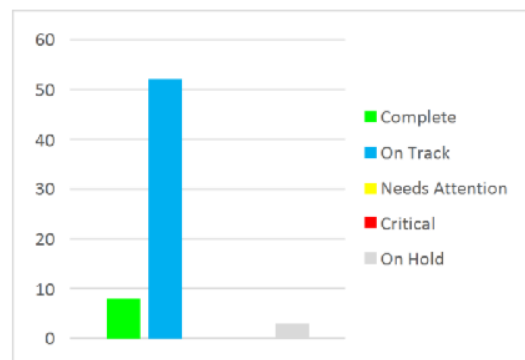
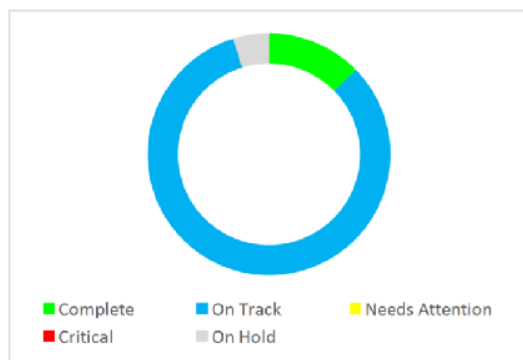
Tourism and Community Development Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	5	38	0	0	1	44
Our Environment	0	0	0	0	0	0
Our Economy	1	3	0	0	2	6
Our Civic Leadership	2	11	0	0	0	13
	8	52	0	0	3	63



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.1.2.10 - Offer seminars to community groups including Service Clubs to educate residents on security measures to reduce risk of property and vehicle theft.	30/06/2021	On Track	Narrabri Shire Council will liaise with the Crime Prevention Unit within Oxley District of the NSW Police to identify seminars and workshops to undertake within the community to provide awareness and education around crime prevention. This action was delayed due to COVID-19 restrictions. The Seniors Festival luncheon lends itself as a good opportunity to invite a guest speaker to address issues of security for our senior residents. The luncheon is scheduled to occur in April 2021.	25 %
1.1.2.12 - Investigate and source positive Drug Education Programs in collaboration with other services to inform residents about drug use and associated health issues.	30/06/2021	On Track	Council is currently investigating positive Drug Education Programs through the Alcohol and Drug Foundation of Australia, Narrabri Community Drug Action Team (CDAT) and Hunter New England Health. Often local community organisations, the Narrabri Youth Interagency and Council work collaboratively to put to promote drug education programs during Youth Week, which will be held 16 - 24 April 2021.	50 %
1.1.2.19 - Support NSW Police to improve the community's perception of the level of crime within Narrabri Shire.	30/06/2021	On Track	Narrabri Shire Council will continue to promote any initiatives by the NSW Police that assist in improving perceptions of crime.	50 %

Actions	Target	Status	Progress	%
1.1.2.20 - Support and promote educational programs targeted at assisting young people in developing healthy, respectful relationships.	30/06/2021	On Track	Narrabri Shire Council was successful in applying for funding through the Stronger Country Communities Fund and were able to secure IRL Education to provide a youth employment capacity building program. The program will be delivered through Narrabri and Wee Waa High Schools during Term 2 and 3 in 2021. It is intended to build capacity towards employment, emotional intelligence, people skills, innovation and creativity. In conjunction with both the Narrabri Youth Interagency and the proposed Youth Council (due to be launched 2021) it is envisaged this forum will identify programs, activities and events that young people would like to see to assist in supporting them. Police Citizens Youth Club are scheduled to provide a briefing to Council's February 2021 meeting to explain more about their programs and how they might be able to assist in the Narrabri Shire area.	50 %
1.1.2.21 - Continue to support activities that raise awareness through participation in and promotion of community events (White Ribbon Day etc).	30/06/2021	On Track	Narrabri Shire Council is committed to working collaboratively with various organizations within the Shire to support awareness campaigns that promote positive behavior and actions within our communities. Council has recently been actively involved in supporting online events during Mental Health Month in October 2020, supporting the National Breast Cancer Foundation and assisting Narrabri District Community Aid Service to promote a Domestic Violence awareness campaign and having stickers installed at various locations across Council facilities such as The Crossing Theatre toilets.	50 %

Actions	Target	Status	Progress	%
1.1.2.22 - Establish and maintain strong relationships with relevant government and local agencies, and service providers to commit resources to support the safety of families, children, and young people in Narrabri Shire.	30/06/2021	On Track	Narrabri Shire Council has a strong relationship with government, non-government and service providers to commit resources to support the safety of families, children and young people in Narrabri Shire. Council works with organisations including NSW Police, neighboring Councils, Department of Education, Narrabri Women's Refuge, Youth Interagency, NDCAS and Centacare.	33 %
1.1.2.25 - Provide regular and up-to-date information to the community regarding personal safety measures and strategies.	30/06/2021	On Hold	This action has been put on hold due to COVID-19 restrictions, as restrictions lift Council will look at working with the NSW Police and relevant stakeholders on personal safety workshops.	0 %
1.1.2.26 - Work collaboratively with government and local agencies to promote and support programs related to harm minimisation and the reduction of alcohol related violence.	30/06/2021	On Track	Council continues to liaise and work with health and service providers to promote and support programs related to harm minimization including the reduction of alcohol related violence. Council will support and promote the Community Engagement and Action Program (CEAP) being facilitated through the Alcohol and Drug Foundation on behalf of NSW Health.	50 %
1.1.2.27 - Support and encourage the provision of drug education programs in collaboration with other services to inform community members about drug use and associated health issues.	30/06/2021	On Track	In collaboration with Interagency groups and NSW Police, council aim to support drug education initiatives and raise awareness in the community about drug issues. Youth Week activities scheduled from 16 - 24 April 2021, organised with the Youth Interagency members such as NSW Police, schools and Non-government organisations always has a drug education component.	50 %
1.1.2.29 - Provide encouragement and support to the delivery of alcohol and drug-free community events within Narrabri Shire.	30/06/2021	On Track	Narrabri Shire Council continues to support the delivery of alcohol and drug free community events within the Shire and will encourage event coordinators to deliver and promote alcohol and drug free events. Such events include Youth Week, the intended Community Connect Day, Mental Health Awareness events during October to name a few.	50 %

Actions	Target	Status	Progress	%
1.1.2.30 - Support educational and community-based programs that encourage participation and celebrate the achievements of young people within the Shire.	30/06/2021	On Track	Narrabri Shire Council facilitates the Lillian Hulbert Memorial Prize which rewards excellence and merit of Narrabri District Youth between the ages of 15 and 18. The prize is awarded for youth who have demonstrated an act of bravery or heroism, charitable activities, education and academic achievement or sporting excellence. Nominations for the prize are called for annually in October and awarded in February the following year. The successful nominees for the 2021 Lillian Hulbert Memorial Award have been advised of scheduled interviews on 11 February 2021. The Award celebration is scheduled to occur in the Council Chambers on 24 February 2021. Youth are also celebrated in the Shire during activities held over Youth Week, can be nominated for the Australia Day Awards as well as for the Volunteer Awards.	50 %
1.1.2.31 - Continue to support activities that raise awareness through participation in and promotion of community events (Graffiti Removal Day etc).	30/06/2021	On Track	Narrabri Shire Council continues to support local activities run by other organisations that promote awareness of positive events that exude a sense of pride in our Shire.	50 %
1.1.2.32 - Raise internal awareness of vandalism and malicious damage that is occurring within Narrabri Shire.	30/06/2021	Complete	Project Complete.	100 %
1.1.2.33 - Partner with local community groups and organisations to provide recreational activities for young people as a diversion from anti-social behaviour.	30/06/2021	On Track	Narrabri Shire Council are currently in discussion with Police Citizens Youth Club to provide outreach programs to assist in diverting young people from anti social behavior. The Chief Executive Officer of the Police Citizens Youth Club is scheduled to provide a briefing to Council in February. Council continues to work collaboratively with organizations such as Narrabri District Community Aid Service (NDCAS) to facilitate reopening of the Youth Shack to aid in diversionary programs from youth who have been suspended from school.	50 %

Actions	Target	Status	Progress	%
1.1.2.34 - Support NSW Police to promote the provision of workshops in regional NSW aimed at tackling rural crime.	30/06/2021	On Track	Narrabri Shire Council continues to work with NSW Police to promote workshops aimed at tackling rural crime. Council is currently considering a rural and crime prevention expo to address crime prevention across a wide range of areas. If this goes ahead it would occur in Q3 or Q4.	33 %
1.1.2.35 - Raise awareness through the facilitation of NSW Police talks about community safety and rural crime prevention methods at community meetings and activities.	30/06/2021	On Track	Narrabri Shire Council continues to liaise with stakeholders to ensure appropriate information is disseminated within the community regarding safety and rural crime prevention. Council continues to facilitate the Crime Prevention Advisory Committee towards identifying and promoting crime prevention methods and information.	50 %
1.1.2.36 - Provide regular and up-to-date information to the rural community regarding crime prevention strategies and measures.	30/06/2021	On Track	Narrabri Shire Council is working closely with NSW Police and other relevant stakeholders to identify appropriate seminars and workshops that can be delivered to the community to advise and promote crime prevention strategies. Council intends to liaise with the Crime Prevention Unit and Rural Crime Investigators to identify suitable workshops relevant to the Shire. Council is also considering holding a rural and crime prevention workshop in 2021 which will invite relevant stakeholders from across NSW.	33 %
1.1.2.37 - Raise awareness through the facilitation and promotion of Domestic Violence campaigns.	30/06/2021	On Track	Narrabri Shire Council work closely with the Domestic Violence Coordinator for Western Region with the NSW Police Force and Narrabri Women's Refuge to promote Domestic Violence Campaigns and to raise awareness of the negative impact of Domestic and Family Violence within communities. Council recently undertook to put up stickers relating to the cycle of Domestic Violence on the back of toilet doors across their facilities. Council is currently considering inviting speakers to the community to raise awareness and education around domestic and family violence.	50 %

Actions	Target	Status	Progress	%
1.1.2.38 - Promote Narrabri Shire as a "zero tolerance" community in relation to domestic and family violence.	30/06/2021	On Track	Narrabri Shire Council works in collaboration with Narrabri District Community Aid Service and NSW Police to promote a 'zero tolerance' towards domestic and family violence. Council supports relevant awareness campaigns such as White Ribbon Day and Help Is Here. Council is currently in the process of putting up Anti Domestic and Family Violence Stickers on all toilet doors to promote awareness and education around domestic violence.	50 %
1.1.2.39 - Investigate possibility of establishing Neighbourhood Watch groups within each individual town and village within the LGA.	30/06/2021	Complete	Narrabri Shire Council's Crime Prevention Advisory Committee discussed with NSW Police the viability of Neighborhood Watch Programs in Narrabri, Wee Waa, Boggabri, Pilliga and Gwabegar. This is a program that was established in some areas a number of years ago but is no longer actively encouraged. Neighborhood Watch has been replaced by the EyeWatch Program which is managed online via Facebook and maintained by Oxley Police District.	100 %
1.1.2.40 - Raise awareness and provide support for programs and campaigns aimed at reducing drug use (e.g. Dob in a Dealer).	30/06/2021	On Track	Council to work in collaboration with other community organisations to distribute information and run programs and campaigns that aim to reduce drug use. This is achieved through attending Interagency meetings such as Youth Interagency and liaising with Centacare who offer support programs to residents.	50 %
1.1.2.41 - Investigate methods to capture information and statistics on the type, location, and scope of vandalism and malicious damage to Council resources and facilities.	30/06/2021	Complete	Project complete.	100 %

Actions	Target	Status	Progress	%
1.1.2.42 - In conjunction with NSW Police, design and deliver an awareness campaign on the importance of reporting rural crime to Police.	30/06/2021	On Track	Narrabri Shire Council will look to run a NSW Farmers Tackling Rural Crime Workshop to assist Farmers in identifying rural crime prevention strategies and to raise awareness about the importance of reporting rural crime. Council are further reviewing the possibility of holding a rural expo to provide access to numerous services to farmers and people living in rural and remote areas.	50 %
1.1.2.8 - Establish a Community Education - Home and Vehicle Security Project Group and identify NGO's, Community Organisations and Businesses willing to support.	30/06/2021	On Track	Council will undertake to progress this action by liaising with the Crime Prevention Unit in Tamworth. Stakeholders need to be identified for a potential project group. Council is also considering a rural and crime prevention expo which will address local crime prevention issues and strategies.	50 %
1.1.2.9 - NSW Police to promote eye watch program to Narrabri Shire community members to provide opportunity for community to participate in active crime prevention activities online.	30/06/2021	On Track	The Eye Watch Program for the local area is run via the Oxley Police District Facebook Page which regularly posts information for crime prevention and safety tips, inform communities about crimes committed in their local area, incidents and emergencies. The Facebook site currently has 26,590 fans. The Eye Watch program has further been promoted through Council channels to increase local awareness.	50 %
1.1.3.4 - Report biennially to Council on current child and aged care supply and demand statistics.	30/06/2021	On Track	Child Care enrolments have been significantly impacted by COVID-19 restrictions causing financial strain on child care. Child Care centres unfortunately had to reduce staffing levels which meant a reduction in available child care spaces. From conversation with child care providers in the shire there is still a significant demand for 0-3 childcare as this required higher staffing ratios. All child care providers have waiting lists on a regular basis.	50 %

Actions	Target	Status	Progress	%
1.1.3.5 - Facilitate increasing child and aged care supply when shortfalls are identified.	30/06/2021	On Track	Narrabri Shire Council was recently in contact with aged care and child care facilities which show a shortfall in child care services between the ages of 0-3 which is due to the staffing requirements for this age group. A new child care facility is currently being built in Boggabri. From discussions with all child care facilities they all have significant waiting lists.	50 %
1.1.4.3 - Partner with the business community, state and federal government to provide opportunities and actively support youth of Narrabri Shire to initiate micro and small businesses, as legitimate alternatives to securing traditional employment.	30/06/2021	On Track	Council will continue to partner with business community, state and federal government to actively support microbusiness and entrepreneurship opportunities to youth of the Narrabri Shire. Council has actively promoted business connect and NEIS new business assistance programs through Small Business in Focus newsletter and via consultation with business and education community at public meetings. Council will pursue facilitation of business-focused mentorship program for people 25 and under, in addition to developing a business grant program offering financial support for start up businesses of the Narrabri Shire and 'pop-up' shop program encouraging trial of new businesses in CBD.	50 %
1.1.4.4 - Lobby for increased access to skills training within Narrabri Shire.	30/06/2021	On Hold	Narrabri Shire Council will closely liaise with current education and training organizations to identify skills gaps and to lobby for appropriate training opportunities.	50 %
1.1.4.6 - Establish and facilitate a Narrabri Shire Youth Council in collaboration with the Shire Schools and youth up to 25 years of age.	31/12/2020	On Track	Narrabri Shire Council is committed to establishing a Youth Council which will be launched in line with Youth Week in 2021. Council will work closely with schools, the youth interagency and other relevant organizations to establish the Youth Council. Narrabri Shire Council has been liaising with other Councils to determine the most appropriate framework and Terms Of Reference are being developed.	50 %

Actions	Target	Status	Progress	%
1.1.4.9 - Council to undertake discussions with Cotton Seed Distributors, Sydney University, Narrabri Shire schools and educational facilities (and other interested parties) about jointly establishing a learning and development centre.	30/06/2021	On Track	Council attended the Federation Farm Committee Meeting on the 21/10/2020 where the committee agreed for Council to present a business case to the committee in regards to a Learning and Development Centre. Research to be undertaken over the next 3 months prior to the next Federation Farm meeting.	50 %
1.2.1.5 - Establish and have adopted a Sporting Wall of Fame Policy.	31/08/2020	Complete	Project complete.	100 %
1.2.3.3 - Review sign posting for adequacy and incorporate latest digital technology to raise awareness of assets across the Shire.	30/08/2020	On Track	Digital LED Sign has been installed within the Visitor Information Centre which will enable Council to raise awareness of assets across the shire. Awaiting Development approval prior to powering up the sign.	95 %
1.2.3.5 - Investigate viability of establishing tours at peak times of significant environmental assets.	30/06/2021	On Track	Narrabri Shire Council is currently developing a touring prospectus to attract groups such as Probus and Rotary or Bus Companies to attract and encourage them to visit the region though developing an awareness of our attractions.	25 %
1.2.4.11 - Review Reflect Reconciliation Action Plan.	30/06/2021	On Track	Narrabri Shire Council is committed to reviewing and developing a new Reflect Reconciliation Action plan. Council is currently liaising with the local Aboriginal community to establish a Working Group who will contribute to the new Reconciliation Action Plan for 2021-2022. In discussions with the Aboriginal community they have requested that a Council delegate with some authority sit on the Working Group.	33 %
1.2.4.7 - In conjunction with the Aboriginal community successfully organise and run Reconciliation Week.	30/06/2021	On Track	Narrabri Shire Council is working closely with the Aboriginal Community who meet regularly to discuss Indigenous events including Reconciliation Week, which will run from 27 May 2021 until 3 June 2021. Narrabri Shire Council is also in the process of reviewing the Reconciliation Action Plan in conjunction with the Aboriginal Community which will assist in developing actions towards furthering reconciliation.	25 %

56

Actions	Target	Status	Progress	%
1.2.4.8 - In conjunction with the Aboriginal community successfully organise and run NAIDOC Week.	31/07/2020	Complete	July's NAIDOC Week celebrations were postponed due to COVID-19 restrictions and rescheduled to occur from 08 to 15 November 2020. Narrabri Shire Council works collaboratively with the local Aboriginal Community and meets regularly with Aboriginal Community Representatives to discuss suitable events. Due to the ongoing COVID-19 pandemic NAIDOC Week events for 2020 were limited to ensure the safety of our communities. Narrabri Shire Council representative provided an Acknowledgement of Country in language with permission and support from CEO of the Narrabri Land Council at the Council run event, A Narrabri Shire Council representative arranged the purchase of books for each Shire preschool, primary and High School and delivered them personally across the Shire along with NAIDOC cakes. During 2021 an Indigenous Banners project will occur across the Shire with youth from the schools. It is intended during NAIDOC week 2021 to hold a ceremony to display all the banners.	100 %

Actions	Target	Status	Progress	%
1.2.4.9 - In conjunction with the Aboriginal community progress the State Heritage Register nomination for Waterloo Creek.	30/06/2021	On Track	<p>Narrabri Shire Council submitted a nomination to NSW State Heritage for the Waterloo Creek Massacre site to be considered as a State Heritage Significant Site. Narrabri Shire Council was proud to report that the nomination was accepted and has been allocated to a working group for further consultation to be undertaken. Due to COVID-19 the nomination has not progressed further at this stage.</p> <p>During December, Narrabri Shire Council representative facilitated a Waterloo Creek Memorial committee meeting including a staff member from State Heritage Office to provide an update on the nomination. The nomination is due to go forward for consideration at their next meeting in February and hopes that a recommendation may go to the Minister by May at the earliest. The committee agreed that more works need to be done to formalise the committee structure to draft Terms of Reference, to vote in a Chair and hold regular monthly meetings while the nomination is being progressed. A site inspection is scheduled for 16 February 2021.</p>	50 %
1.3.1.7 - Provide a report to council on current community transport availability.	30/09/2020	On Track	Community Care provides community transport to residents across the shire for the purpose of attending medical appointments that may not be within the Shire. Community Care further assists members of the community through the NDIS Program. Boggabri HACC assists seniors in Boggabri to attend events within the Shire. Winanga-Li provide community transport service for their clients.	50 %

Actions	Target	Status	Progress	%
1.3.4.10 - Support community organisations and sporting clubs to remove barriers and increase participation of people with a disability.	30/06/2021	On Track	Narrabri Shire Council encourages all members and organizations within the community to be inclusive of all people with a disability. The Disability and Inclusion Action Plan is currently under review with a new plan to be launched in 2021. Council has developed an Access and Inclusion Survey to assist in identifying actions for the new Disability and Inclusion Action Plan which will be in line with community needs. The survey will assist to identify service gaps and build capacity and to highlight what Council is currently doing well.	50 %
1.3.4.16 - Explore option to improve the maintenance and circulation of the Community Directory.	31/12/2020	On Track	Narrabri Shire Council is exploring options to deliver the community directory online. At the Access and Inclusion Advisory Committee meeting held in December the committee, along with the Chair, explored options. Demonstrations of what other councils are achieving were shared with the committee. Bega Valley Shire Council was deemed to be a good example running the Community Directory online through their website. Currently the Community Directory is available on the Shire website and can be printed in its entirety from there.	50 %
1.3.4.20 - Support interagency meetings to improve communications and develop mutually beneficial outcomes.	30/06/2021	On Track	Narrabri Shire continues to support the Narrabri Interagency Committee as well as the Disability Interagency Committee. Both committees convene once per month which Council attends.	50 %
1.3.4.21 - Support Boggabri, Narrabri and Wee Waa in establishing Dementia Friendly Towns.	30/06/2021	On Track	Narrabri Shire Council representative attends Dementia Friendly Community Committee meetings regularly. The last meeting was held in December 2020 and resumed a face to face meeting. At the December Access and Inclusion Advisory committee meeting Executive Manager, Corporate Planning and Workforce agreed that Dementia Friendly training could be included as a module in Velpic for all new staff to complete.	50 %

Actions	Target	Status	Progress	%
1.3.4.4 - Promote an understanding of inclusion within the business community through distribution of information and support for educational programs.	30/06/2021	On Track	Narrabri Shire Council launched an 'All Inclusive Business' Brochure at the Small Business Summit during October. The brochure is currently being distributed throughout the business community across the Shire. The Brochure provides simple, cost effective ways to encourage business owners to make their business more inclusive to attract a wider range of customers.	60 %
1.4.2.3 - Lobby for the expansion of existing educational offerings in Narrabri Shire.	30/06/2021	On Track	Council is currently in the process of following up with the Armidale Diocese in regard to expanding Catholic Education services within Narrabri Shire. This is a continuation of the discussion previously commenced with the Armidale Diocese. The Access and Inclusion committee would like to consider educational opportunities for a school specifically for children with complex needs, such as the GS Kidd Memorial School in Gunnedah. The results from the Disability Access and Inclusion Survey may inform future needs.	50 %
3.1.2.2 - Investigate the improvement of the Rose St/Church St/Kamilaroi Hwy intersection to encourage travellers into Rose St creating a visual stimulus that attracts attention.	31/12/2020	On Hold	This project is to be further discussed with the Wee Waa Community and the Wee Waa Chamber of Commerce. Council is committed to activating the CBD of Wee Waa to create economic stimulus through increased visitation.	50 %
3.1.2.9 - Improve the gateway entry signage on the Shire boundaries.	30/06/2021	On Track	Council has approved the design for the new gateway and town signage. Gateway signage is due to be installed during the 2020/2021 financial year. Town signage will be installed in the 2021/2022 financial year. Council is currently in the process of obtaining documentation for the purpose of lodging Development Applications.	35 %
3.1.3.10 - Council to actively encourage community use of the core Narrabri CBD area by facilitating community events and activities in the core Narrabri CBD area.	30/06/2021	On Hold	With the ongoing CBD Road Upgrades Council continued to encourage the community to shop local and to utilize the Why Leave Town Program. Council encourages organizations to use the Kiosk space within the CBD which can be used free of charge.	50 %

60

3.3.1.6 - Facilitate workshops for Small Business in Local Government Area.	30/06/2021	On Track	<p>Narrabri Shire Council facilitated eighteen workshops for Small Business in Local Government area from July - December 2020. Due to COVID-19, eight events were hosted virtually.</p> <p>Council facilitated ten workshops for local business during NSW Small business month in October 2020. This included four webinars in conjunction with Australian Tax Office and two Hour Paddock Consulting Webinars in conjunction with local business associations.</p> <p>Council worked with ICN Gateway, ARTC Inland rail to facilitate success ICN profile development workshop with 11 local businesses attending. Council hosted a Road Harvest Ready 2020 webinar to support producers and operators with information regarding legislative changes for heavy vehicles and agricultural machinery and COVID safety. Council worked with National Heavy Vehicle Regulator, Transport for NSW, Grain Transport Safety Network and NSW Police to coordinate event, which was successfully attended by 41 participants.</p> <p>Council commenced a retail merchandising program in August 2020 and will conclude in November 2020, funded by NSW Bushfire Recovery Grant. The retail merchandising program includes visual merchandising technique and customer service workshops that have been held monthly with 22 program participants.</p> <p>Council secured Edwina Robertson from "Women Making Gravy", an Instagram training specialist to facilitate two Instagram training workshops on 30 July 2020 at the Crossing Theatre, Narrabri. The workshops sold out and were attended by 30 participants.</p> <p>Council, in conjunction with ARTC Inland Rail have successfully delivered machinery</p>	75 %
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Actions	Target	Status	Progress	%
			competency training to 21 local participants at the Narrabri Waste Facility which provided attendees with the opportunity to undertake training in three of units of competency in civil construction.	
3.3.1.7 - Assist in implementation of Council's Economic Development Strategy.	30/06/2021	On Track	Narrabri Shire Council has developed the Economic Development and Tourism Working Group through which Council's Economic Development Strategy will be identified. Council recently created the position of Small Business Liaison Officer who will be assisting in the development of the strategy. Business investment collateral is being developed.	50 %
3.4.3.2 - Identify and approach key lifestyle village developers to establish facilities in Narrabri Shire.	30/06/2021	Complete	Project complete.	100 %
4.1.1.10 - Attend relevant Chamber of Business meetings within Local Government Area.	30/06/2021	On Track	Narrabri Shire Council continues to attend Chamber of Commerce Meetings as they are called in Narrabri, Wee Waa and Boggabri and are committed to support business networks throughout the shire.	50 %
4.1.1.11 - Develop and maintain local business database.	30/06/2021	On Track	Narrabri Shire Council has developed a local business database that captures over 950 local businesses across all industries within the shire. The database is updated regularly depending on movement within the business community.	50 %

Actions	Target	Status	Progress	%
4.1.1.3 - Successfully organise and run Australia Day Event	31/01/2021	On Track	Nominations for the Australia Day awards were called for in October and closed in November. A report went to Council's December meeting to vote on the awards. It was also proposed and accepted that there be free pool entry for all Shire pools on the day. Narrabri Shire Council's staff representative has commenced plans for the ceremonies to be held across the Shire taking into consideration any COVID-19 restrictions in force at the time. In line with previous years the ceremony times are being rotated across the Shire with Mayor and Ambassador attending all three planned events. Boggabri will host a breakfast ceremony at the HACC Building, Narrabri a lunchtime event at The Crossing Theatre and Wee Waa the evening event at the Namoi Echo Museum. Narrabri Shire Council were successful in receiving some grant funding to ensure COVID safe events.	70 %
4.1.1.4 - Successfully organise and run the Lillian Hulbert Scholarship and award presentation and Seniors Festival and awards	28/02/2021	On Track	Narrabri Shire Council called for nominations in October 2020 which closed end of November 2020. During December a selection meeting was held including the Mayor and the selection panel. The successful nominees were contacted and advised that interviews have been scheduled for 11 February 2021. The annual event will be held on the 24 February 2021 where the award winner will be announced.	75 %
4.1.1.5 - Successfully organise and run International Women's Day Event.	31/03/2021	On Track	International Women's Day is an international event held annually on 8 March. The theme for 2021 is: "Women in Leadership: Achieving an equal future in a COVID-19 world". This theme celebrates the tremendous efforts by women and girls around the world in shaping a more equal future. Narrabri Shire Council will collaborate with local organizations and professionals to continue to champion women within our communities. Council is proposing a breakfast be held on Monday 8 March 2021 at The Crossing Theatre and is looking to engage a couple of motivational speakers to address the theme and together celebrate the success of women.	50 %

Actions	Target	Status	Progress	%
4.1.1.6 - Successfully organise and run Youth Week activities.	30/04/2021	On Track	Youth Week is an annual event scheduled from Friday 16 - Saturday 24 April 2021. Narrabri Shire Council continues to work collaboratively with the Narrabri Youth Interagency towards supporting youth in our shire and exploring ways to involve Youth in activities and events across the Shire. The Walkabout Barber, a mobile barber service has been engaged to attract to the Shire during Youth Week. Brian Dowd, the Walkabout Barber, trained in trauma counselling after recovering from attempting to take his own life. His service combines haircuts with mental health first aid for communities around Australia. Narrabri Shire Council also intends to launch the Youth Council in 2021 during Youth Week.	10 %
4.1.1.7 - Successfully organise and run International Day of People with a Disability.	31/12/2020	On Track	Narrabri Shire Council has developed a Community Survey to establish a base profile of who the people are in our community who are affected by disability and assess their needs and how accessible they find the Shire. A morning tea event was held on 3 December 2020 marking the International Day of People with a Disability. Two guest speakers addressed the group regarding their experience of living with a disability in the Shire. One was a person with a mild disability and the other was a parent / carer of a child with a severe disability. Attendance at the event was limited due to COVID-19 restrictions. Invitations were extended to relevant local organisations as well as clients / people with a disability. The Disability Access and Inclusion Survey was launched at the event and will remain open until end of February. It is available online as well as in hard copy.	75 %

Actions	Target	Status	Progress	%
4.1.1.8 - Successfully organise the Bush Bursary Placement Program.	28/02/2021	On Track	Every year Narrabri Shire facilitates the Bush Bursary program which assists two medical students to undertake a two-week placement within a regional area. The program for Narrabri Shire is due to go ahead for 2020/2021 with preparations underway with students to undertake their placements during University holidays. Council is liaising regularly with the Rural Doctors Network to ensure COVID-19 safety is paramount to the program going ahead. All necessary precautions will be adhered to with the students being COVID-19 tested 3 days prior to their placement to ensure a negative response before the placement can proceed. Council has confirmed two medical students from the Australian National University in Canberra to undertake a placement in the Narrabri Shire from 11 - 22 January 2021. Billeting has been arranged and a placement schedule is being negotiated with medical practices and Community Health / Hospitals in Boggabri, Narrabri and Wee Waa.	75 %
4.1.1.9 - Organise and run the Seniors Festival and Awards.	30/04/2021	On Track	Narrabri Shire Council carried out community meetings in Boggabri and Wee Waa to discuss activities across the Shire during Seniors Week. The 2021 dates have been set from Wednesday 14 - Saturday 24 April. Negotiations are in place with The Crossing Theatre to hold the shire wide luncheon there, during which the local Senior of the Year is announced. Nominations will be called for and a program set during February / March 2021.	50 %
4.1.2.3 - Develop and facilitate annual Small Business Summit.	30/06/2021	Complete	Project complete.	100 %

Actions	Target	Status	Progress	%
4.1.2.4 - Monthly newsletter to small business outlining opportunities and economic activity of the region.	30/06/2021	On Track	Narrabri Shire Council developed the 'Small Business in Focus' monthly small business e-newsletter outlining opportunities and economic activity of the region. The newsletter was first distributed in April 2020. The e-newsletter currently has 490 subscribers with an average opening rate of 43.3% with successive monthly increases in subscribers and engagement. An online subscription landing page has been developed and is promoted through Council's Facebook page, which accounts for 9% of total subscribers to newsletter. The newsletter was instrumental in disseminating relevant information and provided access to support services during the height of the COVID-19 pandemic.	50 %
4.1.4.2 - Annual volunteer celebration held.	31/05/2021	On Track	National Volunteers week is an annual event held annually during the month of May. Dates have been scheduled from 17 - 23 May 2021. Narrabri Shire Council is working with several Volunteer based organizations to assist in the celebration of the Shires Volunteers.	25 %
4.2.3.1 - Develop and maintain a consistent brand across all Council business units and service areas.	30/06/2021	Complete	Project complete.	100 %

Tourism and Community Development Services – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
That each Youth Council meeting is completed within the allocated timeframe (school lunch break).	> 85 %	0 %
Percentage of Access and Inclusion Committee Meetings that comply with operating procedures as set out in the Terms of Reference (ie quorum is met and agenda prepared and distributed in time and adhered to).	> 100 %	100 %
Percentage of Crime Prevention Committee Meetings that comply with operating procedures as set out in the Terms of Reference (ie quorum is met and agenda prepared and distributed in time and adhered to).	> 100 %	100 %
Net cost for provision of visitor service per visitor (VIC patrons)	< \$2	\$8

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Percentage of Council and Community Grants submitted that are successful.	> 25 %	56 %
Value of Council and Community Grants submitted that are successful (\$).	> \$6,000,000	\$42,771,641
The number of youth-based actions formulated through the Youth Council that are undertaken.	> 6	0
Provide advice and recommendations on major projects, community events and significant development applications to ensure access and inclusion issues are identified and resolved.	> 4	1
Average sales per walk in patron for the Narrabri VIC	< \$3	\$6
Number of redeemed voucher from trade show distributions	> 250	0
Overall visitor satisfaction (Surveys and Social Media)	> 96 %	99 %

Workload Measure	2020/21 Estimated	YTD
Attend Shire wide community group meetings.	> 60	25
Number of Grant Applications submitted by Council or jointly with Community Groups.	> 48	38
Facilitate and provide resources to community events	> 12	6
Co-ordinate and run Narrabri Shires Youth Council Meetings.	> 8	0
Co-ordinate and run Narrabri Shires Access and Inclusion Advisory Committee.	> 4	2
Co-ordinate and run Narrabri Shires Crime Prevention Advisory Committee.	> 4	3
Number of visitors to the VIC	> 35,000	18,920
Number of Information packs distributed at trade shows	> 8,100	1,000

Workload Measure	2020/21 Estimated	YTD
Complete visitor satisfaction survey	> 125	51
Number of social media users	> 1,800	3,275
Number of community events and conferences facilitated	> 38	4

Tourism and Community Development Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Tourism - Narrabri - Portable Alfresco Dining Deck (deferred from 2017/18)	0	0	0	10 %	Project deferred to 2021/2022.
Tourism Capex - Digital Signage	4,517	2,984	4,517	100 %	The Digital LED Sign has been successfully installed at the Visitor Information Centre.
Tourism - Gateway Signage	210,000	0	210,000	33 %	A design for the Gateway Signage has been finalised and is due to be installed within 2020/2021. Council is in the process of obtaining formal quotes and a pre-lodgement advice has been sent to Transport for NSW in readiness for lodging the Development Application.
Total:	214,517	2,984	214,517		

Infrastructure Delivery

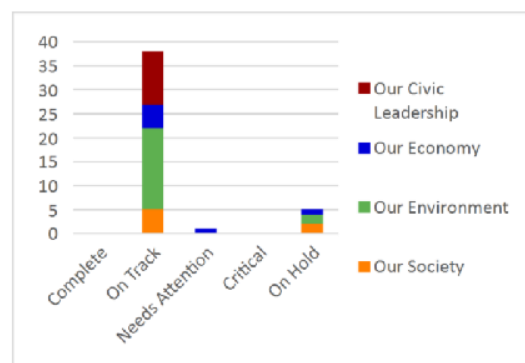
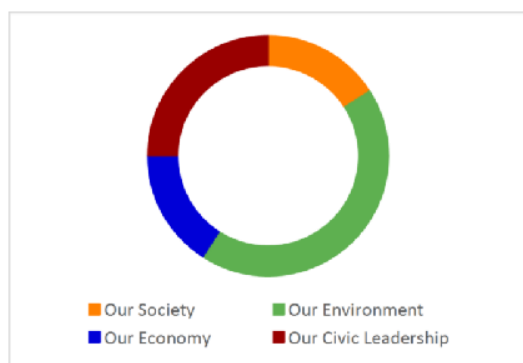
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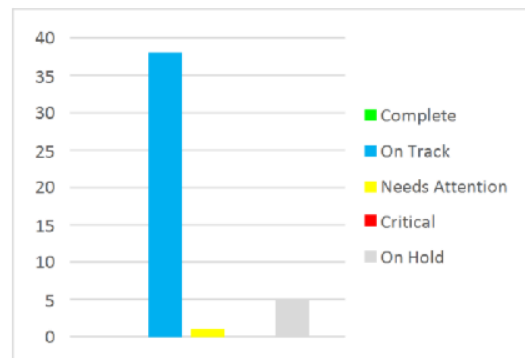
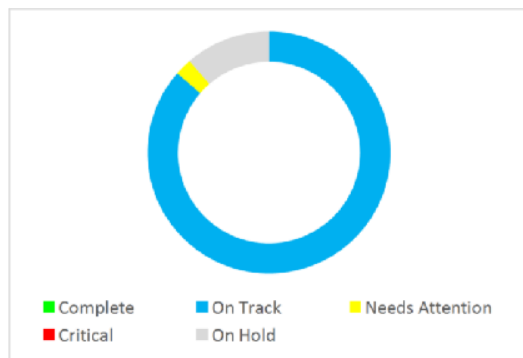
Service Plan Quarterly Report **December 2020**

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	5	0	0	2	7
Our Environment	0	17	0	0	2	19
Our Economy	0	5	1	0	1	7
Our Civic Leadership	0	11	0	0	0	11
	0	38	1	0	5	44



Progress by Action - December 2020



Cemetery Services – Key Performance Measures

<i>Efficiency Measure</i> <i>'Doing things right'</i>	2020/21 Estimated	YTD
Cost per grave to excavate and backfill	< \$902	\$623
Applications for interment are processed within 72 hours	> 100 %	100 %

<i>Effectiveness Measure</i> <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Number of written complaints relating to interments	< 0	0
Number of written complaints regarding maintenance of Cemeteries	< 0	0

<i>Workload Measure</i>	2020/21 Estimated	YTD
Number of unplanned maintenances activities (Call outs) for Cemeteries	< 5	0
Number of casket interments	90	40
Number of ash interments	10	9
Number of plinths and plaques placed	90	56

Cemetery Services – 2020/21 Capital Works Program

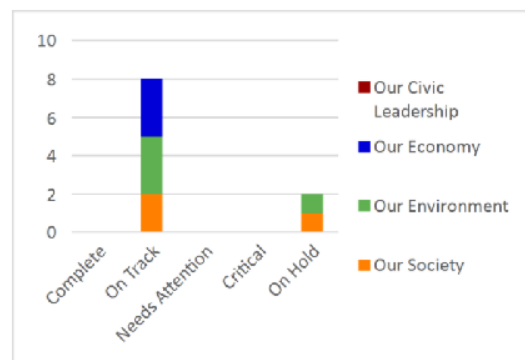
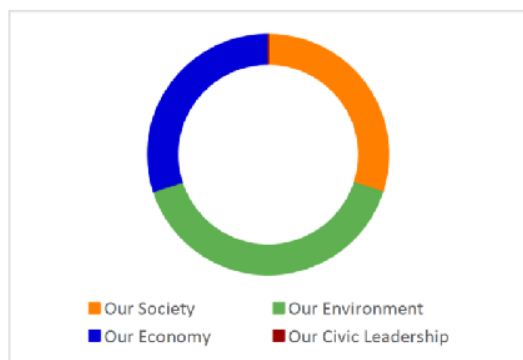
Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Cemeteries - Narrabri Old Cemetery - establish new section	0	0	0	100 %	Project completed.
Cemetery Capex - Narrabri Lawn - replace northern & southern	0	0	0	100 %	Project completed.
Cemeteries - Narrabri Lawn Cemetery - Renew Internal Roads & Carpark (carryover 2018/19)	100,000	0	100,000	15 %	Council will include this works in the Roads departments capital works program for this year. Curb and gutter designs have been completed with drainage works to be the first stage of this project.
Cemeteries - Narrabri Lawn - New Sections	5,000	0	5,000	100 %	Project completed.
Total:	105,000	0	105,000		

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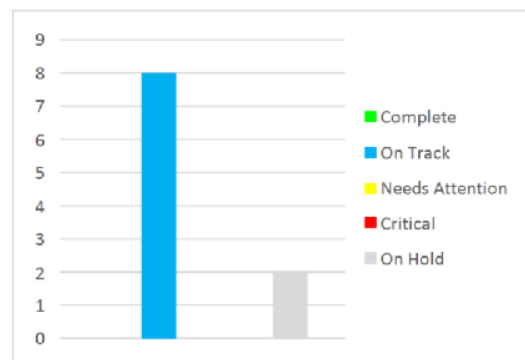
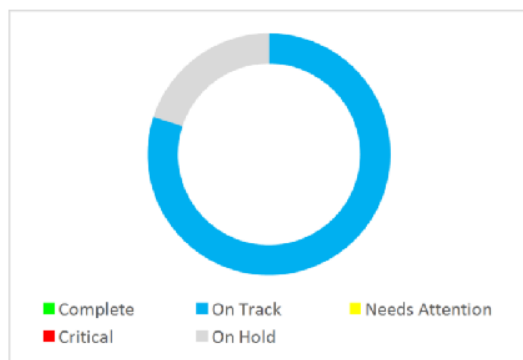
Design and Investigation Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	2	0	0	1	3
Our Environment	0	3	0	0	1	4
Our Economy	0	3	0	0	0	3
Our Civic Leadership	0	0	0	0	0	0
	0	8	0	0	2	10



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.1.2.15 - Implement safe road designs to address identified criteria within the shire network.	30/06/2021	On Track	Audit of road safety initiatives is ongoing as part of routine maintenance and improvement projects. All Engineering designs consider appropriate "Safety in Design" requirements in accordance with Australian Standards, Transport for NSW and AustRoads guidelines.	50 %
1.1.2.3 - Support and liaise with community groups and local residents regarding traffic and alcohol free-zoning requirements.	30/06/2021	On Track	Alcohol Free Zones are due for renewal by 1st July 2023 (Minute 091/2020). Support of local events and assistance for community groups requiring Council approval for traffic related matters and suspension of alcohol-free zones is ongoing and as required.	50 %
1.2.3.7 - Undertake a preliminary feasibility study into the establishment of a weir down-stream from The Crossing Theatre.	30/06/2021	On Hold	Awaiting project brief to enable preliminary investigation works to commence.	0 %
2.1.3.14 - Develop a Safe Routes for Seniors program in the Shire by auditing popular routes in association with a senior/aged care facility, make improvements and then promote their use (including signage of routes).	30/06/2021	On Track	Safe routes for Seniors program to be developed as part of the ongoing Disability Inclusion Action Plan (DIAP). Identified routes that specifically require consultation with community groups are submitted to the DIAP Committee for comment.	50 %
2.1.3.15 - In association with schools, audit key routes to school and improve the facilities along these routes.	30/06/2021	On Track	Priority routes have been identified and concept designs completed for future Capital Works program. Identified projects will be constructed once grant funding opportunities are made available.	50 %
2.1.3.6 - Ensure appropriate regulatory and guidance signage is provided on all existing and proposed walk and cycle facilities.	30/06/2021	On Track	Audit of signage along walk and cycle facilities is ongoing as part of routine maintenance and improvement projects. All Engineering designs consider appropriate regulatory and guidance signage requirements in accordance with Australian Standards, Transport for NSW and AustRoads guidelines.	50 %

Actions	Target	Status	Progress	%
2.1.3.7 - Develop local information brochures and website information on safe walk and cycle practices, to be made available at community information locations in the Shire (e.g. public libraries) and at tourist information kiosks.	30/06/2021	On Hold	Project added to Design Services projects list and will commence once priority infrastructure projects are completed.	0 %
3.2.1.2 - Continually consult relevant stakeholders on future needs of Council's road network in relation to developments such as Inland Rail.	30/06/2021	On Track	Ongoing and as required. Consultation with relevant stakeholders (both internal and external) for all Infrastructure Delivery projects is conducted as part of Councils continual Quality Assurance process.	50 %
3.2.3.1 - Consult with relevant stakeholders on opportunities to increase efficiencies on freight movements to, through and from the Narrabri Shire.	30/06/2021	On Track	Discussions with heavy vehicle operators are ongoing and as required. All heavy vehicle movements are processed by the National Heavy Vehicle Regulator. New routes are assessed in accordance with the Heavy Vehicle National Law and Regulations.	50 %
3.2.3.2 - Develop a freight plan for Narrabri Shire to remove impediments to continuous movement of freight in the largest vehicle possible to key infrastructure.	30/06/2021	On Track	New heavy vehicle routes are assessed in accordance with the Heavy Vehicle National Law and Regulations. Any impediments to the approval of new routes are identified and included as future infrastructure projects (e.g. load limited bridges).	50 %

Design and Investigation Services – Key Performance Measures

<i>Efficiency Measure</i> <i>'Doing things right'</i>	2020/21 Estimated	YTD
Cost per kilometre of road design produced (\$/km)	< \$7,500	\$5,145

<i>Effectiveness Measure</i> <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Internal designs completed within the allocated (agreed) timeframe	100 %	100 %
External designs reviewed and comment provided within 15 working days	100 %	100 %
Heavy Vehicle permits assessed and completed within 15 working days	100 %	100 %
Development Applications assessed and reply submitted to the Director of Infrastructure Delivery within 15 working days	100 %	100 %
Dial Before You Dig requests are replied to within 3 working days	100 %	100 %

<i>Workload Measure</i>	2020/21 Estimated	YTD
Number of Traffic Count Data collected	> 200	88

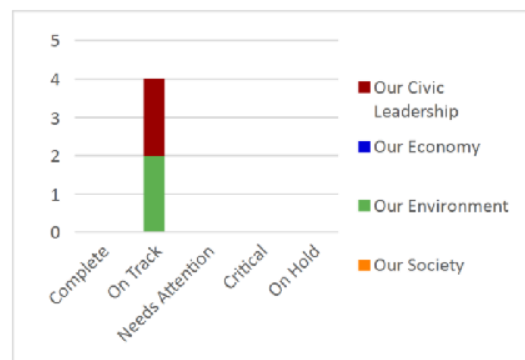
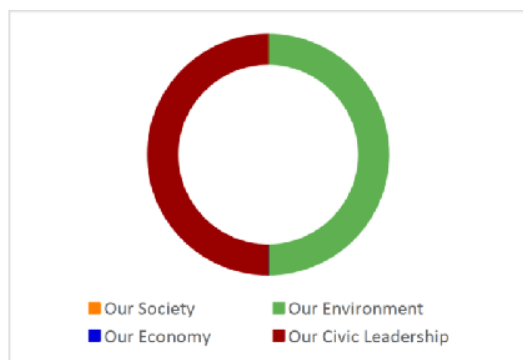
Design and Investigation Services - Statistics

<i>Workload Measure</i>	2020/21 Estimated	YTD
Number of major projects completed (>\$100,000 total project cost)	25	10
Number of minor projects completed (<\$100,000 total project cost)	150	36
Number of external designs assessed	60	25
Number of Heavy Vehicle Permits assessed	120	116
Number of Development Applications assessed	70	20
Number of Dial Before You Dig requests completed	50	27

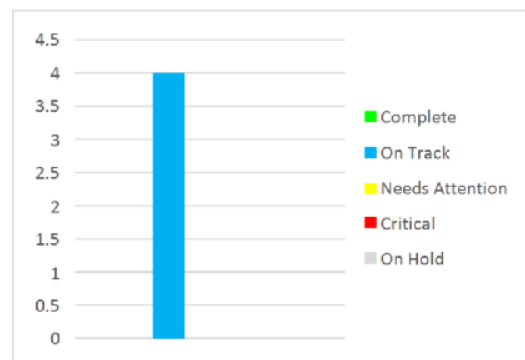
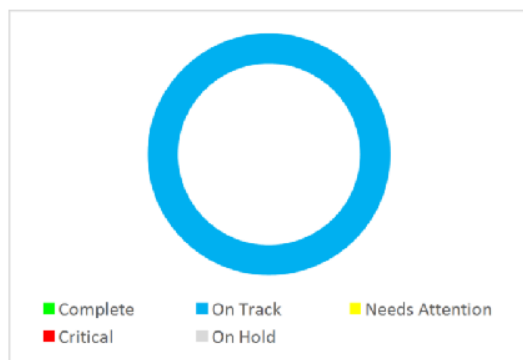
Fleet Management - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	2	0	0	0	2
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	2	0	0	0	2
	0	4	0	0	0	4



Progress by Action - December 2020



Actions	Target	Status	Progress	%
2.2.1.1 - Actively partner with the Rural Fire Service (RFS) and State Emergency Services (SES) to ensure plant and equipment are appropriate.	30/06/2021	On Track	Council was represented at a meeting relating to provision of Heavy Plant in the event of an emergency.	50 %
2.2.1.4 - Facilitate and support the Local Emergency Management Committee.	30/06/2021	On Track	Council has been represented at all LEMC meetings relating to COVID and Emergency Management.	50 %
4.4.4.2 - Develop, review and prioritise relevant fleet replacement programs.	30/06/2021	On Track	A review is scheduled to prioritise Fleet Assets for replacement 20-21.	50 %
4.4.4.3 - Consult with key stakeholders on plant and vehicle replacement requirements to ensure fit for purpose and greatest return for Council.	30/06/2021	On Track	Consultation with key internal stakeholders is continuing.	50 %

Fleet Management – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Scheduled vs Unscheduled Maintenance is 50/50 (% Scheduled)	50 Ratio	37 Ratio
No. of Open IRS (Continuing)	< 35	25

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Number of scheduled maintenance activities completed on time	> 95 %	60 %
Residual Value vs Auction Proceeds	90 %	73 %

Workload Measure	2020/21 Estimated	YTD
Number of Service Requests recorded	2,020	1,169
Number of Procurement Renewals	80	31
Number of Insurance Claims	< 20	11
Number of Disposal Assets Despatched to Auction	80	47

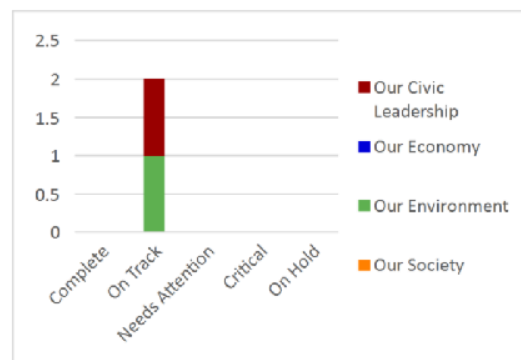
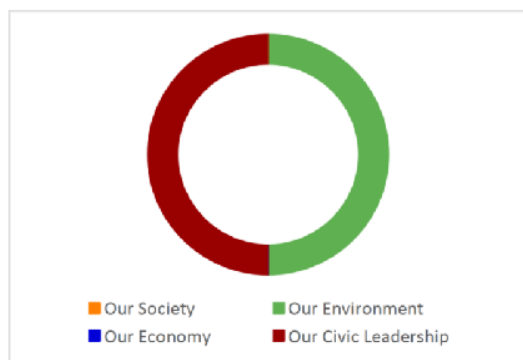
Fleet Management – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Fleet Capital Acquisitions	2,493,000	1,031,599	2,493,000	50 %	Fleet replacement program is underway and on Track. Delivery delays being experienced, attributed to Dock delays/Covid.
Grant - Driver Reviver Site Upgrade	0	20,000	0	100 %	The variable message board trailer is now in use.
Total:	2,493,000	1,051,599	2,493,000		

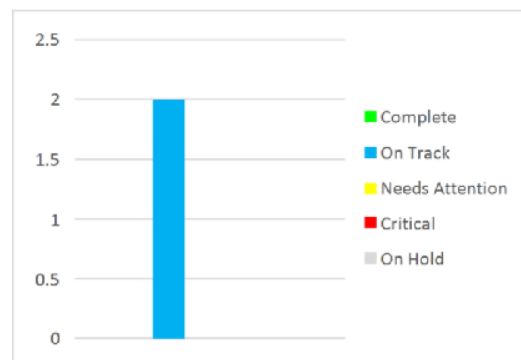
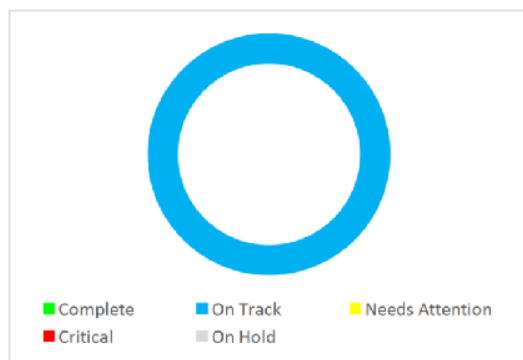
Project and Assets - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	1	0	0	0	1
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	1	0	0	0	1
	0	2	0	0	0	2



Progress by Action - December 2020



Actions	Target	Status	Progress	%
2.2.1.3 - Ensure Narrabri Shire has identified and adequately resourced Disaster Recovery site(s).	30/11/2020	On Track	NSC staff have continued to work hard, following disaster funding guidelines. NSC are waiting for TfNSW to assess the claim and have indicated that this could take a further 6 months. TfNSW have allowed us to extend the scope of the immediate works and have approved the works to be undertaken under this area. This will allow NSC to continue undertaking flood damage repair work on some roads without the need for TfNSW assessment.	25 %
4.3.3.1 - Incorporate communication and consultation requirements into project management processes.	30/06/2021	On Track	Workshop has been held to review the Capital Projects Process and resources used. Development continues into the system and standard resources to be utilised, incorporating communication and consultation.	50 %

Project and Assets – Key Performance Measures

Efficiency Measure <i>'Doing things right'</i>	2020/21 Estimated	YTD
Financial reports for Infrastructure New South Wales, Roads & Maritime Services, Roads to Recovery, etc. projects are forwarded by the due date	100 %	100 %

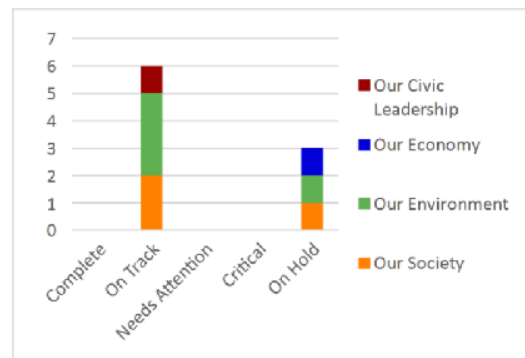
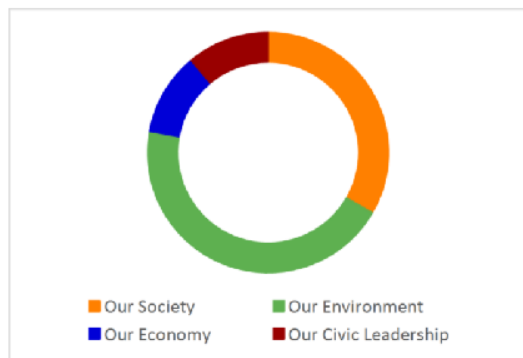
Effectiveness Measure <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Number of legislative and/or Policy breaches relating to tendering	0	0
Contract Progress Claims are checked and processed within the stipulated time	100 %	100 %

Workload Measure	2020/21 Estimated	YTD
Number of new construction and plant contracts processed	> 15	5
Number of current annual contracts (Unit Rate Panel Type Contracts) managed	> 11	10
Number of contract Progress Payments processed	> 61	32
Number of financial reports for Infrastructure New South Wales, Roads & Maritime Services, Roads to Recovery, etc. projects	> 62	44

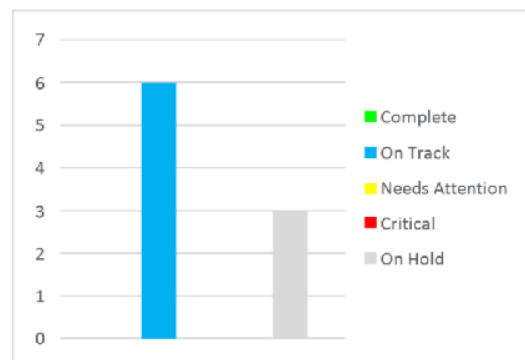
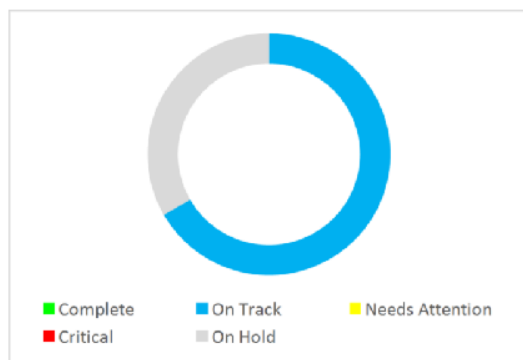
Parks and Open Spaces - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	2	0	0	1	3
Our Environment	0	3	0	0	1	4
Our Economy	0	0	0	0	1	1
Our Civic Leadership	0	1	0	0	0	1
	0	6	0	0	3	9



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.1.1.4 - Draft a Plan of Management for the Narrabri Creek Sport and Recreation Precinct incorporating recommendations of Narrabri Shire Sport and Recreation Plan.	30/06/2021	On Hold	Council is currently drafting a final design and costing of the Tourist hub and with the completion of stage four of the Narrabri Creek shared pathway these two plans will be included in over arching master plan of the Narrabri creek area.	20 %
1.1.2.1 - Apply Crime Prevention Through Environmental Design (CPTED) principles to the design and maintenance of parks, open spaces and amenities to enhance public safety.	30/06/2021	On Track	The four key strategies to crime prevention in design are included in all recreational design for new projects and current asset upgrades.	50 %
1.2.1.2 - Investigate, design and implement renovation/improvements to Wee Waa CBD.	30/06/2021	On Track	Planning and funding has been sourced with a number of works commenced the current project is the centre median planting which will be completed in October further works to the Rose street roundabout are in the planning stage.	50 %
2.1.4.4 - Promote best weed management practices to landholders, including a range of control techniques for integrated weed management.	30/06/2021	On Track	Council promotion and education program through in identification and reporting of incursions of Parthenium weed has been the main focus of the Weeds department and will continue to promote the importance of the eradication of this biosecurity threat to our shire. Council continues to promote priority weed species for eradication and best the best methods of removal of these weed species through land holders inspections and community notices.	50 %
2.1.4.5 - Work with other vegetation managers and land management agencies to ensure weed management programs are included in vegetation management programs.	31/03/2021	On Track	Council weeds department currently work with a number of government agencies including the department of primary industries in grant activated projects on weed and feral animal control.	50 %
2.1.4.6 - Promote vegetation rehabilitation as a key part of weed management.	30/06/2021	On Track	Council conducts a number of inspections on both private and public lands promoting monitoring, identification and weed removal and the benefits of the promotion and regrowth of endemic species to the region .	50 %

Actions	Target	Status	Progress	%
2.2.2.6 - Seek funding to protect and rehabilitate land owned by Council.	30/06/2021	On Hold	Council has not yet identified parcels of land to replant currently council protects assets and land through hazard reduction funding and weed identification and eradication works.	25 %
3.1.2.12 - Develop a Management Plan for the Pilliga Artesian Bore Baths reflecting the local community's aspirations for development and maintenance of the site.	30/06/2021	On Hold	Initial investigation into bore management plan has commenced further planning will continue after the peak season of the Bore baths. Currently Council is seeking grant funding to complete this project.	25 %
4.3.3.10 - Investigate structural concept plans for Swimming Pools in the Shire following the GHD study.	30/06/2021	On Track	Report has been received further leak tests have been completed by divers. Council will now need to investigate future works and funding for the 50m pool and filtration system.	60 %

Parks and Open Spaces – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Number of Biosecurity Directions Issued	> 5	0
Annual cost per Ha to maintain Sports Facilities.	< \$3,500	\$1,392
Annual cost per Ha to maintain Open Space and stormwater areas	< \$1,762	\$688
Cost to maintain street trees with DBH >300mm in Boggabri, Narrabri and Wee Waa	< \$65,988	\$42,000
Cost to clean public toilets across shire (Total of 11)	< \$162,500	\$136,000
Energy cost of public toilets and sport amenity buildings across shire	< \$39,460	\$8,102
Revenue received from sports field lighting	> \$8,500	\$2,457
Annual cost per Ha to maintain Recreation Parks	< \$2,012	\$2,500
Percentage complaints investigation commenced within three (3) working days (weed management)	> 98 %	99 %

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Customer satisfaction with level of service provided at parks, recreation and sporting facilities.	> 75 %	75 %
Number of days sport facilities closed due to maintenance standard / not fit for use.	< 0 Days	0 Days
Number of near miss or injury incidents reported at playgrounds.	0	0
Number of written complaints regarding public toilets that are an unsatisfactory standard of cleanliness.	0	1
Customer satisfaction survey achieves 80% favourable response (weed management)	> 80 %	80 %
Percentage of property inspected that had applied effective weed management.	> 80 %	80 %

Workload Measure	2020/21 Estimated	YTD
Number of sport park amenity buildings (toilets, change rooms and canteens) provided and maintained across shire	> 5	5
Number of playgrounds provided and maintained across shire	> 12	13
Number of roadside Ha treated for noxious weeds	> 10,000	5,987
Number of individual properties inspected for noxious weeds	> 840	135
Number of weed management education programs delivered	> 5	0

Parks and Open Spaces – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Parks & Open Spaces - Wee Waa - CBD Upgrade (VPA)	292,138	33,521	292,138	50 %	Planning and funding has been sourced with a number of works commenced the current project is the centre median planting which will be completed in October further works to the Rose street roundabout are in the planning stage.
Wee Waa - Dangar Park - construct shelters	53,588	13,530	53,588	95 %	Toilet block has been constructed and opened to the public the old amenities building will be demolished over the next month.
Open Spaces - Narrabri - Jetty Area - additional pathway to link arterial pathway	187,000	0	187,000	40 %	This project has been included in the Narrabri lake shared path plan along Walowa street quotes have been received and will be finalized for an installation date on the awarding of the contractor to complete works.
P&OS Capex - Narrabri Lake - additional seating along path	15,000	10,671	15,000	50 %	Seating has been ordered and delivered and will be installed in conjunction with the Narrabri lake shared pathway along Walowa street.
Narrabri Creek - Walk / Cycle Pathway	0	1,824	0	20 %	The tender for this project will be released in November.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
P&OS Capex - Narrabri Gately Field replace perimeter fence	16,336	12,408	16,336	100 %	Project completed.
Sporting Facilities - Narrabri - Cooma Oval - renew cricket nets (carryover \$10k + \$72k from SCCF)	82,171	87,705	82,171	100 %	Project completed.
Sporting Facilities - Narrabri - Cooma Oval - playground area equipment replacement (carryover 2018/19)	12,000	0	12,000	100 %	Project completed.
Recreational Parks - Boggabri - Vickery Park - install flying fox system	30,000	0	30,000	100 %	Project completed.
P&OS Capex - Nbri Collins Park replace storage facilities	30,400	39,564	40,000	100 %	Project completed.
Recreational Parks - Pilliga - Anzac Park - install new playground equipment (carryover 2018/19)	35,000	0	35,000	20 %	Council included additional works to this project with the availability from grant funding to recommission the tennis courts and install new cricket nets this work is nearing completion Council will now finalized quotes and plans for the playground and toilet block to be installed.
Recreational Parks - Pilliga - Anzac Park - install shade shelter (carryover 2018/19)	40,000	0	40,000	20 %	Council included additional works to this project with the availability from grant funding to recommission the tennis courts and install new cricket nets this work is nearing completion Council will now finalized quotes and plans for the playground shade shelter and toilet block to be installed.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Recreational Parks - Pilliga - Rural Transaction Centre - replace amenities (carryover 2018/19)	100,000	2,520	100,000	15 %	Council has moved changed this project from replacing the toilet block held on State government land to installing a new public toilet block in conjunction with the playground and tennis court installation.
Public Amenities & Monuments - Narrabri - Town Clock - renew lighting	5,040	0	5,040	100 %	Project completed.
P&OS Capex - Narrabri Collins Oval grandstand renewal	258,700	0	258,700	10 %	Three contractors are currently quoting the scope of works required.
P&OS Capex - Narrabri Collins Oval replace & extend pathway	55,000	0	55,000	10 %	This project has been added to the Narrabri creek shared pathway stage four tender.
P&OS Capex - Narrabri Cooma Oval replace football posts	22,000	21,775	26,000	50 %	Posts have been ordered and delivered with installation of footings to be completed before the winter football season.
P&OS Capex - Pilliga sports precinct planning	30,000	3,182	30,000	20 %	Planning and design has commenced with the installation of the tennis court and cricket nets nearing completion further planning for irrigation and parking design will continue.
P&OS Capex - Boggabri Anzac Park continuation boundary fence	10,000	0	10,000	20 %	Fence materials have been delivered installation to be commenced in the third quarter of the year.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
P&OS Capex - Boggabri Vickery Park shade shelter skate park	40,000	0	40,000	25 %	Quotation received this project will coincide with the Boggabri pool shade sail project.
P&OS Capex - Boggabri Vickery Park renew perimeter fence	20,000	0	20,000	20 %	Initial quotes received this project will initialize after the installation of the Boggabri skate park shade sail as a section of fence will be removed for this project.
P&OS Capex - Narrabri Collins Park main gate shared pathway	131,000	0	131,000	10 %	This project has been added to the Narrabri creek shared pathway stage four tender.
P&OS Capex - Pilliga Bore Baths replace perimeter fence	25,000	0	25,000	25 %	Fence quotes have been received installation of fence will coincide the end of the Pilliga bore bath peak operating season.
P&OS Capex - Grant Funded Cook Oval Fencing and Irrigation	149,990	131,644	149,990	100 %	Project completed.
P&OS Capex - Mt Kaputar Signage and Shelter (Kaputar Road)	0	14,215	39,000	10 %	Signage and shelter designs received with finalization of the plan with the roads department for parking area to be completed.
P&OS Capex - Pilliga Tennis Court Construction (SCCF)	152,600	158,295	152,600	100 %	Project completed.
P&OS Capex - Narrabri Lake Walowa St Pathway	0	0	0	20 %	Quotes received for pathway and drainage work planning is underway.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
P&OS Capex - Dangar Park Amenities Block	55,000	101,211	55,000	90 %	Final stage of the project to remove existing block has ben delayed due to the discovery of asbestos. Certified asbestos contractor has been engaged to complete works in early 2021.
P&OS Capex – Bellata sporting precinct upgrade	0	0	140,000	5 %	Multi-sport court construction to commence once quotations are finalized.
Grant Capex - SCCF R3 Bellata Recreation Precinct		83,629	151,211	60%	Playground project completed December 2020. Part 2 and 3 of precinct upgrade to be completed under Grant funding within 3 years.
Gwabegar - Anzac Park - install shade shelter	10,520	10,620	0	100%	Project completed.
Total:	1,891,563	729,890	2,202,294		

Sewerage Services – Key Performance Measures

<i>Efficiency Measure</i> <i>'Doing things right'</i>	2020/21 Estimated	YTD
Percentage of water treated to water delivered	> 28 %	70 %

<i>Effectiveness Measure</i> <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Reduction in number of main breaks and chokes (blockages)	< 144	39
Meeting compliance requirements	100 %	100 %
Respond/rectify reported chokes within 3 hours	> 90 %	95 %

<i>Workload Measure</i>	2020/21 Estimated	YTD
Sewerage collection, treatment and disposal	996,000 Kilolitre	431,410 Kilolitre
Average Annual Sewerage collection per connection (kL/connection)	252 Kilolitre	54 Kilolitre
Total number of connections	> 3,960	3,965
Total length of pipes maintained	120 Kilometres	120 Kilometres

Sewerage Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Sewer Capex - Telemetry Upgrades - Sewerage Services	51,014	143,883	51,014	100 %	These works are being undertaken as part of the upgrade of the Boggabri and Wee Waa Sewage Treatment Plant upgrades.

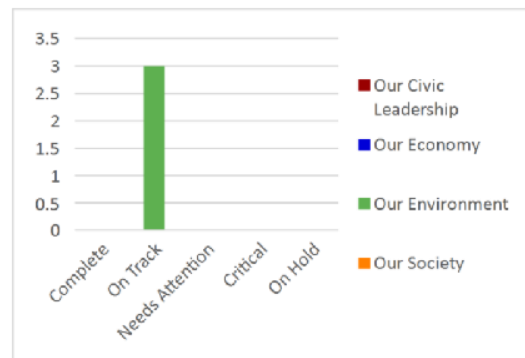
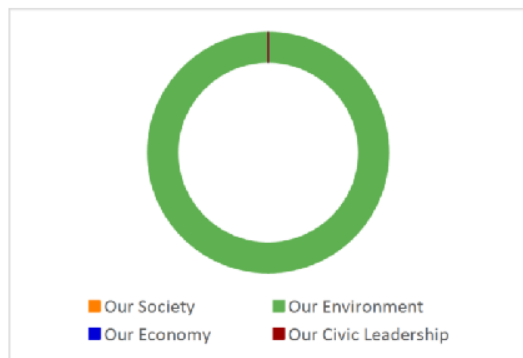
Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Sewerage Services - Sewer Capex - Boggabri Sewerage Treatment Works Augmentation	6,091,600	3,632,487	6,091,600	75 %	Three new tertiary treatment ponds, new Humus Tank, new Switchboard room, new amenities building, and electrical supply upgrade is in progress. Repair and upgrade of process, civil and mechanical equipment and automation is also in progress. Expressions of Interest have been invited to identify a viable treated wastewater recycling opportunity.
Sewerage Services - Sewer Capex - Boggabri Sewer Mains - CCTV and relining of mains	100,000	0	100,000	0 %	These works will be undertaken as required.
Sewerage Services - Sewer Capex - Boggabri Sewer Pump Station Isolation Valves	57,860	0	57,860	0 %	Options are being evaluated to undertake the works.
Sewerage Services - Sewer Capex - Narrabri Sewer Mains - CCTV and relining of mains	100,000	0	20,000	0 %	Works will be undertaken as required.
Sewer Capex - Narrabri Pump Stations - improvement works (de	456,000	417,982	456,600	50 %	Upgrades are in progress in relation to fall prevention and safety improvements.
Sewer Capex - Narrabri Sewer Replace Pump Station Motors	26,352	0	26,352	0 %	Works will be undertaken as required.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Sewerage Services - Sewer Capex - Wee Waa Sewerage Treatment Works Augmentation	4,084,300	2,640,321	4,084,300	70 %	The planned upgrade of Wee Waa STP is in progress including new inlet works, new amenities building, new control room, 2.4km of rising pressure main , 600m effluent rising main and upgrade of 3 sewage pump stations. Repair and upgrade of process, civil and mechanical equipment and automation is also in progress.
Sewerage Services - Sewer Capex - Wee Waa Sewer Mains - CCTV and relining of mains	100,000	0	100,000	0 %	Works will be undertaken as required.
Total:	10,897,726	6,834,672	10,897,726		

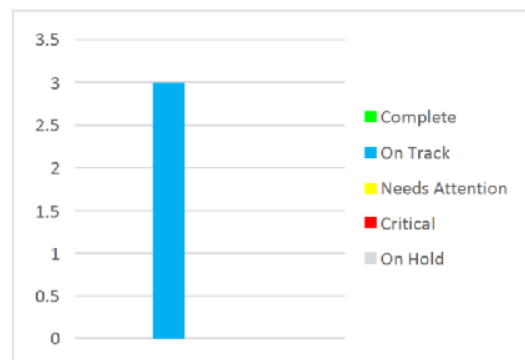
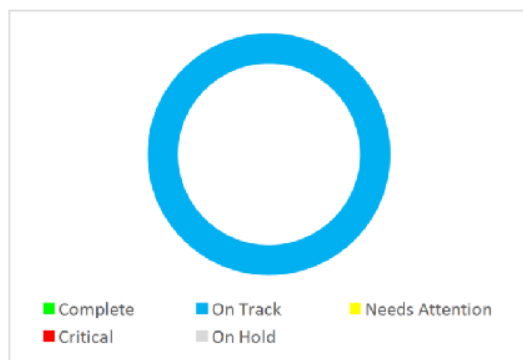
Solid Waste Management Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	3	0	0	0	3
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	0	0	0	0	0
	0	3	0	0	0	3



Progress by Action - December 2020



Actions	Target	Status	Progress	%
2.3.2.15 - Develop and adopt a Waste Management Strategy for the Shire.	30/06/2021	On Track	Draft Strategy document underway. Stakeholder engagement commenced. Community expectation survey required. NSW Waste Strategy due for release shortly should be taken into consideration for NSC Waste Strategy. NIRW currently working on a regional recycling strategy that should also influence this strategy.	50 %
2.3.2.16 - Develop long term strategy for the Narrabri Landfill.	30/06/2021	On Track	GHD have completed the Landfill Strategy and it is currently before the EPA for comment and approval.	90 %
2.3.2.7 - Actively promote the 'Community Recycling Centre'.	30/06/2021	On Track	The Chemical Collection & Drum Muster events have received advertising through social media, the council web site and local media. Both events are now complete. Household cleanout event complete for NWMF, Wee Waa & Boggabri transfer stations, first weekend in Nov 20.	50 %

Solid Waste Management Services – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Cost per tonne to operate Council waste disposal facilities	< \$130	\$117
Zero breaches of EPL Licence requirements for Narrabri Landfill site	< 0	0
Percentage of recycling bin contamination	< 20 %	20 %

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Percentage of waste diverted from Landfill originating from kerbside collection	> 45 %	40 %
Number of written valid complaints per annum of waste services	< 5	0

Workload Measure	2020/21 Estimated	YTD
Number of residential premises presenting for kerbside collections per week	> 4,276	4,304
Number of days Narrabri Landfill open	> 360	182
Delivery of face to face waste minimisation program	> 5	5
Attendance at Northern Inland Regional Waste (NIRW) and Cleanaway contract group meetings	> 7	6

Solid Waste Management Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Waste - Narrabri Landfill - Construction of a New Cell	822,081	0	822,081	45 %	Detailed plan completed by GHD. Development Amendment approved with addition scope required prior to construction. EPA design approval pending. Landfill Strategy pending approval EPA. Tender document internal discussions underway. Tender to be advertised and awarded for the construction of Cell1.
Waste Capex - Narrabri Landfill Improvements	131,437	47,415	131,437	100 %	The Expenditure from this action will need to be transferred to the Cell 1 Project.
Waste Capex - Transfer Stations - New Access Road	20,000	0	20,000	100 %	Included in Transfer Station Enhancement Capex. ACT01116.
Solid Waste Management - Transfer Stations - Upgrade Waste Collection Points	480,798	1,109	480,798	50 %	Fencing upgrade/ maintenance. Minor road repair. Retaining wall maintenance and lowered in readiness for future hook lift bins.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Waste Capex - Nbri New Tfr Stn & Resource Recovery Centre	200,000	0	200,000	45 %	The project is currently awaiting recommendations from the GHD Landfill Strategy and EPA approvals.
Waste Capex - Transfer Station Surveillance CCTV Systems	100,000	0	100,000	45 %	Quotes have arrived and are being looked over pending regional strategy and transfer station updates.
Waste Capex - Transfer Station Enhancements	463,000	0	463,000	50 %	Project is underway with times lines and plans under construction. Enhancements to include new design, fencing maintenance, removal of retaining walls, re-positioning of bins and amenities buildings and maintenance of hardstands.
Total:	2,217,316	48,524	2,217,316		

Swimming Pools – Key Performance Measures

Efficiency Measure `Doing things right`	2020/21 Estimated	YTD
Operational cost per patron at Boggabri is maintained below \$15 per patron	< \$11	\$10
Operational cost per patron at Narrabri is maintained below \$15 per patron	< \$7	\$15
Operational cost per patron at Wee Waa is maintained below \$15 per patron	< \$8	\$10
Percentage of pool operating expenditure recovered as revenue	> 39 %	23 %

Effectiveness Measure `Doing the right things`	2020/21 Estimated	YTD
Number of incidences of pool closure for health reasons	< 1	0
Number of written complaints relating to health, safety or customer service	< 10	0
The total retail sales at Boggabri, Narrabri and Wee Waa each year exceed the rolling three year average	> 70,000	16,890

Workload Measure	2020/21 Estimated	YTD
Number of patrons using pools in Boggabri	> 9,300	3,328
Number of patrons using pools in Narrabri	> 50,890	21,563
Number of patrons using pools in Wee Waa	> 12,850	4,861
Number of Learn to Swim classes offered at Boggabri, Narrabri and Wee Waa pools	> 750	275

Swimming Pools – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Pools Capex - Replace dosing units Nbri (2), WW & Bbri	68,000	2,888	68,000	50 %	The units for all three pools have been ordered for installation.
Pools Capex - Nbri replace gauges - splash toys & LTS tables	11,000	6,306	11,000	100 %	Project complete.
Pools Capex - Nbri replace 2 swimplex sand filters	48,000	47,059	48,000	100 %	Project complete.
Pools Capex - Nbri Aquatic Pool tile replacement	15,000	14,993	15,000	100 %	Project complete.
Pools Capex - Bbri chemical dosing upgrades	85,000	5,346	85,000	25 %	Quotes received for the new filtration shed and chemical holding equipment this project is scheduled to commence at the end of the Summer pool season.
Pools Capex - Bbri building improvements & asbestos removal	85,000	0	85,000	20 %	Quotes received and works to commence at the end of the summer season.
Pools Capex - Bbri renew sand & pipe lines filtration system	15,000	136	15,000	85 %	Foot valve and pipe works completed lint strainer to be replaced in October and laterals will be replaced in conjunction with new filter medium.
Pools Capex - Bbri replace sail on shade structure	10,000	0	10,000	25 %	Delays in obtaining materials by contractor has stalled the installation, this project works should commence in the third quarter.
Pools Capex - Wee Waa replace filter, pipe work, pump	15,000	14,949	15,000	100 %	Project completed.

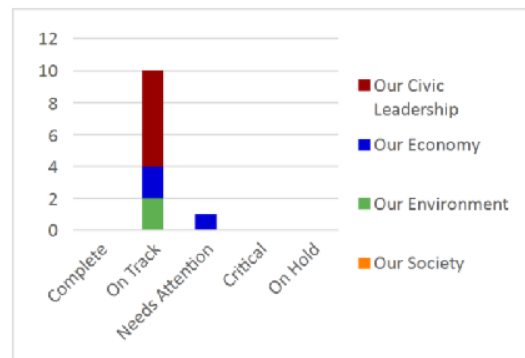
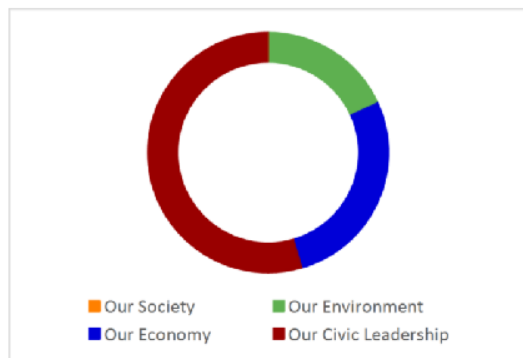
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Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Pools Capex - Wee Waa chemical dosing upgrades	11,000	0	11,000	50 %	Foot valve replacement was needed to allow chemical dosing installation which has now been completed bunted dosing units will now be ordered for installation.
Pools Capex - Wee Waa replace asbestos lining	80,000	0	80,000	10 %	Quotes received and works to commence at the end of the summer season.
Total:	443,000	91,677	443,000		

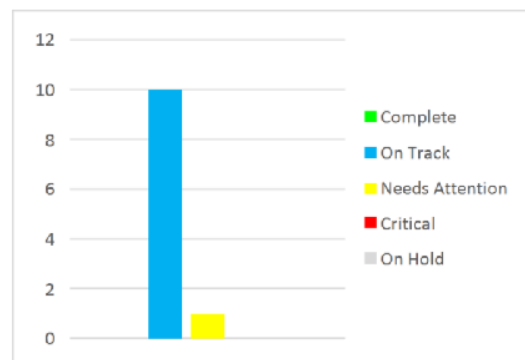
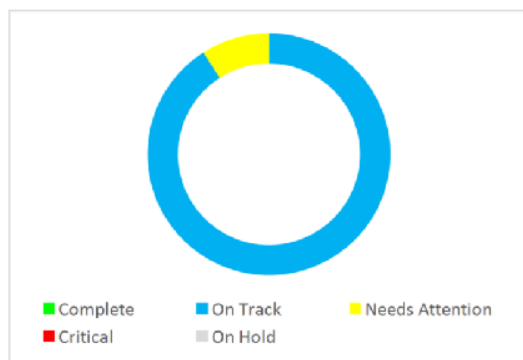
Transport Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	0	0	0	0	0
Our Environment	0	2	0	0	0	2
Our Economy	0	2	1	0	0	3
Our Civic Leadership	0	6	0	0	0	6
	0	10	1	0	0	11



Progress by Action - December 2020



Actions	Target	Status	Progress	%
2.1.3.18 - Review existing maintenance program to ensure it incorporates regular maintenance of footpaths, shared paths and on road cycle facilities.	30/06/2021	On Track	Regular maintenance is carried out on footpaths, shared paths and cycle facilities as part councils general maintenance program.	50 %
2.4.4.1 - Council's gravel pits are operated and maintained in an environmentally compliant manner.	30/06/2021	On Track	Council's quarries are managed in an environmentally compliant manner as per the management plans set in place. Pits are also inspected regularly to ensure compliance.	50 %
3.1.3.3 - Define key CBD entry point at intersection of Doyle and Tibbereena Street by introducing new road surface treatment, new landscaping and adding CBD entry signage.	30/06/2021	Needs Attention	Works not yet commenced. Further investigation required.	0 %
3.2.2.1 - Adapt road strategies to manage the impact of regionally important projects such as the Inland Rail and other significant freight requirements on the future road network of the Narrabri Shire.	30/06/2021	On Track	As a part of the road network hierarchical review, roads will be classified in accordance with their future use and funding sought on this basis.	10 %
3.2.2.2 - Seek funding to develop the road network in support of regionally significant future projects such as the Inland Rail.	30/06/2021	On Track	Funding is frequently sought out to complete major projects. Funding streams will be monitored to identify potential projects.	50 %
4.1.3.3 - Maintain and further develop our relationship with the RMS to obtain best benefits for the Shire from the Roads Maintenance Council Contract for maintenance of state highways in the Shire.	30/06/2021	On Track	Relationships remain strong with TfNSW. This is evident in the continual ordered work offered to NSC to complete.	50 %

Actions	Target	Status	Progress	%
4.2.1.3 - Continually review the condition of the road network to reassess the amount of backlog and lifecycle costing required.	30/06/2021	On Track	Inspections are routinely carried out to determine required maintenance and effectiveness of current practices. Condition assessments are carried out on a 4 year cycle to help develop asset management programs as well as benchmark against current budget and resource levels.	50 %
4.3.3.14 - Cypress Way (R329) Pilliga/Gwabegar Project - Business Case/Grant Ready	30/06/2021	On Track	Initial investigation have been conducted with early indications proving the road does not have a strong case for some grant applications. This road is however a regional road that has been listed as a priority for transfer back to the State Government.	10 %
4.3.3.5 - Explore opportunities with private suppliers/contractors to partner in civil infrastructure projects and maintenance.	30/06/2021	On Track	Road Services continue to use numerous local contractors across its network.	50 %
4.3.3.6 - Become a tier 1 qualified/accredited contractor for Road Construction.	30/06/2021	On Track	A set of management plans have been developed and audited by TfNSW. Some changes have been identified, in which staff have progressed through. The application is now being finalised in preparation for final pre-submission audit.	50 %
4.4.1.1 - Determine a satisfactory level of service for the transport network that is acceptable by the community within budgetary constraints.	30/06/2021	On Track	Preliminary works have commenced in redefining the road network hierarchical structure. This will provide the base line for developing the satisfactory levels of service that can be achieved with the available budget.	10 %

Transport Services – Key Performance Measures

<i>Efficiency Measure</i> <i>'Doing things right'</i>	2020/21 Estimated	YTD
Cost per kilometre of grading roads	< \$500	\$1,048

<i>Effectiveness Measure</i> <i>'Doing the right things'</i>	2020/21 Estimated	YTD
Completing road inspection following public complaint and lodgement of CRM within 48 hours.	> 80 %	80 %

<i>Workload Measure</i>	2020/21 Estimated	YTD
RMS State Highways Maintained	165 Kilometres	165 Kilometres
Regional Roads Maintained	168 Kilometres	168 Kilometres
Collector Roads Maintained	416 Kilometres	416 Kilometres
Local Access Roads Maintained	1,561 Kilometres	1,561 Kilometres
Narrabri Streets Maintained	91 Kilometres	91 Kilometres
Wee Waa Streets Maintained	30 Kilometres	30 Kilometres
Boggabri Streets Maintained	35 Kilometres	35 Kilometres
Village Streets Maintained	20 Kilometres	20 Kilometres

Transport Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Transport - Roads - Bullawa Cr Bridge Eulah Creek Rd - Concept, Geotechnical	27,520	0	27,520	50 %	A business case has been developed for the lodgement of a grant application under "Fixing Country Bridges". The grant application was lodged early October 2020.
Transport - Roads - Boggabri Lynn Street Extension & Cul de Sac	48,966	0	48,966	100 %	Works are part of conditions on a DA. No agreement has been signed with the developer and no contribution has been paid. No action required, needs to be removed as an action.
Footpath Capex - PAMP Cooma Road Shared Pathway	0	3,558	0	50 %	Stage one of this project is completed and additional funding been sourced to complete stage two this project. Construction to commence in 2021.
Transport - Roads - Narrabri Fitzroy Street Rehabilitation	102,504	0	102,504	5 %	Significant kerb and gutter replacement is required as part of this project. Designs are nearing completion and will be a part of the kerb and gutter replacement contract.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Transport - Roads - Narrabri CBD Upgrade	0	0	0	40 %	The contract has been awarded to Daracon Engineering Pty Ltd and construction has commenced. Stage 1a and 1b have been completed. Construction is forecast to be completed in March.
Roads Capex - K&G Renewals	571,000	0	571,000	10 %	Designs are nearing completion and the tender documentation can be completed. Construction scheduled for early 2021.
Roads Capex - Stormwater Renewals	150,000	0	150,000	0 %	Yet to commence.
Roads Capex - Spring Cr Bridge Bald Hill Rd - Concept, Geote	0	1,654	0	100 %	Spring Creek Bridge concept and geotechnical reporting has been completed ready for construction. Construction commencing in November.
Roads Capex - Horse Arm Ck Bridge - Concept, Geotechnical	0	4,275	0	100 %	Preliminary works have been completed and the tender has been awarded to Saunders Civil Build Pty Ltd. Design has commenced and is approximately 50% complete, with site mobilisation scheduled for early November.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Regional Roads - Regional Road Rehabilitation	0	0	0	30 %	Construction works have been completed on Stage 1 - MR133 Killarney Gap Rd. Stage 2 is set to commence early 2021 (MR133), with MR127 Pilliga Rd to follow.
Regional Roads - Regional Road Resheets	131,571	131,581	131,581	100 %	No Gravel Resheeting is scheduled to take place this financial year on Regional Roads.
Shire Roads - Shire Road Resheets	1,714,500	1,075,420	1,714,500	90 %	Designated resheeting program has been completed.
Shire Roads - Shire Road Reseals	1,100,000	0	1,100,000	5 %	Planning is in progress with works scheduled for the summer period.
Roads Capex - Culgoora Road Upgrade	0	24,127	489,024	5 %	Property acquisition and creation of the new road reserve is in progress. Once completed, construction can commence.
Roads Capex - Tarriaro Bridge Replacement	0	25,851	0	100 %	Bridge replacement completed last financial year. No further action required.
Town Streets - Town Streets Rehabilitation	50,000	0	50,000	0 %	Yet to commence.
Town Streets - Town Streets Reseal	350,000	0	350,000	5 %	Planning is in progress with works scheduled for the summer period.
Town Streets - Maitland St Road Surface Replacement	3,336,159	1,107,211	3,336,159	40 %	The contract has been awarded to Daracon Engineering Pty Ltd and construction has commenced. Construction is forecast to be completed in March.

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Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Town Streets - Maitland St Roundabouts Improvements	0	0	0	40 %	The contract has been awarded to Daracon Engineering Pty Ltd and construction has commenced. Construction is forecast to be completed in March.
Town Streets - Footpath Replacement	220,000	0	839,773	0 %	Yet to commence.
Stormwater - Maitland St Stormwater Upgrades	200,000	0	200,000	100 %	A preliminary drainage assessment was undertaken last year to determine inefficiencies in the system. A decision was made to not replace any of the stormwater assets until a complete assessment has been completed and an asset management plan developed.
Roads Capex - Old Turrawan Rd (S1) Reconstruct Railway Xing	900,000	49,400	900,000	5 %	The level crossing is currently in the design phase after receiving a conditional approval from John Holland Rail. Design works are continuing.
Roads Capex - Old Turrawan Rd (S2) Relocate l'sect Kamil Hwy	65,000	16,238	65,000	5 %	The geotechnical investigation and REF have been completed and the consultation with TfNSW, WAD and design have commenced. Land acquisition has been identified and is in the early stages.
Roads Capex - Old Turrawan Rd (S5) Extend Avon St	0	2,110	0	0 %	The REF has been completed and the design is in the early stages.

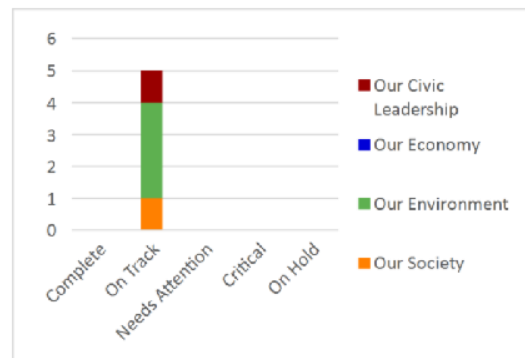
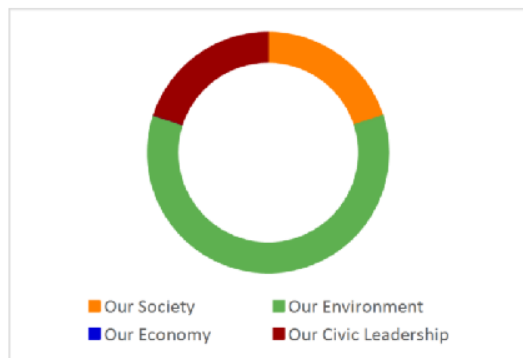
Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Roads Capex - Shire Road Rehabilitation	478,297	489,458	489,273	100 %	Works have been completed on SR4 Spring Plains Rd and SR10 Old Gunnedah Road.
Roads Capex - Horse Arm Creek Bridge Replacement	1,400,000	387,009	1,400,000	25 %	Tender has been awarded to Saunders Civil Build Pty Ltd. Design has been completed and construction has commenced. Scheduled to be completed in March.
Flood RE 8-2-2020	2,000,000	417,079	2,000,000	20 %	Preparation of the flood claim is completed and submitted to TfNSW, we now await their assessment. 'Immediate' work scope has been widened and these works are continuing.
Roads Capex - Carinya Rd (SR143) Upgrade	433,925	1,000	433,925	5 %	REF and environmental investigations have been completed. Works are scheduled to commence early 2021.
Roads Capex - Spring Creek Bridge Replacement	1,400,000	345,576	1,400,000	25 %	Tender has been awarded to Saunders Civil Build Pty Ltd. Design has been completed and construction has commenced. Scheduled to be completed in March.
Roads Capex - Nbri Collins, Hogan, Lietch Ovals access roads	50,000	0	50,000	0 %	Works will be carried out in summer.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Roads Capex - Narrabri Fitzroy St road and K&G replacement	800,000	1,961	800,000	5 %	Significant kerb and gutter replacement is required as part of this project. Designs are nearing completion and will be a part of the kerb and gutter replacement contract.
S/Wtr Capex - Nbri Aquatic Centre replace discharge system	35,000	1,818	35,000	20 %	Initial investigation has been conducted and construction has commenced on improving flow issues.
Roads Capex - (MR133) Killarney Gap Road REPAIR GRANT	894,997	155,471	894,997	50 %	Stage 1 construction has been completed, with Stage 2 to commence early 2021.
Roads Capex - MR127 Pilliga Road Rehab (REPAIR/Block)	400,000	0	400,000	5 %	Planning has commenced and work is scheduled to take place in 2021.
Total:	17,359,448	4,240,797	17,979,222		

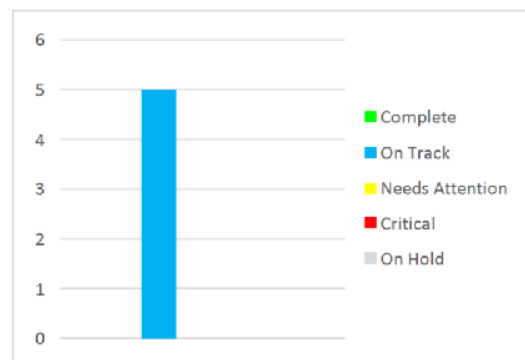
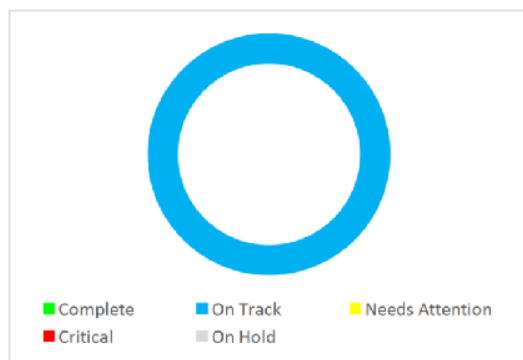
Water Services - Actions

Progress by Theme – December 2020

Theme	Complete	On Track	Needs Attention	Critical	On Hold	Total
Our Society	0	1	0	0	0	1
Our Environment	0	3	0	0	0	3
Our Economy	0	0	0	0	0	0
Our Civic Leadership	0	1	0	0	0	1
	0	5	0	0	0	5



Progress by Action - December 2020



Actions	Target	Status	Progress	%
1.4.1.2 - Facilitate and support the continued operation of the Federation Farm share farming agreement.	30/06/2021	On Track	Ongoing support is provided to ensure success of the Federation Farm share farming agreement.	50 %
2.3.3.7 - Engage with the Community on the subject of a treated water supply.	30/06/2021	On Track	Preparation of an Integrated Water Cycle Management Strategy is in progress. As part of this strategy community will be engaged on the subject of a treated water supply.	10 %
2.4.3.1 - Monitor water quality performance and identify trends.	30/06/2021	On Track	Water quality is being monitored in accordance with NSW Health Drinking Water Monitoring Program.	50 %
2.4.3.3 - Maintain a database of water quality results from public water supply bores and identify trends.	30/06/2021	On Track	Water supplied from the public bores is tested within the supply network in accordance with NSW Health Drinking Water Monitoring Program.	50 %
4.3.1.3 - Ensure accuracy of linear water and waste water assets in the asset information system.	30/06/2021	On Track	Asset information is being reviewed and systematic improvements are identified to improve the quality of asset data.	25 %

Water Services – Key Performance Measures

Efficiency Measure 'Doing things right'	2020/21 Estimated	YTD
Unaccounted for Water (losses/leaks/flushing)	< 20 %	35 %

Effectiveness Measure 'Doing the right things'	2020/21 Estimated	YTD
Reduction in Customer Service Requests (CSRs) - Water quality related to Iron and Manganese	< 80	17
Reduction in Customer Service Requests (CSRs) - Water pressure	< 60	20
Reduction in water mains breaks	< 165	93

Workload Measure	2020/21 Estimated	YTD
Volume of water abstracted and distributed (kL)	3,545 Kilolitre	1,259,000 Kilolitre
Average volume of water supplied to each customer (kL/connection)	420 Kilolitre	89 Kilolitre
Total number of connections	4,470	4,478
Total length of pipes maintained	168 Kilometres	168 Kilometres

Water Services – 2020/21 Capital Works Program

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Water - Bellata - Replace Galvanised Pipe	0	0	0	100 %	Project Completed.
Water Capex - Telemetry Upgrades - Water Services	50,000	0	50,000	100 %	Telemetry upgrade has been completed.
Water - Wee Waa Replace Mains Charles & James Sts	270,000	0	0	0 %	Works are being planned.
Water Capex - Bellata - Bore process automation	10,000	0	10,000	100 %	New bore has been commissioned at Bellata along with new switchboard and process automation.
Water Capex - Bellata Bore Replacement	60,000	82,851	60,000	100 %	New bore at Bellata has been installed and commissioned.
Water Supplies - Water Capex - Bellata Rising Main Replacement	0	0	0	100 %	The removal and replacement of approximately 815 m of water pipe and associated works have been completed along the Newell Highway at Bellata.
Water Capex - Bellata Reticulated Water Main Replacement	600,000	642,917	600,000	100 %	Removal and replacement of approximately 815 m of water pipe has been completed at Newell Highway, Bellata.
Water Supplies - Water Capex - Boggabri Water Mains Renewals	20,000	0	200,000	0 %	Options are being evaluated to undertake the works.
Water Capex - Gwabegar Bore Replacement	100,000	121,423	100,000	100 %	New bore at Gwabegar has been installed and commissioned.
Water Capex - Narrabri Water Augmentation	250,000	304,365	250,000	99 %	Final commissioning checks are in progress.

Capital Work Description	Budget Adopted	YTD	Projected	% Completed	Progress
Water Supplies - Water Capex - Narrabri Water Mains Renewals	400,000	74,254	400,000	80 %	Replacement of two aging water pipes on the Namoi River has been undertaken.
Water Capex - Pilliga Bore Replacement	120,000	173,696	120,000	100 %	New bore at Pilliga has been installed and commissioned.
Water Supplies - Water Capex - Wee Waa Water Mains Renewals	300,000	0	300,000	0 %	Options are being evaluated to undertake the works.
Water Supplies - Water Capex - Wee Waa install high efficiency electrical motors at bores	15,000	0	15,000	0 %	Options are being evaluated to undertake the works.
Water Supplies - Water Capex - Wee Waa Stop Valves in Reticulation (carryover 2017/18)	30,000	520	30,000	0 %	Options are being evaluated to undertake the works.
Water Capex - Wee Waa Reservoir Roof & Access Steps	6,262	0	6,262	0 %	Not planned for the current 2020-2021 Financial Year.
Total:	2,141,262	1,400,026	2,141,262		

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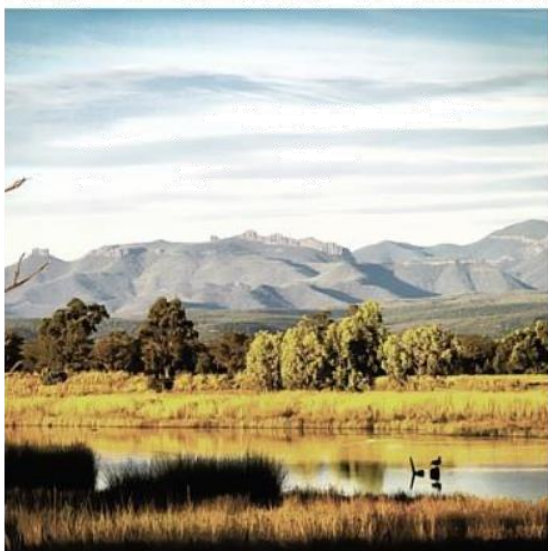
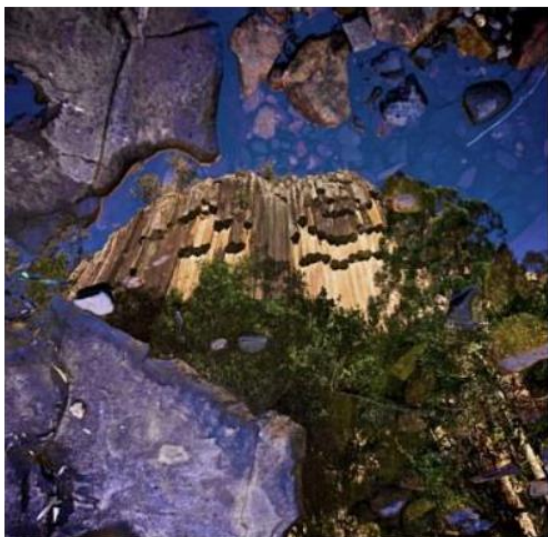
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As at **December 2020**





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Our Strategic Directions

Our Community Strategic Plan that informed the development of the Delivery Program is based on four key Strategic Directions. Together, these provide a strong foundation for planning the *social, environmental, economic and civic leadership* outcomes for our Shire with the purpose of achieving our shared vision and strategic directions.

These Strategic Directions align with our Community Vision. They also recognise that all our communities share similar aspirations, including a safe and inclusive place to live, a sustainable environment, opportunities for employment and tourism, as well as proactive leadership and essential service and infrastructure delivery.

Under each Strategic Direction are a number of Strategic Objectives, and for each Strategic Objective are a series of Strategies which demonstrate Narrabri Shire's focus for the next 10 years.

Figure 1: Council's Strategic Directions

Our Vision

A strong and vibrant regional growth centre providing a quality living environment for the entire Shire community.

Our Strategic Direction



Theme 1: Our Society

Strategic Direction 1: Safe, Inclusive and Connected Community

A safe, supportive community where everyone feels welcomed, valued and connected.



Theme 2: Our Environment

Strategic Direction 2: Environmentally Sustainable and Productive Shire

Maintaining a healthy balance between our natural and built environments.



Theme 3: Our Economy

Strategic Direction 3: Progressive and Diverse Economy

A strong, diverse economy that attracts, retains and inspires business, industry and tourism growth.



Theme 4: Our Civic Leadership

Strategic Direction 4: Collaborative and Proactive Leadership

Working pro-actively together to achieve our shared vision with strong strategic direction.

Our Delivery Program

The Strategies identified in the Community Strategic Plan flow down into the Delivery Program. The Delivery Program outlines how Council will deliver and resource these Strategies over the following four years. Council's Delivery Program measures the success of Council achieving its Strategies for the benefit of the community to which it serves.

Specific actions to be completed and the resources required for each financial year are explored further in Council's Operational Plan and Resourcing Strategy. The relationship between the Community Strategic Plan, Delivery Program and Operational Plan is demonstrated in the following figure.

Figure 2: Integrated Planning and Reporting Elements

Four key strategic themes



Measuring and Monitoring our Success

Performance measures have been placed against the Strategies in the Delivery Program to enable the community and Council to monitor the achievement of critical success factors for each strategic priority area. Council will gather information on each performance measure and report to Council through bi-annual reviews on how Council and the community are tracking.

Whilst some performance measures can be clearly quantified, this may not necessarily mean the community is aware of, fully appreciates, or is fully satisfied with, the extent of progress. A community survey is proposed every two years to gauge community satisfaction or otherwise with progress and where priorities could or should be assigned to particular areas in the future. Alternatively, community members are encouraged to attend monthly Council meetings.

Council will continue to set measurable targets against its actions in the Operational Plan to allow Council to monitor its progress in achieving the plan.



THEME 1: Our Society

Strategic Direction 1: Safe, Inclusive and Connected Community

By 2027, Safe, Inclusive and Connected Community

COMMUNITY ENGAGEMENT

Through extensive community engagement, the Narrabri Shire Community identified several social priority areas to be addressed over the following four years.

COMMUNITY SERVICES

Current services provided within the Narrabri Shire community include:

- Community development
- Community health and safety
- Community arts, events and entertainment
- Community care services and transport
- Parks, open spaces and sporting facilities
- Children, youth and aged care services
- Disability access services
- Library services

COMMUNITY OUTCOMES

In partnership with the community, government and non-government agencies, the Delivery Program will work towards achieving the following social strategic outcomes:

- Increased community arts, events and entertainment
- Reduction in anti-social behaviour and public offences
- Improved community accessibility and inclusiveness
- Improved sport and recreational services and facilities
- Improved educational services and learning pathways
- Improved community health and support services

Our Society

Strategic Direction 1: Safe, Inclusive and Connected Community

Objective 1.1 - Community health, safety and support services will adequately meet changing community needs

1.1.1 - Support and encourage health and wellbeing programs and services to improve resident lifestyles

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO01 - Dedicated walking and cycling trails: Kilometres of dedicated walking and cycling trails in the Shire.	National Parks and Wildlife Service and Council data	> 0 Kilometres		Mt Kaputar National Park and Narrabri Shire Council designated walking and cycle tracks continuously being upgraded. The Narrabri Creek shared cycle and walk path has been developed with an additional 1.6km added to the pathway during 2019/2020 with additional extensions scheduled in 2020/2021. Upgrades to Narrabri Lake Pathway have been completed.
SO02 - Participation in Sporting and Recreational Activities: Percentage of adult population that participated in sport and recreational activities during the last 12 months.	Community survey	> 60 %		Participation has been affected by the Covid 19 pandemic, which has had a greater impact on organized sport there has been an increase in oval bookings in the summer season with cricket and touch football numbers on the rise. Recreational activities have increased with the construction of the creek and lake pathways.
SO03 - Library Utilisation: Increase in Library memberships as a percentage of the population.	Council data	> 65 %		Narrabri = 8,643 members x 13,084 total population of Narrabri LGA = 66.05%. Wee Waa = 1,929 members x 13,084 total pop. = 14.88%. Boggabri = 544 members x 13,084 total pop. = 4.11%

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO04 - Lifestyle Satisfaction: Level of satisfaction with recreation and lifestyle opportunities.	Community survey	> 75 %	<p>71 71 71 71 82 82 82 75</p>	Council has included several upgrades to recreational parks in the shire in the Capital works and grant funding plans. The additional assets will include shade shelters and new equipment. The recent installation new shared pathways at the Narrabri Creek and Narrabri lake has increased patronage in the two sites, the completion of a tennis court in Pilliga and a playground in Bellata will increase social participation in both towns.

1.1.2 - Maximise community safety through the implementation of crime prevention and risk management actions

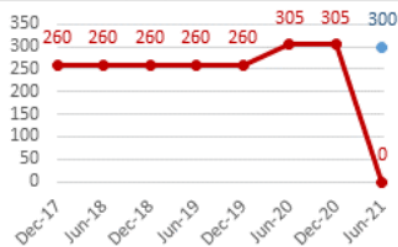
Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO05 - Illicit drug use: Decrease in the number of reported incidents of the use of illicit drugs in Narrabri Shire annually.	Bureau of Crime Statistics and Research data	< 40	<p>0 45 45 41 41 65 22 40</p>	BOCSAR NSW figures show a total of 22 drug offences recorded for July 2020 to September 2020 within the Narrabri LGA. Further data is not as yet available.
SO06 - Crime Incidents: Reduction in overall crime incidents reported.	Bureau of Crime Statistics and Research data	< 740	<p>778 778 778 677 677 672 250 740</p>	BOCSAR NSW Figures indicate a total of 250 offences recorded across all crime types for the period July, August and September 2020 for the Narrabri LGA. Over this period there has been a decrease in assaults, both domestic violence related and non-domestic violence related. Of note, breach of bail offences continue to trend upwards.

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO07 - Safety Perception: Positive increase in resident perception of safety identified in community surveys.	Community survey	> 75 %	<table><thead><tr><th>Date</th><th>Score</th></tr></thead><tbody><tr><td>Dec-17</td><td>69</td></tr><tr><td>Jun-18</td><td>69</td></tr><tr><td>Dec-18</td><td>69</td></tr><tr><td>Jun-19</td><td>69</td></tr><tr><td>Dec-19</td><td>74</td></tr><tr><td>Jun-20</td><td>74</td></tr><tr><td>Dec-20</td><td>74</td></tr><tr><td>Jun-21</td><td>75</td></tr></tbody></table>	Date	Score	Dec-17	69	Jun-18	69	Dec-18	69	Jun-19	69	Dec-19	74	Jun-20	74	Dec-20	74	Jun-21	75	<p>Council held community survey determined that the community had a good perception of safety within their community however the satisfaction rating of 74% falls just short of the 75% benchmark. As per the survey, community safety and crime prevention is one of the highest importance ratings sitting at 91%.</p>
Date	Score																					
Dec-17	69																					
Jun-18	69																					
Dec-18	69																					
Jun-19	69																					
Dec-19	74																					
Jun-20	74																					
Dec-20	74																					
Jun-21	75																					
SO08 - Road Safety: Road safety fatalities and major injuries per 100,000 population in NSW.	Roads and Maritime Services data	< 25	<table><thead><tr><th>Date</th><th>Score</th></tr></thead><tbody><tr><td>Dec-17</td><td>38</td></tr><tr><td>Jun-18</td><td>38</td></tr><tr><td>Dec-18</td><td>38</td></tr><tr><td>Jun-19</td><td>38</td></tr><tr><td>Dec-19</td><td>4</td></tr><tr><td>Jun-20</td><td>4</td></tr><tr><td>Dec-20</td><td>4</td></tr><tr><td>Jun-21</td><td>25</td></tr></tbody></table>	Date	Score	Dec-17	38	Jun-18	38	Dec-18	38	Jun-19	38	Dec-19	4	Jun-20	4	Dec-20	4	Jun-21	25	<p>Transport for NSW accident data is due for release every twelve (12) months. The number of road deaths per 100,000 population in NSW has dropped over the past five decades, from 28.9 in 1970 to 4.4 in 2019 (provisional figure), with a low of 4.1 in 2014.</p> <p>In 2019 Narrabri Shire had a total of 245 recorded motor vehicle accidents with 13 resulting in fatalities and 71 resulting in serious injuries.</p> <p>Black spots are identified and assessed on a continual basis and considered for funding by Transport for NSW during their Road Safety Program each year.</p>
Date	Score																					
Dec-17	38																					
Jun-18	38																					
Dec-18	38																					
Jun-19	38																					
Dec-19	4																					
Jun-20	4																					
Dec-20	4																					
Jun-21	25																					

1.1.3 - Child and aged care supply meets community needs

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO09 - Child care availability: Number of available child care spaces across the Shire increased to ensure waiting lists are less than 5% of total capacity.	Service provider data	< 5 %	<table><thead><tr><th>Date</th><th>Waiting List %</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>31</td></tr><tr><td>Dec-18</td><td>31</td></tr><tr><td>Jun-19</td><td>35</td></tr><tr><td>Dec-19</td><td>35</td></tr><tr><td>Jun-20</td><td>52</td></tr><tr><td>Dec-20</td><td>20</td></tr><tr><td>Jun-21</td><td>5</td></tr></tbody></table>	Date	Waiting List %	Dec-17	0	Jun-18	31	Dec-18	31	Jun-19	35	Dec-19	35	Jun-20	52	Dec-20	20	Jun-21	5	There continue to be waiting lists across all child- care centers within the LGA however with the imminent opening of the new child-care centre in Boggabri and relaxing of COVID-19 restrictions in the industry, waiting lists have reduced significantly. There is still currently a higher demand that availability with the main issue bring a high demand for care for children under the age of 2.
Date	Waiting List %																					
Dec-17	0																					
Jun-18	31																					
Dec-18	31																					
Jun-19	35																					
Dec-19	35																					
Jun-20	52																					
Dec-20	20																					
Jun-21	5																					
SO10 - Aged care availability: Number of available aged care spaces across the Shire increased to ensure waiting lists are less than 5% of total capacity.	Service provider data	< 5 %	<table><thead><tr><th>Date</th><th>Waiting List %</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>3</td></tr><tr><td>Dec-18</td><td>3</td></tr><tr><td>Jun-19</td><td>6</td></tr><tr><td>Dec-19</td><td>6</td></tr><tr><td>Jun-20</td><td>6</td></tr><tr><td>Dec-20</td><td>6</td></tr><tr><td>Jun-21</td><td>5</td></tr></tbody></table>	Date	Waiting List %	Dec-17	0	Jun-18	3	Dec-18	3	Jun-19	6	Dec-19	6	Jun-20	6	Dec-20	6	Jun-21	5	Council is in contact with the aged care industry and engages with individual aged care providers. Council has previously written and forwarded letters to three lifestyle village operators promoting Narrabri Shire as a suitable location for them to expand their operations and develop a new facility in Narrabri. Conversations were held after letters sent with invitations extended to all parties to visit Narrabri Shire. Council has liaised with aged care providers within the Shire to ascertain waiting list numbers. When waiting lists numbers are compared with spaces available, there is a waiting list of 6%.
Date	Waiting List %																					
Dec-17	0																					
Jun-18	3																					
Dec-18	3																					
Jun-19	6																					
Dec-19	6																					
Jun-20	6																					
Dec-20	6																					
Jun-21	5																					

1.1.4 - Youth of the shire are engaged and supported through the provision of adequate programs and training services to facilitate the retention of our young people

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO11 - Training Services: Increase in the number of formal training opportunities available for youth within the Shire.	Australian Bureau of Statistics data	> 300	 <table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>260</td></tr><tr><td>Jun-18</td><td>260</td></tr><tr><td>Dec-18</td><td>260</td></tr><tr><td>Jun-19</td><td>260</td></tr><tr><td>Dec-19</td><td>260</td></tr><tr><td>Jun-20</td><td>305</td></tr><tr><td>Dec-20</td><td>305</td></tr><tr><td>Jun-21</td><td>300</td></tr></tbody></table>	Date	Value	Dec-17	260	Jun-18	260	Dec-18	260	Jun-19	260	Dec-19	260	Jun-20	305	Dec-20	305	Jun-21	300	Council was successful in attracting a Country Universities Centre to Narrabri Shire which began operations in 2019. Council has met with TAFE representatives about the possibility of providing a facility for industry specific qualifications in Wee Waa. Council is aware that Community College has been successful in delivering additional programs in Wee Waa including Computer Courses and Community Services. A new RTO has in 2019 commenced delivering Training in the Narrabri Shire for Rail Specific courses.
Date	Value																					
Dec-17	260																					
Jun-18	260																					
Dec-18	260																					
Jun-19	260																					
Dec-19	260																					
Jun-20	305																					
Dec-20	305																					
Jun-21	300																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO12 - Voluntary Programs: Increase in youth volunteer activity across the Shire.	Community survey	> 65 %	<table><tr><th>Date</th><th>Value</th></tr><tr><td>Dec-17</td><td>60</td></tr><tr><td>Jun-18</td><td>60</td></tr><tr><td>Dec-18</td><td>60</td></tr><tr><td>Jun-19</td><td>60</td></tr><tr><td>Dec-19</td><td>77</td></tr><tr><td>Jun-20</td><td>77</td></tr><tr><td>Dec-20</td><td>77</td></tr><tr><td>Jun-21</td><td>65</td></tr></table>	Date	Value	Dec-17	60	Jun-18	60	Dec-18	60	Jun-19	60	Dec-19	77	Jun-20	77	Dec-20	77	Jun-21	65	Councils Community Survey which was undertaken by Micromex in 2019 shows a 77% satisfaction rate with Youth Support. Council facilitates a range of youth related activities throughout the year, as well as recognising the importance of volunteerism. Council is currently undertaking measures to implement a Shire Youth Council which will be undertaken by youth volunteers from across the Shire. The Lillian Hulbert Memorial Prize encourages young people to excel in a range of pursuits inclusive of charitable works and volunteering within Narrabri Shire. This year's award winner was for charitable activities across the community. Council's continued facilitation in the promotion and administration of this prize contributes to youth participation in voluntary activities. This memorial prize is awarded on an annual basis.
Date	Value																					
Dec-17	60																					
Jun-18	60																					
Dec-18	60																					
Jun-19	60																					
Dec-19	77																					
Jun-20	77																					
Dec-20	77																					
Jun-21	65																					
SO13 - Youth Perception: Level of satisfaction with programs and training opportunities available locally.	Community survey	> 4	<table><tr><th>Date</th><th>Value</th></tr><tr><td>Dec-17</td><td>3</td></tr><tr><td>Jun-18</td><td>3</td></tr><tr><td>Dec-18</td><td>3</td></tr><tr><td>Jun-19</td><td>3</td></tr><tr><td>Dec-19</td><td>3</td></tr><tr><td>Jun-20</td><td>3</td></tr><tr><td>Dec-20</td><td>3</td></tr><tr><td>Jun-21</td><td>4</td></tr></table>	Date	Value	Dec-17	3	Jun-18	3	Dec-18	3	Jun-19	3	Dec-19	3	Jun-20	3	Dec-20	3	Jun-21	4	Council undertook a community survey facilitated by Micromex in 2019. This reflected a mean score of 3.11 regarding the level of satisfaction with youth related program and training provision.
Date	Value																					
Dec-17	3																					
Jun-18	3																					
Dec-18	3																					
Jun-19	3																					
Dec-19	3																					
Jun-20	3																					
Dec-20	3																					
Jun-21	4																					

Objective 1.2 - Our vibrant country lifestyle will be enhanced through embracing our recreational and cultural diversity

1.2.1 - Major towns have attractive and welcoming CBD areas that provide opportunities for social interaction

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
SO14 - CBD Satisfaction: 80% of shop customers surveyed consider the CBD attractive and welcoming.	Targeted survey	> 80 %	<table><thead><tr><th>Date</th><th>Satisfaction (%)</th></tr></thead><tbody><tr><td>Dec-17</td><td>72</td></tr><tr><td>Jun-18</td><td>72</td></tr><tr><td>Dec-18</td><td>72</td></tr><tr><td>Jun-19</td><td>55</td></tr><tr><td>Dec-19</td><td>55</td></tr><tr><td>Jun-20</td><td>55</td></tr><tr><td>Dec-20</td><td>55</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target Jun-21</td><td>80</td></tr></tbody></table>	Date	Satisfaction (%)	Dec-17	72	Jun-18	72	Dec-18	72	Jun-19	55	Dec-19	55	Jun-20	55	Dec-20	55	Jun-21	0	Target Jun-21	80	Council has recently opened another round of grant applications for the CBD Beautification Program. A CBD satisfaction specific community survey conducted in June 2019 that showed that 55.29% of those who completed the survey thought that their relevant CBD was attractive and welcoming. A further survey conducted by Micromex on behalf of Council in September 2019 found that 86% were satisfied with public area appearance and 76% were satisfied with enhancing town/village centres.
Date	Satisfaction (%)																							
Dec-17	72																							
Jun-18	72																							
Dec-18	72																							
Jun-19	55																							
Dec-19	55																							
Jun-20	55																							
Dec-20	55																							
Jun-21	0																							
Target Jun-21	80																							

1.2.2 - Promote and support the development of and access to creative arts

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
SO15 - Opportunities to engage in Arts and Cultural Activities: Increase the quality and/or number of Arts and Cultural activities per annum.	Council and community data	> 45	<table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>41</td></tr><tr><td>Jun-18</td><td>41</td></tr><tr><td>Dec-18</td><td>41</td></tr><tr><td>Jun-19</td><td>42</td></tr><tr><td>Dec-19</td><td>29</td></tr><tr><td>Jun-20</td><td>31</td></tr><tr><td>Dec-20</td><td>31</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target Jun-21</td><td>45</td></tr></tbody></table>	Date	Value	Dec-17	41	Jun-18	41	Dec-18	41	Jun-19	42	Dec-19	29	Jun-20	31	Dec-20	31	Jun-21	0	Target Jun-21	45	The Crossing Theatre will host two travelling exhibitions, two theatre productions and the inaugural event CREATE this financial year. There are already three productions booked for the 2021/22 financial year.
Date	Value																							
Dec-17	41																							
Jun-18	41																							
Dec-18	41																							
Jun-19	42																							
Dec-19	29																							
Jun-20	31																							
Dec-20	31																							
Jun-21	0																							
Target Jun-21	45																							

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO16 - Participation in Arts and Cultural Activities: Percentage of adult population that participated in Arts and Cultural Activities during the last 12 months.	Community survey	> 40 %		This calculation is based on the Narrabri Shire having 8000 adults and is for the period of 1 July till the 31 December 2020.

1.2.3 - Maximise community access to existing natural environmental assets across the Shire

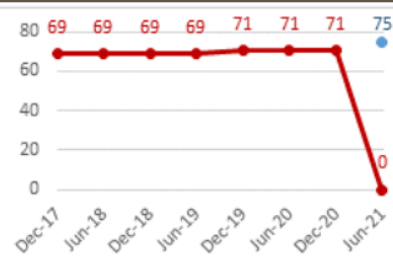
Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO17 - Community Access Satisfaction: Level of satisfaction with access to natural assets increased.	Community survey	> 85 %		The satisfaction level from the Community has increased by 6 percent Council believes this is due to the construction of the Narrabri Creek shared pathway and upgrades to the Narrabri Lake pathway which has seen an increase of user groups at both sites.

1.2.4 - Promote and support Reconciliation in partnership with the aboriginal community

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO18 - Reconciliation Perception: 90% people surveyed are satisfied with reconciliation activities undertaken within the community.	Community survey	> 90 %		Micromex Community Survey provided an 88% satisfaction rate with reconciliation activities within the community. Council is continuously working on reconciliation activities with local Indigenous communities and have invited various Aboriginal Leaders to participate in the development of the Reconciliation Action Plan.

Objective 1.3 - Our communities will be provided with facilities and services to increase social connectivity and accessibility

1.3.1 - Ensure adequate community transport is available to access essential health care and social needs

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO19 - Community Transport Perception: Percentage of community members who believe that an appropriate range of community transport options are available locally to access health care and social needs.	Community survey	> 75 %	 <table><thead><tr><th>Date</th><th>Percentage</th></tr></thead><tbody><tr><td>Dec-17</td><td>69</td></tr><tr><td>Jun-18</td><td>69</td></tr><tr><td>Dec-18</td><td>69</td></tr><tr><td>Jun-19</td><td>69</td></tr><tr><td>Dec-19</td><td>71</td></tr><tr><td>Jun-20</td><td>71</td></tr><tr><td>Dec-20</td><td>71</td></tr><tr><td>Jun-21</td><td>75</td></tr></tbody></table>	Date	Percentage	Dec-17	69	Jun-18	69	Dec-18	69	Jun-19	69	Dec-19	71	Jun-20	71	Dec-20	71	Jun-21	75	Council residents have access to two major transport providers to assist them with health related transport. These include Wee Waa Community Care Service and North West Community Transport. Council regularly liaise with Wee Waa Community Transport Services to organise transportation for local residents for community events. Wee Waa Community Care Service provides transport support for older people living at home, for people who have limited or no access to private or public transport, people who have limited financial capacity, people who need a meal service, people who have functional limitations and people with disabilities. Council has recently launched a community wide survey to understand local needs in regards to disability access and services.
Date	Percentage																					
Dec-17	69																					
Jun-18	69																					
Dec-18	69																					
Jun-19	69																					
Dec-19	71																					
Jun-20	71																					
Dec-20	71																					
Jun-21	75																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO20 - Transport Limitations: Percentage of adult population that experienced transport limitations in the last 12 months.	Community survey	< 25 %		Council works with community transport providers within the Shire to ensure adequate services are provided. Correspondence has been forwarded to CountryLink to reinforce their existing service and request additional train services. Air flights between Narrabri, Sydney and Brisbane provide regular and fast services to two eastern seaboard capital cities.

1.3.2 - Strengthen access to services through enhanced use of technology

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
SO21 - Enhanced Service Provision: Increased percentage of services accessed via technology.	Australian Bureau of Statistics data	> 5 %		After completing the implementation of the new Cloud-based Corporate Information System, we have increased access to the system via internet. Now our focus is increase accessibility via Mobile technology using Tablets/Mobile devices, especially for outdoor staff members.
SO22 - Internet Connection: Percentage of residents connected to available internet sources such as NBN/ADSL	Australian Bureau of Statistics data	> 60 %		Residents are using Mobile and wireless technologies to connect to internet other than NBN.

1.3.3 - All towns and villages have access to at least one quality meeting place to facilitate social gathering

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO23 - Social Connection: 90% of surveyed community members are satisfied with the quality and availability of meeting places in their town or village.	Community survey	> 90 %	<table><thead><tr><th>Date</th><th>Satisfaction Level (%)</th></tr></thead><tbody><tr><td>Dec-17</td><td>78</td></tr><tr><td>Jun-18</td><td>78</td></tr><tr><td>Dec-18</td><td>78</td></tr><tr><td>Jun-19</td><td>78</td></tr><tr><td>Dec-19</td><td>81</td></tr><tr><td>Jun-20</td><td>81</td></tr><tr><td>Dec-20</td><td>81</td></tr><tr><td>Jun-21</td><td>90</td></tr></tbody></table>	Date	Satisfaction Level (%)	Dec-17	78	Jun-18	78	Dec-18	78	Jun-19	78	Dec-19	81	Jun-20	81	Dec-20	81	Jun-21	90	Council has accessed funding via the Federal Government Drought Communities Program which will be utilised to upgrade community facilities supporting continued quality and availability of community meeting places. A number of community groups have taken up this opportunity with projects to be completed by the end of May 2021.
Date	Satisfaction Level (%)																					
Dec-17	78																					
Jun-18	78																					
Dec-18	78																					
Jun-19	78																					
Dec-19	81																					
Jun-20	81																					
Dec-20	81																					
Jun-21	90																					

1.3.4 - Continually improve access to community facilities and services across the Shire

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO24 - Community Accessibility: 90% of surveyed community members are satisfied with the accessibility of community facilities and services in their town or village.	Community survey	> 90 %	<table><thead><tr><th>Date</th><th>Satisfaction Level (%)</th></tr></thead><tbody><tr><td>Dec-17</td><td>76</td></tr><tr><td>Jun-18</td><td>76</td></tr><tr><td>Dec-18</td><td>76</td></tr><tr><td>Jun-19</td><td>76</td></tr><tr><td>Dec-19</td><td>92</td></tr><tr><td>Jun-20</td><td>92</td></tr><tr><td>Dec-20</td><td>92</td></tr><tr><td>Jun-21</td><td>90</td></tr></tbody></table>	Date	Satisfaction Level (%)	Dec-17	76	Jun-18	76	Dec-18	76	Jun-19	76	Dec-19	92	Jun-20	92	Dec-20	92	Jun-21	90	Community survey conducted with positive results.
Date	Satisfaction Level (%)																					
Dec-17	76																					
Jun-18	76																					
Dec-18	76																					
Jun-19	76																					
Dec-19	92																					
Jun-20	92																					
Dec-20	92																					
Jun-21	90																					

Objective 1.4 - A diverse range of quality learning options will be available to improve knowledge and skills within the community

1.4.1 - Ensure our schools are provided with the resources required to deliver quality learning outcomes and retain student numbers

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO27 - Education Services: Residents' level of satisfaction with educational services.	Community survey	> 85 %	<table><thead><tr><th>Date</th><th>Satisfaction Level (%)</th></tr></thead><tbody><tr><td>Dec-17</td><td>81</td></tr><tr><td>Jun-18</td><td>81</td></tr><tr><td>Dec-18</td><td>81</td></tr><tr><td>Jun-19</td><td>81</td></tr><tr><td>Dec-19</td><td>87</td></tr><tr><td>Jun-20</td><td>87</td></tr><tr><td>Dec-20</td><td>87</td></tr><tr><td>Jun-21</td><td>85</td></tr></tbody></table>	Date	Satisfaction Level (%)	Dec-17	81	Jun-18	81	Dec-18	81	Jun-19	81	Dec-19	87	Jun-20	87	Dec-20	87	Jun-21	85	The Community Survey undertaken by Micromex in 2019 indicates a community satisfaction level of 87% which is 2% above target. Council continues to engage with education providers to ensure a high standard of services. The Country Universities Centre is open and attracting students, further bolstering education services for the Shire.
Date	Satisfaction Level (%)																					
Dec-17	81																					
Jun-18	81																					
Dec-18	81																					
Jun-19	81																					
Dec-19	87																					
Jun-20	87																					
Dec-20	87																					
Jun-21	85																					
SO28 - Learning Outcomes: Improved NAPLAN results across the Narrabri Shire LGA.	Australian Curriculum Assessment and Reporting Authority data	> 473	<table><thead><tr><th>Date</th><th>NAPLAN Results</th></tr></thead><tbody><tr><td>Dec-17</td><td>473</td></tr><tr><td>Jun-18</td><td>473</td></tr><tr><td>Dec-18</td><td>473</td></tr><tr><td>Jun-19</td><td>460</td></tr><tr><td>Dec-19</td><td>460</td></tr><tr><td>Jun-20</td><td>473</td></tr><tr><td>Dec-20</td><td>473</td></tr><tr><td>Jun-21</td><td>473</td></tr></tbody></table>	Date	NAPLAN Results	Dec-17	473	Jun-18	473	Dec-18	473	Jun-19	460	Dec-19	460	Jun-20	473	Dec-20	473	Jun-21	473	Education ministers made the decision to cancel NAPLAN in 2020 due to the ongoing COVID-19 pandemic.
Date	NAPLAN Results																					
Dec-17	473																					
Jun-18	473																					
Dec-18	473																					
Jun-19	460																					
Dec-19	460																					
Jun-20	473																					
Dec-20	473																					
Jun-21	473																					
SO29 - School Retention: Percentage of students from Years 7 to Year 12 still attending secondary school across the Narrabri Shire LGA.	Service provider data	> 65 %	<table><thead><tr><th>Date</th><th>Retention (%)</th></tr></thead><tbody><tr><td>Dec-17</td><td>59</td></tr><tr><td>Jun-18</td><td>60</td></tr><tr><td>Dec-18</td><td>60</td></tr><tr><td>Jun-19</td><td>41</td></tr><tr><td>Dec-19</td><td>41</td></tr><tr><td>Jun-20</td><td>45</td></tr><tr><td>Dec-20</td><td>45</td></tr><tr><td>Jun-21</td><td>65</td></tr></tbody></table>	Date	Retention (%)	Dec-17	59	Jun-18	60	Dec-18	60	Jun-19	41	Dec-19	41	Jun-20	45	Dec-20	45	Jun-21	65	The percentage of students who started high school in year 7 and completed their secondary education in year 12 remains static at approximately 45%.
Date	Retention (%)																					
Dec-17	59																					
Jun-18	60																					
Dec-18	60																					
Jun-19	41																					
Dec-19	41																					
Jun-20	45																					
Dec-20	45																					
Jun-21	65																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO30 - Early Childhood Development: Percentage of children who are developmentally on track (AEDC Domains) across the Narrabri Shire LGA.	Australian Early Development Census data	> 85 %	<table><thead><tr><th>Date</th><th>Percentage</th></tr></thead><tbody><tr><td>Dec-17</td><td>84</td></tr><tr><td>Jun-18</td><td>84</td></tr><tr><td>Dec-18</td><td>84</td></tr><tr><td>Jun-19</td><td>84</td></tr><tr><td>Dec-19</td><td>76</td></tr><tr><td>Jun-20</td><td>76</td></tr><tr><td>Dec-20</td><td>76</td></tr><tr><td>Jun-21</td><td>85</td></tr></tbody></table>	Date	Percentage	Dec-17	84	Jun-18	84	Dec-18	84	Jun-19	84	Dec-19	76	Jun-20	76	Dec-20	76	Jun-21	85	2018 AEDC data shows several areas of significant increase and decrease markers. The result is a decrease in the average percentage, from 84.2% down to 76.38%. The majority of childcare providers within Narrabri Shire provide early childhood teachers to assist with developmental growth. The decrease could be attribute to a range of factors including socio-economics, changes in staffing and movements of families to or from the Shire (2018 data is the latest data available).
Date	Percentage																					
Dec-17	84																					
Jun-18	84																					
Dec-18	84																					
Jun-19	84																					
Dec-19	76																					
Jun-20	76																					
Dec-20	76																					
Jun-21	85																					

1.4.2 - Improve access to learning options for mature residents

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO31 - Educational Qualifications: People >25 years old who have a non-school qualification.	Australian Bureau of Statistics data	> 2,500	<table><thead><tr><th>Date</th><th>Count</th></tr></thead><tbody><tr><td>Dec-17</td><td>2419</td></tr><tr><td>Jun-18</td><td>2419</td></tr><tr><td>Dec-18</td><td>2419</td></tr><tr><td>Jun-19</td><td>2419</td></tr><tr><td>Dec-19</td><td>2419</td></tr><tr><td>Jun-20</td><td>2419</td></tr><tr><td>Dec-20</td><td>2450</td></tr><tr><td>Jun-21</td><td>2500</td></tr></tbody></table>	Date	Count	Dec-17	2419	Jun-18	2419	Dec-18	2419	Jun-19	2419	Dec-19	2419	Jun-20	2419	Dec-20	2450	Jun-21	2500	The Narrabri Shire Country Universities Centre Campus began operations in Narrabri in 2019 which bolsters opportunity across the Shire for residents to undertake non-school qualification courses. Council offers traineeships and apprenticeships across the organisation. There are a range of small and large organisations across the Shire that offer several entry level opportunities and there has been an increase in Registered Training Organisations delivering training within the Narrabri Shire.
Date	Count																					
Dec-17	2419																					
Jun-18	2419																					
Dec-18	2419																					
Jun-19	2419																					
Dec-19	2419																					
Jun-20	2419																					
Dec-20	2450																					
Jun-21	2500																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO32 - Vocational Education & Training Enrolments: Percentage of community members aged 15 to 64 enrolled in vocational education and training.	Training providers	> 13 %	<table><thead><tr><th>Date</th><th>Percentage</th></tr></thead><tbody><tr><td>Dec-17</td><td>12</td></tr><tr><td>Jun-18</td><td>12</td></tr><tr><td>Dec-18</td><td>12</td></tr><tr><td>Jun-19</td><td>22</td></tr><tr><td>Dec-19</td><td>22</td></tr><tr><td>Jun-20</td><td>15</td></tr><tr><td>Dec-20</td><td>15</td></tr><tr><td>Jun-21</td><td>13</td></tr></tbody></table>	Date	Percentage	Dec-17	12	Jun-18	12	Dec-18	12	Jun-19	22	Dec-19	22	Jun-20	15	Dec-20	15	Jun-21	13	A different data source was identified and used for this measure giving a higher percentage when compared to previous years data. Narrabri Shire residents currently participate in the University of the Third Age (U3A). Students have the opportunity to enroll in courses being delivered through various Registered Training Organisations with an increase in external organisations who no outreach to Narrabri to deliver training.
Date	Percentage																					
Dec-17	12																					
Jun-18	12																					
Dec-18	12																					
Jun-19	22																					
Dec-19	22																					
Jun-20	15																					
Dec-20	15																					
Jun-21	13																					
SO33 - Learning Needs Perception: Percentage of community members who believe a range of learning options are available to meet their needs.	Community survey	> 75 %	<table><thead><tr><th>Date</th><th>Percentage</th></tr></thead><tbody><tr><td>Dec-17</td><td>69</td></tr><tr><td>Jun-18</td><td>69</td></tr><tr><td>Dec-18</td><td>69</td></tr><tr><td>Jun-19</td><td>69</td></tr><tr><td>Dec-19</td><td>87</td></tr><tr><td>Jun-20</td><td>87</td></tr><tr><td>Dec-20</td><td>87</td></tr><tr><td>Jun-21</td><td>75</td></tr></tbody></table>	Date	Percentage	Dec-17	69	Jun-18	69	Dec-18	69	Jun-19	69	Dec-19	87	Jun-20	87	Dec-20	87	Jun-21	75	All education requirements are catered for in Narrabri Shire by both private enterprise and government organisations. Council supports education programmes for all age ranges in the Shire inclusive of STEM, computing, robotics, writing, art, music, drug and alcohol education. The 2019 Micromex survey reflects a satisfaction result of 87%, with a mean score of 3.58.
Date	Percentage																					
Dec-17	69																					
Jun-18	69																					
Dec-18	69																					
Jun-19	69																					
Dec-19	87																					
Jun-20	87																					
Dec-20	87																					
Jun-21	75																					

1.4.3 - Work with training providers and industry to focus on the delivery of local industry training requirements

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO34 - Training Placements: Increase in training placements within the Narrabri Shire LGA.	National Centre for Vocational Education and Training	> 2,300	<table><thead><tr><th>Date</th><th>Measure Status</th></tr></thead><tbody><tr><td>Dec-17</td><td>2231</td></tr><tr><td>Jun-18</td><td>2231</td></tr><tr><td>Dec-18</td><td>2231</td></tr><tr><td>Jun-19</td><td>2231</td></tr><tr><td>Dec-19</td><td>2231</td></tr><tr><td>Jun-20</td><td>2500</td></tr><tr><td>Dec-20</td><td>2500</td></tr><tr><td>Jun-21</td><td>2300</td></tr></tbody></table>	Date	Measure Status	Dec-17	2231	Jun-18	2231	Dec-18	2231	Jun-19	2231	Dec-19	2231	Jun-20	2500	Dec-20	2500	Jun-21	2300	Council has been working with the Country Universities Centre organisation and a Country Universities Centre campus has opened in Narrabri which has increased training placements significantly. Community College has commenced delivering training in Wee Waa, Rail Industry training is being delivered in Narrabri and Council is working with the community to provide traineeship placements. Council is further providing training and upskilling opportunities under the Drought Communities Program targeting skills gaps in line with current labor market trends.
Date	Measure Status																					
Dec-17	2231																					
Jun-18	2231																					
Dec-18	2231																					
Jun-19	2231																					
Dec-19	2231																					
Jun-20	2500																					
Dec-20	2500																					
Jun-21	2300																					

1.4.4 - Leverage off established research facilities to grow industry training hubs

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO35 - Research Program Participation: Increased participation in STEM programs.	Council data	> 172	<table><thead><tr><th>Date</th><th>Measure Status</th></tr></thead><tbody><tr><td>Dec-17</td><td>164</td></tr><tr><td>Jun-18</td><td>151</td></tr><tr><td>Dec-18</td><td>288</td></tr><tr><td>Jun-19</td><td>483</td></tr><tr><td>Dec-19</td><td>825</td></tr><tr><td>Jun-20</td><td>1043</td></tr><tr><td>Dec-20</td><td>1174</td></tr><tr><td>Jun-21</td><td>172</td></tr></tbody></table>	Date	Measure Status	Dec-17	164	Jun-18	151	Dec-18	288	Jun-19	483	Dec-19	825	Jun-20	1043	Dec-20	1174	Jun-21	172	This figure is accumulative for the beginning of the delivery program in July 2017. 131 participants was added to the previous accumulative amount of 1043.
Date	Measure Status																					
Dec-17	164																					
Jun-18	151																					
Dec-18	288																					
Jun-19	483																					
Dec-19	825																					
Jun-20	1043																					
Dec-20	1174																					
Jun-21	172																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
SO36 - Research Training Provision: Increased participation in provision of training by research facilities.	Council data	> 79	<table><thead><tr><th>Date</th><th>Participation</th></tr></thead><tbody><tr><td>Dec-17</td><td>75</td></tr><tr><td>Jun-18</td><td>81</td></tr><tr><td>Dec-18</td><td>197</td></tr><tr><td>Jun-19</td><td>197</td></tr><tr><td>Dec-19</td><td>342</td></tr><tr><td>Jun-20</td><td>342</td></tr><tr><td>Dec-20</td><td>342</td></tr><tr><td>Jun-21</td><td>79</td></tr></tbody></table>	Date	Participation	Dec-17	75	Jun-18	81	Dec-18	197	Jun-19	197	Dec-19	342	Jun-20	342	Dec-20	342	Jun-21	79	This figure is accumulative for the beginning of the delivery program in July 2017. 0 participants were added to the accumulative amount of 342.
Date	Participation																					
Dec-17	75																					
Jun-18	81																					
Dec-18	197																					
Jun-19	197																					
Dec-19	342																					
Jun-20	342																					
Dec-20	342																					
Jun-21	79																					



THEME 2: Our Environment

Strategic Direction 2: Environmentally Sustainable and Productive Shire

By 2027, Environmentally Sustainable and Productive Shire

COMMUNITY ENGAGEMENT

Through extensive community engagement, the Narrabri Shire Community identified several environmental priority areas to be addressed over the following four years.

COMMUNITY SERVICES

Current services provided within the Narrabri Shire community include:

- Waste management and recycling
- Environmental planning
- Planning and development
- Parks and open spaces
- Noxious weeds control
- Floodplain management
- Water and sewer management
- Stormwater management

COMMUNITY OUTCOMES

In partnership with the community, government and non-government agencies, the Delivery Program will work towards achieving the following environmental strategic outcomes:

- Improved air, water and soil quality
- Reduction in domestic and industry waste
- Management of potential impacts from extractive industries
- Improved emergency service provision and resources
- Maintenance of heritage sites for future generations

Our Environment

Strategic Direction 2: Environmentally Sustainable and Productive Shire

Objective 2.1 - We will maintain our open spaces, natural environment and heritage for future generations

2.1.1 - Conserve our aboriginal heritage through improved awareness

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN01 - Aboriginal Heritage Count: Increase in the number of heritage items and areas listed in the Local Environmental Plan.	Council data	> 10	<table><tr><th>Date</th><th>Count</th></tr><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>0</td></tr><tr><td>Dec-18</td><td>0</td></tr><tr><td>Jun-19</td><td>0</td></tr><tr><td>Dec-19</td><td>0</td></tr><tr><td>Jun-20</td><td>0</td></tr><tr><td>Dec-20</td><td>0</td></tr><tr><td>Jun-21</td><td>10</td></tr></table>	Date	Count	Dec-17	0	Jun-18	0	Dec-18	0	Jun-19	0	Dec-19	0	Jun-20	0	Dec-20	0	Jun-21	10	Aboriginal Cultural Heritage Study underway. Council is currently working on a nomination for Waterloo Creek site.
Date	Count																					
Dec-17	0																					
Jun-18	0																					
Dec-18	0																					
Jun-19	0																					
Dec-19	0																					
Jun-20	0																					
Dec-20	0																					
Jun-21	10																					
EN02 - Aboriginal Heritage Satisfaction: Level of satisfaction with protection of heritage items.	Community survey	> 85 %	<table><tr><th>Date</th><th>Satisfaction (%)</th></tr><tr><td>Dec-17</td><td>85</td></tr><tr><td>Jun-18</td><td>85</td></tr><tr><td>Dec-18</td><td>85</td></tr><tr><td>Jun-19</td><td>85</td></tr><tr><td>Dec-19</td><td>87</td></tr><tr><td>Jun-20</td><td>87</td></tr><tr><td>Dec-20</td><td>87</td></tr><tr><td>Jun-21</td><td>0</td></tr></table>	Date	Satisfaction (%)	Dec-17	85	Jun-18	85	Dec-18	85	Jun-19	85	Dec-19	87	Jun-20	87	Dec-20	87	Jun-21	0	Aboriginal Heritage Study was adopted at December Council meeting and available on website.
Date	Satisfaction (%)																					
Dec-17	85																					
Jun-18	85																					
Dec-18	85																					
Jun-19	85																					
Dec-19	87																					
Jun-20	87																					
Dec-20	87																					
Jun-21	0																					
EN03 - Aboriginal Heritage Signage: Total number of Aboriginal heritage sites with information signs installed increased.	IP Australia data	> 8	<table><tr><th>Date</th><th>Count</th></tr><tr><td>Dec-17</td><td>6</td></tr><tr><td>Jun-18</td><td>6</td></tr><tr><td>Dec-18</td><td>6</td></tr><tr><td>Jun-19</td><td>7</td></tr><tr><td>Dec-19</td><td>12</td></tr><tr><td>Jun-20</td><td>12</td></tr><tr><td>Dec-20</td><td>12</td></tr><tr><td>Jun-21</td><td>0</td></tr></table>	Date	Count	Dec-17	6	Jun-18	6	Dec-18	6	Jun-19	7	Dec-19	12	Jun-20	12	Dec-20	12	Jun-21	0	The T-Qual Aboriginal Study identified significant Aboriginal areas along the Kamilaroi Highway for future development. The Kamilaroi Highway Group is developing Kamilaroi trails to educate and encourage visitation into the region. Total number of Kamilaroi heritage sites with information is 12 with other sites under development. Council continues to work with State Heritage to have the Waterloo Creek Massacre Site Heritage Listed.
Date	Count																					
Dec-17	6																					
Jun-18	6																					
Dec-18	6																					
Jun-19	7																					
Dec-19	12																					
Jun-20	12																					
Dec-20	12																					
Jun-21	0																					

2.1.2 - Planning controls appropriately identify and conserve open spaces and natural environmental areas

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN04 - Planning Controls: Planning controls reviewed and updated annually.	Council data	> 4		Local Strategic Planning Statement (LSPS) and Local Growth Management Strategy (LGMS) adopted in June 2020. Local Environmental Plan (LEP) "Health Check" completed as part of this process. Comprehensive review of LEP can now commence now that LSPS and LGMS are in place.

2.1.3 - Passive recreational open spaces are well maintained and accessible for public use

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN05 - Public Accessibility: Level of satisfaction with access to walkways and cycleways.	Community survey	> 70 %		Satisfaction levels have increased by 13 percent in this area with the installation of the Narrabri Creek shared pathway and upgrades to the Narrabri Lake path. Further extensions to this pathway network will increase participation and satisfaction rates.
EN06 - Appearance of Public Spaces: Percentage of adults who express satisfaction with the accessibility and appearance of public areas.	Community survey	> 80 %		Council has delivered a number of upgrades to the open spaces assets with replacement of older structures and equipment this has improved the effect of visual and usage of these Council sites.

2.1.4 - Minimise the impacts of noxious weeds and feral and domestic animals on the environment

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN07 - Animal Education: Increase in the number of educational sessions per annum conducted by Council for animal owners.	Council data	> 4	<table><thead><tr><th>Period</th><th>Sessions</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>1</td></tr><tr><td>Dec-18</td><td>1</td></tr><tr><td>Jun-19</td><td>2</td></tr><tr><td>Dec-19</td><td>0</td></tr><tr><td>Jun-20</td><td>0</td></tr><tr><td>Dec-20</td><td>0</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Period	Sessions	Dec-17	0	Jun-18	1	Dec-18	1	Jun-19	2	Dec-19	0	Jun-20	0	Dec-20	0	Jun-21	0	No sessions conducted between 1 July and June 2020 due to ongoing vacant Ranger positions. Permanent appointment to role projected by September 2020.
Period	Sessions																					
Dec-17	0																					
Jun-18	1																					
Dec-18	1																					
Jun-19	2																					
Dec-19	0																					
Jun-20	0																					
Dec-20	0																					
Jun-21	0																					
EN08 - Animal Management: Reduction in reported animal attacks caused by dogs across the Narrabri Shire LGA.	Office of Local Government data	< 15	<table><thead><tr><th>Period</th><th>Attacks</th></tr></thead><tbody><tr><td>Dec-17</td><td>16</td></tr><tr><td>Jun-18</td><td>2</td></tr><tr><td>Dec-18</td><td>9</td></tr><tr><td>Jun-19</td><td>9</td></tr><tr><td>Dec-19</td><td>1</td></tr><tr><td>Jun-20</td><td>13</td></tr><tr><td>Dec-20</td><td>13</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Period	Attacks	Dec-17	16	Jun-18	2	Dec-18	9	Jun-19	9	Dec-19	1	Jun-20	13	Dec-20	13	Jun-21	0	Thirteen reported between 1 July and 30 June 2020.
Period	Attacks																					
Dec-17	16																					
Jun-18	2																					
Dec-18	9																					
Jun-19	9																					
Dec-19	1																					
Jun-20	13																					
Dec-20	13																					
Jun-21	0																					
EN09 - Weed Management: Area of land without a Priority Weeds Management Program reduced in the Narrabri Shire Local Government Area.	Council data	< 20 %	<table><thead><tr><th>Period</th><th>Area (%)</th></tr></thead><tbody><tr><td>Dec-17</td><td>36</td></tr><tr><td>Jun-18</td><td>37</td></tr><tr><td>Dec-18</td><td>32</td></tr><tr><td>Jun-19</td><td>37</td></tr><tr><td>Dec-19</td><td>20</td></tr><tr><td>Jun-20</td><td>20</td></tr><tr><td>Dec-20</td><td>20</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Period	Area (%)	Dec-17	36	Jun-18	37	Dec-18	32	Jun-19	37	Dec-19	20	Jun-20	20	Dec-20	20	Jun-21	0	Council conducts inspections to prevent, eliminate and restrict bio-security matters following the North West Regional Strategic Weed Management Plan. Data from regular inspections conducted by Council. Council has received two grants in combating weeds and invasive species this work has continued on from the Pilliga region into the Yarrie Lake area.
Period	Area (%)																					
Dec-17	36																					
Jun-18	37																					
Dec-18	32																					
Jun-19	37																					
Dec-19	20																					
Jun-20	20																					
Dec-20	20																					
Jun-21	0																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN10 - Biosecurity Management: Decrease in the number of priority weed types through eradication.	Council data	< 3	<table><thead><tr><th>Date</th><th>Number of priority weed types</th></tr></thead><tbody><tr><td>Dec-17</td><td>5</td></tr><tr><td>Jun-18</td><td>5</td></tr><tr><td>Dec-18</td><td>5</td></tr><tr><td>Jun-19</td><td>5</td></tr><tr><td>Dec-19</td><td>5</td></tr><tr><td>Jun-20</td><td>3</td></tr><tr><td>Dec-20</td><td>3</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Number of priority weed types	Dec-17	5	Jun-18	5	Dec-18	5	Jun-19	5	Dec-19	5	Jun-20	3	Dec-20	3	Jun-21	0	Council conducts regular road and river inspections to ensure Narrabri Shire is protected from Sagittaria Platyphylla, Salvinia Molesta, Water Lettuce, Alligator weed and Hudson Pear. Council uses Facebook and the newspaper to advise the community about weed infestations and new incursions. These weeds are still a threat for the Shire. Hudson Pear and Alligator Weed are Narrabri Shire Councils biggest threat due to the proximity of our closest infestations in neighbouring shires. Surveillance/inspections are continual to ensure that these weeds do not enter our shire. New infestations of Harrisia Cactus and Boxing glove have been discovered in the past financial year and were eradicated. Parthenium weed was located in the Narrabri shire Council conducted an intensive program in location eradication and inspection to remove all the Parthenium weed identified and will concentrate future inspections on feed out areas on private property who received hay from Queensland.
Date	Number of priority weed types																					
Dec-17	5																					
Jun-18	5																					
Dec-18	5																					
Jun-19	5																					
Dec-19	5																					
Jun-20	3																					
Dec-20	3																					
Jun-21	0																					

Objective 2.2 - We will protect our environment through sustainable planning and well-resourced emergency services**2.2.1 - Community emergency service providers are well resourced to adequately prepare and respond to natural disasters and emergencies**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN11 - Emergency Response: 100% emergency response rate to situations.	Council data	> 100 %	<table><thead><tr><th>Date</th><th>Response Rate</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>0</td></tr><tr><td>Dec-18</td><td>0</td></tr><tr><td>Jun-19</td><td>0</td></tr><tr><td>Dec-19</td><td>0</td></tr><tr><td>Jun-20</td><td>0</td></tr><tr><td>Dec-20</td><td>0</td></tr><tr><td>Jun-21</td><td>100</td></tr></tbody></table>	Date	Response Rate	Dec-17	0	Jun-18	0	Dec-18	0	Jun-19	0	Dec-19	0	Jun-20	0	Dec-20	0	Jun-21	100	To date there has been zero complaints in response to emergency situations.
Date	Response Rate																					
Dec-17	0																					
Jun-18	0																					
Dec-18	0																					
Jun-19	0																					
Dec-19	0																					
Jun-20	0																					
Dec-20	0																					
Jun-21	100																					

2.2.2 - Protect and rehabilitate degraded and fragmented areas and enhance corridors that connect remnant bushland

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN12 - Land Care Participation: Number of active groups in land care.	Council data	> 4	<table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>2</td></tr><tr><td>Jun-18</td><td>2</td></tr><tr><td>Dec-18</td><td>4</td></tr><tr><td>Jun-19</td><td>2</td></tr><tr><td>Dec-19</td><td>2</td></tr><tr><td>Jun-20</td><td>2</td></tr><tr><td>Dec-20</td><td>2</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Value	Dec-17	2	Jun-18	2	Dec-18	4	Jun-19	2	Dec-19	2	Jun-20	2	Dec-20	2	Jun-21	0	There are 2 groups; Merrimborough Landcare group and the Yarrie Lake Landcare group that exist in the Shire.
Date	Value																					
Dec-17	2																					
Jun-18	2																					
Dec-18	4																					
Jun-19	2																					
Dec-19	2																					
Jun-20	2																					
Dec-20	2																					
Jun-21	0																					
EN13 - Rehabilitation: Area of land where rehabilitation is completed (per annum).	Council data	> 350 %	<table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>313</td></tr><tr><td>Jun-18</td><td>313</td></tr><tr><td>Dec-18</td><td>313</td></tr><tr><td>Jun-19</td><td>385</td></tr><tr><td>Dec-19</td><td>385</td></tr><tr><td>Jun-20</td><td>578</td></tr><tr><td>Dec-20</td><td>578</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Value	Dec-17	313	Jun-18	313	Dec-18	313	Jun-19	385	Dec-19	385	Jun-20	578	Dec-20	578	Jun-21	0	Mining rehabilitation is being completed by the responsible mine.
Date	Value																					
Dec-17	313																					
Jun-18	313																					
Dec-18	313																					
Jun-19	385																					
Dec-19	385																					
Jun-20	578																					
Dec-20	578																					
Jun-21	0																					

2.2.3 - Ensure Council and government agencies have a robust compliance program to protect environmental assets

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN14 - Environmental Reporting: Annual reports are provided on environmental outcomes for all major projects.	Council data	> 100	<table><thead><tr><th>Date</th><th>Measure Status</th></tr></thead><tbody><tr><td>Dec-17</td><td>100</td></tr><tr><td>Jun-18</td><td>100</td></tr><tr><td>Dec-18</td><td>80</td></tr><tr><td>Jun-19</td><td>85</td></tr><tr><td>Dec-19</td><td>85</td></tr><tr><td>Jun-20</td><td>85</td></tr><tr><td>Dec-20</td><td>85</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Measure Status	Dec-17	100	Jun-18	100	Dec-18	80	Jun-19	85	Dec-19	85	Jun-20	85	Dec-20	85	Jun-21	0	Council has not had sufficient resources to review the environmental licences annual returns for extractive industries.
Date	Measure Status																					
Dec-17	100																					
Jun-18	100																					
Dec-18	80																					
Jun-19	85																					
Dec-19	85																					
Jun-20	85																					
Dec-20	85																					
Jun-21	0																					

2.2.4 - Decision making will be informed by the principles of Ecologically Sustainable Development and the precautionary principle

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN15 - Environmental Concern: Percentage of surveyed residents with a high degree of concern about the environment is decreased.	Community survey	< 15 %	<table><thead><tr><th>Date</th><th>Measure Status</th></tr></thead><tbody><tr><td>Dec-17</td><td>21</td></tr><tr><td>Jun-18</td><td>21</td></tr><tr><td>Dec-18</td><td>21</td></tr><tr><td>Jun-19</td><td>21</td></tr><tr><td>Dec-19</td><td>26</td></tr><tr><td>Jun-20</td><td>26</td></tr><tr><td>Dec-20</td><td>26</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Measure Status	Dec-17	21	Jun-18	21	Dec-18	21	Jun-19	21	Dec-19	26	Jun-20	26	Dec-20	26	Jun-21	0	Council has used the principles of sustainable development in the decision-making process. Council increased community awareness of environmental issues through media advertisements, the local newspaper, Facebook and correspondence.
Date	Measure Status																					
Dec-17	21																					
Jun-18	21																					
Dec-18	21																					
Jun-19	21																					
Dec-19	26																					
Jun-20	26																					
Dec-20	26																					
Jun-21	0																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN16 - Ecological Sustainability Compliance: Demonstrated inclusion of Ecologically Sustainable Development and precautionary principle analysis in relevant Council Reports.	Council data	> 100	<p>The graph shows a red line representing the measure status over time. The status starts at 0 in Dec-17 and Jun-18, rises to 100 in Dec-18, remains at 100 through Jun-20, and then drops back to 0 in Jun-21. A blue dot is also present at Jun-21 at the 100 level.</p>	<p>Council submission on the Vickery Coal Mine Extension Project included a requirement that: "The NSW Government should apply the principles of ecologically sustainable development and the precautionary principle to the assessment of the Project." Council submission on the Narrabri Gas Project included a requirement that: "... the precautionary principle should be applied in this matter and indefinite monitoring of decommissioned coal seam gas wells by a public authority should be required until there is a sufficient body of evidence by way of long-term studies to conclude that the risk of contamination of water resource aquifers is negligible."</p>

Objective 2.3 - Our natural resource consumption will be reduced and waste well managed**2.3.1 - Investigate and implement alternative energy technologies to reduce Council's carbon footprint**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN17 - Fuel Usage: Reduction in fuel usage on prior year.	Council data	> 400,000		With a few fuel accounts outstanding, it is expected that 587,990 litres of fuel would have been consumed in 19-20 FY. This represents an average of 48,999 litres per month.
EN18 - Total Energy Usage: 15% reduction in Council's total energy usage on 2016/17 levels by 2020/21.	Council data	> 15 %		Further actions deferred until 2021/2022 due to budget restrictions.

2.3.2 - Implement a waste management strategy focusing on waste avoidance, reusing and recycling to minimise the proportion of waste sent to landfill and to maximise the use of our natural resources

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN19 - Household Waste Generation: Reducing average volume (kilograms) per household.	Council data	> 490 Kilograms		The waste strategy is under development and will consider work that is being delivered under the GHD contract. However, Council is focused on a waste minimisation campaign that includes promoting the use of the recycling and green bins as well as reducing the percentage of contamination.

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
EN20 - Household Waste Recycling: Percentage of waste diverted from landfill (annual total waste diverted from landfill/annual municipal kerbside collection).	Council data	> 75 %	<table><thead><tr><th>Date</th><th>Percentage</th></tr></thead><tbody><tr><td>Dec-17</td><td>45</td></tr><tr><td>Jun-18</td><td>41</td></tr><tr><td>Dec-18</td><td>38</td></tr><tr><td>Jun-19</td><td>39</td></tr><tr><td>Dec-19</td><td>36</td></tr><tr><td>Jun-20</td><td>40</td></tr><tr><td>Dec-20</td><td>53</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target</td><td>75</td></tr></tbody></table>	Date	Percentage	Dec-17	45	Jun-18	41	Dec-18	38	Jun-19	39	Dec-19	36	Jun-20	40	Dec-20	53	Jun-21	0	Target	75	The waste strategy is under development and will consider work that is being delivered under the GHD contract. The percentage of waste diverted from household kerbside collection recycling and food and organics was 36% this equals to 560 tonnes of waste for the six month period. This would be approximately 1,120 tonnes for the full period.
Date	Percentage																							
Dec-17	45																							
Jun-18	41																							
Dec-18	38																							
Jun-19	39																							
Dec-19	36																							
Jun-20	40																							
Dec-20	53																							
Jun-21	0																							
Target	75																							
EN21 - Public Recycling Facilities: Increase in the number of recycling facilities in public spaces.	Council data	> 4	<table><thead><tr><th>Date</th><th>Number of facilities</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>2</td></tr><tr><td>Dec-18</td><td>5</td></tr><tr><td>Jun-19</td><td>4</td></tr><tr><td>Dec-19</td><td>4</td></tr><tr><td>Jun-20</td><td>0</td></tr><tr><td>Dec-20</td><td>4</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target</td><td>4</td></tr></tbody></table>	Date	Number of facilities	Dec-17	0	Jun-18	2	Dec-18	5	Jun-19	4	Dec-19	4	Jun-20	0	Dec-20	4	Jun-21	0	Target	4	The waste strategy is under development and will consider work that is being delivered under the GHD contract.
Date	Number of facilities																							
Dec-17	0																							
Jun-18	2																							
Dec-18	5																							
Jun-19	4																							
Dec-19	4																							
Jun-20	0																							
Dec-20	4																							
Jun-21	0																							
Target	4																							
EN22 - Industry Waste Minimisation: Increase in number of businesses and industries involved in the waste minimisation program.	Council data	> 50	<table><thead><tr><th>Date</th><th>Number of businesses/industries</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>10</td></tr><tr><td>Dec-18</td><td>10</td></tr><tr><td>Jun-19</td><td>15</td></tr><tr><td>Dec-19</td><td>15</td></tr><tr><td>Jun-20</td><td>46</td></tr><tr><td>Dec-20</td><td>20</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target</td><td>50</td></tr></tbody></table>	Date	Number of businesses/industries	Dec-17	0	Jun-18	10	Dec-18	10	Jun-19	15	Dec-19	15	Jun-20	46	Dec-20	20	Jun-21	0	Target	50	As part of the development approval process, Council request waste management plans for all the new commercial developments in the Shire. Council has also reviewed the landfill fees, to include new charges that promote the adequate classification of waste. Council has also involved businesses in the litter reduction campaign.
Date	Number of businesses/industries																							
Dec-17	0																							
Jun-18	10																							
Dec-18	10																							
Jun-19	15																							
Dec-19	15																							
Jun-20	46																							
Dec-20	20																							
Jun-21	0																							
Target	50																							

2.3.3 - Conserve and manage our natural water resources for environmental and agricultural sustainability

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EN23 - Council Water Consumption: Percentage reduction on 2016/2017 levels in mains water consumed by Council operations.	Council data	< 15 %	<table><thead><tr><th>Date</th><th>Percentage Reduction</th></tr></thead><tbody><tr><td>Dec-17</td><td>40</td></tr><tr><td>Jun-18</td><td>19</td></tr><tr><td>Dec-18</td><td>21</td></tr><tr><td>Jun-19</td><td>21</td></tr><tr><td>Dec-19</td><td>24</td></tr><tr><td>Jun-20</td><td>26</td></tr><tr><td>Dec-20</td><td>26</td></tr><tr><td>Jun-21</td><td>15</td></tr></tbody></table>	Date	Percentage Reduction	Dec-17	40	Jun-18	19	Dec-18	21	Jun-19	21	Dec-19	24	Jun-20	26	Dec-20	26	Jun-21	15	Water use across the Shire remains consistent with past years however automated meter readers and new water meters are recording greater use by residential and industrial properties due to their accuracy. This has greatly improved visibility for unaccounted water.
Date	Percentage Reduction																					
Dec-17	40																					
Jun-18	19																					
Dec-18	21																					
Jun-19	21																					
Dec-19	24																					
Jun-20	26																					
Dec-20	26																					
Jun-21	15																					
EN24 - Water Quality: Water quality improvement in the Namoi River. Measured by the positive displacement of rubbish.	Council data	> 1 Tonne	<table><thead><tr><th>Date</th><th>Positive Displacement (Tonnes)</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>0</td></tr><tr><td>Dec-18</td><td>0</td></tr><tr><td>Jun-19</td><td>0</td></tr><tr><td>Dec-19</td><td>0</td></tr><tr><td>Jun-20</td><td>0</td></tr><tr><td>Dec-20</td><td>0</td></tr><tr><td>Jun-21</td><td>1</td></tr></tbody></table>	Date	Positive Displacement (Tonnes)	Dec-17	0	Jun-18	0	Dec-18	0	Jun-19	0	Dec-19	0	Jun-20	0	Dec-20	0	Jun-21	1	No gross pollutant traps have been installed. A total of 93 potential sources of stormwater outflow to the catchment of the Namoi River within Narrabri town limits have been identified. No stormwater catchment models have been created or analysed, these estimates are based solely on existing storm water pipes and assuming they are sufficiently sized. Further work is required to scope the full extent of works.
Date	Positive Displacement (Tonnes)																					
Dec-17	0																					
Jun-18	0																					
Dec-18	0																					
Jun-19	0																					
Dec-19	0																					
Jun-20	0																					
Dec-20	0																					
Jun-21	1																					

Objective 2.4 - The impacts of extractive industries on the environment will be minimised**2.4.1 - The community is informed by real time regional dust monitoring data to inform personal decisions**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN25 - Air Quality: Number of days polluting concentrations exceed National Environment Protection Measure (NEPM) guidelines.	Environmental Protection Agency data	< 0		PM2.5 particle levels were above standard for 22 days from 1 July 2019 to 30 June 2020. According to the NSW Annual Air Quality Statement 2019: The 20 days in 2019 were due to exceptional events (defined under Clause 18 of the AAQ NEPM as a 'fire or dust occurrence'). PM2.5 annual average levels remained below the standard at Narrabri.
EN26 - Dust Monitoring: Real time regional monitoring system in place and available in easy to understand language.	Council data	> 85 %		Narrabri is now part of the NSW Air Quality Monitoring Network. The Narrabri air monitoring station was built in December 2017 near Narrabri Airport. Real-time Regional monitoring data has been available online since the equipment was installed.

2.4.2 - Projects are managed to minimise active disturbance areas and limit time to revegetation

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN27 - Mine Rehabilitation Compliance: Mines adhere to agreed rehabilitation schedules.	Council data	> 100 %		Council has not had sufficient resources to review Mine Rehabilitation Plans; however, the NSW Resource Regulator has conducted targeted assessments at mine sites to ensure that operators are effectively undertaking progressive rehabilitation in accordance with the obligations set out in their approved plans. Assumption made for 100% adherence.

2.4.3 - Ground water extractions are maintained in an environmentally sustainable manner to ensure long term viability and quality

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN28 - Water Resourcing: Current groundwater extractions are maintained.	Council data	< 400 Litres Per Day		Average Litres per resident per day Shire wide. Assumed population 10729 based on ABS 2016 data. Vol extracted from Apr to June 2020 was 0.58 GL.
EN29 - Environmental Flow: Current bore water extractions are maintained.	Council data	> 1,000 Megalitres		Borefield extractions across the Shire during January 2020 to June 2020.

2.4.4 - Potential environmental and community impacts are minimised through thorough assessment and independent monitoring

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EN30 - Community Confidence: Community confidence in assessment and monitoring.	Community survey	> 75 %		Council have taken a public and proactive role in advocating on the Vickery Extension Project and Narrabri Gas Project environmental requirements.



THEME 3: Our Economy

Strategic Direction 3: Progressive and Diverse Economy

By 2027, Progressive and Diverse Economy

COMMUNITY ENGAGEMENT

Through extensive community engagement, the Narrabri Shire Community identified several economic priority areas to be addressed over the following four years.

COMMUNITY SERVICES

Current services provided within the Narrabri Shire community include:

- Economic development
- Planning and development
- Entertainment and conferences
- Local and regional tourism and events
- Saleyards
- Airport

COMMUNITY OUTCOMES

In partnership with the community, government and non-government agencies, the Delivery Program will work towards achieving the following economic strategic outcomes:

- Increased community events, conferences and entertainment
- Increased employment through industry innovation, investment and value adding
- Established freight hub for the Norther Inland Region
- Increased housing availability and affordability

Broadened economic base

Our Economy

Strategic Direction 3: Progressive and Diverse Economy

Objective 3.1 - We will stimulate business and tourism by maximising our assets and attracting regional events

3.1.1 - Identify and facilitate a diverse event, conference and entertainment program

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EC01 - Events, Conferences & Entertainments: Percentage increase in the number of events, conferences and entertainment activities per annum.	Council data	> 10 %	<table><thead><tr><th>Date</th><th>Percentage Increase</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>10</td></tr><tr><td>Dec-18</td><td>10</td></tr><tr><td>Jun-19</td><td>8</td></tr><tr><td>Dec-19</td><td>8</td></tr><tr><td>Jun-20</td><td>0</td></tr><tr><td>Dec-20</td><td>8</td></tr><tr><td>Jun-21</td><td>10</td></tr></tbody></table>	Date	Percentage Increase	Dec-17	0	Jun-18	10	Dec-18	10	Jun-19	8	Dec-19	8	Jun-20	0	Dec-20	8	Jun-21	10	No increase due to COVID 19. Considering the current COVID restrictions, The Crossing Theatre has a busy program of events (Festival CREATE, 2 Travelling exhibitions, 2 theatre productions and a number of small business events. Please note, these could easily change due to Covid 19.
Date	Percentage Increase																					
Dec-17	0																					
Jun-18	10																					
Dec-18	10																					
Jun-19	8																					
Dec-19	8																					
Jun-20	0																					
Dec-20	8																					
Jun-21	10																					
EC02 - Events, Conferences & Entertainment Patronage: Percentage increase in patrons at The Crossing Theatre for events, conferences and entertainment per annum.	Council data	> 5 %	<table><thead><tr><th>Date</th><th>Percentage Increase</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>5</td></tr><tr><td>Dec-18</td><td>5</td></tr><tr><td>Jun-19</td><td>4</td></tr><tr><td>Dec-19</td><td>4</td></tr><tr><td>Jun-20</td><td>0</td></tr><tr><td>Dec-20</td><td>4</td></tr><tr><td>Jun-21</td><td>5</td></tr></tbody></table>	Date	Percentage Increase	Dec-17	0	Jun-18	5	Dec-18	5	Jun-19	4	Dec-19	4	Jun-20	0	Dec-20	4	Jun-21	5	No increase due to COVID 19. Considering the current COVID restrictions, The Crossing Theatre has a busy program of events (Festival CREATE, 2 Travelling exhibitions, 2 theatre productions and a number of small business events. Please note, these could easily change due to Covid 19.
Date	Percentage Increase																					
Dec-17	0																					
Jun-18	5																					
Dec-18	5																					
Jun-19	4																					
Dec-19	4																					
Jun-20	0																					
Dec-20	4																					
Jun-21	5																					

3.1.2 - Facilitate the provision of a quality tourism product to present to visitors

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC03 - Tourism Visitation, Stay & Spend: Percentage increase in key visitor metrics for Narrabri Shire LGA - Number of Visitors.	Tourism Research Australia data	> 235,000		Council actively markets and promotes the Narrabri Shire through various campaigns and partnerships to attract more visitors, increase length of stay and encourage higher levels of expenditure to the region. 2018 (TRA) Total Number to the Narrabri Region 245,000. Average Spend per ON domestic \$107.00 per person. Average spend per trip domestic \$294 per person.
EC04 - Social Media Audience: Grow social media user database.	Facebook data	> 2,500		Council has increased their social media audience significantly which has been assisted by the development and implementation of a Social Media Strategy.
EC21 - Tourism Visitation, Stay & Spend: Percentage increase in key visitor metrics for Narrabri Shire LGA - Visitor Spend.	Tourism Research Australia data	> \$46		Council actively promotes a diverse range of local and regional products, gourmet produce, regional souvenirs, information and maps. 2018 (TRA) Total Number to the Narrabri Region 245,000. Average Spend per ON domestic \$107.00 per person. Average spend per trip domestic \$294 per person. Average spend per ON International \$50 per person. Average spend per trip International \$806 per person (figures used from 2018 as data is only collected every 2 years and new data has not been released yet).

3.1.3 - Implement the Narrabri CBD Master Plan to capture a greater proportion of highway traffic opportunities and improve shopping experience

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC05 - CBD Customer Satisfaction: Increased satisfaction with CBD experience reflected in customer surveys.	Community survey	> 75 %		The 2019 Micromex survey undertaken on behalf of Council shows a satisfaction rate of 76% with an increase of mean score when compared to the 2017 survey.
EC06 - CBD Shop Usage: Number of vacant shops decreased from June 2017 level. Shops facing Maitland Street, Narrabri.	Council data	< 9		There are currently 9 vacant shops facing Maitland Street in Narrabri which is a decrease from 11 during the last reporting period.

3.1.4 - Airport facilities and services provide connectivity to capital city markets

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC07 - Airport Usage: Increased RPT numbers by 3% per annum.	Avdata Australia	> 6,500		Reduced numbers due to COVID 19.
EC08 - Airport Satisfaction: Positive rating of airport by users.	Targeted survey	> 80 %		Positive responses to Airport Management.

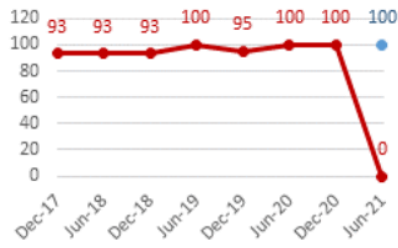
Objective 3.2 - We will become a logistics hub for the northern inland region**3.2.1 - Promote Narrabri Shire as a national and state significant Manufacturing and Logistics Hub.**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC09 - Logistical Operations: New or expanding logistics operations commenced.	Council data	> 2		Council has finalised a Strategic Business Case and Master Plan study of what is now known as the Northern NSW Inland Port (N2IP); 1x new logistics operation. Council has purchased 240ha of land and exercised options on an additional two blocks amounting to 134 hectares making the N2IP site approximately 370 hectares in size. Council is currently working with EY on optimising the connectivity of N2IP with Inland Rail. Council has received Growing Local Economies funds of \$16.8 million and Commonwealth Budget funds of \$7.8 million for infrastructure works at the N2IP development.

3.2.2 - Develop at least one flood free intermodal site that has access to quality infrastructure and the proposed inland rail network

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC10 - Intermodal Site: Additional intermodal site established.	Council data	> 4		Narrabri Shire has three (3) operational intermodal sites. The Northern NSW Inland Port (N2IP) development includes the capability of providing further intermodal capabilities with direct connectivity to Inland Rail infrastructure. Council has purchased 240ha for N2IP and exercised options on an additional 134ha, giving a total footprint of 374 hectares.

3.2.3 - Explore opportunities for increasing the efficiency of freight movements

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EC11 - Freight Movement: Increased percentage of road network available for longer freight vehicles.	Council data	> 100 %	 <table><thead><tr><th>Date</th><th>Percentage</th></tr></thead><tbody><tr><td>Dec-17</td><td>93</td></tr><tr><td>Jun-18</td><td>93</td></tr><tr><td>Dec-18</td><td>93</td></tr><tr><td>Jun-19</td><td>100</td></tr><tr><td>Dec-19</td><td>95</td></tr><tr><td>Jun-20</td><td>100</td></tr><tr><td>Dec-20</td><td>100</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Percentage	Dec-17	93	Jun-18	93	Dec-18	93	Jun-19	100	Dec-19	95	Jun-20	100	Dec-20	100	Jun-21	0	Heavy vehicle permits are assessed based on the National Heavy Vehicle Regulator (NHVR) requirements. Routes are generally approved with the exception of routes that impact Councils infrastructure (e.g. load limited bridges), or the local community (e.g. within the town residential areas and school zones).
Date	Percentage																					
Dec-17	93																					
Jun-18	93																					
Dec-18	93																					
Jun-19	100																					
Dec-19	95																					
Jun-20	100																					
Dec-20	100																					
Jun-21	0																					

Objective 3.3 - Value adding and industry innovation will drive employment**3.3.1 - Value adding opportunities will be researched and pursued**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
EC12 - Value Adding: Number of value adding opportunities assessed through the development application process and/or State Significant developments.	Council data	> 8	<table><thead><tr><th>Date</th><th>Value Adding Opportunities</th></tr></thead><tbody><tr><td>Dec-17</td><td>1</td></tr><tr><td>Jun-18</td><td>2</td></tr><tr><td>Dec-18</td><td>2</td></tr><tr><td>Jun-19</td><td>4</td></tr><tr><td>Dec-19</td><td>4</td></tr><tr><td>Jun-20</td><td>5</td></tr><tr><td>Dec-20</td><td>8</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Value Adding Opportunities	Dec-17	1	Jun-18	2	Dec-18	2	Jun-19	4	Dec-19	4	Jun-20	5	Dec-20	8	Jun-21	0	As potential opportunities arise, Council staff provide new businesses with contacts for existing local operators that will jointly benefit both parties. Council organised and ran an Inland Rail Industry Stakeholder Round Table to encourage business networking opportunities and a Small Business Summit in July of 2019. Council has successfully underwritten a local gift card programme which has had good uptake and usage keeping spending local. An online business directory has been established allowing local businesses to connect to each other. In October 2020, Council organised a small business networking event and 18 workshops over Small Business Month.
Date	Value Adding Opportunities																					
Dec-17	1																					
Jun-18	2																					
Dec-18	2																					
Jun-19	4																					
Dec-19	4																					
Jun-20	5																					
Dec-20	8																					
Jun-21	0																					

3.3.2 - Industry innovation trends will be determined, monitored and referenced to identify opportunities

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC13 - Industry Trends: Annual production of documents identifying industry trends.	Council data	> 4	<p>The graph shows the annual production of documents identifying industry trends. The data points are: Dec-17 (0), Jun-18 (0), Dec-18 (0), Jun-19 (1), Dec-19 (1), Jun-20 (2), Dec-20 (4), Jun-21 (0). A red line connects the points. A blue dot is at (Jun-21, 4).</p>	<p>A Strategic Business Case in relation to the Industrial and Logistics Hub has been undertaken. Within this document is a list and review of industry trends pertaining to organisations that would benefit from establishing in the Industrial and Logistics Hub. Council is currently working with EY on a report looking at optimising the connectivity of N2IP to Inland Rail. Narrabri Shire was endorsed by the NSW State Government as a Strategic Activation Precinct investigation area in late 2020. A part of the investigation will look at business and industry able to be attracted to Narrabri Shire. Council now has access to localised economic data through a REMPLAN subscription.</p>

3.3.3 - Local industry leaders will be regularly consulted to determine emerging competitive advantages

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC14 - Industry Innovation and Collaboration: Annual 'Think Tank' industry leader forum held and documented.	Council data	> 4	<p>Line graph showing the number of industry leader forums held from Dec-17 to Jun-21. The y-axis ranges from 0 to 5. The x-axis shows dates: Dec-17, Jun-18, Dec-18, Jun-19, Dec-19, Jun-20, Dec-20, Jun-21. The data points are: Dec-17 (0), Jun-18 (0), Dec-18 (1), Jun-19 (1), Dec-19 (1), Jun-20 (1), Dec-20 (1), Jun-21 (0). A blue dot at Jun-21 indicates the current status is 4.</p>	Council has recently employed a Small Business Liaison Officer who is actively working with Business and Industry across the Shire and holds monthly business meetings. Council ran numerous successful workshops throughout October 2020 which is Small Business Month, finishing with a well attended Business Networking Evening where the Online B2B Localised Platform was officially launched. Council continues to attend all Chamber of Commerce Meetings in Narrabri, Boggabri and Wee Waa.

3.3.4 - Promote opportunities created through abundant supply of energy and easy access to transport logistics

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC15 - Business Growth: Number of registered businesses in Narrabri Shire LGA.	Australian Bureau of Statistics data	> 1,700	<p>Line graph showing the number of registered businesses in Narrabri Shire LGA from Dec-17 to Jun-21. The y-axis ranges from 0 to 2000. The x-axis shows dates: Dec-17, Jun-18, Dec-18, Jun-19, Dec-19, Jun-20, Dec-20, Jun-21. The data points are: Dec-17 (1621), Jun-18 (1621), Dec-18 (1760), Jun-19 (1760), Dec-19 (1760), Jun-20 (1751), Dec-20 (1751), Jun-21 (1700). A blue dot at Jun-21 indicates the current status is 1700.</p>	The number of businesses currently registered within the Narrabri LGA is 1751. Council is currently developing an updated Investment Prospectus to provide to potential investors.

Objective 3.4 - Adequate housing options will be available to meet demands across the Shire**3.4.1 - Available residential land is adequate to meet demand in the local market**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC16 - Median Sales Price: Median sales prices are in line with comparable areas.	Real Estate data	10 %		<p>As of December 2020: Narrabri median house price is \$330,000.00 (stable) Gunnedah median house price is \$330,000.00 (stable) Moree median house price is \$208,000 (increase from \$184K) Inverell median house price is \$265,000.00 (decrease from \$265k).</p>

3.4.2 - Public housing stock is adequate to meet current and projected demand across all demographics

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC17 - Housing Affordability: Affordability of housing in the Narrabri Shire calculated by median weekly rent divided by median weekly household income.	Council data	> 15 %		<p>Data sourced (realestate.com) that is current to July 2020 shows a figure of 29.78% of household income spent on rent in Narrabri. This figure remains less than Gunnedah which has decreased from 37.31% to 30.6%.</p>

3.4.3 - Housing stock will reflect the changing demographic trend of smaller low maintenance properties

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
EC18 - Housing Stock: New approvals for housing reflect increased percentage of unit/villa stock.	Council data	> 5 %		<p>No unit developments received or approved.</p>

3.4.4 - Housing stocks will be maintained to a suitable standard

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
EC19 - Residential Development: Increase in residential investment per year. Measured by number of new dwelling applications.	Council data	> 15	<table><thead><tr><th>Date</th><th>Measure Status</th></tr></thead><tbody><tr><td>Dec-17</td><td>12</td></tr><tr><td>Jun-18</td><td>5</td></tr><tr><td>Dec-18</td><td>11</td></tr><tr><td>Jun-19</td><td>11</td></tr><tr><td>Dec-19</td><td>5</td></tr><tr><td>Jun-20</td><td>10</td></tr><tr><td>Dec-20</td><td>10</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Jun-21 (Projected)</td><td>15</td></tr></tbody></table>	Date	Measure Status	Dec-17	12	Jun-18	5	Dec-18	11	Jun-19	11	Dec-19	5	Jun-20	10	Dec-20	10	Jun-21	0	Jun-21 (Projected)	15	In FY 2019-2020 there were 6 new dwellings in Narrabri, 3 new dwellings in Boggabri and 1 new dwelling in Wee Waa, indicating consistent residential investment.
Date	Measure Status																							
Dec-17	12																							
Jun-18	5																							
Dec-18	11																							
Jun-19	11																							
Dec-19	5																							
Jun-20	10																							
Dec-20	10																							
Jun-21	0																							
Jun-21 (Projected)	15																							
EC20 - Public Complaints: Decreasing trend of public complaints about buildings.	Council data	< 5	<table><thead><tr><th>Date</th><th>Measure Status</th></tr></thead><tbody><tr><td>Dec-17</td><td>6</td></tr><tr><td>Jun-18</td><td>4</td></tr><tr><td>Dec-18</td><td>6</td></tr><tr><td>Jun-19</td><td>6</td></tr><tr><td>Dec-19</td><td>2</td></tr><tr><td>Jun-20</td><td>3</td></tr><tr><td>Dec-20</td><td>3</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Jun-21 (Projected)</td><td>5</td></tr></tbody></table>	Date	Measure Status	Dec-17	6	Jun-18	4	Dec-18	6	Jun-19	6	Dec-19	2	Jun-20	3	Dec-20	3	Jun-21	0	Jun-21 (Projected)	5	Planning and Environment managing complaints as lodged.
Date	Measure Status																							
Dec-17	6																							
Jun-18	4																							
Dec-18	6																							
Jun-19	6																							
Dec-19	2																							
Jun-20	3																							
Dec-20	3																							
Jun-21	0																							
Jun-21 (Projected)	5																							



THEME 4: Our Civic Leadership

Strategic Direction 4: Collaborative and Proactive Leadership

By 2027, Collaborative and Proactive Leadership

COMMUNITY ENGAGEMENT

Through extensive community engagement, the Narrabri Shire community identified several civic leadership priority areas to be addressed over the following four years.

COMMUNITY SERVICES

Current services provided within the Narrabri Shire Community include:

- Integrated strategic planning and reporting
- Community engagement and consultation
- Representation and governance
- Human resource management
- Customer services
- Information services
- Financial services
- Risk management
- Compliance and regulation

COMMUNITY OUTCOMES

In partnership with the community, government and non-government agencies, the Delivery Program will work towards achieving the following civic leadership strategic outcomes:

- Improved community engagement and decision-making processes
- Well established community, industry, government and non-government partnerships
- Well maintained core infrastructure and service provision that delivers public value
- Transparent and accountable planning and reporting
- Financial efficiency and sustainability

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Our Civic Leadership

Strategic Direction 4: Collaborative and Proactive Leadership

Objective 4.1 - We will proactively engage and partner with the community and government to achieve our strategic goals

4.1.1 - Provide customer service excellence that is responsive to community needs

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
CL02 - Community Satisfaction: Community satisfaction with operations of Council.	Community survey	> 75 %	<table><tr><th>Date</th><th>Score</th></tr><tr><td>Dec-17</td><td>61</td></tr><tr><td>Jun-18</td><td>61</td></tr><tr><td>Dec-18</td><td>61</td></tr><tr><td>Jun-19</td><td>61</td></tr><tr><td>Dec-19</td><td>65</td></tr><tr><td>Jun-20</td><td>65</td></tr><tr><td>Dec-20</td><td>65</td></tr><tr><td>Jun-21</td><td>75</td></tr></table>	Date	Score	Dec-17	61	Jun-18	61	Dec-18	61	Jun-19	61	Dec-19	65	Jun-20	65	Dec-20	65	Jun-21	75	Responsiveness can be increased and monitored with the implementation of the new Corporate Information System. Follow-up action has to be taken to ensure requests are closed out in the system once completed. Customer response workflows are continuing to be built in CRM and reporting of this data is being tested to ensure accuracy.
Date	Score																					
Dec-17	61																					
Jun-18	61																					
Dec-18	61																					
Jun-19	61																					
Dec-19	65																					
Jun-20	65																					
Dec-20	65																					
Jun-21	75																					
CL01 - Customer Response: Percentage of customer requests attended to within adopted customer service level standards.	Council data	> 85 %	<table><tr><th>Date</th><th>Score</th></tr><tr><td>Dec-17</td><td>52</td></tr><tr><td>Jun-18</td><td>52</td></tr><tr><td>Dec-18</td><td>52</td></tr><tr><td>Jun-19</td><td>57</td></tr><tr><td>Dec-19</td><td>57</td></tr><tr><td>Jun-20</td><td>90</td></tr><tr><td>Dec-20</td><td>65</td></tr><tr><td>Jun-21</td><td>85</td></tr></table>	Date	Score	Dec-17	52	Jun-18	52	Dec-18	52	Jun-19	57	Dec-19	57	Jun-20	90	Dec-20	65	Jun-21	85	The Community Survey was undertaken in September 2019. 84% of residents are at least somewhat satisfied with the overall performance of Council over the past 12 months. This is a 2% increase from the previous survey conducted in 2017. Residents are at least satisfied with 35 out of 45 Council services/facilities. 85% of residents rate their overall quality of life good to excellent.
Date	Score																					
Dec-17	52																					
Jun-18	52																					
Dec-18	52																					
Jun-19	57																					
Dec-19	57																					
Jun-20	90																					
Dec-20	65																					
Jun-21	85																					

4.1.2 - Ensure the community is informed and involved in Council activities through implementing quality consultation

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
CL03 - Community Satisfaction: Level of satisfaction with Council's provision of information to residents about activities, services and community services.	Community survey	> 75 %	<table><tr><th>Date</th><th>Satisfaction Level</th></tr><tr><td>Dec-17</td><td>67</td></tr><tr><td>Jun-18</td><td>67</td></tr><tr><td>Dec-18</td><td>67</td></tr><tr><td>Jun-19</td><td>67</td></tr><tr><td>Dec-19</td><td>65</td></tr><tr><td>Jun-20</td><td>65</td></tr><tr><td>Dec-20</td><td>65</td></tr><tr><td>Jun-21</td><td>75</td></tr></table>	Date	Satisfaction Level	Dec-17	67	Jun-18	67	Dec-18	67	Jun-19	67	Dec-19	65	Jun-20	65	Dec-20	65	Jun-21	75	Council continues to distribute information on Council-specific activities through Your Council, media releases, the Council website, fact sheets, social media and community radio sponsored announcements. In August 2018 Council commenced a radio segment fortnightly with local community radio station 2maxFM where the GM provides an update on Council related activities.
Date	Satisfaction Level																					
Dec-17	67																					
Jun-18	67																					
Dec-18	67																					
Jun-19	67																					
Dec-19	65																					
Jun-20	65																					
Dec-20	65																					
Jun-21	75																					
CL04 - Website Usage: Increasing trend of visits to the Narrabri Shire Council website homepage.	Google analytics	> 0	<table><tr><th>Date</th><th>Visits</th></tr><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>6226</td></tr><tr><td>Dec-18</td><td>16854</td></tr><tr><td>Jun-19</td><td>35000</td></tr><tr><td>Dec-19</td><td>46799</td></tr><tr><td>Jun-20</td><td>58487</td></tr><tr><td>Dec-20</td><td>12750</td></tr><tr><td>Jun-21</td><td>0</td></tr></table>	Date	Visits	Dec-17	0	Jun-18	6226	Dec-18	16854	Jun-19	35000	Dec-19	46799	Jun-20	58487	Dec-20	12750	Jun-21	0	Google Analytics was applied to the Narrabri Shire Council website from July 1 2020 to December 31 2020. This has provided accurate data on users accessing the Narrabri Shire Council homepage for the reporting period.
Date	Visits																					
Dec-17	0																					
Jun-18	6226																					
Dec-18	16854																					
Jun-19	35000																					
Dec-19	46799																					
Jun-20	58487																					
Dec-20	12750																					
Jun-21	0																					
CL05 - Social Media Usage: Number of people following the Narrabri Shire Council Facebook page and other platforms.	Council data	> 0	<table><tr><th>Date</th><th>Followers</th></tr><tr><td>Dec-17</td><td>3376</td></tr><tr><td>Jun-18</td><td>3576</td></tr><tr><td>Dec-18</td><td>3784</td></tr><tr><td>Jun-19</td><td>4115</td></tr><tr><td>Dec-19</td><td>4274</td></tr><tr><td>Jun-20</td><td>4788</td></tr><tr><td>Dec-20</td><td>5042</td></tr><tr><td>Jun-21</td><td>0</td></tr></table>	Date	Followers	Dec-17	3376	Jun-18	3576	Dec-18	3784	Jun-19	4115	Dec-19	4274	Jun-20	4788	Dec-20	5042	Jun-21	0	Council continues to provide regular updates on its social media platforms of interesting and relevant information. Council provides posts that inform the community on upcoming events, career opportunities, project updates, emergencies and other matters of interest.
Date	Followers																					
Dec-17	3376																					
Jun-18	3576																					
Dec-18	3784																					
Jun-19	4115																					
Dec-19	4274																					
Jun-20	4788																					
Dec-20	5042																					
Jun-21	0																					

4.1.3 - Develop and build strong, productive partnerships with State and Federal Governments

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
CL06 - Grant Funding: Grant funding levels maintained (per annum).	Council data	> \$6	<table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>6</td></tr><tr><td>Jun-18</td><td>6</td></tr><tr><td>Dec-18</td><td>2</td></tr><tr><td>Jun-19</td><td>10</td></tr><tr><td>Dec-19</td><td>2.2</td></tr><tr><td>Jun-20</td><td>6.5</td></tr><tr><td>Dec-20</td><td>13</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target Jun-21</td><td>6</td></tr></tbody></table>	Date	Value	Dec-17	6	Jun-18	6	Dec-18	2	Jun-19	10	Dec-19	2.2	Jun-20	6.5	Dec-20	13	Jun-21	0	Target Jun-21	6	In the period of 1 October 2020 to 361 December 2020 Council lodged 13 grant applications. Council is proactive in researching grant opportunities and lodging grant applications. There is ongoing review of available grant opportunities for all sections of Council. Council continues to match funding opportunities with capital works and specific projects.
Date	Value																							
Dec-17	6																							
Jun-18	6																							
Dec-18	2																							
Jun-19	10																							
Dec-19	2.2																							
Jun-20	6.5																							
Dec-20	13																							
Jun-21	0																							
Target Jun-21	6																							

4.1.4 - Grow volunteer capacity to achieve community outcomes

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
CL07 - Volunteering: Percentage of adult population who volunteer.	Community survey	> 70 %	<table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>67</td></tr><tr><td>Jun-18</td><td>67</td></tr><tr><td>Dec-18</td><td>67</td></tr><tr><td>Jun-19</td><td>67</td></tr><tr><td>Dec-19</td><td>65</td></tr><tr><td>Jun-20</td><td>65</td></tr><tr><td>Dec-20</td><td>65</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target Jun-21</td><td>70</td></tr></tbody></table>	Date	Value	Dec-17	67	Jun-18	67	Dec-18	67	Jun-19	67	Dec-19	65	Jun-20	65	Dec-20	65	Jun-21	0	Target Jun-21	70	Data obtained from Micromex Research Community Survey, held October 2019. 65% of residents stated they had volunteered in their local community in the last 12 months. Those living in towns were significantly more likely to have participated in local sport/recreational activities than those living in villages. Experience with local transport limitations decreased with age. Participation in arts and cultural activities was significantly higher among females compared to males.
Date	Value																							
Dec-17	67																							
Jun-18	67																							
Dec-18	67																							
Jun-19	67																							
Dec-19	65																							
Jun-20	65																							
Dec-20	65																							
Jun-21	0																							
Target Jun-21	70																							

Objective 4.2 - Decision making will ensure Council remains financially sustainable**4.2.1 - Maintain and improve Council's financial sustainability with a focus on core business**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
CL08 - Council Fitness: Council meeting Fit For The Future (FFTF) Ratios.	Council data	> 100 %		Council is currently meeting only three of the six benchmark indicators for Performance Measures reported in note 26 of the 2020 audited Financial Statements. Covid-19 restrictions and the affects of the prolonged drought have had a significant impact, particularly for Council's operating performance ratio and the outstanding rates and charges percentage.

4.2.2 - Proposed expansions in Council services are evaluated after consideration of asset renewal and operational costs

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
CL09 - Service Expansions: No service expansion occurs without full lifecycle costing considerations.	Council data	< 0		Council has considered one (1) business case assessment during the Delivery Program period (2017-2021) and agreed not to proceed due to the poor business case.

4.2.3 - Modernise Council's service delivery, governance and management

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
CL21 - Council Performance: Increased Community satisfaction with Council performance.	Community survey	> 80 %	<p>82 82 82 82 84 84 84 80</p>	The Community Survey was undertaken in September 2019. 84% of residents are at least somewhat satisfied with the overall performance of Council over the past 12 months. This is a 2% increase from the previous survey conducted in 2017. Residents are at least satisfied with 35 out of 45 Council services/facilities. 85% of residents rate their overall quality of life good to excellent. The next Community Satisfaction survey is scheduled to be undertaken late 2021.
CL11 - Councillor Satisfaction: Percentage of Community satisfaction with elected representatives.	Community survey	> 75 %	<p>68 68 68 68 65 65 65 75</p>	The Community Survey undertaken in September 2019 reported that satisfaction is currently higher among 65+ year olds and lower among 50-64 year olds.
CL13 - Organisational Review: Organisational structure reviewed according to Service Review schedule.	Council data	> 100 %	<p>19 20 30 30 75 100 100 100</p>	Organisational restructure implemented effective from November 2019 giving consideration to 8 previous service reviews. Extensive recruitment processes undertaken between implementation date to fill vacancies within the determines structure. Informal service reviews have continued to occur to monitor the effectiveness of new organisational structure, with minor amendments required particularly in consideration of labour market factors.

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
CL12 - Service Review: Service Review Program undertaken.	Council data	> 12	<table><thead><tr><th>Date</th><th>Measure Status</th></tr></thead><tbody><tr><td>Dec-17</td><td>1</td></tr><tr><td>Jun-18</td><td>2</td></tr><tr><td>Dec-18</td><td>8</td></tr><tr><td>Jun-19</td><td>8</td></tr><tr><td>Dec-19</td><td>8</td></tr><tr><td>Jun-20</td><td>8</td></tr><tr><td>Dec-20</td><td>8</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target Jun-21</td><td>12</td></tr></tbody></table>	Date	Measure Status	Dec-17	1	Jun-18	2	Dec-18	8	Jun-19	8	Dec-19	8	Jun-20	8	Dec-20	8	Jun-21	0	Target Jun-21	12	Service reviews completed for The Crossing Theatre, Tourism Services, Swimming Pools, Fleet Management, Road Services, Fleet, Project Management and Parks and Open Spaces.Full organisational restructure undertaken in 2019 considering the completed service review and other organisational feedback.Informal service reviews have continued to occur to monitor the effectiveness of new organisational structure, with minor amendments required particularly in consideration of labour market factors.
Date	Measure Status																							
Dec-17	1																							
Jun-18	2																							
Dec-18	8																							
Jun-19	8																							
Dec-19	8																							
Jun-20	8																							
Dec-20	8																							
Jun-21	0																							
Target Jun-21	12																							

Objective 4.3 - Infrastructure and service delivery will provide public value for the community**4.3.1 - Develop and integrate a methodology that measures and reports to communities on equitable distribution of Council funding**

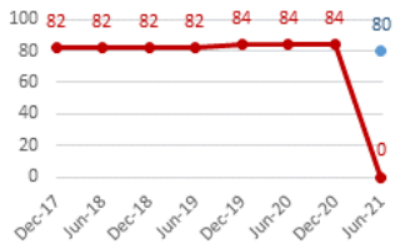
Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
CL14 - Spending Distribution: Increased community understanding of Council's spending distribution throughout the Shire.	Community survey	> 75 %	<table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>61</td></tr><tr><td>Jun-18</td><td>61</td></tr><tr><td>Dec-18</td><td>61</td></tr><tr><td>Jun-19</td><td>61</td></tr><tr><td>Dec-19</td><td>55</td></tr><tr><td>Jun-20</td><td>55</td></tr><tr><td>Dec-20</td><td>55</td></tr><tr><td>Jun-21</td><td>75</td></tr></tbody></table>	Date	Value	Dec-17	61	Jun-18	61	Dec-18	61	Jun-19	61	Dec-19	55	Jun-20	55	Dec-20	55	Jun-21	75	Council has introduced service-based costings as part of its budget. budget review and year end reporting processes. This will be further enhanced with further development of Council's new Corporate Information system.
Date	Value																					
Dec-17	61																					
Jun-18	61																					
Dec-18	61																					
Jun-19	61																					
Dec-19	55																					
Jun-20	55																					
Dec-20	55																					
Jun-21	75																					

4.3.2 - Service outcomes are maintained by regular market testing of delivery methods and regional inter-Council cooperation


Measure	Measured Against	Target Jun 2021	Measure Status	Comments																		
CL15 - Council Efficiency: Efficiency gains are identified and quantified.	Council data	> \$0	<table><thead><tr><th>Date</th><th>Value</th></tr></thead><tbody><tr><td>Dec-17</td><td>163,000</td></tr><tr><td>Jun-18</td><td>382,700</td></tr><tr><td>Dec-18</td><td>696,700</td></tr><tr><td>Jun-19</td><td>416,700</td></tr><tr><td>Dec-19</td><td>487,800</td></tr><tr><td>Jun-20</td><td>754,058</td></tr><tr><td>Dec-20</td><td>754,058</td></tr><tr><td>Jun-21</td><td>0</td></tr></tbody></table>	Date	Value	Dec-17	163,000	Jun-18	382,700	Dec-18	696,700	Jun-19	416,700	Dec-19	487,800	Jun-20	754,058	Dec-20	754,058	Jun-21	0	Council has reached it's goal of \$600,000 efficiency savings, noting that Council sold a building asset for an amount significantly under the carrying book value. This sale resulted in the reduction of Council's efficiency savings by \$280,000.
Date	Value																					
Dec-17	163,000																					
Jun-18	382,700																					
Dec-18	696,700																					
Jun-19	416,700																					
Dec-19	487,800																					
Jun-20	754,058																					
Dec-20	754,058																					
Jun-21	0																					

Measure	Measured Against	Target Jun 2021	Measure Status	Comments																				
CL16 - Market Testing: Annual market testing of services.	Council data	> 4	<table><caption>Market Testing Scores</caption><thead><tr><th>Date</th><th>Score</th></tr></thead><tbody><tr><td>Dec-17</td><td>0</td></tr><tr><td>Jun-18</td><td>1</td></tr><tr><td>Dec-18</td><td>1</td></tr><tr><td>Jun-19</td><td>1</td></tr><tr><td>Dec-19</td><td>3</td></tr><tr><td>Jun-20</td><td>3</td></tr><tr><td>Dec-20</td><td>3</td></tr><tr><td>Jun-21</td><td>0</td></tr><tr><td>Target Jun-21</td><td>4</td></tr></tbody></table>	Date	Score	Dec-17	0	Jun-18	1	Dec-18	1	Jun-19	1	Dec-19	3	Jun-20	3	Dec-20	3	Jun-21	0	Target Jun-21	4	Council is in receipt of the FY2019 Local Government Performance Excellence Program report. The report provides appropriate comparisons between Narrabri Shire and a benchmark set of councils, in terms of location, size and revenue. Areas of analysis included workforce, finance, service delivery and corporate leadership. The report summarised performance year-on-year and against the benchmark set. Council has also recently decided to participate in Council Comparison Windows, based on Council's OLG Grouping and mining affected councils.
Date	Score																							
Dec-17	0																							
Jun-18	1																							
Dec-18	1																							
Jun-19	1																							
Dec-19	3																							
Jun-20	3																							
Dec-20	3																							
Jun-21	0																							
Target Jun-21	4																							

Objective 4.4 - Our strategic goals will be achieved through transparent and accountable planning and reporting**4.4.1 - Engage with the community to determine affordable and acceptable levels of service**

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
CL10 - Community Satisfaction: Community satisfaction with overall Council service delivery.	Community survey	> 80 %		The Community Survey was undertaken in September 2019. 84% of residents are at least somewhat satisfied with the overall performance of Council over the past 12 months. This is a 2% increase from the previous survey conducted in 2017. Residents are at least satisfied with 35 out of 45 Council services/facilities. Council have commenced a program of Service Reviews to review areas for efficiency, effectiveness and relevance. A priority list to schedule service areas for review up until 2023 has been endorsed by Management.

4.4.2 - Ensure effective and sound local governance practice

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
CL17 - Local Governance: No breaches of Code of Conduct identified in compliance with the requirements of the Local Government Act 1993.	Council data	< 0		Code of Conduct training was provided to Councillors/Staff in 2020.

4.4.3 - Report in a clear, concise manner that is easily understood

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
CL18 - Council Reporting: Survey of Councillors indicates reporting is easy to understand.	Council data	> 80 %	<p>A line graph with the y-axis ranging from 0 to 100 in increments of 20. The x-axis shows dates: Dec-17, Jun-18, Dec-18, Jun-19, Dec-19, Jun-20, Dec-20, and Jun-21. A red line with circular markers shows 0% for all dates from Dec-17 to Dec-20, and then jumps to 80% for Jun-21. A blue dot is placed at the 80% mark for Jun-21.</p>	Survey of Councillors not undertaken during 2019/2020.

4.4.4 - Implement Strategic Asset Management Plans focusing on renewal of assets

Measure	Measured Against	Target Jun 2021	Measure Status	Comments
CL19 - Council Infrastructure Satisfaction: Percentage of adult population who are satisfied with core infrastructure including roads and footpaths.	Community survey	> 75 %	<p>A line graph with the y-axis ranging from 0 to 80 in increments of 20. The x-axis shows dates: Dec-17, Jun-18, Dec-18, Jun-19, Dec-19, Jun-20, Dec-20, and Jun-21. A red line with circular markers shows 67% for all dates from Dec-17 to Dec-20, and then jumps to 75% for Jun-21. A blue dot is placed at the 75% mark for Jun-21.</p>	Asset Management Plans are under continued review. A Condition Assessment of Shire Roads was commissioned in late 2017 and completed in June 2018. The data is currently being analysed before engagement with the public to determine future service levels. Flood Damage has hurt the standard of roads, which may cause a dip in road satisfaction particularly on unsealed roads. This unfortunately is out of NSC control as it stands.
CL20 - Asset Renewal Ratio: Infrastructure Renewal Ratio exceeds 100%.	Council data	> 100 %	<p>A line graph with the y-axis ranging from 0 to 150 in increments of 50. The x-axis shows dates: Dec-17, Jun-18, Dec-18, Jun-19, Dec-19, Jun-20, Dec-20, and Jun-21. A red line with circular markers shows 137% for Dec-17 and Jun-18, then drops to 100% for Dec-18, Jun-19, Dec-19, Jun-20, and Dec-20, and remains at 100% for Jun-21. A blue dot is placed at the 100% mark for Jun-21.</p>	Council's capital works renewal budget for 2020/2021 exceeds the depreciation expense for infrastructure assets. Council has been very successful in grant applications, further boosting renewals.



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