



## **EMERGENCY ACTION PLAN**

# **MARBURG DETENTION BASIN**

**at**

**MARBURG – QUARRY ROAD, MARBURG**

**September, 2023**

Approved by the delegate of the Chief Executive,  
Department of Regional Development, Manufacturing  
and Water until 2 June 2025.

### Emergency Activation Quick Reference

The Emergency Action Plan (EAP) for Marburg Detention Basin covers four emergency conditions evaluated within this document. Use the following table to select the relevant section of the EAP that deals with the emergency condition. Note that the Dam Operator (DOP) is responsible for the decision to activate the EAP.

Activation Level	Alert	Lean Forward	Stand Up	Stand-Down
Decision Authority	Dam Operator (DOP)	Dam Operator (DOP)	Dam Operator (DOP) & Local Disaster Co-Coordinator	Dam Operator (DOP)
<b>Activation trigger for emergency conditions relating to dam hazards</b>				
Flood Event With no Structural Issues (Flow Chart A)	Water level = 81.50 mAHD (Automatic Flood Gauge Level = 2.10 m) and rising	Water level = 83.00 mAHD (Automatic Flood Gauge Level = 3.6 m)	Water level = 86.70 mAHD (Automatic Flood Gauge Level = 7.3 m)	Water level = 81.70 mAHD (Automatic Flood Gauge Level = 2.3 m) and falling with no more rain forecast.
Flood Event With Structural Issues (Flow Chart B)	Water level = 81.50 mAHD (Automatic Flood Gauge Level = 2.10 m) and rising	Water level = 83.00 mAHD (Automatic Flood Gauge Level = 3.6 m)	Water level = 86.70 mAHD (Automatic Flood Gauge Level = 7.3 m)	Water level = 81.70 mAHD (Automatic Flood Gauge Level = 2.3 m) and falling with no more rain forecast and dam safety risk is reduced.
Earthquake Event (Flow Chart B)	Earthquake occurs of magnitude 4 or greater	Rainfall Event Imminent	-	All remedial works are completed and dam safety risk is reduced.
Terror Event (Flow Chart C)	Terror event occurs	Rainfall Event Imminent	-	All remedial works are completed and dam safety risk is reduced.

Note: Automatic Flood Gauge Zero Level is at EL 79.4 m AHD

## Distribution Control Sheet

**Controlled Copy:** Marburg Detention Basin - EAP - 2023 – Copy # 1  
(Refer Note below)

**Authorisation:**

Signature:

Date: 29/09/2023

**Approved by:**

General Manager, Asset and Infrastructure Services

Copy#	Position*	Location
1	Dam Operator (DOP)	Ipswich City Council
2	Council Officers (CO)	Ipswich City Council
3	Local Disaster Coordinator/Local Disaster Management Group	Emergency Management Unit, Ipswich City Council, Ipswich
4	Chief Executive/Director Dam Safety	Department of Regional Development, Manufacturing and Water (RDMW)
5	SES Local Controller	Ipswich City SES unit
6	Executive Officer Ipswich District Disaster Management Group	Queensland Police Service Yamanto

## Revisions

Revision No.	Description	Revision	Revised By
1	Update of 2014 EAP	October 2016	[REDACTED] (WSP PB)
2	Updated with DEWS comments	January 2017	ICC
3	Updated with comments from stakeholders	February 2018	[REDACTED] (SMEC)
4	Annual Review	September 2018	ICC
5	Annual Review	September 2019	ICC
6	Annual Review	October 2020	ICC
7	Annual Review	September 2021	ICC
8	New EAP for regulator's approval	February 2022	ICC
9	Annual Review	August 2022	ICC
10	Annual Review	October 2023	ICC

*Note: A complete set of documents in hard copy form shall be held in Infrastructure and Environment Department, Asset Management Section at 1 Nicholas street Level 7. The electronic copies are saved in Objective and on the USB Drive attached to hard copy of Marburg Detention Basin EAP).*

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# 1 Introduction

This Emergency Action Plan (EAP) is part of a suite of dam safety and management documents prepared by Ipswich City Council (ICC). When using this plan, reference is also to be made to the current version of *Ipswich City Council Local Disaster Management Plan (LDMP)*. ICC is the owner of Marburg Flood Detention Basin and any emergency response in relation to the basin is to be managed and directed as per this EAP.

The Marburg Detention Basin is a flood detention structure located on Black Snake Creek immediately upstream of the township of Marburg. The detention basin was constructed to reduce the impact of flooding downstream of its location, by detaining flood flows from Black Snake Creek and releasing them at a reduced rate, lowering the probability of inundation of properties and infrastructure downstream. The Marburg Detention Basin is intended to attenuate the 1 in 100 year AEP flood inflow of 200 m<sup>3</sup>/s down to 75 m<sup>3</sup>/s through the township.

In the case where there is no storm event occurring within the catchment the basin is effectively dry and as such Sunny Day Failure is not considered within this document.

The basin was constructed in 2004 as an earth embankment, with a height of approximately 10.7 metres and an embankment length of 725 metres. A centrally located spillway provides the ability to discharge water safely when water level in the basin exceeds the spillway level.

Four 1800mm diameter concrete pipes beneath the basin embankment, control the discharge from the detention basin during major events, with excess storm inflow being stored temporarily in the basin. The detention basin is designed to contain the 1% Annual Exceedance Probability (AEP) flood event without the spillway discharging.

Discharges from the basin are conveyed through the township of Marburg through a 20m wide grassed channel. Crossings on the Rosewood Marburg Road and Edmond Street are recognised to be flood prone and are likely to become impassable when rainfall events exceeding 20% AEP occur.

Due to the proximity of properties and infrastructure downstream of the basin, the basin is assessed to be a referable dam, Category 2 (population at risk exceeding 100).

As the detention basin is located a short distance upstream of properties, there will be minimal time to respond and implement actions to safeguard the Marburg community in the event of an emergency. It is estimated that the nearest residences will be impacted within minutes of an emergency event, while the Warrego Highway, located 1500m downstream of the basin will be impacted within approximately 10 minutes.

Table 1.1 lists the likely peak water levels in the basin for a range of flood events.

Discharges through the spillway will commence once water levels exceed the full supply level of 86.7 m AHD.

To assist with monitoring the rainfall conditions and water level at the Marburg Detention Basin an automated BOM station (recording rain gauge and water level) and manual read gauge boards are installed. In the event that the site is unable to be attended, the rain and water level can be monitored from the BOM Enviromon system.

Under normal operating conditions during low intensity storms, the rate of flow entering the detention basin from Black Snake Creek will pass directly through the detention basin's outlet pipes and will not cause any impoundment or rise in water levels in the basin. Increased flows and a rise in water level in the downstream channel can be expected. Flooding of the low-level road crossings downstream of the basin is expected.

Increased levels of inflow to the detention basin during high intensity storm events, will result in the water level in the basin rising and an increase in the downstream water levels. These water levels are within design expectations as noted in Table 1.1.

**Table 1.1 - Peak Storage Levels for a Range of Flood Events**

<b>AEP (%)</b>	<b>ARI (Years)</b>	<b>Storage Level (m AHD)</b>
63%	1	82.0
39%	2	82.7
20%	5	83.8
10%	10	84.7
5%	20	85.4
2%	50	86.2
1%	100	86.7 (spillway crest level)
0.01	10,000	88.7
0.002	50,000	89.2 (dam crest level)

Once water levels in the detention basin exceed the basin’s spillway level, increased discharges to the downstream area will occur through the spillway and an increased level of flood threat to downstream residents and occupants will develop. Depending on the severity of the flood inflow, it may be necessary to activate this EAP.

During the period when water is impounded in the detention basin and a dam safety issue is identified, such as the development of an issue that could lead to failure of the detention basin, then a dam safety situation exists and activation of this EAP will be required.

This EAP and associated flood mapping cover the area extending from the Marburg Detention Basin, downstream as far as the Local Government Boundary between Ipswich and Somerset Regional Council. The flood path downstream of the Local Government Boundary is largely rural in nature with the flood mapping indicating that the flood flows attenuate as they progress downstream. Irrespective it is expected that Somerset Regional Council is notified and kept informed of any emergency events at the Marburg Detention Basin.

## **1.1 Risks and Issues**

The following risks and issues may need to be considered in respect to the operation, use and activation of this EAP:

- Storm events leading to water being impounded in the detention basin will be local and the time between the rainfall event and the water entering the detention basin will be less than 1 hour;
- Water levels in the detention basin are likely to rise quickly;
- Where possible, council officers should be mobilised early to observe and evaluate the developing situation at the Detention Basin. This action may need to be based on predictions of an event developing based on weather forecasts and rainfall records;
- Operators attending site are to be aware that due to flooding and inundation of local roads that they may be isolated at the site until the flood levels recede;
- Due to the long length of the basin’s embankment and that no access is provided over the spillway, consideration should be given to mobilising 2 operators to the site, to enable the embankment to both sides of the spillway to be safely inspected and monitored;
- Dam failure mechanisms may develop quickly with a high likelihood of Council being unable to undertake any actions to mitigate or reduce the development of the failure in a timely manner;

- In the event that council officers identify an issue that may develop into a breach of the embankment, there are minimal actions that they can take to stop or reduce the failure. The main action of the operators under these circumstances will be to observe the situation at the detention basin and provide warning to the emergency services and the event coordinator, so that downstream evacuations can be undertaken in a timely manner;
- The detention basin embankment has the potential of developing a failure under flood conditions due to:
  - The embankment only experiencing water levels sporadically and only on the upstream side;
  - Seepage through the embankment will only be evident when there is water stored in the basin. If seepage is identified then it is likely that an open passage exists through the embankment (highly porous area or a piping mechanism is developing);
  - The embankment fill material may develop shrinkage cracks during dry periods
  - The embankment details indicate homogenous fill, with no filters. Seepage through the embankment or cracks will be uncontrolled and can therefore develop quickly into a dam failure mechanism.
- The Marburg SES facility is located on M Verrenkamp Road adjacent to Black Snake Creek. This facility will experience inundation as a result of rainfall events greater than a 5% AEP. Consideration should be given to evacuating this facility and its resources when an Alert is issued under this EAP.

## 1.2 Technical Data

Table 1.2 – Marburg Detention Basin Technical Data

Marburg Detention Basin		
POPULATION AT RISK	Sunny Day Failure Flood Failure (AEP 1 in 100) Flood Failure (AEP 1 in 10,000)	Not Applicable Total PAR = 173 Incremental PAR = 44
Type of dam	Earth fill Embankment – Homogenous Fill	
Dam Owner	Ipswich City Council (ICC)	
Construction Completed	2004	
Watercourse	Black Snake Creek	
Catchment Area	16.04 km <sup>2</sup>	
Length of Dam Wall	Approximately 725 m	
Maximum Height Dam Wall	Approximately 10.7m	
Full Supply Level (Spillway Crest Level)	86.7 m AHD	
Dam Crest Level	89.2 m AHD	
Storage Capacity at F.S.L.	1107 ML	
Annual Exceedance Probability of Discharge through Spillway	1% AEP	

## 1.3 Monitoring System

The monitoring systems provided at the Marburg Detention Basin are flood markers and an automated rainfall and flood gauge.

This automated rainfall and flood gauge provides constant monitoring of rainfall events with the data being relayed to the Enviromont monitoring system and is to be used only when conditions make the site difficult to attend. Enviromont is an Australian Government, Bureau of Meteorology product with a capacity to collect and monitor rainfall and river level data in real time. Contact Enviromon for current updates at the Bureau of Meteorology, [REDACTED]

Trigger water surface levels given within this document are in both m AHD and the level applicable to the reading on the Enviromon automated instrumentation system. The BOM Enviromon flood gauge zero level (0m) is 79.4 m AHD.

## 1.4 Maintenance and Inspections

To reduce the likelihood of the Marburg Detention Basin failing under normal operating conditions a program of regular inspection and maintenance needs to be undertaken. This includes the following activities:

**Table 1.3 – Marburg Detention Basin Maintenance & Inspection Schedule**

<b>Activity</b>	<b>Description / Details</b>	<b>Timing / Frequency</b>
Dam Safety Inspections	Routine inspections throughout the year.	Every 2 months
	Annual Inspection	yearly
	Special Inspection	After a major flood event
	Comprehensive Inspection	5 yearly
Grass Cutting	Cutting the grass on the embankment crest and embankment slopes	<ul style="list-style-type: none"> <li>• prior to annual inspection</li> <li>• prior to comprehensive inspection</li> <li>• as recommended during routine inspection.</li> </ul>
Outlet Pipes	undertake an inspection of the outlet pipes (inside the pipes), approach slabs and downstream outlet works	During comprehensive inspection
Spillway and Stilling Basin	<ul style="list-style-type: none"> <li>• Inspect shotcrete for signs of loss of coverage and cracking /movement.</li> <li>• Inspect rock gabions and mattresses for signs of deformation, movement of rock or damage to the wire baskets</li> <li>• Inspect stilling basin for erosion and loss of stone rip rap</li> </ul>	During annual inspection

## 1.5 Glossary

Table 1.4 – Glossary

Term	Acronym	Description
Annual Exceedance Probability	AEP	The probability that a given rainfall total accumulated over a given duration will be exceeded in any one year.
Australian Height Datum	AHD	National datum to which levels referred
Average Recurrence Interval	ARI	The average, or expected, value of the periods between exceedances of a given rainfall total accumulated over a given duration.
Department of Regional Development, Manufacturing and Water	DRDMW	Department responsible for management of dams in Queensland including dam emergencies
Department of Transport and MainRoads	DTMR	Department responsible for management of mainroads including the Warrego Highway
Emergency Action Plan	EAP	Disaster Management Plan providing guidance on the actions required to manage an event associated with Marburg Detention Basin (this plan)
Ipswich City Council	ICC	Owner of the referable dam and responsible for the operation and management of Marburg Detention Basin
Local Disaster Coordinator	LDC	Refer to definition in Disaster Management Act
Local Disaster Coordination Centre	LDCC	Location from which the event or disaster is managed
Local Disaster Management Group	LDMG	Refer to definition in Disaster Management Act
Probable Maximum Flood	PMF	The flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in a particular drainage area
Probable Maximum Precipitation	PMP	The maximum depth of precipitation at a location for a given duration that is meteorologically possible
Queensland Fire and Emergency Services	QFES	Primary provider of fire, search and rescue services to the State of Queensland.

## 2 Roles and Responsibilities

According to Water Supply (Safety and Reliability) Act 2008 (the Act) *“An owner of a dam is the owner of land on which the dam is constructed or is to be constructed”*.

The Marburg Detention Basin is built on Lot 2 / SP157097 which is owned by Ipswich City Council. Accordingly, the owner of Marburg Detention Basin is Ipswich City Council. According to the Act, the owner of a referable dam must have an approved emergency action plan for the dam.

The General Manager, Infrastructure and Environment Department, Ipswich City Council is responsible for the overall management of the referable dams owned by ICC including all other ICC assets. Accordingly, the General Manager, Infrastructure and Environment Department, Ipswich City Council is the **Dam Operator (DOP)** of Marburg Detention Basin.

The Dam Operator delegates / assigns various tasks of operation and maintenance of Marburg Detention Basin to **Council Officers** and may include the following:

- Manager, Assets Services, IED
- Manager, Infrastructure Strategy, IED
- Manager, Works and Field Services, IED
- Asset Manager, Asset Services Branch, IED
- Asset Engineers, Asset Services Branch, IED
- Any other Council Officers who have a role in the operation and maintenance of referable dams owned by ICC.

Table 2.1 lists the roles and responsibilities that have been assigned to the Dam Operator and Council Officers under this EAP.

**Table 2.1 – Roles and Responsibilities**

Role	Responsibility
Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Manage to have an approved emergency action plan for the Marburg Detention Basin</li> <li>• Activation of this Emergency Action Plan (EAP)</li> <li>• Assign / delegate tasks to Council Officers during EAP activation</li> <li>• Advise the LDC of the developing issue or the event</li> <li>• Issue warning and evacuation messages</li> <li>• Issue media alerts and information</li> <li>• Continue to monitor and provide updates to the LDC</li> <li>• Identify and arrange for additional resources to attend site if required</li> <li>• Maintain a log of the event, actions taken and all communications</li> <li>• At stand down phase deactivate the EAP</li> <li>• Advise and update Chief Executive/Director Dam Safety, Department of Regional Development, Manufacturing and Water (DRDMW) as required</li> <li>• Within thirty (30) working days after the end of the event, present an Emergency Event Report (EER) to the Director of Dam Safety, DRDMW</li> <li>• Develop and implement an education program for relevant entities including the LDMG and regularly exercises the EAP to ensure its effectiveness</li> <li>• Conduct public education of the EAP</li> </ul>
Council Officers	<ul style="list-style-type: none"> <li>• Regular inspection and maintenance of the detention basin and associated infrastructure</li> <li>• Determination of the most fit-for purpose communication method and implementation</li> <li>• Attend the site during a flood event (if safe to do so) and undertake an inspection and make observations of the situation</li> <li>• Reporting of any observations or dam safety issues</li> <li>• Take photographs of any dam safety issues</li> <li>• Maintain a log of the event, actions taken and all communications</li> <li>• Review and maintain a register of lessons learnt with input from all relevant stakeholders</li> <li>• Record data for later analysis</li> </ul>

Role	Responsibility
Local Disaster Coordinator (LDC)	<p>Review the data and information received</p> <ul style="list-style-type: none"> <li>● Following Local Disaster Management Plan and associated doctrine: <ul style="list-style-type: none"> <li>● Advise the LDMG of the developing issue or the event</li> <li>● Convene the LDMG and manage its functions</li> <li>● Alert/Advice the emergency response agencies to a developing situation and the possible need to mobilise and implement emergency actions</li> <li>● Establish a Local Disaster Coordination Centre (LDCC) including provision of resources</li> <li>● Implement the preparedness, response and recovery strategy as required</li> <li>● Coordinate the response and establish a Local Disaster Coordination Centre (LDCC) including provision of resources</li> <li>● Convene the Local Disaster Management Group (LDMG)</li> <li>● Assign resources as required to support the Dam Operator</li> <li>● Assist police and SES to evacuate residents at risk</li> </ul> </li> </ul>
Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>● Following Local Disaster Management Plan and associated doctrine: <ul style="list-style-type: none"> <li><input type="checkbox"/> Coordination of responses if the event escalates to include a wider area</li> <li><input type="checkbox"/> Review the data and information received</li> <li><input type="checkbox"/> Assign resources as required to support the Dam Operator</li> <li><input type="checkbox"/> Support to to evacuate residents at risk</li> </ul> </li> </ul>
Police	<ul style="list-style-type: none"> <li>● Provision of additional resources from outside of the area if required</li> <li>● First response and initial evacuation</li> <li>● Emergency evacuation</li> </ul>

### 3 Notification Information

The following section provides guidance on the level of alert to be adopted, the process for engaging this EAP and its escalation from a normal situation to a dam safety emergency situation.

Whilst this EAP provides for an emergency situation to develop in stages, it is to be recognised that under some circumstances the immediate activation of this plan to a ‘Stand-Up’ (Dam Safety Emergency) may be required.

Warning messages and communication systems, including relevant contact details, are to be reviewed and confirmed on a regular basis.

#### 3.1 Notification Stages

In this EAP a 4 stage action plan has been adopted as outlined. Each stage includes a colour coding that is used to define the level of action outlined in the flow charts and action plans. Water levels given are in both mAHD and, in brackets, the relative BOM Enviromon reading. Note that the BOM Enviromon flood gauge zero level (0 m) is 79.4 mAHD.

In the absence of other reason for triggering alert levels, the nominal water level triggers are given in Table 3.1 and the alert level definition are given in Table 3.2.

**Table 3.1– Alert Level Basin Water Surface Level Triggers**

Alert Level	Detention Basin Water Level (m AHD)	Enviromon Water Level (m)	AEP of Flood event
Alert	81.5	2.1	
Lean Forward	83	3.6	
Stand-Up	86.7 (Spillway Crest)	7.3	1%
Stand-Down	81.7	2.3	

**Table 3.2 – Emergency Level Definitions**

Level	Description (Select one or more appropriate description)
<b>ALERT (Dam Safety Alert)</b>	<p>Emergency hazards are developing or have developed that raise the need for closer monitoring of weather conditions that may impact on the Marburg Detention Basin. Emergency hazards may include:</p> <ul style="list-style-type: none"> <li>• Development of emergency hazard in the Marburg Detention Basin catchment that warrants frequent or continuous monitoring of weather forecasts, rainfall, and basin water levels;</li> <li>• Severe storm warnings received</li> <li>• Potential for flooding downstream of Marburg Detention Basin;</li> <li>• Detention basin water level &gt; 81.5 mAHD (2.1 m);</li> <li>• Reports or identification of acts of terrorism, sabotage or vandalism that may compromise the structural integrity of the Marburg Detention Basin;</li> <li>• Reports of strong earthquakes in the region measuring a magnitude of 4 on the Richter Scale, or a IV on the Modified Mercalli Scale.</li> </ul>

Level	Description (Select one or more appropriate description)
<b>LEAN FORWARD</b> <b>(Dam Safety Event)</b>	<p>Emergency event developing further where Marburg Detention Basin is filling with water and there is the potential for further water level rises or for dam safety issues to develop or have been observed. Conditions may include:</p> <ul style="list-style-type: none"> <li>• Observed or monitored rainfall and detention basin inflow event that forecasts the potential for the detention basin to partially fill;</li> <li>• Possible minor flooding downstream of the detention basin;</li> <li>• Detention basin water level &gt; 83.0 mAHD (3.6 m);</li> <li>• Blockage of the outlet pipes or other condition that leads to a faster rise and higher water levels in Marburg Detention Basin; or</li> <li>• Identification of structural issues that may compromise the structural stability of Marburg Detention Basin. The embankment is intact but there is the potential for it to fail;</li> </ul> <p>At this level contact PAR within the evacuation zone via the following means, where appropriate:</p> <ul style="list-style-type: none"> <li>• Text message (within EA polygon via National Emergency Alert System)</li> <li>• Local radio</li> <li>• Door knocking</li> </ul>
<b>STAND-UP</b> <b>(Dam Safety Emergency)</b>	<p>Emergency event exists or developing where major flooding downstream of Marburg Detention Basin is expected and/or failure of the detention basin embankment is expected. Conditions may include:</p> <ul style="list-style-type: none"> <li>• Discharge forecasted or occurring through the spillway (i.e. water levels in the detention basin are 86.7mAHD (7.3 m or more);</li> <li>• Forecast for water levels in Marburg Detention Basin to reach or exceed embankment crest level;</li> <li>• Major flooding downstream of the detention basin;</li> <li>• Failure of the detention basin embankment is imminent or has occurred; or</li> <li>• Other situation or issue that compromises the structural integrity of Marburg Detention Basin leading to a failure of the detention basin embankment (irrespective of water level in the detention basin or existing or forecasted inflows).</li> </ul> <p>At this level contact PAR within the evacuation zone via the following means, where appropriate :</p> <ul style="list-style-type: none"> <li>• Text message (within EA polygon via National Emergency Alert System)</li> <li>• Local radio</li> <li>• Door knocking.</li> </ul>
<b>STAND-DOWN</b> <b>(Dam Safety Threat Reducing)</b>	<p>Emergency hazard to Marburg Detention Basin are reducing, and the water level in the detention basin is dropping. Conditions may include:</p> <ul style="list-style-type: none"> <li>• Water levels in the detention basin are 81.7 mAHD (2.3 m or less</li> <li>• Dam inspections have not identified any safety issues or structural integrity issues;</li> <li>• Failure of the detention basin embankment is unlikely or not expected; or</li> <li>• Downstream flooding has reduced and no longer a threat to the public.</li> </ul>

The flow chart contained in Figure 3.1 provides guidance on how a dam safety emergency situation may develop and the escalation of the situation through the various notification stages.



### 3.2 Emergency Response Notification and Contact List

The following list provides information on persons/organisations who may need to be contacted or called for assistance as part of activation of the EAP.

**Table 3.3 - Notification Contact List**

SN#	Title/Name	Phone Business	Phone Mobile
<b>Ipswich City Council</b>			
1	Chief Executive Officer	[REDACTED]	[REDACTED]
2	General Manager Asset Infrastructure Service (Dam Operator)	[REDACTED]	[REDACTED]
3	Manager, Assets Services (Council Officer)	[REDACTED]	[REDACTED]
4	Manager, Infrastructure Strategy (Council Officer)	[REDACTED]	[REDACTED]
5	Manager, Works and Field Services (Council Officer)	[REDACTED]	[REDACTED]
<b>Disaster Management Group</b>			
1	City of Ipswich LDMG - Local Disaster Coordination Centre/Flood Intelligence Centre Emergency Management Duty Officer	[REDACTED]	
2	City of Ipswich LDMG - Local Disaster General Manager Environment and sustainability	[REDACTED]	[REDACTED]
3	City of Ipswich LDMG - Deputy Local Disaster Coordinator	[REDACTED]	[REDACTED]
4	City of Ipswich LDMG - Deputy Local Disaster Coordinator & General Manager	[REDACTED]	[REDACTED]
5	Ipswich District Disaster Management Group (District Disaster Coordinator and Chair)	[REDACTED]	[REDACTED]
6	State Disaster Coordination Centre (SDCC)	[REDACTED]	[REDACTED]
7	SES Marburg	132 500 (for public use)	[REDACTED]

8	SES Rosewood	132 500 (for public use)	[REDACTED]
9	SES Ipswich	132 500 And 000, [REDACTED]	[REDACTED]
10	Marburg Police Station	3437 2600	
<b>Department of Regional Development, Manufacturing and Water</b>			
1	Chief Executive/Director Dam Safety, Department of Regional Development, Manufacturing and Water (RDMW)	[REDACTED]	[REDACTED]
<b>Bureau of Meteorology</b>			
1	Duty Meteorologist in charge	[REDACTED]	
<b>Other Organisations</b>			
1	Department of Transport and Main Roads Statewide Road Condition Information Service	13 19 40	
2	Geoscience Australia	[REDACTED]	
3	Somerset Regional Council	[REDACTED]	
<b>Table last updated</b>			09/09/2023

### 3.3 Impacted Persons / Property

The properties potentially impacted by an emergency event at the Marburg Detention Basin, are identified on the flood inundation maps included in Appendix A. Inundation maps are provided for a range of flood events.

The extent and depth of inundation detailed on the inundation maps is based on modelling of rainfall / storm events and the ground information provided. The maps provide an indication only of the depth and extent of inundation that can be expected.

For this EAP, the flood categories listed in Table 3.4 have been used.

**Table 3.4 – Flood Level Designation**

Flood Designation	Description
<b>Minor Flood Level</b>	Flooding as a result of rainfall in the Black Snake Creek catchment up to a <b>5% AEP</b> rainfall event. <i><b>For definition of the Minor Flood Area evacuation zone, refer to the 5% AEP Flood Inundation Map.</b></i>
<b>Major Flood Level</b>	Flooding as a result of a <b>5% AEP rainfall event</b> or greater and / or failure of the Marburg Detention Basin. <i><b>For definition of the Major Flood Area evacuation zone, refer to the PMP Flood Inundation Map.</b></i>

The following issues are to be noted with respect to flooding in Marburg:

1. Inundation of local roads and streets in Marburg may occur as a result of more frequent rainfall events than a 5% AEP event (some road crossings inundate during a 20% AEP event). Impacts on property where inundation levels start to exceed 300 mm are likely only after rainfall exceeds a 10% AEP event;
2. Management of road closures for events smaller than a 5% AEP are to be managed as local flood management issues;
3. When using this EAP, it is to be noted that flooding impacts will also result from flows in sub-catchments and along drainage lines entering Black Snake Creek from both the east and west of Marburg.

**3.4 Road Inundation and Road Closure**

Table 3.4 below provides guidance on the closure of roads and streets for the different flood level designations. The road closures are based on any street where water has covered some or all of the street, irrespective of water depth.

**Table 3.5 – Road Closures for Different Flood Levels**

Flood Designation	Roads / Streets Inundated with Water
<p><b>Minor Flood Level</b> (Up to a 20 year ARI Event – refer to inundation map for this event)</p>	<ul style="list-style-type: none"> <li>• Queen Street south, between Edmond Street and Black Snake Creek crossing</li> <li>• Queen Street north, between Edmond Street and William Street</li> <li>• Edmond Street east, between Queen Street and Kennedy Street</li> <li>• Edmond Street west between Queen Street and Main Street including crossing of Black Snake Creek</li> <li>• Edmond Street west at approach to Warrego Highway on ramp</li> <li>• Rosewood - Marburg Road between Queen Street and Schubels Road including crossing of Black Snake Creek</li> <li>• Rosewood - Marburg Road south of Schubels Road</li> <li>• Marburg Quarry Road</li> <li>• Butlers Road, east of Marburg Quarry Road</li> <li>• Main Street at the southern end</li> <li>• Main Street, between Edmond Street and Owens Street</li> <li>• Roderick Street</li> <li>• Moriarity Lane</li> <li>• M Verrenkamps Road and Car Park</li> <li>• Louisa Street and crossing of Black Snake Creek</li> <li>• George Street</li> <li>• William Street</li> <li>• Marburg Road, north of William Street</li> <li>• Telrader Road</li> </ul>
<p><b>Major Flood Level</b> (Flood level between a 20 year ARI event and a PMP event including dam failure – refer to inundation map for this event)</p>	<p>All of the above listed roads plus the following additional streets / areas:</p> <ul style="list-style-type: none"> <li>• Warrego Highway, Black Snake Creek crossing</li> <li>• Warrego Highway, Marburg western on ramp / intersection</li> <li>• Postmans Track,</li> <li>• Edmond Street, School Street to Kennedy Street</li> <li>• Main Street, from Edmond Street to end</li> <li>• Schubels Road, from intersection with Rosewood Marburg Road</li> </ul>

### 3.5 Evacuation Routes / Evacuation Centre

The City of Ipswich evacuation centres will be established in accordance with the LDMG’s Evacuation Centre Sub Plan. A suitable location will be selected and established according to this plan, based on the best information available for any specific event. When considering evacuation routes, the following should be considered:

- Flooding of Black Snake Creek may prevent movement across the creek from either direction;
- Conditions leading to flooding in Marburg are also likely to see similar conditions at Rosewood. Any evacuation centre being established should consider the potential need to accommodate residents from both communities;
- Rosewood is approximately 12 km distance from Marburg and is accessed via narrow winding roads;
- Any flood event impacting on Marburg is also likely to cause localised flooding of the roads between Marburg and Rosewood and roads may be impassable or closed;
- The weather conditions may make road conditions hazardous;
- Rosewood may also be experiencing similar levels of flooding; and

- In order to ensure that the population can safely access the evacuation centre at Rosewood, it will be necessary to activate this EAP well in advance of any hazardous weather conditions developing and roads becoming impassable or closed.

Where the population at Marburg is directed to Rosewood the following evacuation routes are preferred:

#### **From the west side of Marburg**

- Take the Warrego Highway in a westerly direction to Minden (towards Toowoomba);
- At Minden turn left onto Tallegalla Road and follow this in a southerly direction;
- Continue on the Rosewood – Marburg Road to Rosewood;
- After entering Rosewood proceed to intersection with Walloon Road and Rosewood – Laidley Road (Lanefield Road);
- Turn right into Rosewood – Laidley Road (Lanefield Road).
- High School (Evacuation Centre) is located after 340m on the left

#### **From the east side of Marburg**

- Take the Warrego Highway in an easterly direction (towards Brisbane)
- At Hagslea turn right onto the Thagoona – Hagslea Road and follow this in a south easterly direction;
- Continue south on Caledonian Road;
- At the Karrabin – Rosewood Road intersection, turn right and follow road to Rosewood;
- In Rosewood continue straight ahead along Walloon Road, crossing Matthew Street;
- At the intersection with John Street, continue straight ahead into Rosewood – Laidley Road (Lanefield Road);
- High School (Evacuation Centre) is located after 340m on the left side of the road.

The above evacuation routes are outlined on the **Evacuation Route Map** in Appendix A.

### **3.6 Warning and Communication Plan**

The target audience of emergency warnings is the incremental PAR and those properties and persons which have a high flood risk during a dam hazard or dam emergency event. The maximum incremental PAR is 44 for AEP 1 in 10,000 flood failure event. The purpose of the emergency warnings is to inform the target audience of an impending or current threat and promote an appropriate responsive action.

The incremental population at risk is distributed throughout the Marburg area for various events. For this reason, all properties within the floodplain have been included in the warning notifications to ensure a consistent approach to evacuation is applied.

This EAP does not include a detailed list of occupants of properties that may be impacted. About 60 properties may be impacted during AEP 1 in 100 flood failure and the short time available leading to the issue of warnings or evacuation of residents, makes it improbable that contacting individual residents by phone or similar using resources at the LDCC is unlikely to be completed in time.

Use of National Emergency Alert System through SDCC is the primary means of warning residents. The alert polygons are loaded, tested and held by SDCC with consideration this is a detention basin with no possibility of sunny day failure. The map of alert polygons for minor and major flooding are included in Appendix A. The impact extents have to be considered in light of flood conditions at the time.

Ipswich City Council uses live flood modelling and customises messages at the time from its Public Information and Warnings Plan. Developing a special pre- defined wording just for the detention basin EAP without broader flood impacts is not optimal.

Where possible, warning is to be given of the developing situation that provides residents and property occupants time to prepare and where necessary make their way safely to higher ground. It is

recommended that any warnings or need for evacuation be undertaken using the following arrangements:

- National Emergency Alert System using the appropriate polygon(s) for the impact area downstream of the Marburg detention basin. Refer map of alert polygons for minor and major flooding that are included in Appendix A
- Local emergency response personnel making public broadcasts and where necessary door knocking individual residences or places of occupancy; and

The flood inundation mapping included in the Appendix A, is to be used as a guide as to which properties may be impacted.

Priority is to be given to contacting any occupants of domestic dwellings that are either:

- Close to the Marburg Detention Basin first; and
- Those located in close proximity to the existing drainage / Black Snake Creek channel through the township.

Residents identified as being at risk during an emergency event of the detention basin are to be notified annually that they live within a risk zone. The notification will explain to the resident the nature of the risk and advise that they sign up to emergency notification services.

## 4 Emergency Events and Action List

Under normal operating conditions, with minor or low flows in Black Snake Creek and no impounded flood waters in the detention basin, there are no dam safety issues or direct threats to the downstream population. As such, Sunny Day Failures are not applicable to this detention basin.

The following scenarios / situations are provided as a guide to the possible dam safety events and emergency situations associated with this detention basin.

In a flood and dam safety emergency situation, all persons involved in activation, management and implementation of this EAP are to note the following:

- Due to the close proximity of the Marburg Detention Basin to potentially affected properties, any emergencies will have a near immediate impact on those properties;
- **It will be necessary to be proactive in the implementation of this EAP.** Any actions including the evacuation of the flood inundation area must be actioned and undertaken well ahead of when the emergency event actually occurs;
- The situations likely to lead to implementation of this EAP are also likely to see intense rainfall conditions elsewhere in the area. This will increase the hazards and risks associated with implementing this plan. Hazards may include dangerous road conditions, reduced visibility, flooding of local roads, downed power lines and trees being blown over;
- Resources required to respond to a dam safety event at Marburg may be limited due to these resources being previously deployed elsewhere in the region as a result of the wet weather event, and the time required to organise and for the resources to travel to site;
- The Marburg Flood Detention Basin has a limited ability only to protect persons and property in the township of Marburg from flooding and flood impacts. The detention basin provides a buffer that enables time to review the developing situation, activate the EAP and for evacuations to be undertaken;
- If a dam safety issue is developing that is likely to lead to failure of the Marburg Detention Basin embankment, there is a high likelihood that it will develop at a rate which exceeds the capacity of the dam owner to respond and to undertake repairs or mitigate the issue.

## 4.1 Potential Emergency Events and Responses

Possible dam safety issues that could develop at the Marburg Detention Basin are listed in Table 4.1.

**Table 4.1 – Possible Dam Safety Issues**

Possible Dam Safety Issues	Description / Characteristics	Emergency Issues
Blockage of the Outlet Pipes	Complete or partial blockage of one or more of the outlet pipes. Increased turbulence at the upstream end of the outlet pipes.	Reduced discharge capacity through the outlet pipes. Increased rate of rise of the water level in the detention basin. Potential for discharges through the spillway or the embankment being overtopped.
Imminent overtopping of the basin embankment	Water is discharging through the spillway. Further rainfall or inflows to the basin likely Potential for embankment crest to be overtopped.	Increased flow of water and further downstream inundation. Potential for erosion of the embankment to take place and develop into a breach.
Seepage Erosion or piping	Identification of seepage in the embankment or at the downstream toe of the embankment.	Potential for the seepage to develop into a piping failure.
Scour	Wave Scour on upstream embankment	Loss of grass cover and erosion protection. Exposure of the embankment fill material and increased erosion taking place.
	Scour around spillway or outlet structures	Loss of embankment fill and destabilisation of the structures.
Rapid increase or cloudy appearance of seepage	Development of a piping mechanism and movement of material out of the embankment.	Development of internal embankment erosion and a flow path through the embankment. Potential for the erosion to rapidly increase and the embankment to fail.
Inundation of toe of embankment	Saturation of the embankment fill at the toe of the embankment (upstream or downstream)	Potential for instability to develop in the embankment slopes as the flood level recedes.
Longitudinal cracks in embankment or crest (cracks parallel with crest alignment)	Straight or curved cracks in the embankment crest or the embankment slopes	Embankment instability leading to slip failures developing. Exposure of the embankment and further development of slips.

Possible Dam Safety Issues	Description / Characteristics	Emergency Issues
Transverse cracks in embankment or crest (cracks running across crest alignment)	Fissures or cracks in the embankment crest or the embankment slopes	Transverse cracks create an open water path through the embankment.  Potential for further erosion to develop and lead to development of a breach.
Slips, slumps or settlement in the embankment or the embankment slopes	Depressions in the embankment crest. Depressions or bulges on the embankment slopes	Embankment instability developing that could develop further including a breach of the embankment.
Failure of the Outlet Pipes	Seepage around the outlet pipes.	Erosion around and along the outside of the outlet pipes developing into a piping failure
	Displacement of the outlet pipes	Exposing the inner embankment to water and erosion forces.
Erosion at and around the discharge end of the outlet pipes	High flow velocities and turbulence eroding the stream bed and sides at the outlet pipe discharge	Development of instability at the downstream end of the outlet pipes.
	Turbulence around the end wall structure eroding the downstream embankment.	Development of backward erosion mechanism along the outlet pipes
Erosion of the Spillway shotcrete	Loss of shotcrete on the spillway approach and downstream apron areas	Exposure of the embankment fill and potential for development of erosion.
Exposure of the spillway gabions or loss or downstream rip rap	Spillway flows exposing the gabions.	Loss of spillway crest control structure leading to increased discharge rates and possible breach of embankment.
	Turbulence and flows wash rip rap out of spillway stilling basin.	Erosion of the downstream embankment and development of backward erosion in the area around the spillway

## 4.2 Possible Scenarios Leading to Activation of the EAP

There are a number of different events that may lead to this EAP being activated and requiring a coordinated response.

The following responses have been developed noting that this is a flood detention basin:

- Experiences conditions where water is only stored to any significant depth on infrequent occasions and generally for short durations; and
- The dam safety emergency events applicable to a water supply dam are not necessarily applicable in this case (i.e. under 'Sunny Day' conditions the basin does not hold any water and there is no likelihood of a dam failure occurring that will impact on the township of Marburg).

It should not be expected that this EAP presents response actions for all potential dam failure hazards. There may be dam failure hazards that have not been identified or emergency events that develop outside of those presented in this EAP. In such potential scenarios, responsible officers should be prepared to implement actions that may result in activation or escalation of the EAP if there is an

appropriate emergency hazard.

The following events are considered to be the most appropriate for Marburg Detention Basin.

#### **4.2.1 Event A – Flood Event with No Structural Issues (Escalating to Overtopping)**

Under this scenario flood inflows into the Marburg Detention Basin exceeds the discharge capacity of the basin's outlet pipes and the water level in the detention basin rises. The detention basin spillway is found to be operating as designed and there is no evidence of any dam safety issues (no development of seepage, piping failures, slips, slumps or cracks or other issues likely to impact on the integrity of the embankment).

Under this situation, the detention basin is reducing the flow rate in Black Snake Creek passing through the township of Marburg, but it is to be noted that:

- Inundation of roads within the township is likely to occur; and
- Flooding of roads and properties will take place as water levels increase in the detention basin and basin outflows from the pipes increases.

If the water level in the detention basin is predicted to exceed the spillway crest level, there will be an increase in the rate of discharge from the detention basin and increased potential for downstream flooding to develop (Major Flood Levels). Refer to the inundation maps (Appendix A) relating to a 5% AEP event or greater.

If the water level in the detention basin is predicted to exceed the basin's embankment crest level (dam crest), the rate of discharge from the detention basin will increase and the potential for downstream flooding increases. If this occurs, there is a high likelihood of the detention basin embankment scouring and a breach of the embankment developing (dam safety emergency). Refer to the inundation maps (Appendix A) for a PMP event.

Under this scenario, a dam safety emergency could also be triggered by any of the following:

- The outlet pipes passing water under the detention basin embankment are found to be blocked, partially blocked or flow is being restricted. This will lead to an increased rate of rise of water level in the detention basin, the potential for the spillway to discharge flows and possibly overtopping of the detention basin embankment;
- Vandalism, sabotage or other acts, that compromise the structural integrity or ability for the detention basin to operate as intended at the time of a flood event. The detention basin is therefore unable to operate as intended or its structural stability has been compromised.

The likelihood of an act of vandalism or terrorism taking place as a storm inflow event is developing or occurring is considered remote.

Figure 4.1 presents an emergency actions flow chart for Event A (Flood Event, with no Structural Issues) and Table 4.2 provides the recommended responses to this situation.

Figure 4.1 – Flow chart A – Flood inflow with no structural issues

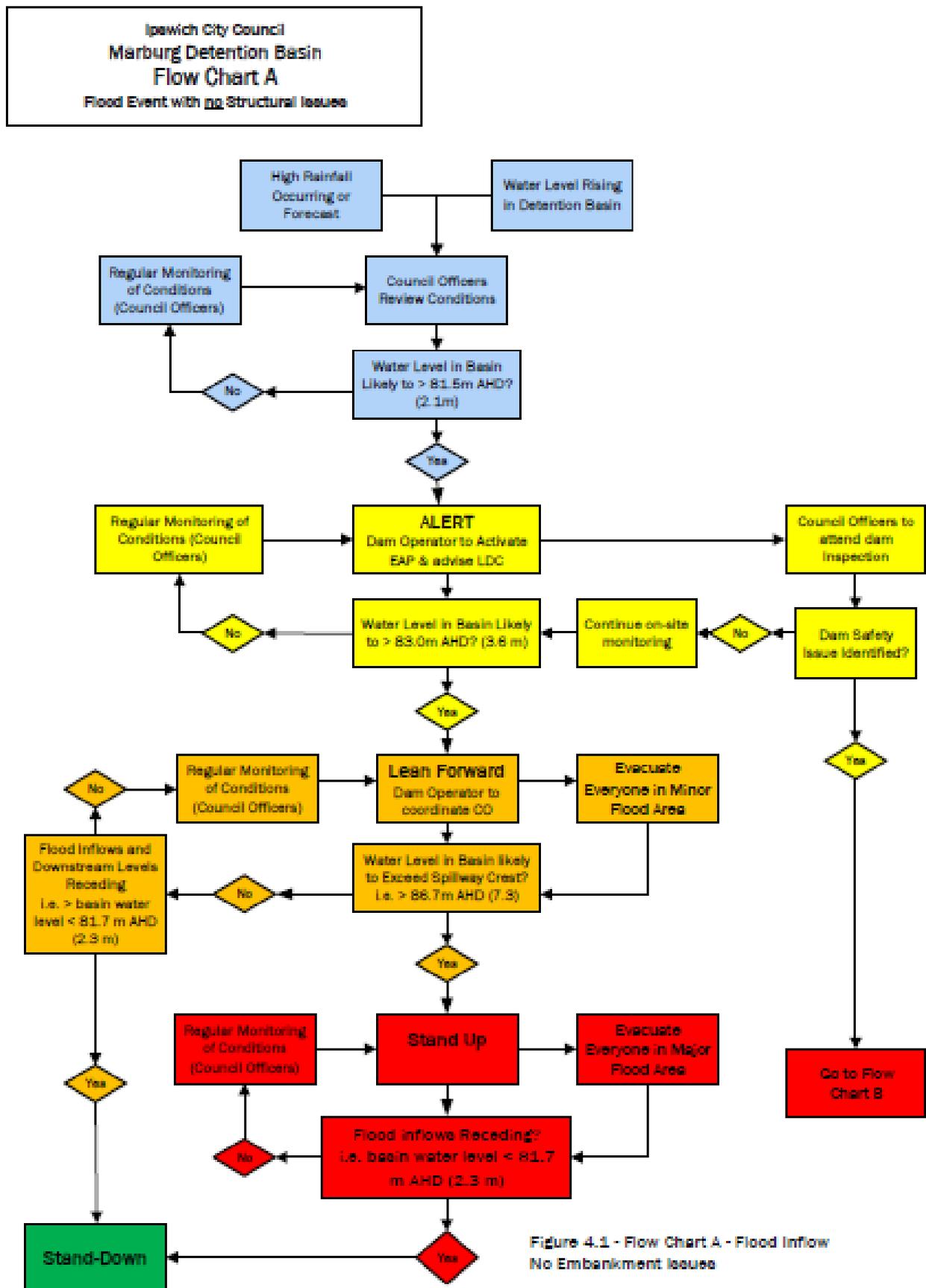


Figure 4.1 - Flow Chart A - Flood Inflow No Embankment Issues

**Table 4.2 – Flood Inflow, No Embankment Issues – Recommended Actions**

	<b>Role</b>	<b>Actions</b>
<b>Event Identification (Flow Chart A) High rainfall occurring or water levels rising</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Increase awareness of, or potential for a flood situation to develop</li> <li>• Delegate tasks to Council Officers</li> <li>• Advise the Local Disaster Coordinator of the developing emergency hazard</li> <li>• Commence recording of data and information and maintain a log of all communications</li> </ul>
	Council Officers (CO)	<ul style="list-style-type: none"> <li>• Monitor regional and local weather conditions</li> <li>• Identify conditions that may lead to flooding in the Marburg Detention Basin catchment</li> <li>• Identify conditions or events likely to result in water levels rising in Marburg Detention Basin</li> <li>• Monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Contact Dam Operator if there are concerns about a potential flood situation developing at Marburg</li> <li>• Commence recording of data and information and maintain a log of all communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Receive information from the Dam Operator regarding event development and make aware LDMG</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Through the Local Disaster Coordinator increase awareness of, or potential for a flood situation to develop</li> </ul>

	Role	Actions
<b>ALERT (Flow Chart A)</b> <b>Basin water level &gt; 81.5 m AHD (Automatic Flood Gauge Level: 2.1 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• <b>Activate the Emergency Action Plan (EAP)</b></li> <li>• Arrange for resources to attend site</li> <li>• Coordinate with Council Officers and assign tasks to:               <ul style="list-style-type: none"> <li>• monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• attend the site for dam inspection and storage level gauge monitoring</li> </ul> </li> <li>• Provide updates of site conditions and the developing issue or event in a priority order to:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Advise residents that the detention basin is operating as intended and starting to fill and to monitor the Council Facebook and Disaster Dashboard.</li> <li>• Prepare for closure of local roads in Marburg</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officers (CO)	<ul style="list-style-type: none"> <li>• Continue to monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Attend the site (if safe to do so)</li> <li>• Undertake an inspection of the embankment and associated infrastructure</li> <li>• Provide updates of site conditions to DOP</li> <li>• Take photographs of any issues</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Review the data and information received</li> <li>• Advise the LDMG of the developing issue or the event</li> <li>• Communicate to the LDMG through channels defined in the local disaster management plans.</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Increase awareness of, or potential for a flood situation to develop</li> <li>• Review the emergency response plan and required actions</li> </ul>
	Ipswich City Council (ICC)	<ul style="list-style-type: none"> <li>• Prepare for closure of local roads in Rosewood</li> </ul>

	Role	Actions
<b>LEAN-FORWARD (Flow Chart A)</b> <b>Basin water level &gt; 83.0 m AHD (Automatic Flood Gauge Level: 3.6 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Continue to coordinate with Council Officers</li> <li>• Request SDCC to issue a warning / evacuation notice to residents (PAR) and others via the National Emergency Alert System</li> <li>• Provide updates of site conditions and the developing issue or event in a priority order to:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Alert Somerset Regional Council to flooding of Black Snake Creek downstream of Marburg</li> <li>• Alert DTMR to possible flooding of Warrego Highway</li> <li>• Issue media alerts and information</li> <li>• Prepare for closure of local roads due to flooding</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Continue to monitor the rainfall and water level gauge (BOM, Enviromon)</li> <li>• Continue to undertake dam inspections and observe conditions until situation eases and if safe to do so</li> <li>• Provide regular updates to DOP</li> <li>• Take photographs of any issues</li> <li>• Record the date of the event and maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Establish a Local Disaster Coordination Centre (LDCC) including provision of resources</li> <li>• Advise emergency response agencies of the developing situation and forecast conditions and impacts</li> <li>• Assign resources as required to support the Dam Operator</li> <li>• Consider evacuation centre(s) in accordance with the local disaster management plan</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Attend the LDCC and undertake assigned roles and responsibilities to manage the event</li> <li>• Manage the responses to the event as directed by LDC</li> <li>• Provide advice emergency response agencies and provide guidance on the need to close roads and for the evacuation of residents</li> <li>• Prepare the evacuation centre(s)</li> <li>• Consider the provision of public information and/or warnings based on risk and the local disaster management plans .</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
	Queensland Fire and Emergency Services (QFES)	<ul style="list-style-type: none"> <li>• Coordination of responses if the event escalates to include a wider area</li> </ul>
	Ipswich City Council (ICC)	<ul style="list-style-type: none"> <li>• Prepare for closure of local roads due to flooding</li> </ul>

	Role	Actions
<b>STAND-UP (Flow Chart A)</b> <b>Basin water level &gt; 86.7 m AHD (Automatic Flood Gauge Level 7.3 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Continue to coordinate with Council Officers</li> <li>• Request SDCC to issue an evacuation notice to residents (PAR) and others via the National Emergency Alert System</li> <li>• Provide updates of site conditions and the developing issue or event in a priority order to:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Alert Somerset Regional Council to flooding of Black Snake Creek downstream of Marburg</li> <li>• Alert DTMR to possible flooding of Warrego Highway</li> <li>• Issue media alerts and information</li> <li>• Request closure of local roads due to flooding</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Continue to monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Continue to undertake inspections and observe conditions until situation eases if safe to do so</li> <li>• Provide regular updates to DOP</li> <li>• Take photographs of any issues</li> <li>• Record the date of the event and maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Assign resources and responsibilities as required</li> <li>• Assign resources as required to support the Dam Operator</li> <li>• Consider the provision of public information and/or warnings based on risk and the local disaster management plans</li> <li>• Consider appropriate response strategies based on context, risk and the local disaster management plan.</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Manage the responses to the event as directed by LDC</li> <li>• Contact the emergency response agencies and provide guidance on the need to close roads and for the evacuation of residents</li> <li>•</li> </ul>
		<ul style="list-style-type: none"> <li>• Alert all other residents of the possible need to evacuate at short notice</li> <li>• Operate and manage the evacuation centre(s)</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
Queensland Fire and Emergency Services (QFES)	<ul style="list-style-type: none"> <li>• Coordination of responses if the event escalates to include a wider area</li> <li>• Provision of additional resources from outside of the area if required</li> </ul>	

	Ipswich City Council (ICC)	<ul style="list-style-type: none"><li>• Close road as per advise received from Dam Operator and in coordination with LDMG</li></ul>
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	Role	Actions
<b>STAND-DOWN (Flow Chart A)</b> <b>Basin water level drops below 81.7 m (Automatic Flood Gauge Level: 2.3 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Deactivate the EAP</li> <li>• Advise that emergency event at the dam has passed to the following:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Arrange for special inspection if needed</li> <li>• Prepare a report on the event within forty-eight hours (48) of becoming aware of the incident or failure to the Director Dam Safety, DRDMW</li> <li>• Prepare an Emergency Event Report (EER) and submit to the Director Dam Safety within thirty (30) working days after the end of the event</li> <li>• Advise all entities previously notified of the situation.</li> <li>• Coordinate and conduct a review of the event and the responses</li> <li>• Review the adequacy of the monitoring systems and their operation</li> <li>• Register and address lessons learnt in conjunction with other relevant stakeholders</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Undertake a full inspection of Marburg Detention Basin and advise DOP if Special Inspection is needed.</li> <li>• Assist Dam Operator with preparation of incident and EER report to DDS</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Advise LDMG that dam safety emergency event has passed and emergency response services can stand down</li> <li>• Provide input to a review of the event with the Dam Operator</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Organise response agencies in respect to restoration of services to Marburg and return of residents</li> <li>• Participate in a review of the event and the responses</li> </ul>

#### 4.2.2 Event B – Flood Event with Structural Issues

Under this scenario an issue related to the structural integrity of the dam is identified while the following is occurring:

- The flood level has risen in the detention basin but has not necessarily reached the level of the spillway;
- During this period an inspection of the dam is undertaken and identified a structural deficiency or a report is received that a structural integrity issue has been identified;
- From the information available there is a concern that failure of the detention basin embankment is possible / likely or imminent.

In the event of a structural issue at the basin, the failure modes could be any of a range of options, including excessive seepage, piping, undermining scour, settlement of the embankment and structures, cracking of structural elements, etc, all having the potential for further deterioration and leading to a dam failure. This would increase the rate of discharge through the detention basin and an increased level of downstream flooding.

If structural damage to the dam is identified, the initial action is to register an incident on the dam inspection form. Table 4.1 provides a list of potential indicators of structural damage to the Dam. Structural damage to the dam can be caused in many ways including earthquake, explosion, vandalism, or large objects crashing into the dam or reservoir. Structural damage can be identified through visual inspection on a regular basis in accordance with ANCOLD guidelines.

For this scenario, reference should be made to flood inundation mapping for a PMP event + Dam Break (**Major Flood Level**) in Appendix A.

Under this scenario, a dam safety emergency could be triggered by any of the following:

- Excessive seepage identified at the downstream toe of the detention basin embankment or from the abutments of the detention basin;
- Sand boils developing along the toe of the downstream embankment or in the vicinity of the toe;
- Water flowing from cracks or development of ‘piping’ holes in the embankment and the movement of material out of the embankment;
- Slips, slumps or movement of material on the embankment;
- Development of cracks, horizontal movement or settlement of the detention basin embankment;
- Scour and erosion around the downstream end of the outlet pipes that is compromising the integrity of the downstream embankment toe;
- Other stability issue or combination of any of the above that leads to concerns around the stability of the detention basin embankment, its outlets or spillway.

Refer to Flow Chart B (Figure 4.2) and Table 4.3 for the responses to this situation.

Figure 4.2 – Flow chart B – Flood inflow with structural issue

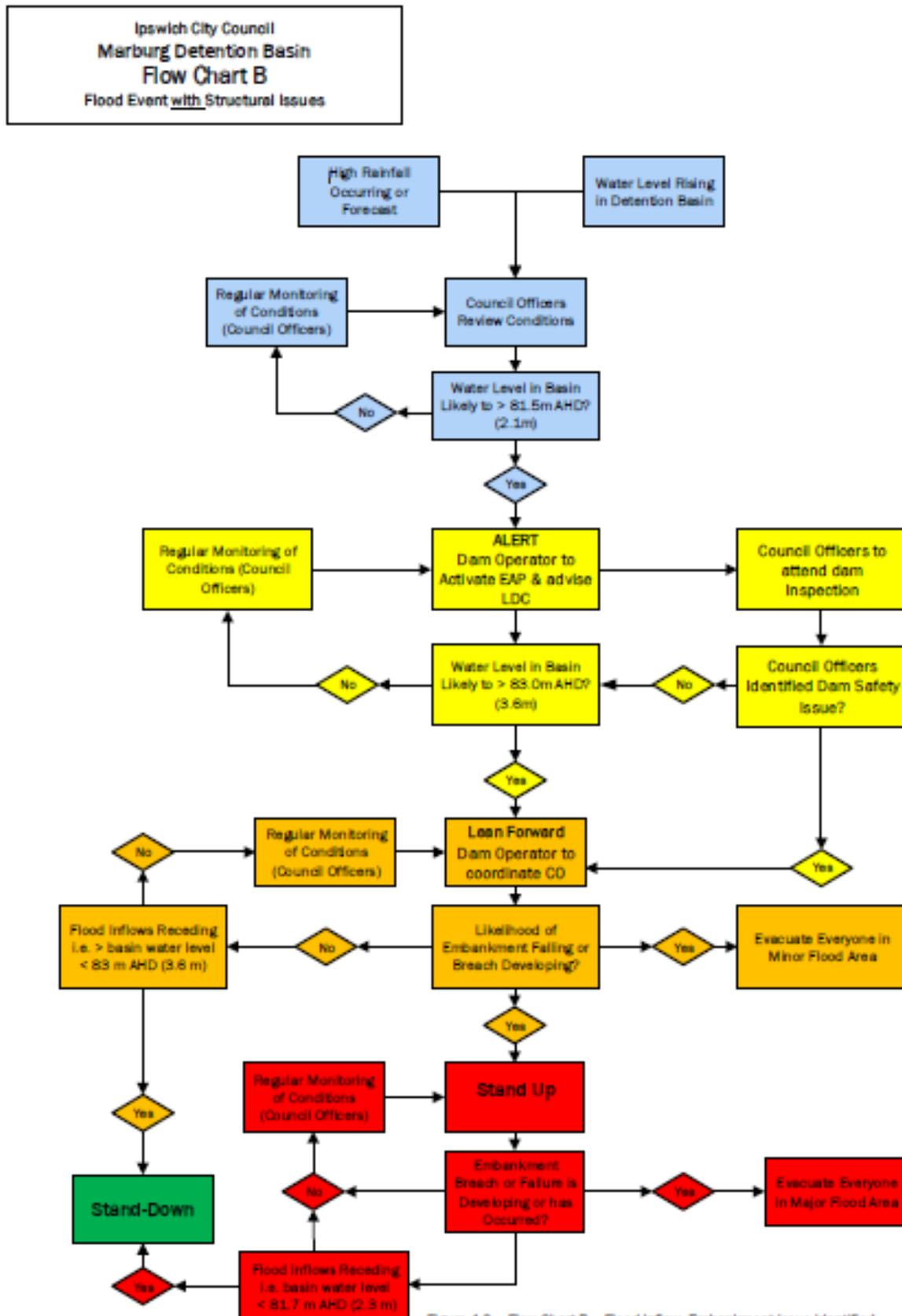


Figure 4.2 – Flow Chart B – Flood Inflow, Embankment Issue Identified

**Table 4.3 – Flow Chart B – Recommended Actions - Flood event with dam structural issues**

	<b>Role</b>	<b>Actions</b>
<b>Event Identification (Flow Chart B) High rainfall occurring or water levels rising</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Increase awareness of, or potential for a flood situation to develop</li> <li>• Coordinate with Council Officers if there are concerns about a potential flood situation developing at Marburg</li> <li>• Advise the Local Disaster Coordinator of the developing emergency hazard</li> <li>• Commence recording of data and information and maintain a log of all communications</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Monitor regional and local weather conditions</li> <li>• Identify conditions that may lead to flooding in the Marburg Detention Basin catchment</li> <li>• Identify conditions or events likely to result in water levels rising in Marburg Detention Basin</li> <li>• Monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Advise the DOP of the developing emergency hazard</li> <li>• Commence recording of data and information and maintain a log of all communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Receive information from the Dam Operator regarding event development and make aware LDMG</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Through the Local Disaster Coordinator increase awareness of, or potential for a flood situation to develop</li> </ul>

	Role	Actions
<b>ALERT (Flow Chart B)</b> <b>Basin water level &gt; 81.5 m AHD (Automatic Flood Gauge Level: 2.1 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>● <b>Activate the Emergency Action Plan (EAP)</b></li> <li>● Arrange for additional resources to attend site if required</li> <li>● Coordinate with Council Officers and assign tasks to: <ul style="list-style-type: none"> <li>● monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>● attend the site for dam inspection and storage level gauge monitoring</li> </ul> </li> <li>● Provide updates of site conditions and the developing issue or event in a priority order to: <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>● Request SDCC to issue an alert to local residents warning of potential flooding via the National Emergency Alert System</li> <li>● Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>● Prepare for closure of local roads in Marburg</li> <li>● Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officers (CO)	<ul style="list-style-type: none"> <li>● Continue to monitor the rainfall and water level gauge (BOM, Enviromon)</li> <li>● Attend the site (if safe to do so)</li> <li>● Undertake an inspection of the embankment and associated infrastructure</li> <li>● Provide updates of site conditions to DOP</li> <li>● Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>● Continue to undertake inspections and observe conditions until situation eases</li> <li>● Take photographs of any issues</li> <li>● Record data of the event and maintain a log of all actions and communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>● Review the data and information received from DOP</li> <li>● Advise the LDMG of the developing issue or the event</li> <li>● Alert the emergency response agencies to a developing situation and the possible need to mobilise and implement emergency actions</li> <li>● Maintain a log of all actions taken and communications</li> <li>● Consider the provision of public information and/or warnings based on risk and the local disaster management plans</li> <li>● Consider appropriate response strategies based on context, risk, and the local disaster management plan.</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>● Increase awareness of, or potential for a flood situation to develop</li> <li>● Review the emergency response plan and required actions</li> </ul>

	Ipswich City Council (ICC)	<ul style="list-style-type: none"><li>• Prepare for closure of local roads in Rosewood</li></ul>
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	Role	Actions
<b>LEAN-FORWARD (Flow Chart B)</b> <b>Basin water level &gt; 83.0 m AHD (Automatic Flood Gauge Level: 3.6 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Continue to coordinate with Council Officers</li> <li>• Request SDCC to issue a warning / evacuation notice to residents (PAR) and others via the National Emergency Alert System</li> <li>• Provide updates of site conditions and the developing issue or event in a priority order to:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Alert Somerset Regional Council to flooding of Black SnakeCreek downstream of Marburg</li> <li>• Alert DTMR to possible flooding of Warrego Highway</li> <li>• Issue media alerts and information</li> <li>• If possible undertake repairs or actions to mitigate or reduce a dam safety issue</li> <li>• Prepare for closure of local roads due to flooding</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Continue to monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Continue to undertake inspections and observe conditions until situation eases if safe to do so</li> <li>• Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>• Provide regular updates to DOP</li> <li>• Take photographs of any issues</li> <li>• Record the date of the event and maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Establish a Local Disaster Coordination Centre (LDCC)including provision of resources</li> <li>• Convene the Local Disaster Management Group (LDMG)</li> <li>• Advise emergency response agencies of the developingsituation and forecast conditions and impacts</li> <li>• Assign resources as required to support the Dam Operator</li> <li>• Place evacuation centre(s) on notice</li> <li>• Consider the provision of public information and/or warnings based on risk and the local disaster management plans</li> <li>• Consider appropriate response strategies based on context, risk and the local disaster management plan.</li> <li>• Maintain a log of all actions taken and communications</li> </ul>

	Local Disaster Management Group(LDMG)	<ul style="list-style-type: none"> <li>• Attend the LDCC and undertake assigned roles and responsibilities to manage the event</li> <li>• Manage the responses to the event as directed by LDC</li> <li>• Contact the emergency response agencies and provide guidance on the need to close roads and for the evacuation of residents</li> <li>• Prepare the evacuation centre(s)</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
	QFES	<ul style="list-style-type: none"> <li>• Coordination of responses if the event escalates to include a wider area</li> </ul>

	Role	Actions
<b>STAND-UP (Flow Chart B)</b> <b>Basin water level &gt; 86.7 m AHD (Automatic Flood Gauge Level 7.3 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Continue to coordinate with Council Officers</li> <li>• Request SDCC to issue an evacuation notice to residents (PAR) via the National Emergency Alert System</li> <li>• Provide updates of site conditions and the developing issue or event in a priority order to:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Alert Somerset Regional Council to flooding of Black SnakeCreek downstream of Marburg</li> <li>• Alert DTMR to possible flooding of Warrego Highway</li> <li>• Issue media alerts and information</li> <li>• If possible undertake repairs or actions to mitigate or reduce a dam safety issue</li> <li>• Request closure of local roads due to flooding</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Continue to monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Continue to undertake inspections and observe conditions until situation eases if safe to do so</li> <li>• Provide regular updates to DOP</li> <li>• Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>• Take photographs of any issues</li> <li>• Record the date of the event and maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Manage the LDMG and assign resources and responsibilities as required</li> <li>• Assign resources as required to support the Dam Operator</li> <li>• Advise QFES of the developing situation</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Manage the responses to the event as directed by LDC</li> <li>• Contact the emergency response agencies and provide guidance on the need to close roads and for the evacuation of residents</li> <li>• Evacuate all residents located within the major flood zone of Black Snake Creek</li> <li>• Alert all other residents of the possible need to evacuate at short notice</li> <li>• Operate and manage the evacuation centre(s)</li> <li>• Maintain a log of all actions taken and communications</li> </ul>
	Queensland Fire and Emergency Services (QFES)	<ul style="list-style-type: none"> <li>• Coordination of responses if the event escalates to include a wider area</li> <li>• Provision of additional resources from outside of the area if required</li> </ul>
	Ipswich City Council (ICC)	<ul style="list-style-type: none"> <li>• Close road as per advise received from Dam Operator and in coordination with LDMG</li> </ul>

	Role	Actions
<b>STAND-DOWN (Flow Chart B)</b> <b>Basin water level drops below 81.7 m AHD (Automatic Flood Gauge Level: 2.3 m)</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Deactivate the EAP</li> <li>• Advise that emergency event at the dam has passed to the following:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Arrange for special inspection if needed to investigate into the cause of the dam safety issue</li> <li>• Arrange for any repair works to be undertaken</li> <li>• Prepare a report on the event within forty-eight hours (48) of becoming aware of the incident or failure to the Director Dam Safety, DRDMW</li> <li>• Prepare an Emergency Event Report (EER) and submit to the Director Dam Safety within thirty (30) working days after the end of the event</li> <li>• Advise all entities previously notified of the situation.</li> <li>• Coordinate and conduct a review of the event and the responses</li> <li>• Review the adequacy of the monitoring systems and their operation</li> <li>• Register and address lessons learnt in conjunction with other relevant stakeholders</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Undertake a full inspection of Marburg Detention Basin and advise DOP if Special Inspection is needed.</li> <li>• Prepare a report on works or actions to be undertaken to restore the embankment and associated infrastructure</li> <li>• Assist Dam Operator with preparation of event and EER report to DDS</li> </ul>
	Local Disaster Coordinator (LDC)	<ul style="list-style-type: none"> <li>• Advise LDMG that the dam safety emergency event has passed and emergency response services can stand down</li> <li>• Provide input to a review of the event with the Dam Operator</li> </ul>
	Local Disaster Management Group (LDMG)	<ul style="list-style-type: none"> <li>• Organise response agencies in respect to restoration of services to Marburg and return of residents</li> <li>• Participate in a review of the event and the responses</li> </ul>

### 4.2.3 Event C – Earthquake Event

In the event of an earthquake an inspection is to be undertaken to ensure structural integrity of the detention basin is maintained. Table 4.1 provides a list of potential indicators of general structural damage to the dam. The dam is required to be inspected and a report issued if an earthquake is of a high enough magnitude, the magnitude will be reported by Geoscience Australia and can be referenced against the Modified Mercalli (MM) intensity scale, shown in Table 4.4 below. A damage assessment is required when an earthquake is rated at an MM intensity of IV which correlates to a magnitude 4.0 event or higher.

Refer to Flow Chart C (Figure 4.3) and Table 4.5 for responses to this situation.

**Table 4.4 – Modified Mercalli Scale**

Earthquake Magnitude	Typical Maximum Modified Mercalli Intensity
1.0-3.0	I
3.0-3.9	II-III
4.0-4.9	IV-V
5.0-5.9	VI-VII
6.0-6.9	VII-IX
7.0 and higher	VIII or higher
Abbreviated Modified Mercalli Intensity Scale	
I	Not felt except by a very few under especially favourable conditions.
II	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Figure 4.3 – Flow chart C – Earthquake event

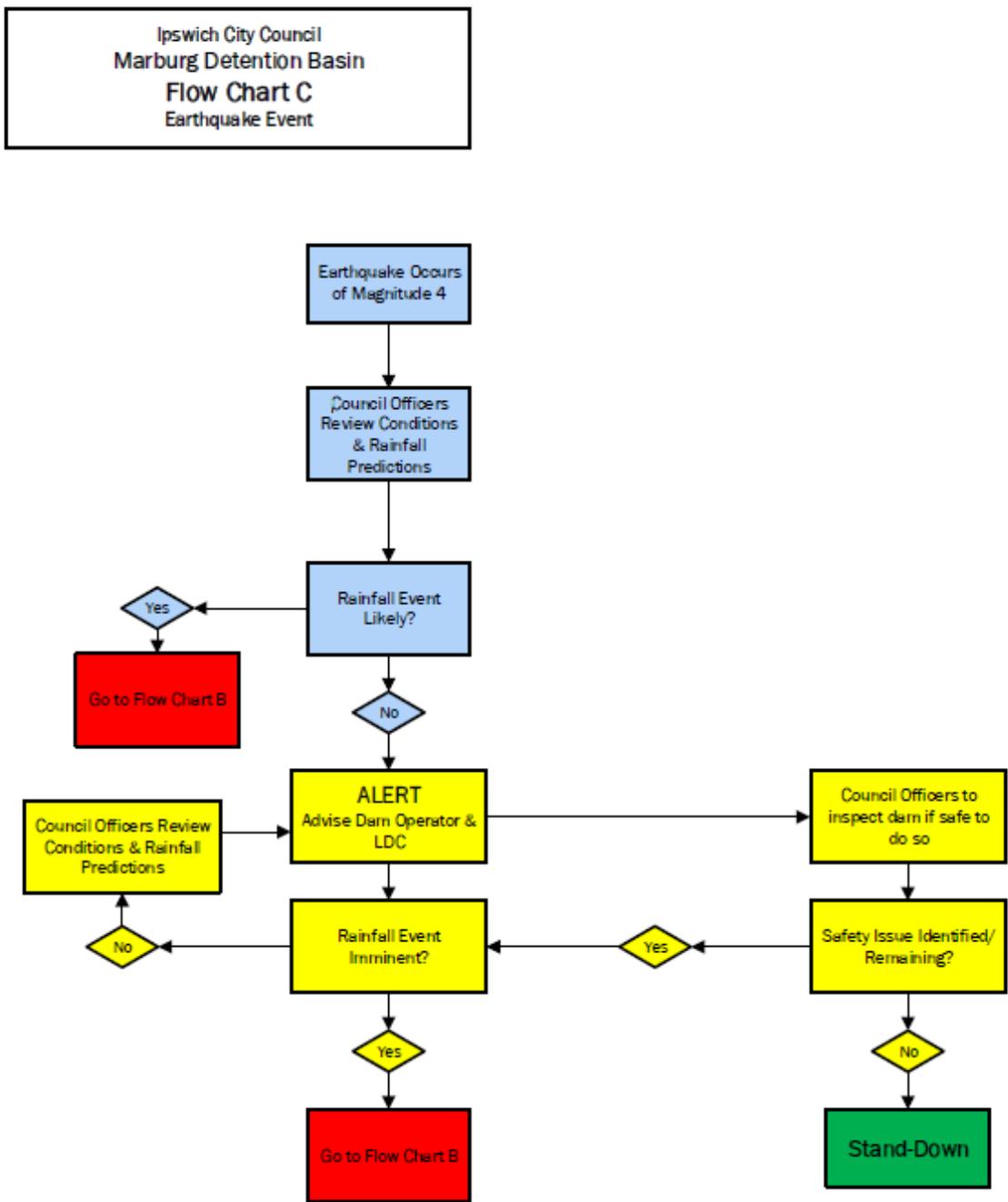


Figure 4.3 – Flow Chart C – Earthquake Event

**Table 4.5 – Flow Chart C – Recommended Actions – Earthquake Event**

	<b>Role</b>	<b>Actions</b>
<b>Event Identification (Flow Chart C) Magnitude 4 Or Greater Earthquake Occurs</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Contact Council Officer if there are concerns about a potential emergency hazard developing at Marburg Detention Basin if an earthquake event of magnitude 4 and over occurs near the dam</li> <li>• Advise the Local Disaster Coordinator (LDC) of the developing emergency hazard</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Monitor Geoscience Australia for Earthquake severity</li> <li>• Contact DOP if an earthquake event has occurred</li> <li>• Monitor regional and local weather conditions</li> <li>• Identify conditions that may lead to flooding in the Marburg Detention Basin catchment</li> <li>• Identify conditions or events likely to result in water levels rising in Marburg Detention Basin</li> <li>• Monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Contact Dam Operator if there are concerns about a potential flood situation developing at Marburg</li> <li>• Commence recording of data and information and maintain a log of all communications</li> </ul>

	Role	Actions
<b>ALERT (Flow Chart C) No Rainfall Event Likely</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• <b>Activate the Emergency Action Plan (EAP)</b></li> <li>• Coordinate with Council Officers and assign tasks to: <ul style="list-style-type: none"> <li>• monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• attend the site for dam inspection and storage level gauge monitoring</li> </ul> </li> <li>• Provide updates of site conditions and the developing issue or event in a priority order to: <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Request SDCC to issue an alert to local residents warning if there is a potential flooding via the National Emergency Alert System</li> <li>• Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>• Prepare for closure of local roads in Marburg</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Continue to monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Attend the site (if safe to do so)</li> <li>• Undertake an inspection of the embankment and associated infrastructure</li> <li>• Provide updates of site conditions to DOP</li> <li>• Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>• Continue to undertake inspections and observe conditions until situation eases</li> <li>• Take photographs of any issues</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>

	Role	Actions
<b>STAND-DOWN (Flow Chart C) No Structural Damage to Basin</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Deactivate the EAP</li> <li>• Advise that emergency event at the dam has passed to the following:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Arrange for special inspection if needed</li> <li>• Arrange for any repair works to be undertaken</li> <li>• Prepare a report on the event within forty-eight hours (48) of becoming aware of the incident or failure to the Director Dam Safety, DRDMW</li> <li>• Prepare an Emergency Event Report (EER) and submit to the Director Dam Safety within thirty (30) working days after the end of the event</li> <li>• Advise all entities previously notified of the situation.</li> <li>• Coordinate and conduct a review of the event and the responses</li> <li>• Review the adequacy of the monitoring systems and their operation</li> <li>• Register and address lessons learnt in conjunction with other relevant stakeholders</li> </ul>
	Council Officers (CO)	<ul style="list-style-type: none"> <li>• Undertake a full inspection of Marburg Detention Basin and advise DOP if Special Inspection is needed.</li> <li>• Prepare a report on works or actions to be undertaken to restore the embankment and associated infrastructure</li> <li>• Assist Dam Operator with preparation of an event and EER report to DDS</li> </ul>

#### 4.2.4 Event D – Terrorist Event

A response to terrorist activity is the responsibility of the Queensland Police Service (QPS), as such QPS must be notified on 000. Observations of suspicious behaviour not requiring an emergent response should first be reported to the National Security Hotline on 1800 123 400. It is a whole-of-government commitment to safeguard the community through effective and collaborative arrangements to counter terrorism and its consequences. For more information, refer to the Queensland Counter-Terrorism Strategy 2013-2018.

Refer to Figure 4.4 - Flow Chart D and Table 4.6 for responses to this situation.

Figure 4.2 – Flow chart D – Terrorist event

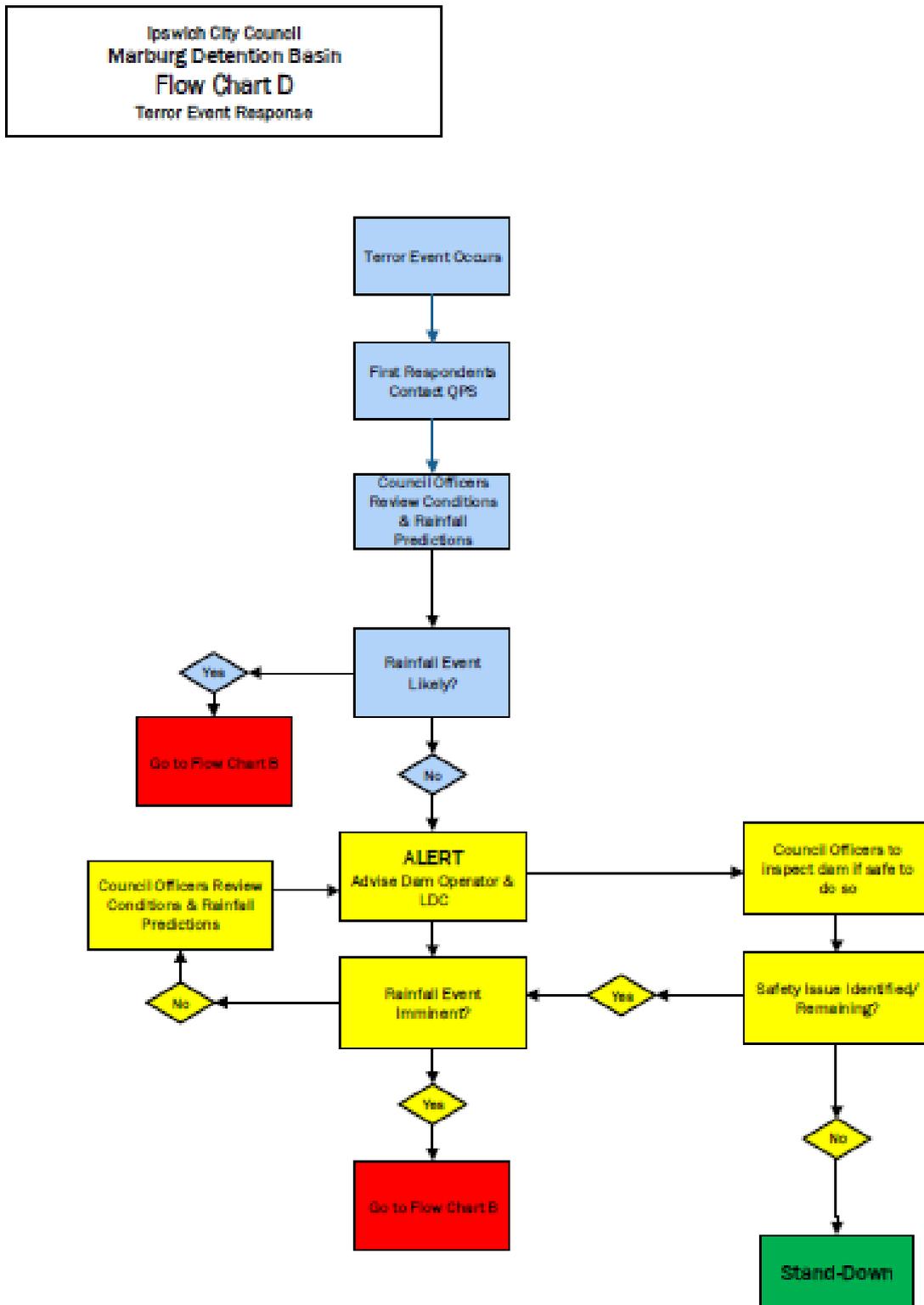


Figure 4.4 – Flow Chart D – Terrorist Event

**Table 4.6 – Flow Chart D – Recommended Actions – Terrorist Event**

	<b>Role</b>	<b>Actions</b>
<b>Event Identification (Flow Chart D) Terror Event Occurs</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Contact QPS (000)</li> <li>• Contact Council Officer if there are concerns about a potential emergency hazard developing at Marburg Detention Basin</li> <li>• Advise the Local Disaster Coordinator of the developing emergency hazard</li> </ul>
	Council Officers (CO)	<ul style="list-style-type: none"> <li>• Monitor regional and local weather conditions</li> <li>• Identify conditions that may lead to flooding in the Marburg Detention Basin catchment</li> <li>• Identify conditions or events likely to result in water levels rising in Marburg Detention Basin</li> <li>• Monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Contact Dam Operator if there are concerns about a potential flood situation developing at Marburg</li> <li>• Commence recording of data and information and maintain a log of all communications</li> </ul>

	Role	Actions
<b>ALERT (Flow Chart D) No Rainfall Event Likely</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• <b>Activate the Emergency Action Plan (EAP)</b></li> <li>• Arrange for resources to attend site</li> <li>• Coordinate with Council Officers and assign tasks to: <ul style="list-style-type: none"> <li>• monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• attend the site for dam inspection and storage level gauge monitoring</li> </ul> </li> <li>• Provide updates of site conditions and the developing issue or event in a priority order to: <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>
	Council Officer (CO)	<ul style="list-style-type: none"> <li>• Continue to monitor the rainfall and flood (water level) gauge (BOM, Enviromon)</li> <li>• Attend the site (if safe to do so)</li> <li>• Undertake an inspection of the embankment and associated infrastructure</li> <li>• Provide updates of site conditions to DOP</li> <li>• Where possible take actions to address dam safety issues or to reduce the impact or development of a dam safety issue</li> <li>• Take photographs of any issues</li> <li>• Record data of the event and maintain a log of all actions and communications</li> </ul>

	Role	Actions
<b>STAND-DOWN (Flow Chart D) No Structural Damage to Basin</b>	Dam Operator (DOP)	<ul style="list-style-type: none"> <li>• Deactivate the EAP</li> <li>• Advise that emergency event at the dam has passed to the following:               <ol style="list-style-type: none"> <li>1. LDC</li> <li>2. SDCC</li> <li>3. CEO of ICC</li> <li>4. Director Dam Safety, DRDMW</li> </ol> </li> <li>• Arrange for special inspection if needed</li> <li>• Arrange for any repair works to be undertaken</li> <li>• Prepare a report on the event within forty-eight hours (48) of becoming aware of the incident or failure to the Director Dam Safety, DRDMW</li> <li>• Prepare an Emergency Event Report (EER) and submit to the Director Dam Safety within thirty (30) working days after the end of the event</li> <li>• Advise all entities previously notified of the situation.</li> <li>• Coordinate and conduct a review of the event and the responses</li> <li>• Review the adequacy of the monitoring systems and their operation</li> <li>• Register and address lessons learnt in conjunction with other relevant stakeholders</li> </ul>
	Council Officers (CO)	<ul style="list-style-type: none"> <li>• Undertake a full inspection of Marburg Detention Basin and advise DOP if Special Inspection is needed.</li> <li>• Prepare a report on works or actions to be undertaken to restore the embankment and associated infrastructure</li> <li>• Assist Dam Operator with preparation of the EER report to DDS</li> </ul>

## **APPENDIX A - MAPPING**

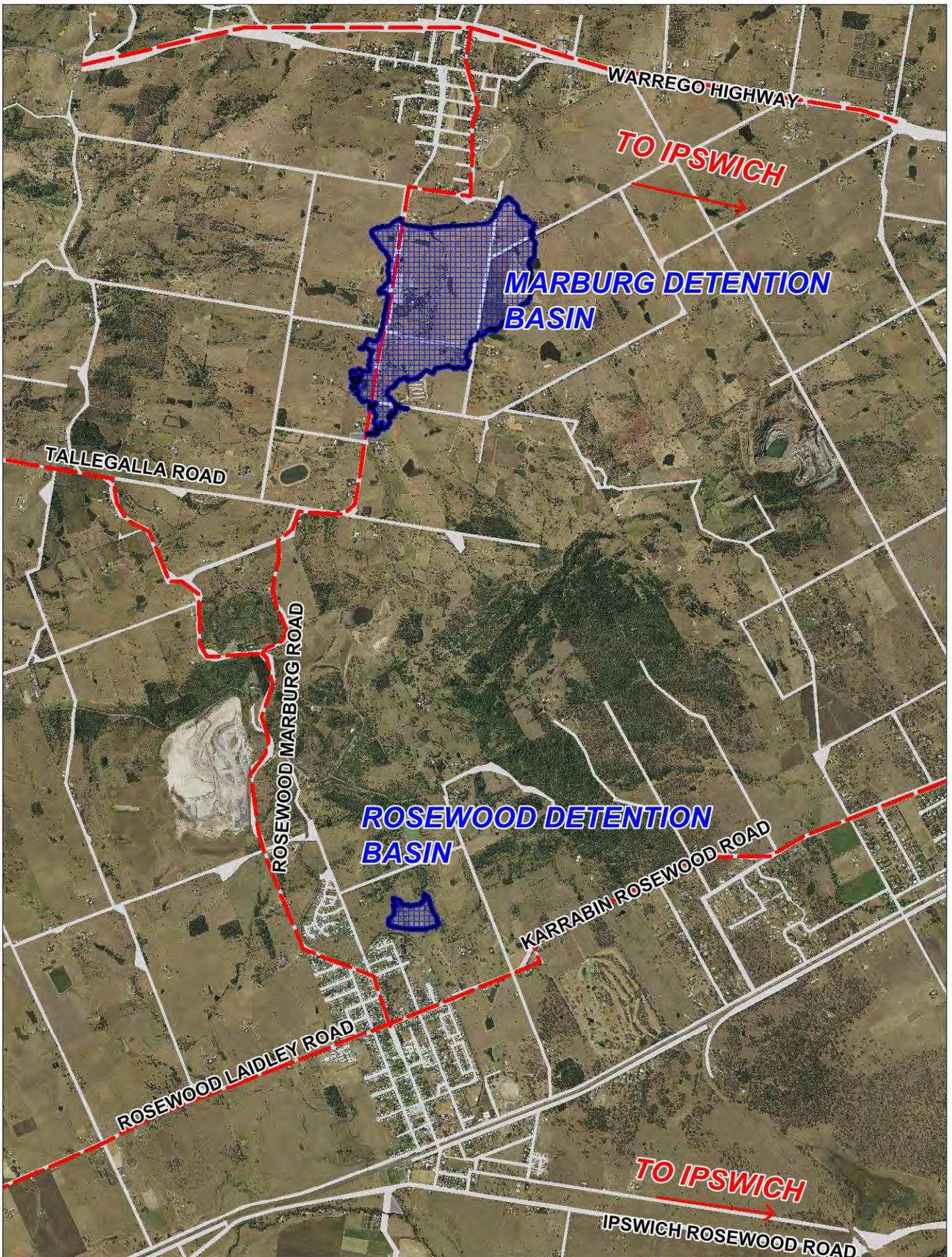
Area Map

Catchment Map

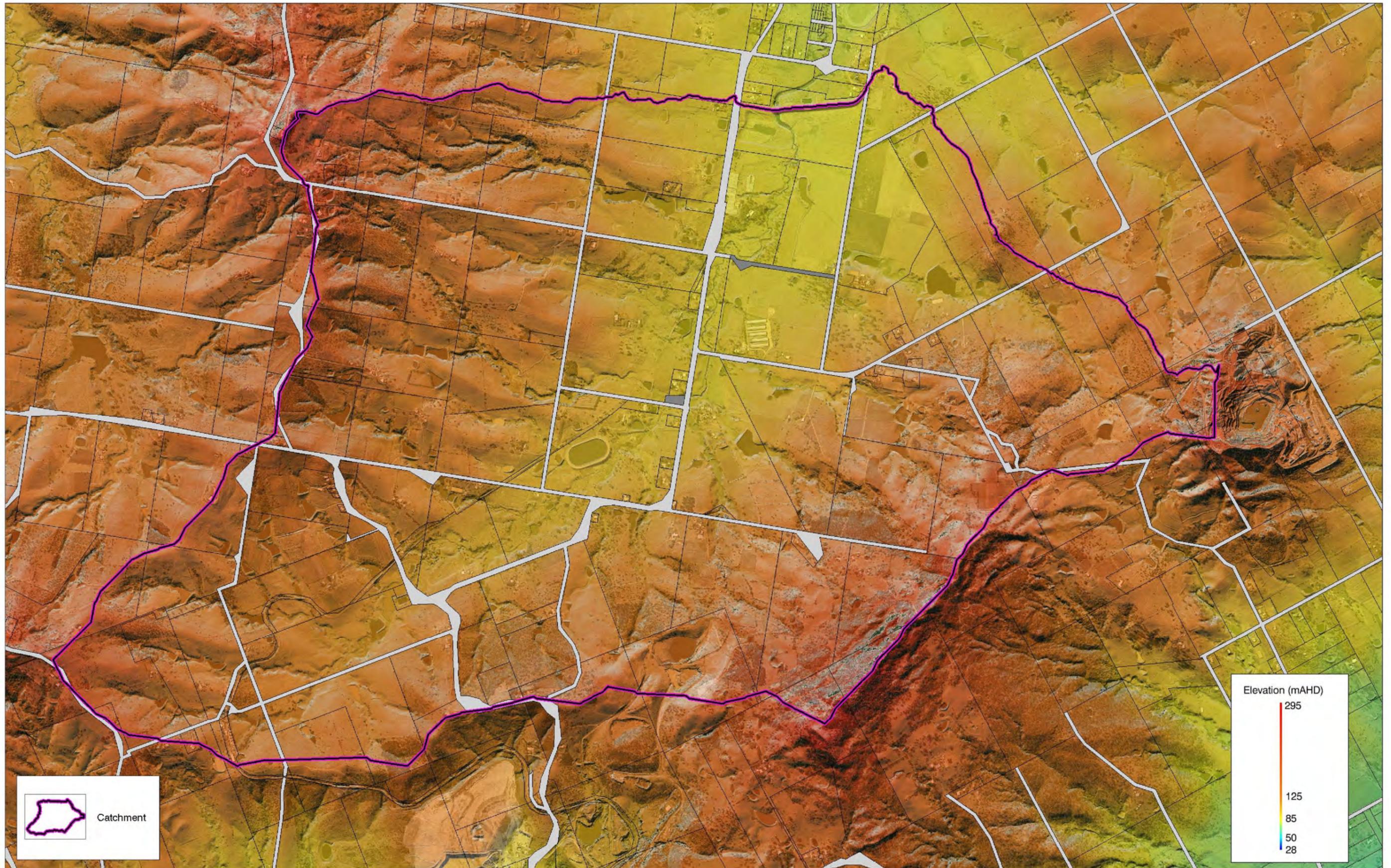
Alert polygons map for minor and major flooding

Evacuation Route map

Inundation Mapping



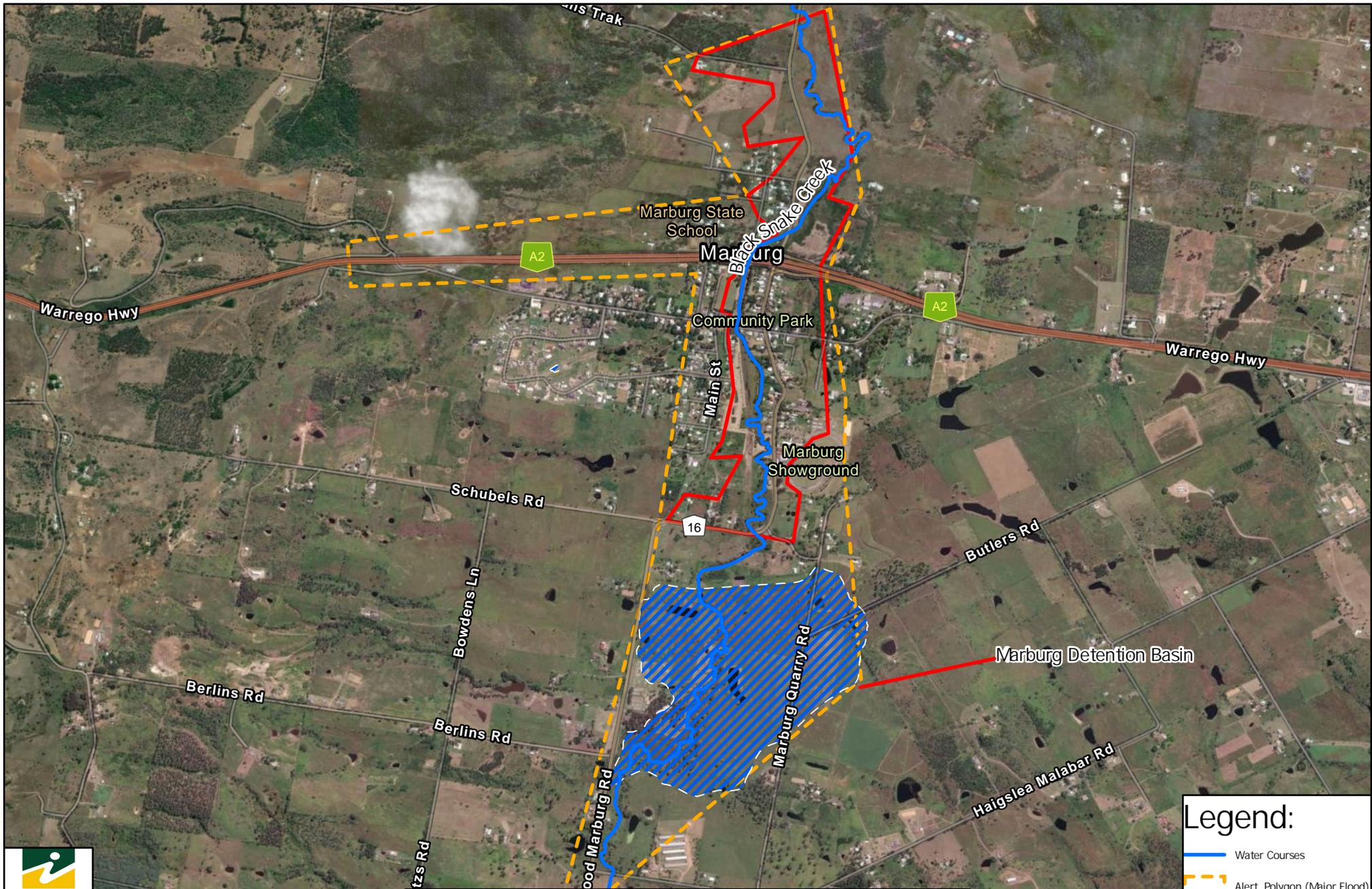
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	PROJECT NO. 30031267 PROJECT TITLE ROSEWOOD AND MARBURG BASIN		
	TITLE <b>LOCALITY MAP</b>		



COORDINATE SYSTEM Datum: GDA94 Projection: MGA Zone 56  
 PAGE SIZE A3 SCALE 1:10,000  
 PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP

**NORTH**  
 DRAWING NO. FIGURE-008 REVISION A STATUS FINAL  
 CREATED BY CGR DATE 30/06/2014  
 TITLE **Catchment draining into Marburg Basin**

CLIENT  
 Ipswich City Council  
 CONSULTANT  
  
 SMEC Australia Ltd  
 Level 1, 154 Melbourne Street  
 South Brisbane QLD 4101



**Legend:**

- Water Courses
- Alert Polygon (Major Flood)
- Alert Polygon (Minor Flood)
- Detention Basins

**Marburg Detention Basin EPA Alert polygon for Major Flood:**

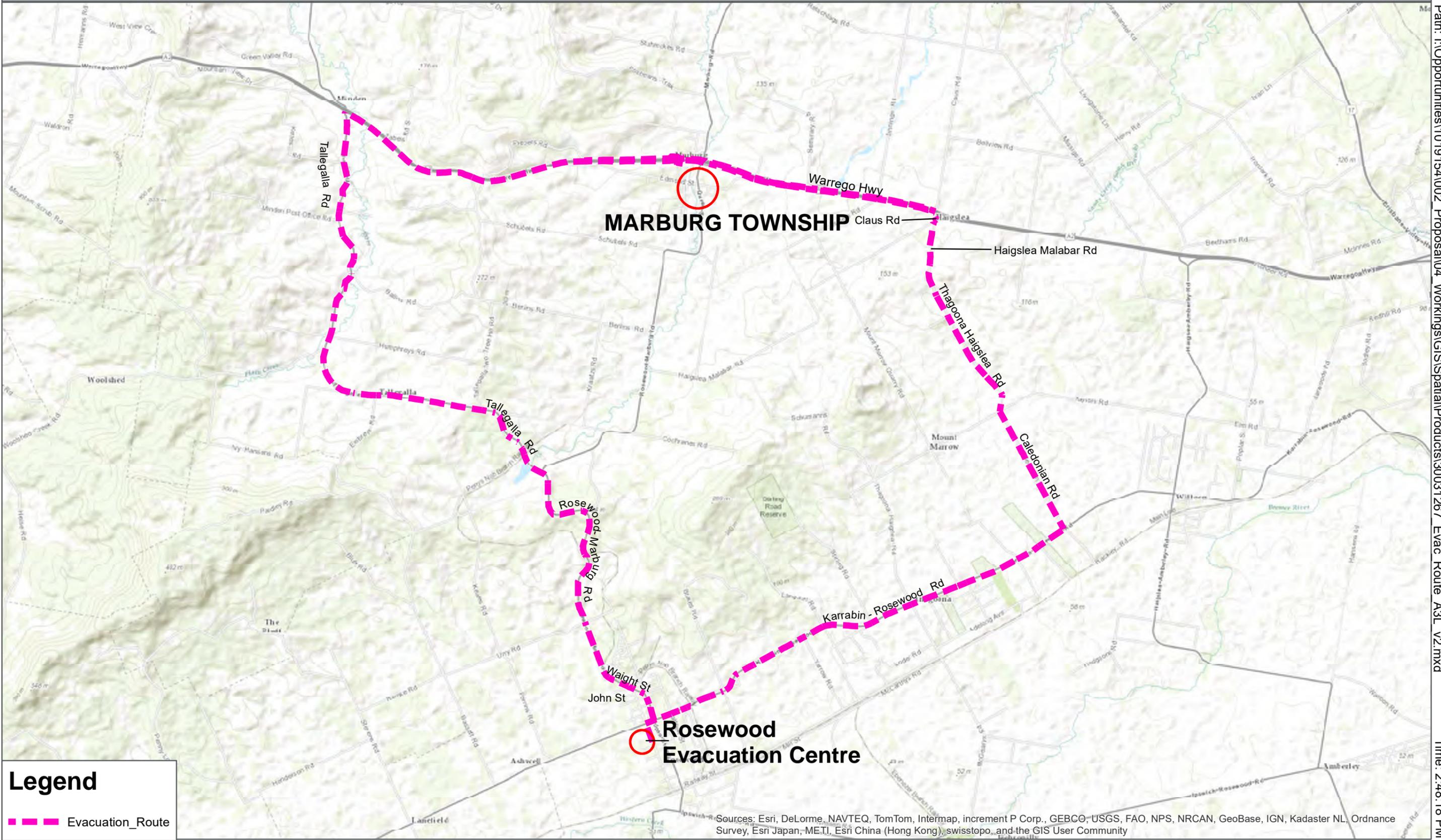


Scale: 1: 25, 000

Page Size: A4

Disclaimer: While every care is taken by the Ipswich City Council (ICC) and South East Queensland Catchments (SEQC) to ensure the accuracy of this data, ICC nor SEQC makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation liability in negligence for all expenses, losses, damages (including indirect or consequential damage) and costs which may be incurred as a result of the data being inaccurate or incomplete in any way and for any reason. Based on data provided with the permission of the Council.

# Evacuation Routes - Marburg



## Legend

 Evacuation\_Route

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

Path: I:\Opportunities\1019154\002\_Proposal\04\_Workings\GIS\Spatial\Products\30031267\_Evac\_Route\_A3L\_v2.mxd Time: 2:48:18 PM

**COORDINATE SYSTEM** GDA 1994 MGA Zone 56

0 630 1,260 1,890 2,520

**PAGE SIZE** A3 **SCALE** 1:50,000

Metres

**DRAWING NO.** 1007842-001

**REVISION** B

**CREATED BY** EH11799

**DATE** 11/07/2014



**PROJECT NO.** 30031267

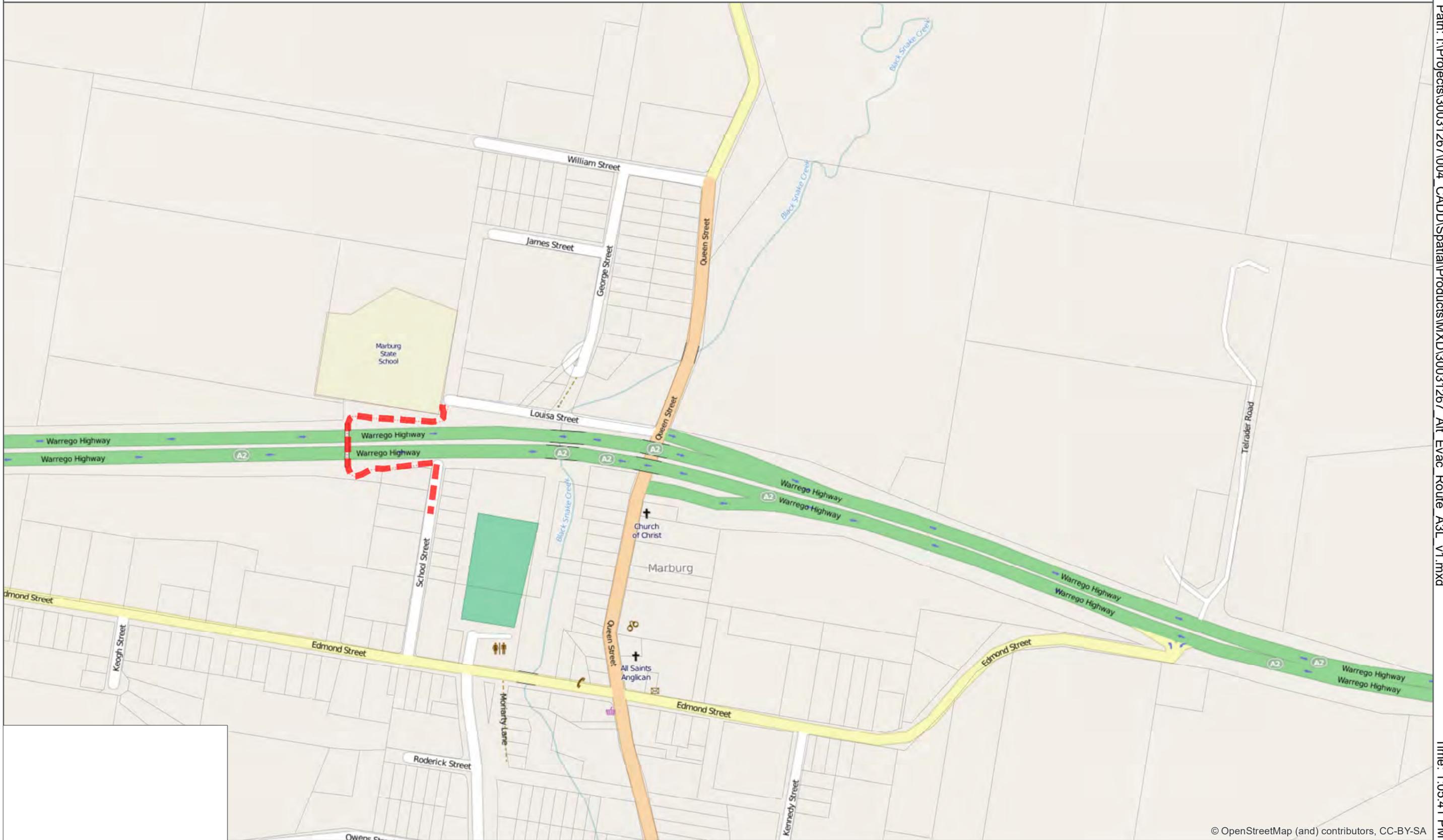
**PROJECT TITLE** Ipswich Referable Dams EAPs

**SOURCE** Microsoft Bing imagery



**CONSULTANT** SMEC Australia

# Alternative Evacuation Route - Marburg



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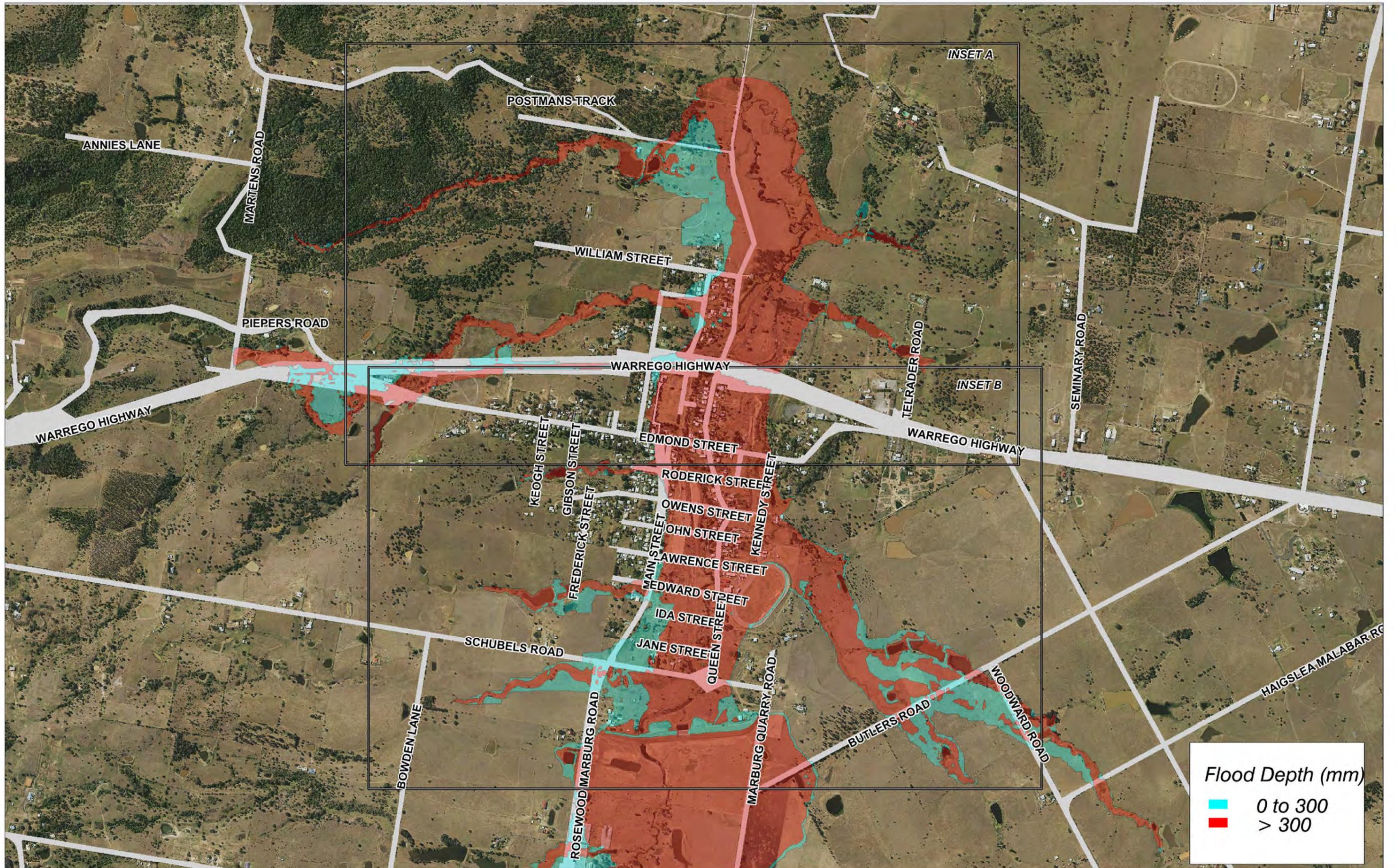
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© OpenStreetMap (and) contributors, CC-BY-SA

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<b>PAGE SIZE</b> A3	<b>SCALE</b> 1:5,000
<b>PROJECT NO.</b> 30031267	<b>PROJECT TITLE</b> Ipswich Referable Dams EAPs

<b>DRAWING NO.</b> 1007842-001	<b>REVISION</b> A
<b>CREATED BY</b> EH11799	<b>DATE</b> 18/06/2014
<b>SOURCE</b> Microsoft Bing imagery	





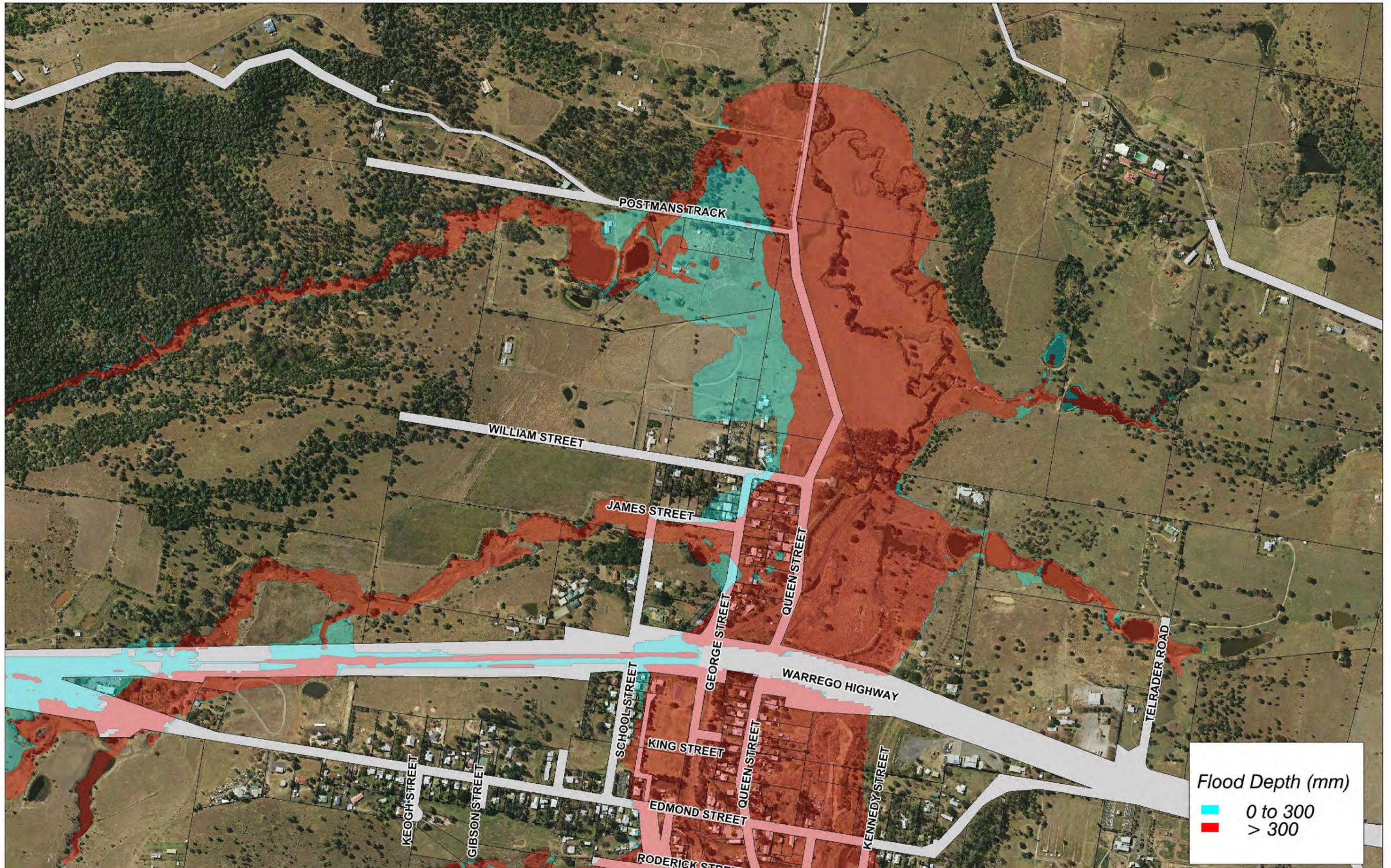
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- 0 to 300
- > 300

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 PAGE SIZE A3 SCALE 1:7,500  
 PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP

DRAWING NO. FIGURE-001 REVISION B STATUS FINAL  
 CREATED BY CGR DATE 30/06/2014  
 TITLE **KEY MAP, FLOOD DEPTHS, PMP EVENT**

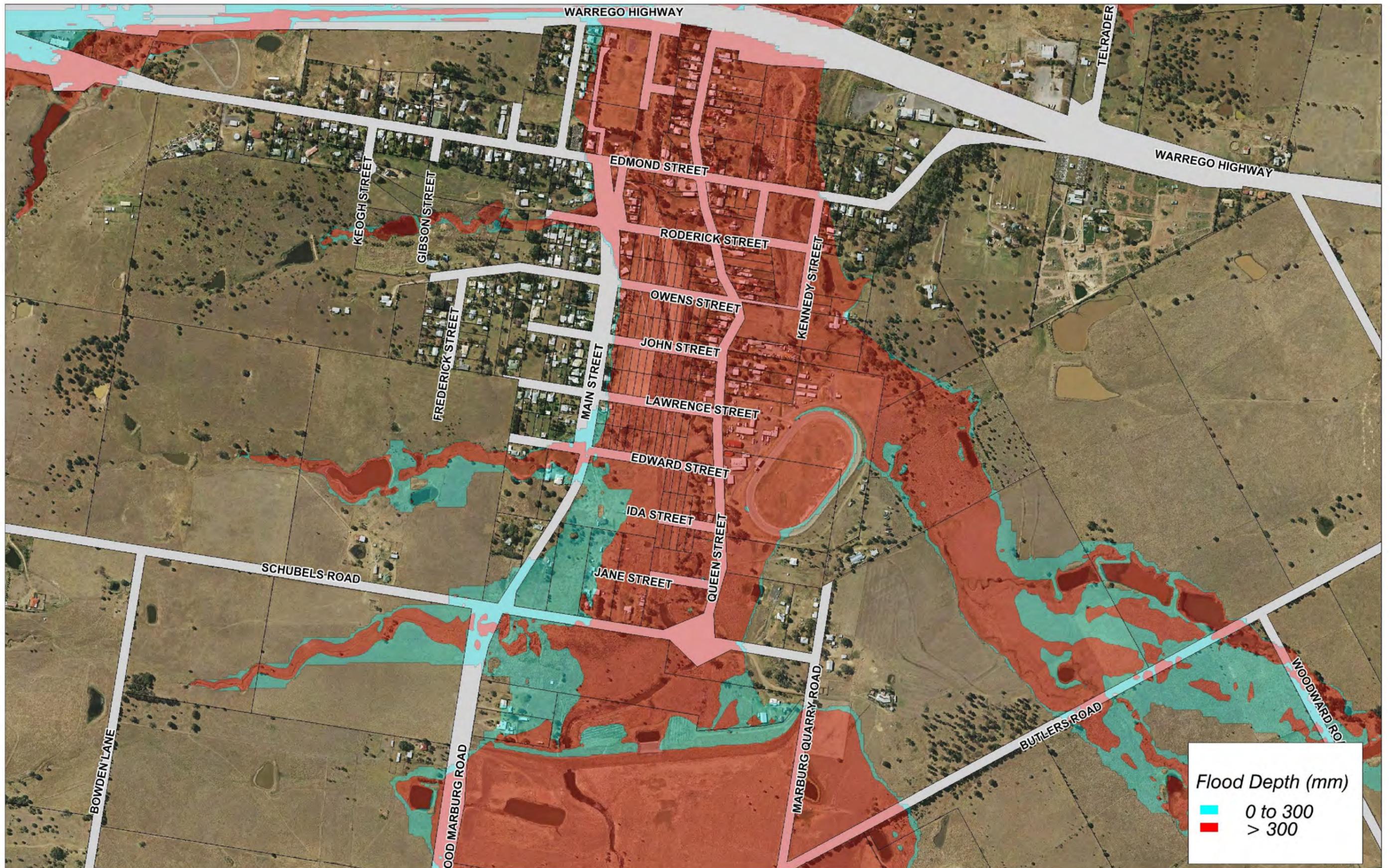
CLIENT Ipswich City Council  
 CONSULTANT **SMEC**  
 SMEC Australia Ltd  
 Level 1, 154 Melbourne Street  
 South Brisbane QLD 4101



**Flood Depth (mm)**

- 0 to 300
- > 300

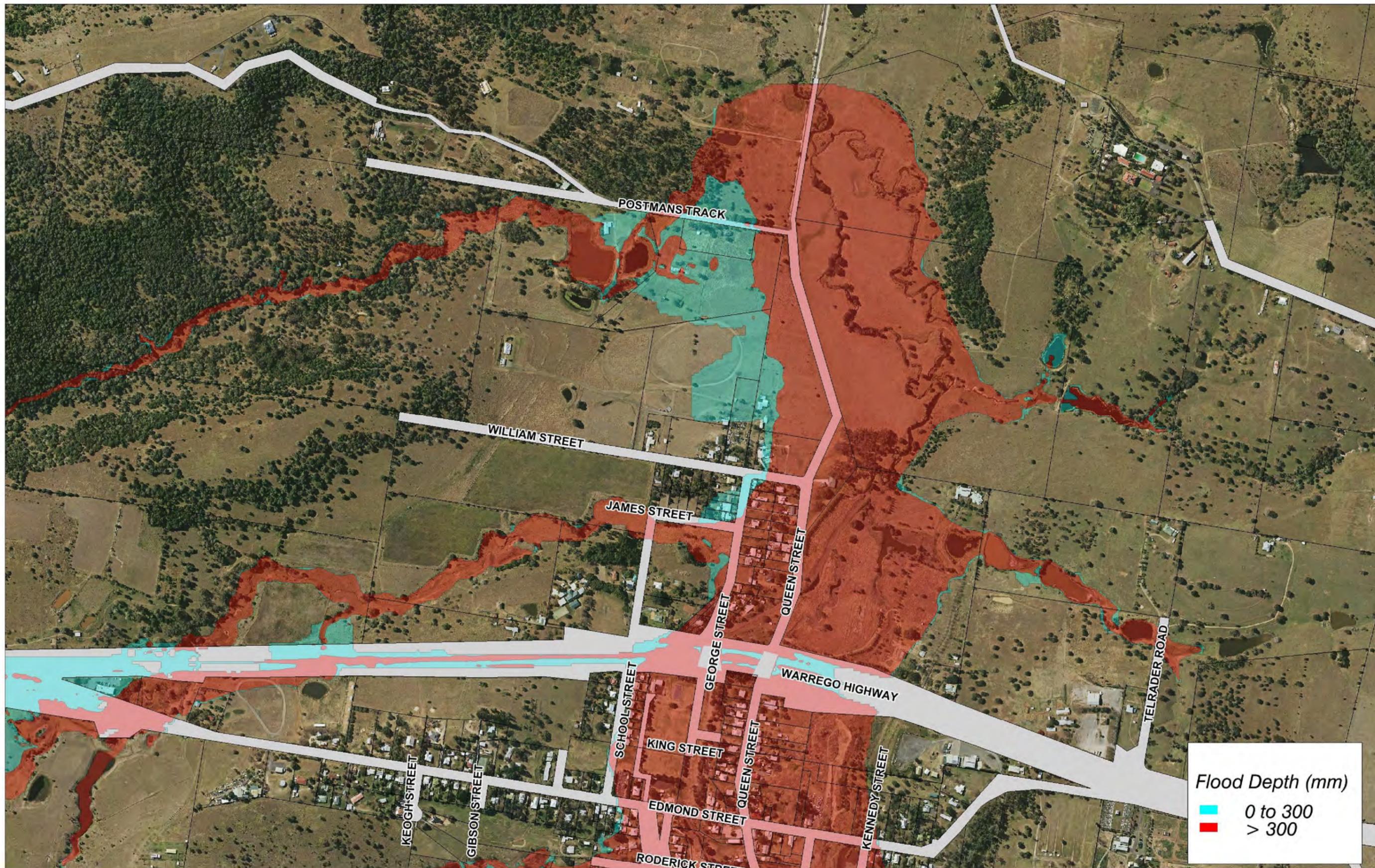
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, PMP EVENT, INSET A</b></p>		



**Flood Depth (mm)**

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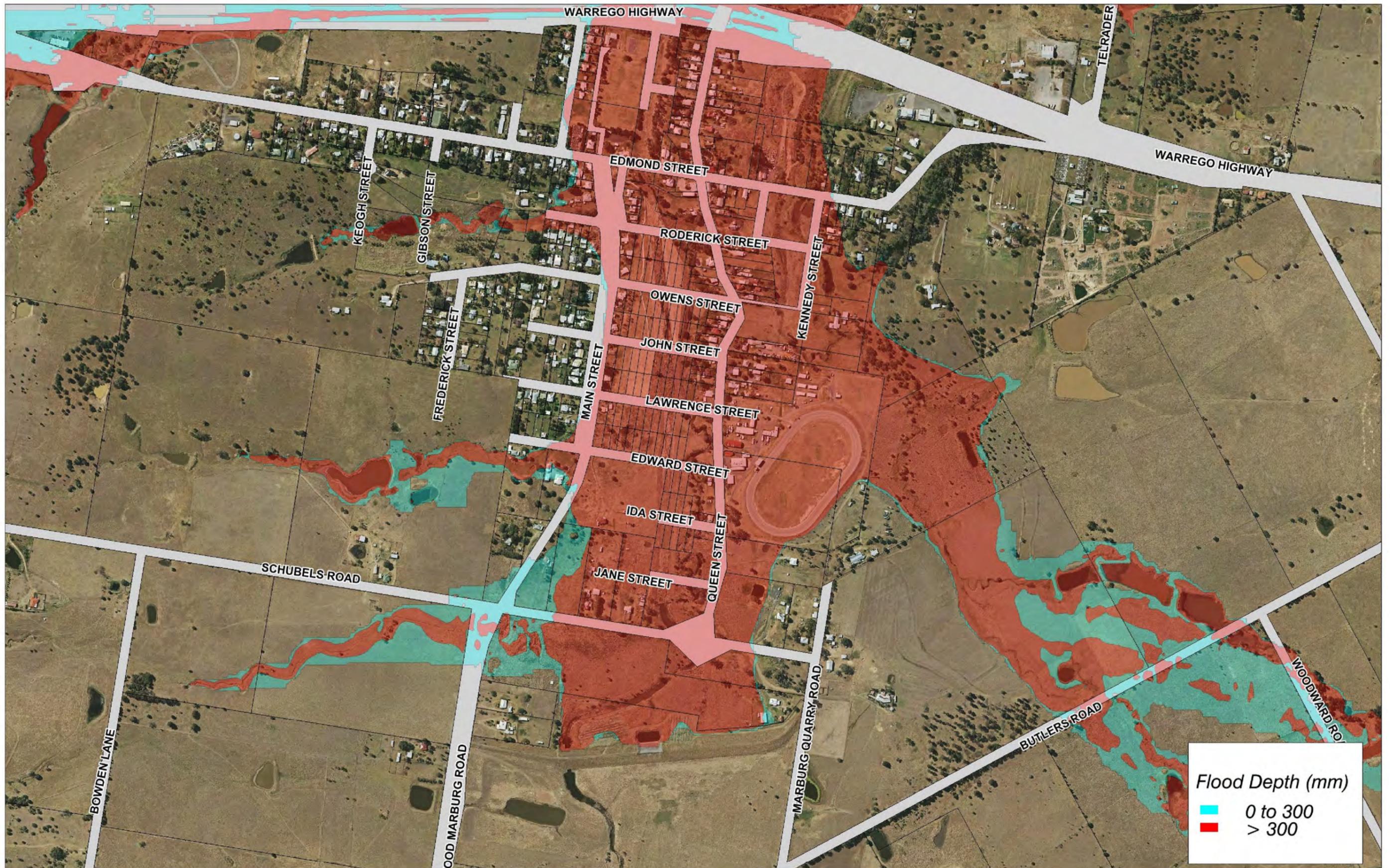
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, PMP EVENT, INSET B</b></p>		



**Flood Depth (mm)**

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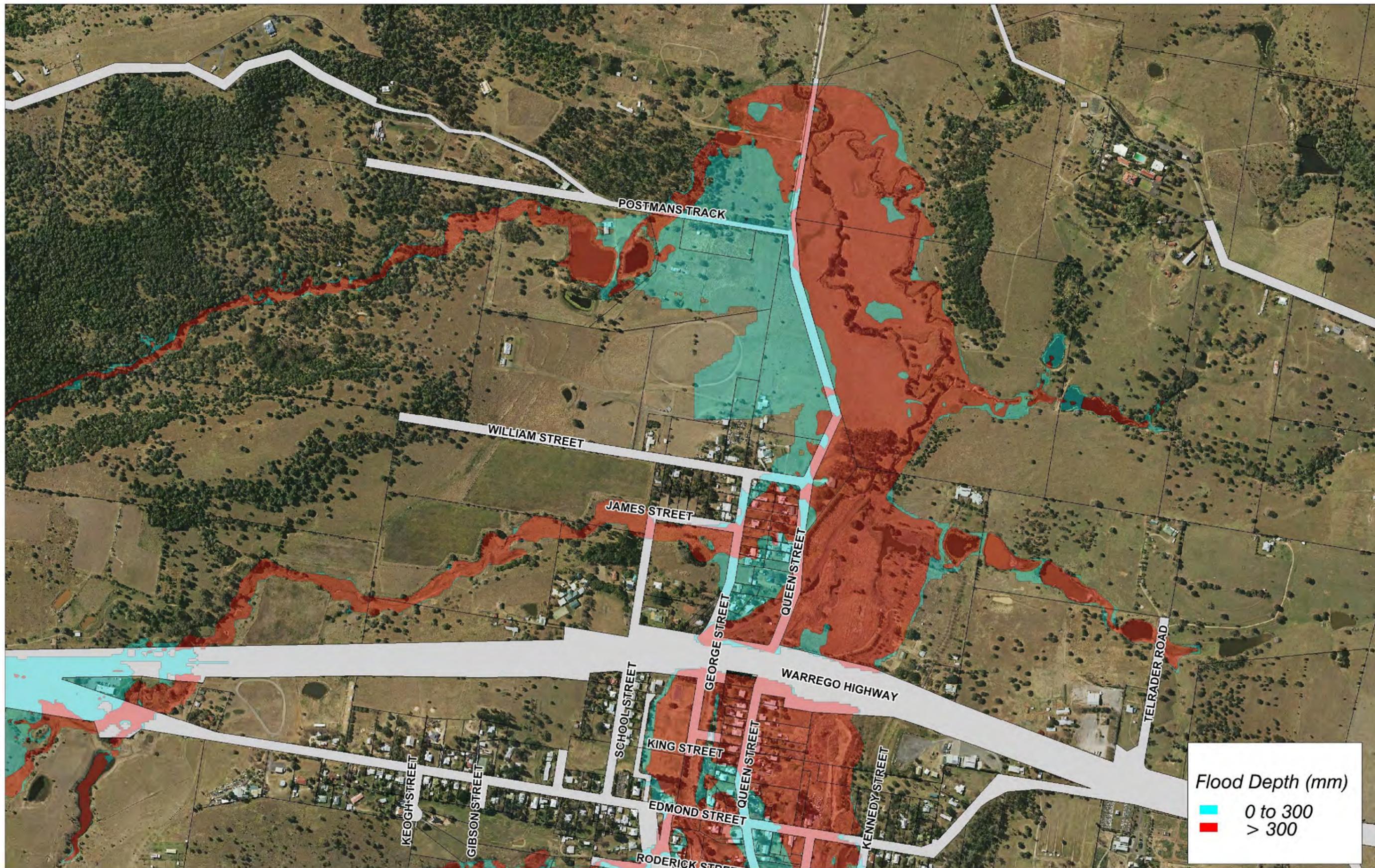
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>		<p>TITLE <b>FLOOD DEPTHS, PMP EVENT WITH DAM BREACH, INSET A</b></p>					<p>SMEC Australia Ltd Level 1, 154 Melbourne Street South Brisbane QLD 4101</p>



**Flood Depth (mm)**

- 0 to 300
- > 300

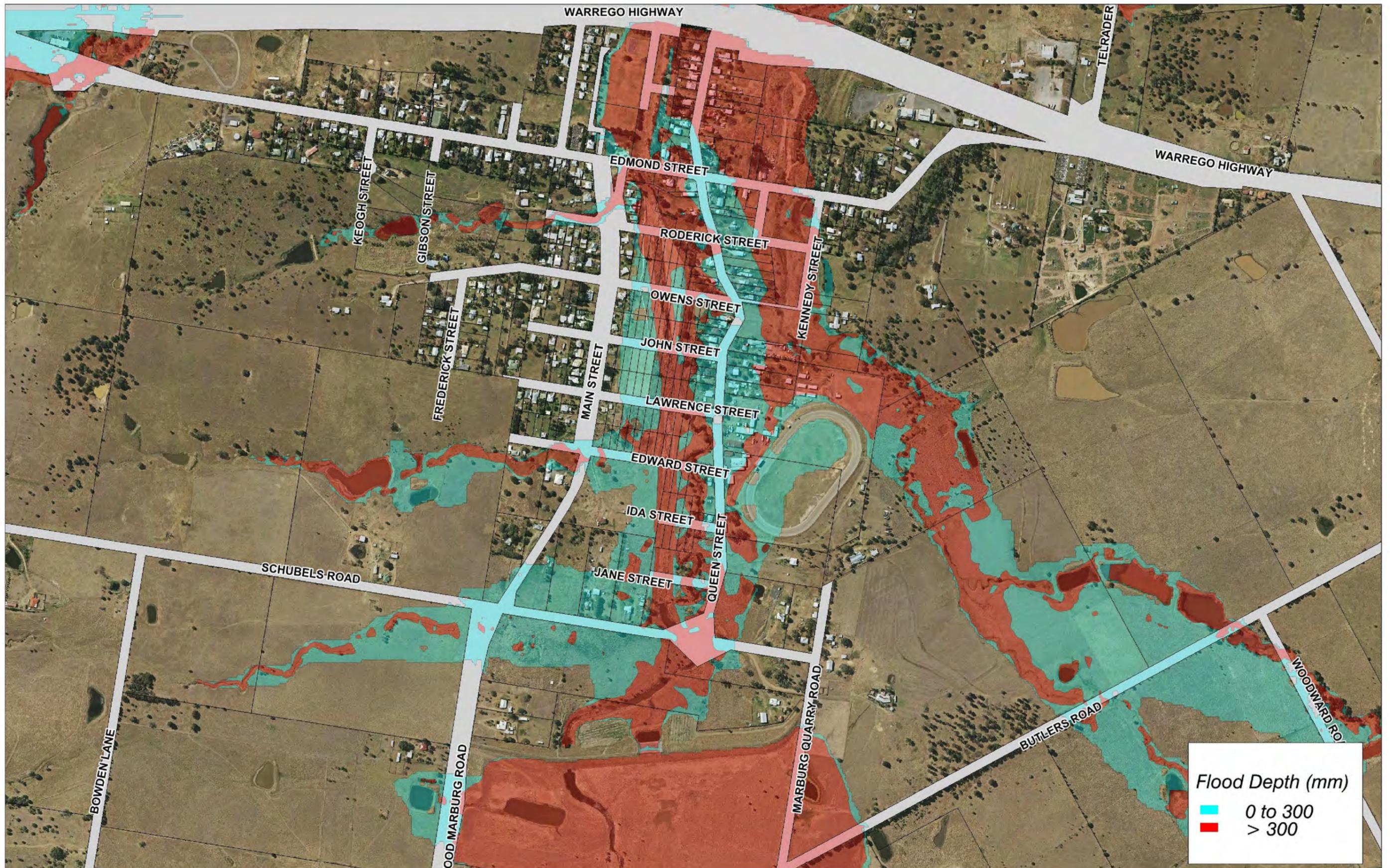
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, PMP EVENT WITH DAM BREACH, INSET B</b></p>		



**Flood Depth (mm)**

- 0 to 300
- > 300

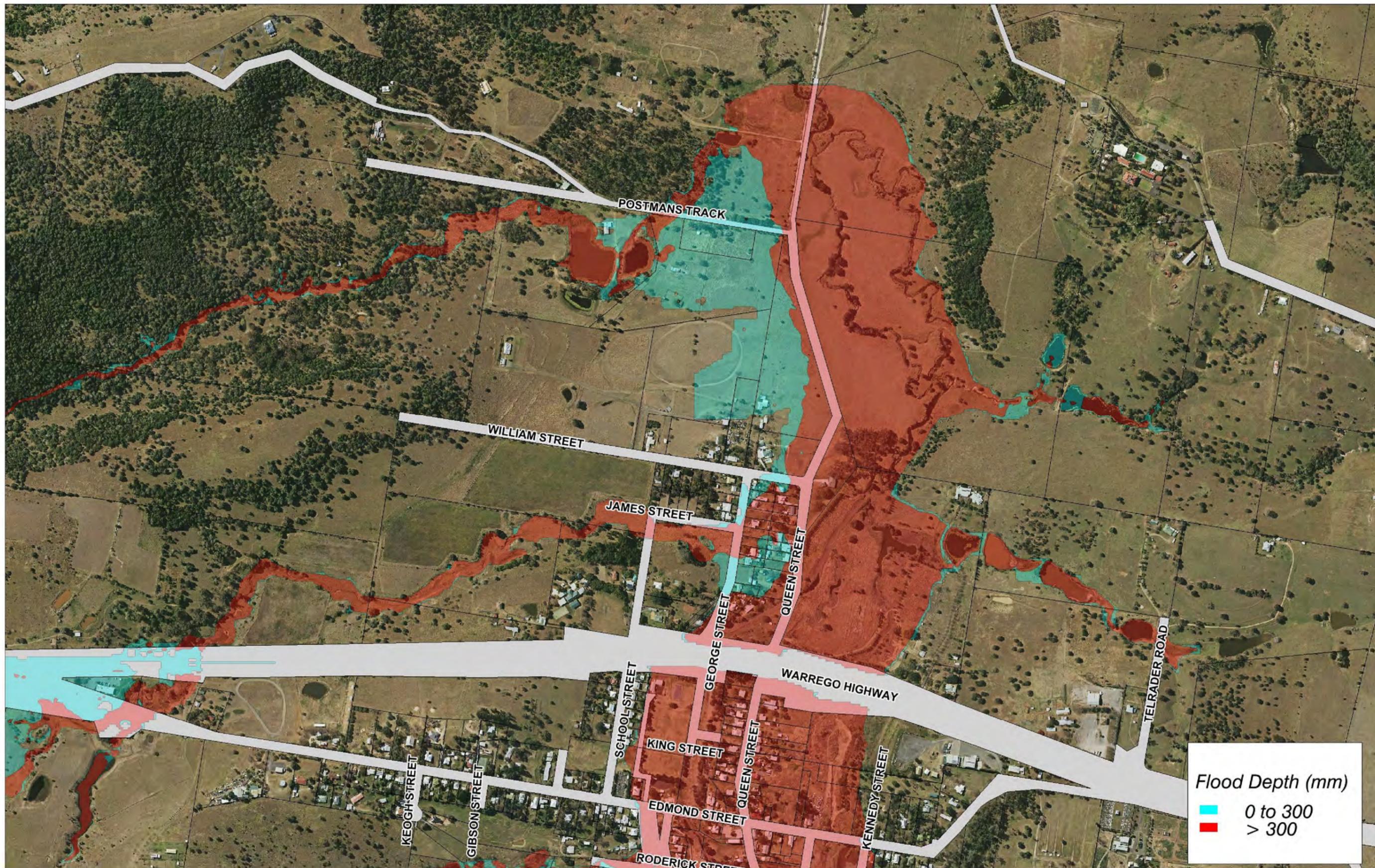
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>		<p>TITLE <b>FLOOD DEPTHS, 500 YR ARI EVENT, INSET A</b></p>					



**Flood Depth (mm)**

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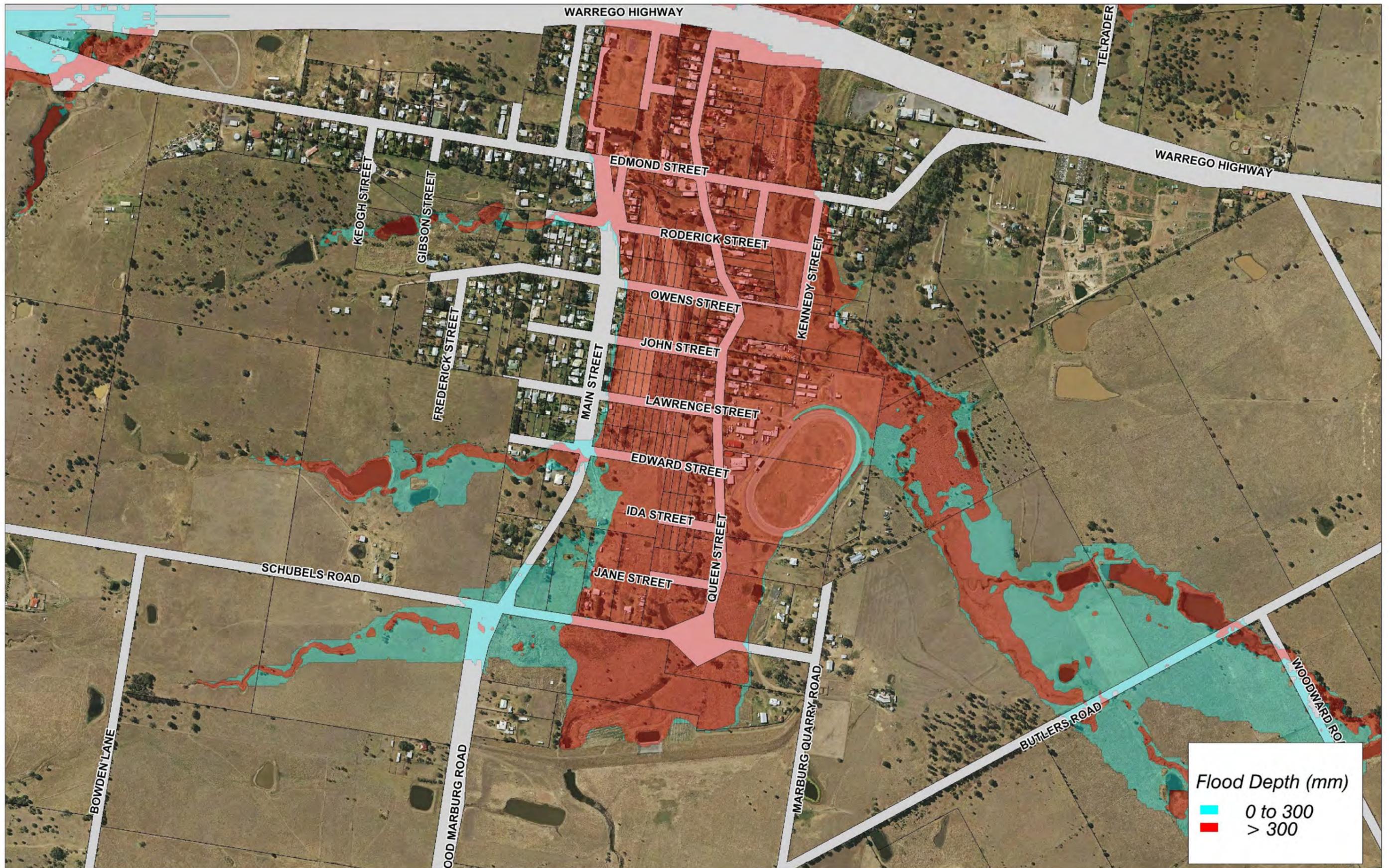
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, 500 YR ARI EVENT, INSET B</b></p>		



**Flood Depth (mm)**

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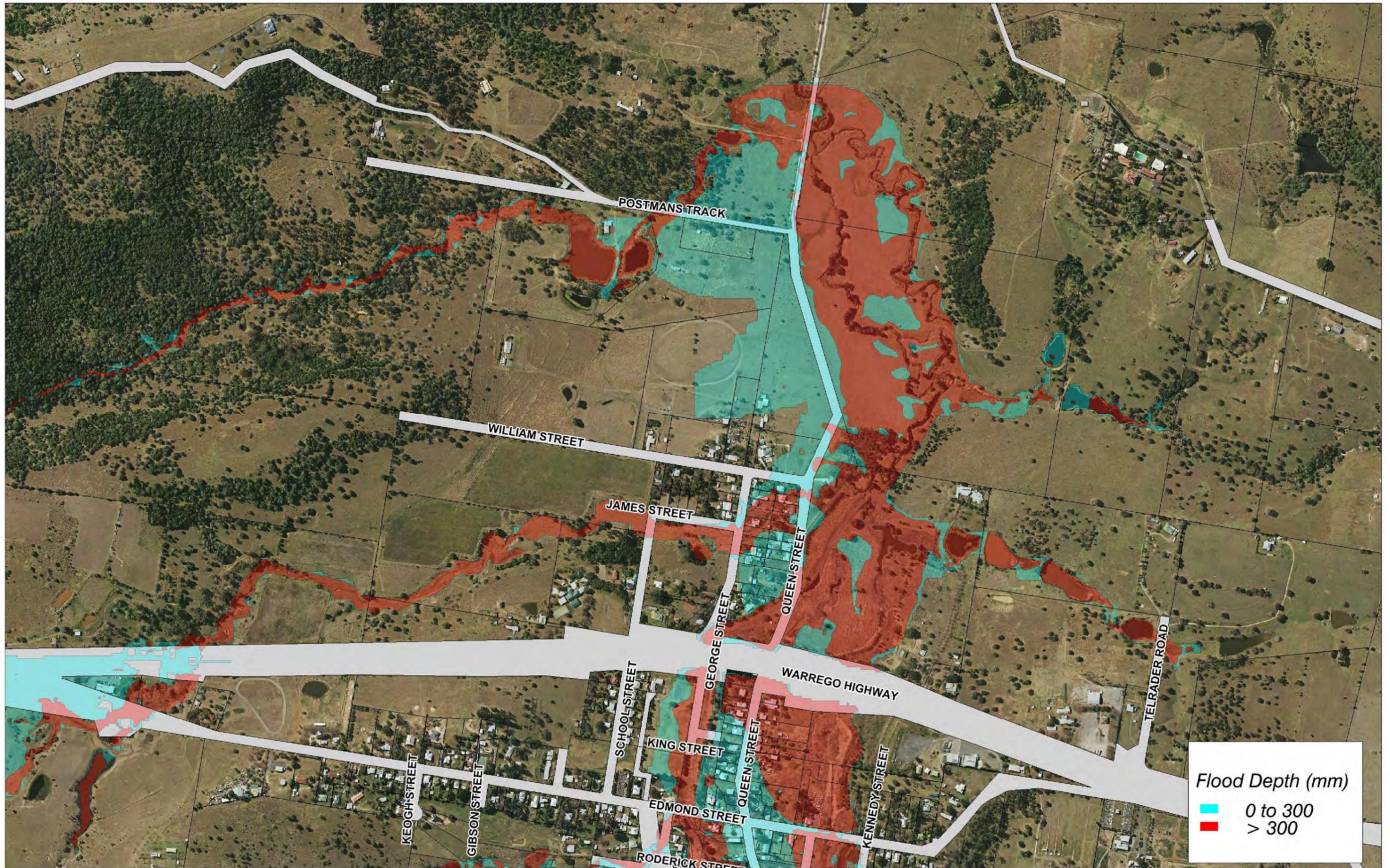
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>		<p>TITLE <b>FLOOD DEPTHS, 500 YR ARI (SCF) WITH DAM BREACH, INSET A</b></p>				<p>SMEC Australia Ltd Level 1, 154 Melbourne Street South Brisbane QLD 4101</p>



**Flood Depth (mm)**

- 0 to 300
- > 300

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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, 500 YR ARI (SCF) WITH DAM BREACH, INSET B</b></p>		<p>SMEC Australia Ltd Level 1, 154 Melbourne Street South Brisbane QLD 4101</p>



**Flood Depth (mm)**

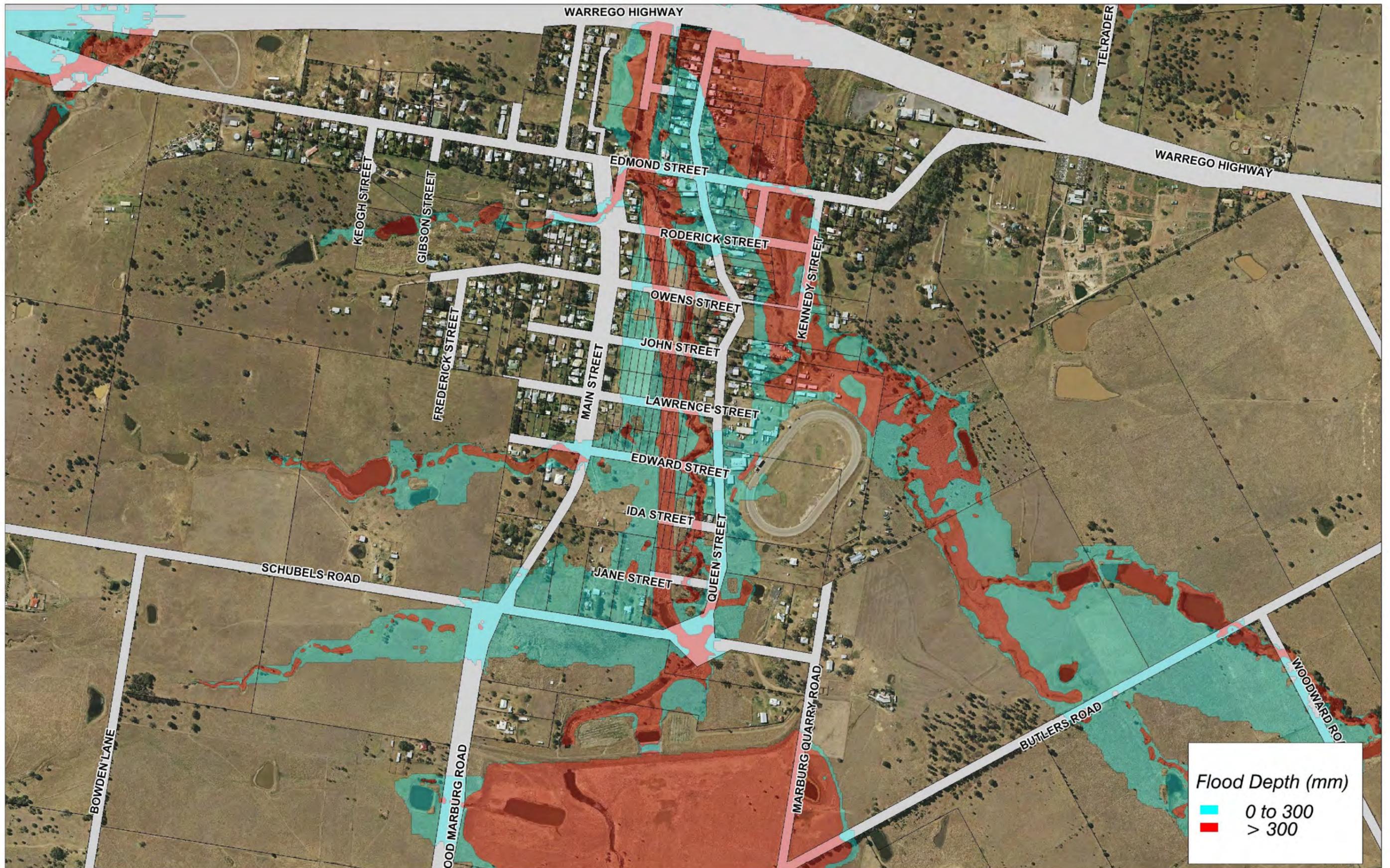
- 0 to 300
- > 300

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DRAWING NO. FIGURE-005-A REVISION B STATUS FINAL  
 CREATED BY CGR DATE 30/06/2014  
 TITLE **FLOOD DEPTHS, 100 YR ARI EVENT, INSET A**

CLIENT  
 Ipswich City Council

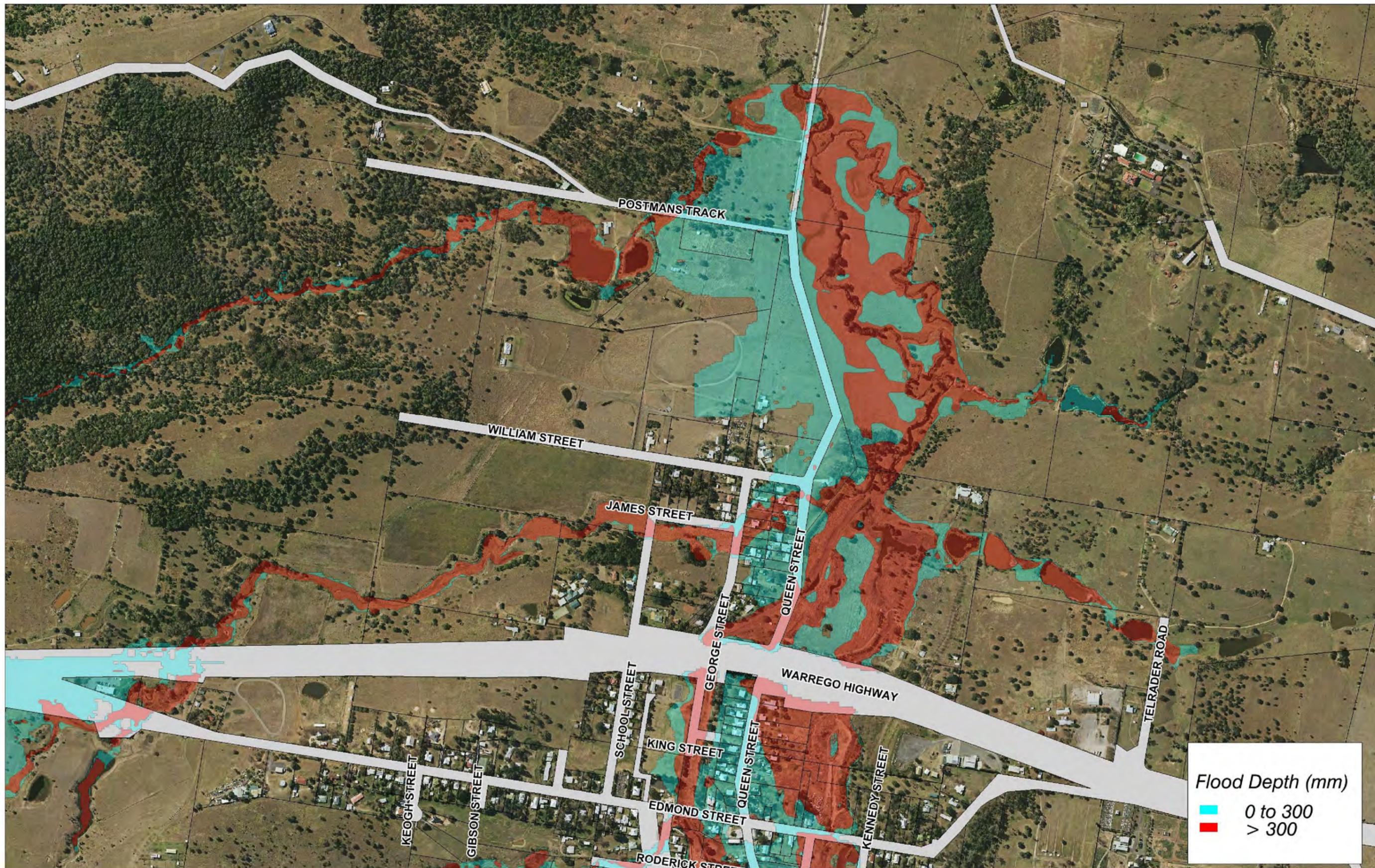
CONSULTANT  
  
 SMEC Australia Ltd  
 Level 1, 154 Melbourne Street  
 South Brisbane QLD 4101



**Flood Depth (mm)**

- 0 to 300
- > 300

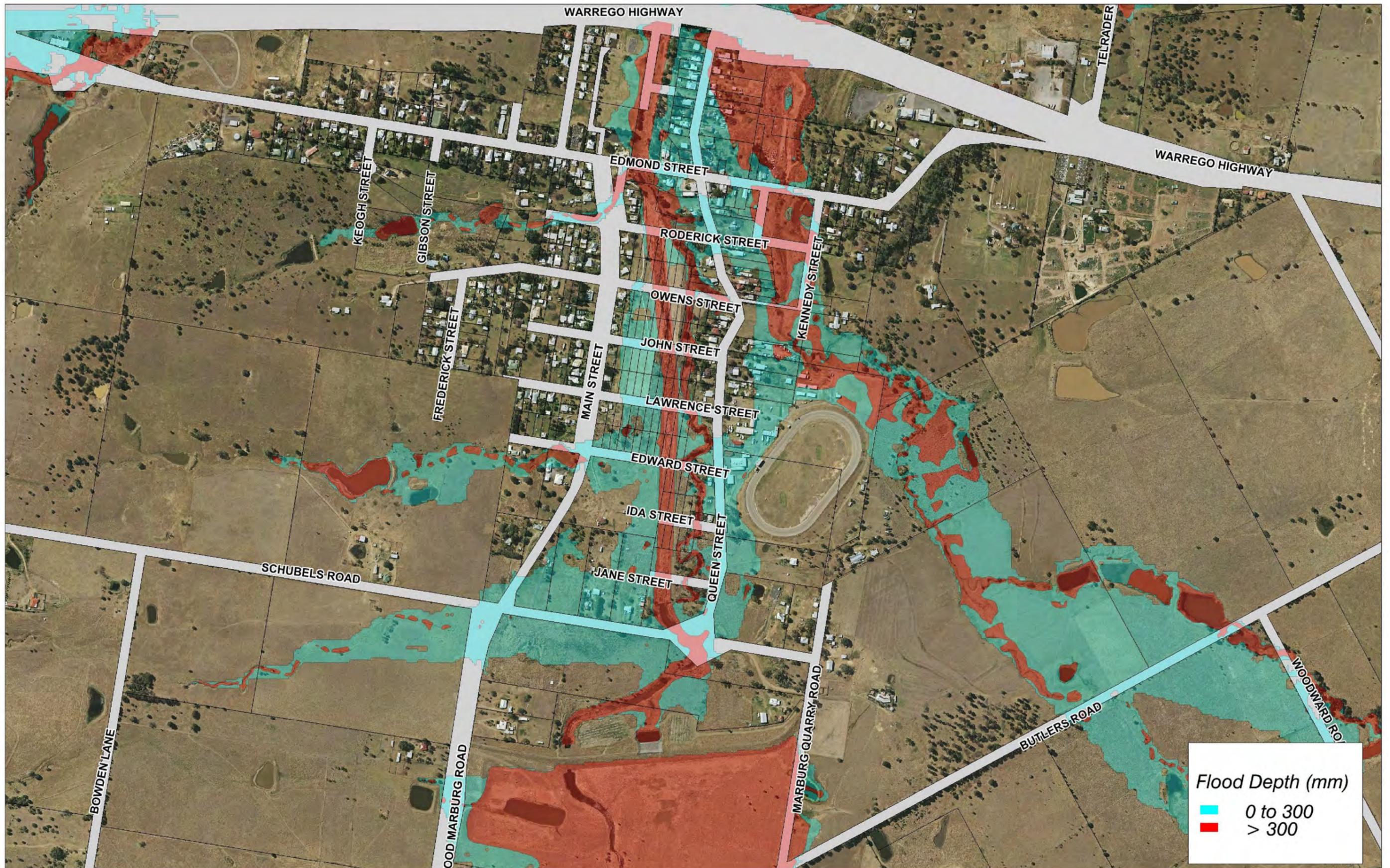
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**Flood Depth (mm)**

- 0 to 300
- > 300

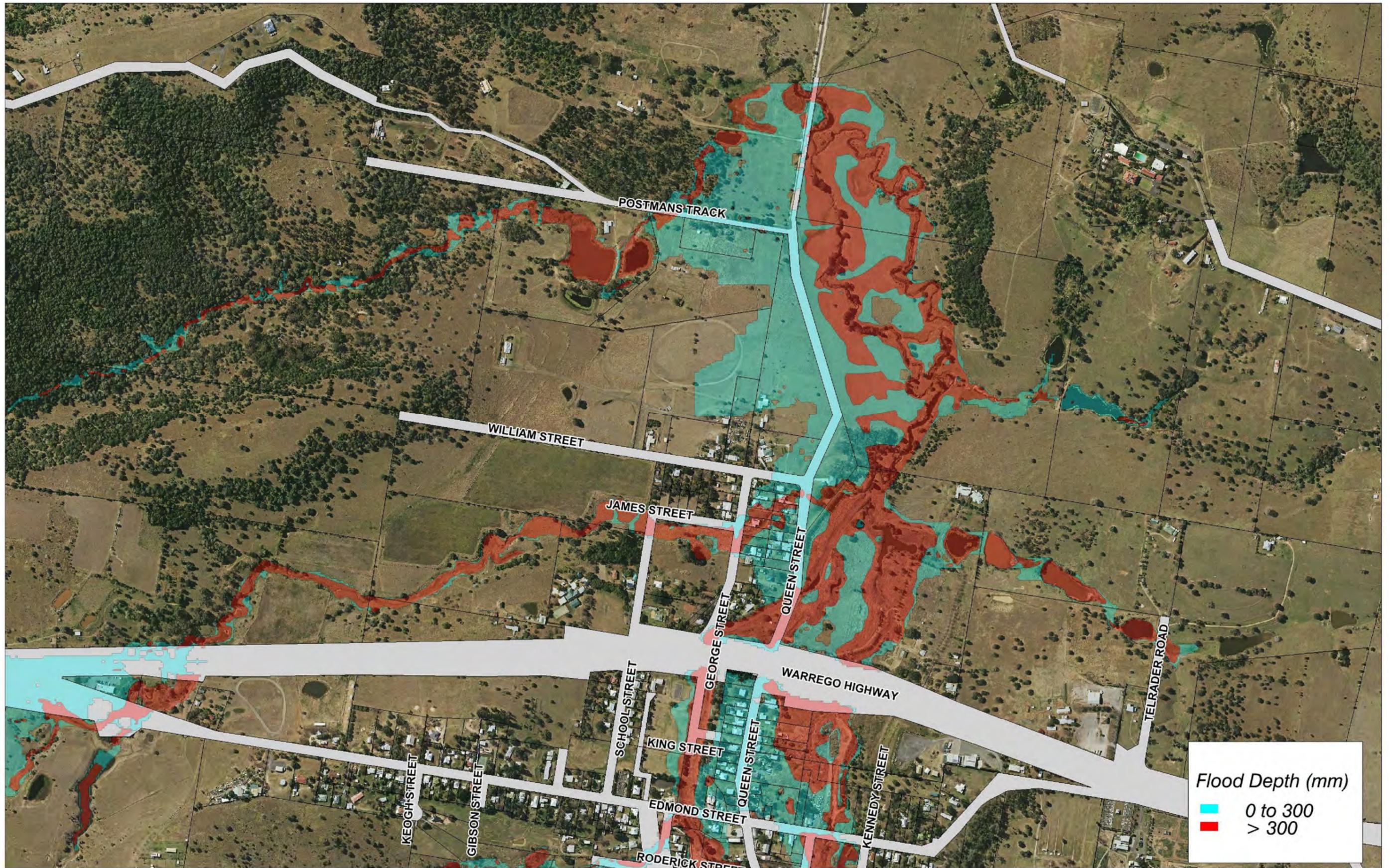
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>		<p>TITLE <b>FLOOD DEPTHS, 20 YR ARI EVENT, INSET A</b></p>					



**Flood Depth (mm)**

- 0 to 300
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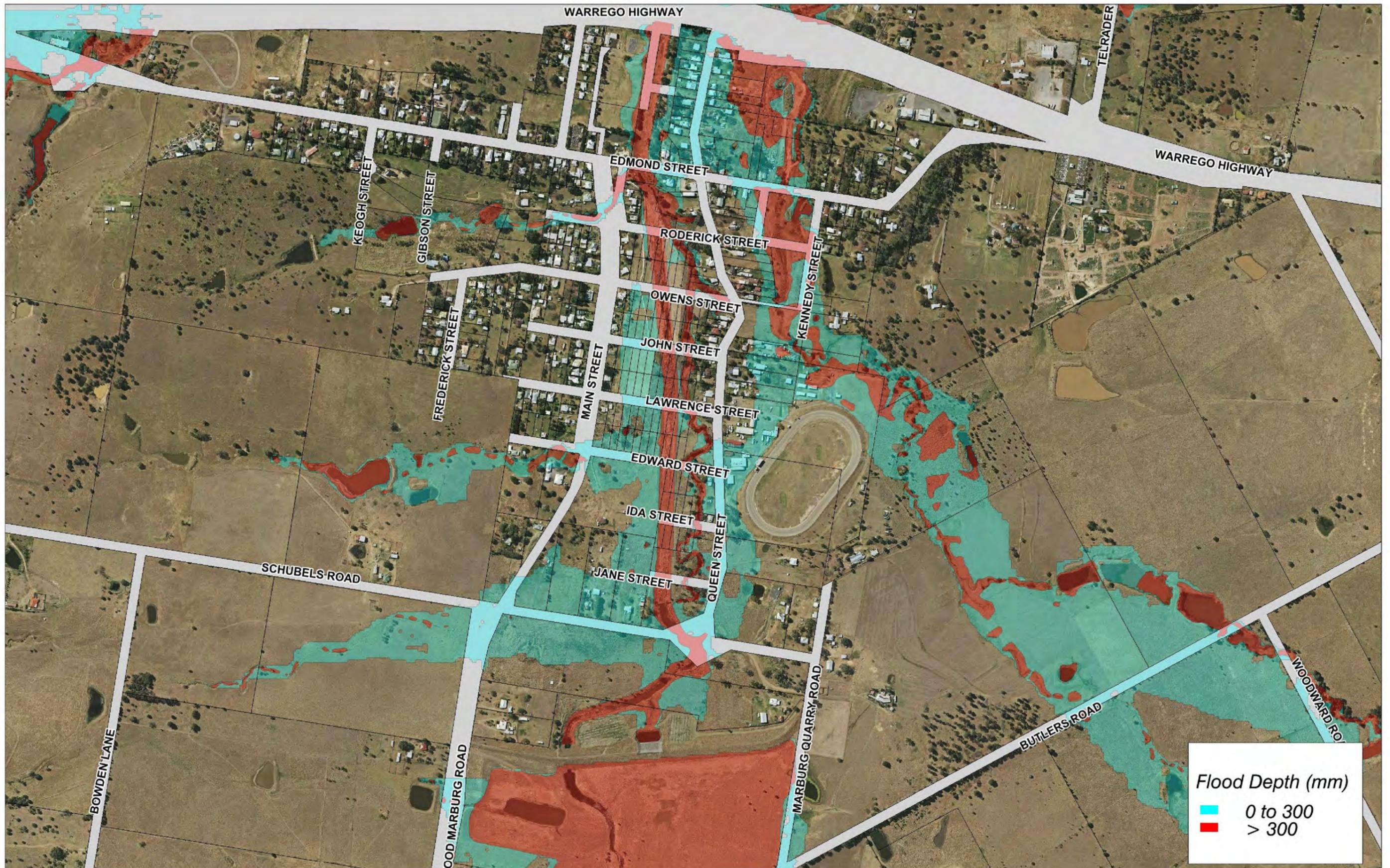
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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, 20 YR ARI EVENT, INSET B</b></p>		



**Flood Depth (mm)**

- 0 to 300
- > 300

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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, 10 YR ARI EVENT, INSET A</b></p>		



**Flood Depth (mm)**

- 0 to 300
- > 300

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<p>PROJECT NO. 30031267 PROJECT TITLE MARBURG BASIN EAP</p>	<p>TITLE <b>FLOOD DEPTHS, 10 YR ARI EVENT, INSET B</b></p>		

## APPENDIX B - SUPPORTING INFORMATION

## APPENDIX B

### SUPPORTING INFORMATION

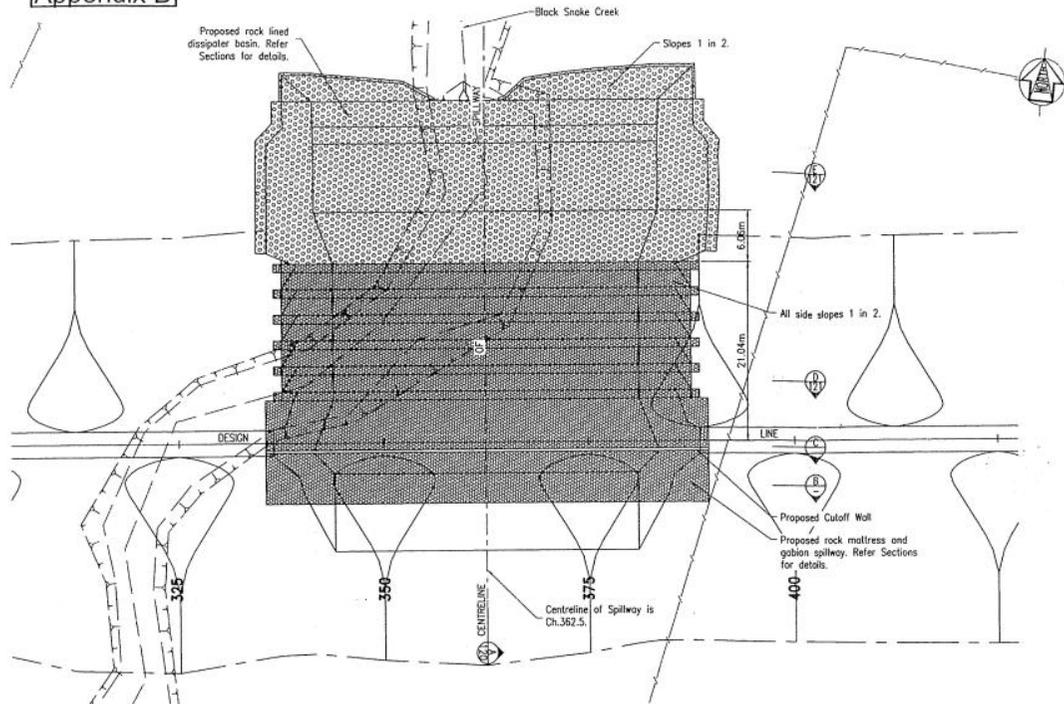
The following supporting information and documentation has been included with this EAP:

<b>Document</b>	<b>Details</b>
Engineering Details	Plans and sections detailing Marburg Flood Detention Basin
Spillway Discharge Curve	Chart detailing spillway discharge flow rate versus water level
Log Form	Form that can be used to record events and actions
Communications Form	Form that can be used for sending of information relating this EAP
Water Level Rate of Rise Record Sheet	Blank sheet for recording storage levels and time of reading. Data is used to develop rate of rise charts
Water Level Rate of Rise Chart	Blank chart that can be used to plot the water level in the Marburg Flood Detention Basin versus time (assist in predicting water levels). Charts can be used to assess when basin water levels may reach critical levels (spillway crest, embankment crest)
Location of Monitoring Instrumentation Map	An aerial map for the location of Monitoring Instrumentation

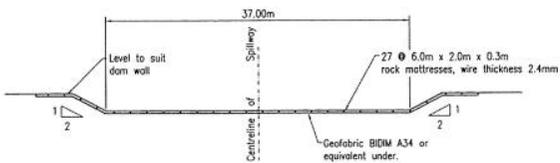


Marburg Detention Basin  
Emergency Action Plan

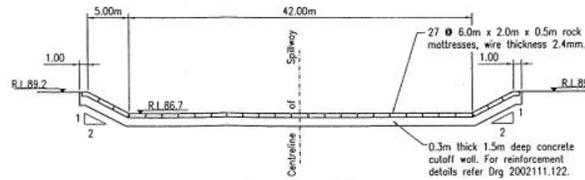
Appendix B



PLAN



SECTION B



SECTION C

NOTES

- MATTRESSES AND GABIONS:**
- Material for mattresses and gabions shall consist of hard, dense, durable, rock fragments. Water absorption (AS 2758) not exceeding 2.5%.
  - Wire for mattresses and gabions shall be plastic coated.
  - Mesh openings shall be 60mm x 80mm for mattresses and 80mm x 100mm for gabions.
  - Rock for mattresses and gabions shall have a particle size between 120mm and 250mm.
- ROCK PROTECTION:**
- Material for rock protection shall consist of hard, dense, durable rock fragments. Water absorption (AS 2758) not exceeding 2.5%.
    - Rock Protection Type A shall be well graded within the following limits:
      - (i) Maximum size 300mm.
      - (ii) Not less than 50% by mass larger than 200mm.
      - (iii) Not more than 10% smaller than 50mm.
    - Rock Protection Type B shall consist of boulders not more than 900mm mean dimension, with at least 50% larger than 600mm and less than 10% smaller than 150mm.
    - Rock Protection Type C shall consist of boulders not more than 900mm mean dimension, with at least 50% larger than 500mm and less than 10% smaller than 150mm.
  - Rock protection shall be spread to the thickness shown on the drawing, in such a manner that the finer material is generally toward the underside of the layer, that the rock protection is stable without any tendency to slide and that there are no large voids.
- CONTAINMENT CONCRETE:**
- The surface layer of the rock mattresses and gabions where indicated shall be contained by placing and working concrete down into the voids. The concrete shall have a characteristic strength of 25MPa, and a max aggregate size of 10mm, and shall be worked down into the voids by vibrating, rodding and ramming until the surface of the concrete is in accordance with the lines, grades and dimensions shown on the drawing. The depth of concrete placed shall be between 150mm and 250mm. Slump shall be 80mm - 80mm. The concrete cover over the wire lids of the mattresses shall be 25mm.
  - Design Levels are to surfaces of concrete cover.
- ENVIRONMENTAL PROTECTION:**
- EP1. Environmental protection to be carried out as per Environmental Management Plan.
- EP2. Hydromulch all disturbed/exposed areas.

LEGEND

- - - Existing Edge of Bitumen
- - - Existing Edge of Gravel Road
- ===== Existing Kerb and Channel
- ..... Existing Footpath
- Existing Sign
- Existing Sewerage Line
- Existing Sewerage Manhole
- ..... Existing Stormwater System
- ..... Existing Stormwater Manhole
- Existing G.P.P.
- Existing Water Main
- Existing Fire Hydrant
- Existing Valve
- Existing Power Pole
- Existing Gas Main
- Existing H/P Gas Main
- Existing Moonee Oil Line
- OP Existing Optus Cable
- Existing Optus Pit
- Existing Telstra Cable
- Existing Telstra O/F Cable
- Existing Telstra Pit
- Existing Fence
- Existing Tree
- Proposed Edge of Bitumen
- Proposed Kerb and Channel
- Proposed Footpath
- Proposed Sign
- Proposed Stormwater System
- Proposed Stormwater Manhole
- Proposed G.P.P.
- Proposed Headwall

REVISIONS		
AMENDMENT	INITIALS	DATE
C		
F		
E		
D		
C		
B		
A		

Survey Certification:  
As the Surveyor for this Project, I hereby certify that the method for construction has been in accordance with the design and levels shown on this drawing.

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

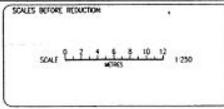
Construction Certification:  
As Supervising Engineer for this project, I certify that the works detailed on this drawing have been carried out in accordance with the drawing and specifications, to the satisfaction of the IPSWICH CITY COUNCIL.

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

**IPSWICH CITY COUNCIL**

58 SOUTH STREET  
IPSWICH 4385  
P.O. BOX 191

Phone (07) 3810 7894  
(07) 3810 7927  
Fax (07) 3810 7950



REVISED	DATE	BY	CHKD
DESIGNED	14 MAY 2002		
DRAWN	NOV 2001		
CHECKED	27 JUN 2002		
REVISIONS	17 JUL 02		
RECOMMENDED	28 FEB 02		
APPROVED	28 FEB 02		

**MARBURG DETENTION BASIN  
DETENTION BASIN SPILLWAY  
PLAN AND SECTIONS**

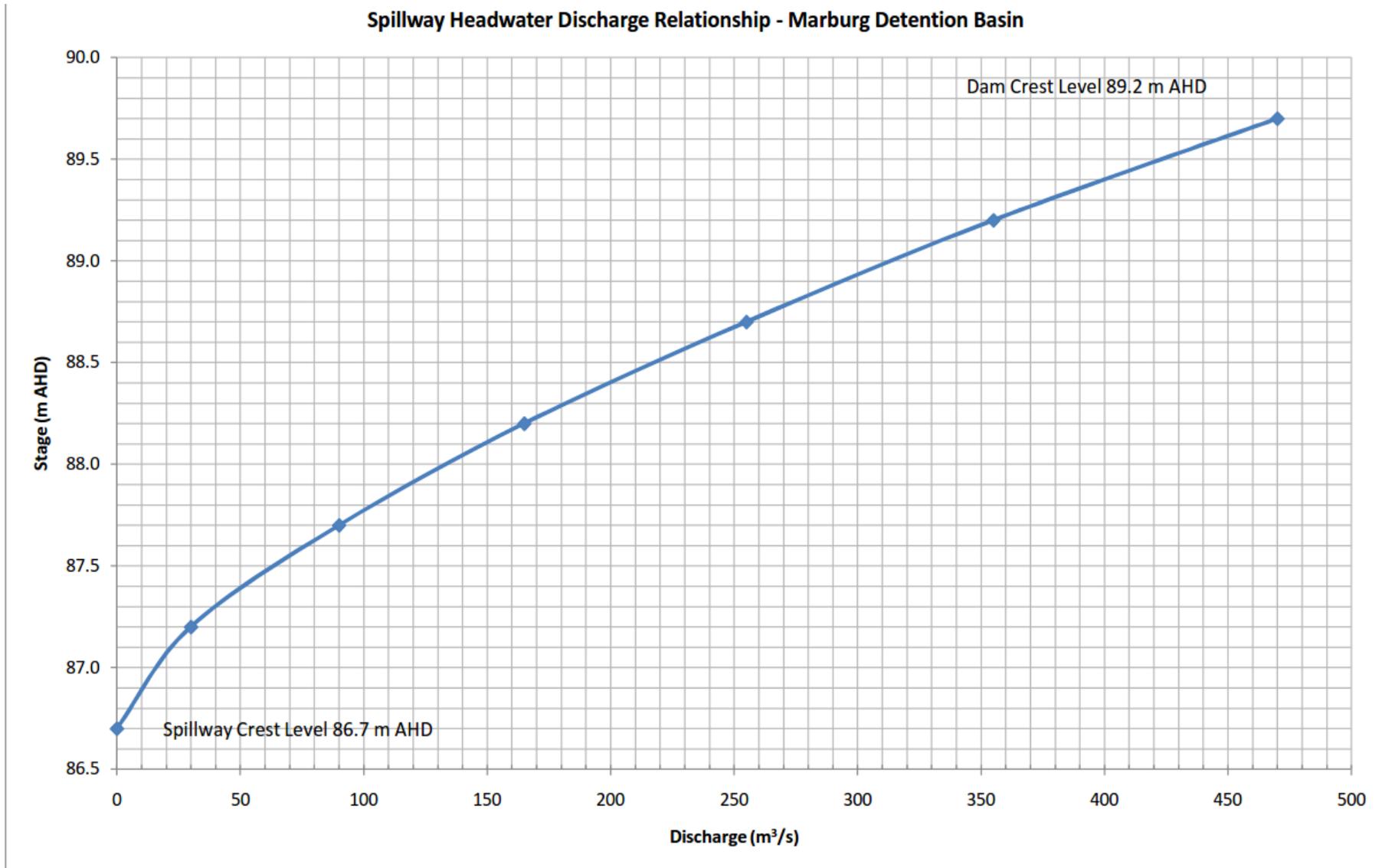
Appendix B

Doc Status : SCHEME Size : A1 Dr : 209 Rev : 0 Dwg : 2002111.120



**Flood Markers**

**Viewing upstream side of Intake Structure**





**City of Ipswich**

**MARBURG FLOOD DETENTION BASIN  
EMERGENCY ACTION PLAN COMMUNICATION**

**Communications Form**

Communication To:

Name / Title ..... Date ..... Time (24 hr) .....

Phone / Fax Number ..... Email Address .....

Communication From:

Name / Title .....

Phone / Fax Number ..... Email Address .....

Current Marburg Detention Basin EAP Response Level (Circle Current Level)

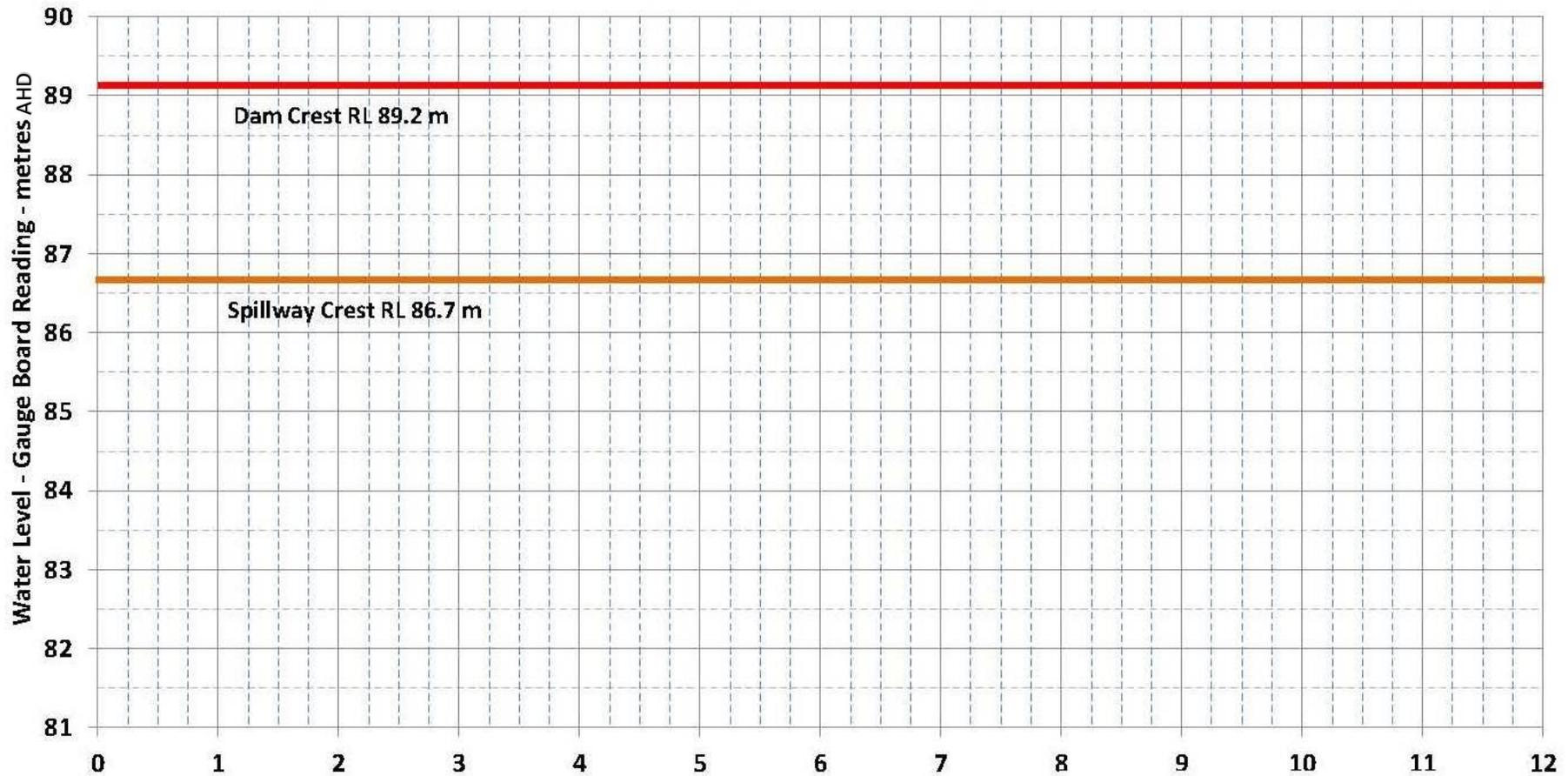
**ALERT                  LEAN-FORWARD                  STAND-UP                  STAND-DOWN**

MESSAGE:



## Marburg Flood Detention Basin Water Level versus Time

12 Hour Chart



Water level = 81.50 mAHd (Automatic Flood Gauge Level = 2.10 m) and rising	EAP activated at water level = 83.00 mAHd (Automatic Flood Gauge Level = 3.6 m)	Water level = 86.70 mAHd (Automatic Flood Gauge Level = 7.3 m)	Water level = 83.00 mAHd (Automatic Flood Gauge Level = 3.6 m) and falling with no more rain
--	---	--	--

**Time in Hours**  
(1 Division = 15 minutes)

Date .....  
Start Time (24 hr) .....

**LOCATION OF MONITORING INSTRUMENTATION  
(Marburg Detention Basin)**



# APPENDIX F EMERGENCY ALERT REQUEST FORMS

**APPENDIX F1  
SUNNY DAY FAILURE EMERGENCY ALERT REQUEST FORM**



# EMERGENCY ALERT REQUEST

Location: Springfield Lakes Dams

Date: / /  
Time: : hrs

Requesting Officer:

Telephone:

Agency/Position:

Email:

Event Type	<input type="checkbox"/> Cyclone	<input type="checkbox"/> Storm Surge	<input type="checkbox"/> Flash Flood	<input type="checkbox"/> Flood
	<input type="checkbox"/> Bushfire	<input type="checkbox"/> Fire Incident	<input type="checkbox"/> Smoke or Toxic Plume	<input type="checkbox"/> Chemical Spill
	<input type="checkbox"/> Tsunami (NOTE Tsunami EA campaigns will be sent as Location Based Text Message ONLY)			
	<input checked="" type="checkbox"/> Other (please specify): Dam Failure – Sunny Day Dam Failure			
Message Severity	<input checked="" type="checkbox"/> Emergency Warning (NOTE activates the SEWS)		<input type="checkbox"/> Watch & Act	<input type="checkbox"/> Advice
Campaign Mode	<input checked="" type="checkbox"/> Voice		<input checked="" type="checkbox"/> SMS – Location Based	<input type="checkbox"/> SMS – Service Address Based
LDMG Advised	<input type="checkbox"/> YES <input type="checkbox"/> NO	DDMG Advised	<input type="checkbox"/> YES <input type="checkbox"/> NO	

Threat Direction Required?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Note: Can only be used for Emergency Warnings. Indicate direction on map
----------------------------	---	--

<b>STEP 1. EA Polygon Area:</b> <input type="checkbox"/> Map attached	<b>STEP 2. Filename:</b>
<b>STEP 3. Spatial format:</b> (Indicate the format used) <input checked="" type="checkbox"/> KML *.kml (preferred format as per Spatial guidelines) <input type="checkbox"/> ESRI *.dbf, *.prj, *.shp, *.shx <input type="checkbox"/> GML *.gml, *.xsd <input type="checkbox"/> MapInfo TAB *.dat, *.id, *.map, *.tab <input type="checkbox"/> MapInfo Mid/Mif *.MID Sequence, *.mif <input type="checkbox"/> OTHER(insert)	<b>STEP 4. Messaging/spatial data, is it supplied via</b> <input checked="" type="checkbox"/> DMportal - specify filenames below <input type="checkbox"/> FTP - specify filenames below <input type="checkbox"/> Email <input type="checkbox"/> Other (please specify) Filename: _____

Type (please use capitals for clarity) or handwrite Voice message (Ideally message should be less than 450 characters).

Emergency emergency This is a dam failure warning message from the Ipswich city council. Imminent failure of Marburg detention basin. Localities affected Marburg take action to protect life now warn neighbours and move to higher ground. for more information listen to ABC radio or visit [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

Type or handwrite SMS below (maximum of 160 characters including spaces)

Emergency Emergency Ipswich Council advises imminent failure of Marburg Referable Dam. Take Action Now. Warn Others, Move to Higher Ground. visit [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

SEND TO \_\_\_\_\_ TO CONFIRM \_\_\_\_\_

FOR USE BY SDCC			
Requesting Officer:	Signature	/ /20	<input type="checkbox"/> Manual Transmission <input type="checkbox"/> EMS Transmission EA Campaign No. _____ EMS Report ID: _____
EA User Name:	Signature	/ /20	
Authorising Officer Name:	Signature	/ /20	

**EA Manual and the Emergency Alert Request Form Template are available at: [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)**

## DO NOT SEND THIS PAGE

### GUIDE TO COMPLETE STEPS 1 – 4

<b>STEP 1.</b>	EA Polygon Area (e.g. detailed description and location reference to allow positive identification of message area, including street names with cross street, areas of interest such as parks, rivers, dams, coastal areas) it is preferable to attach a map identifying the message area. If a Threat Direction has been requested, please clearly indicate it on the map.
<b>STEP 2.</b>	Tick applicable box and note the file name.
<b>STEP 3.</b>	<p>Voice Message: type or handwritten the required message. As the message will be translated by a text-to-speech process it is important that words are not unintelligible when translated e.g. "qld" used in a web site address must be entered as "q l d", similarly the word "dot" must be entered into a web address instead of a full stop.</p> <p>Voice Message ideally should have no more than 450 characters including spaces. Do not use special characters – refer to EA Manual for details. Warning message must start with "Emergency Emergency"</p>
<b>STEP 4.</b>	SMS Is restricted to a maximum of 160 characters including spaces and punctuation. Either type the message or handwrite the characters into the boxes.

**Example:** *SMS Flash Flood Warning from SES for Opal Valley-immediate threat to life/property-Warn others-Leave area/prepare NOW or seek higher ground-Listen to local radio*

**If using template EA messages, please provide the appropriate variables that are in the template message guides. Refer to the Queensland Emergency Alert Manual for copies of the template message guides.**

//RELEVANTAUTHORITY//

//DIRECTIONANDAREA//

//NAME//

//NUMBER//

//TIME//

//TIMEandDAY//

//DIRECTIONandPLACE//

//HOURSMINUTES//

//PLACE//

//PLACEPLACE//

//EXTERNAL/INTERNAL//

//SUBURBS//

//FireIncident//

**APPENDIX F2**  
**PMF Failure – Lean Forward Activation Level**  
**Emergency Alert Request Form**



# EMERGENCY ALERT REQUEST

Location: Springfield Lakes Dams

Date: / /  
Time: : hrs

Requesting Officer:

Telephone:

Agency/Position:

Email:

Event Type

- Cyclone       Storm Surge       Flash Flood       Flood  
 Bushfire       Fire Incident       Smoke or Toxic Plume       Chemical Spill  
 Tsunami (NOTE Tsunami EA campaigns will be sent as Location Based Text Message ONLY)  
 Other (please specify): Extreme Flood Event Dam Failure

Message Severity

- Emergency Warning (NOTE activates the SEWS)       Watch & Act       Advice

Campaign Mode

- Voice       SMS – Location Based       SMS – Service Address Based

LDMG Advised

- YES  NO

DDMG Advised

- YES  NO

Threat Direction Required?

- YES  NO

Note: Can only be used for Emergency Warnings. Indicate direction on map

**STEP 1. EA Polygon Area:**  Map attached

**STEP 2. Filename:**

**STEP 3. Spatial format:** (Indicate the format used)

- KML \*.kml (preferred format as per Spatial guidelines)  
 ESRI \*.dbf, \*.prj, \*.shp, \*.shx  
 GML \*.gml, \*.xsd  
 MapInfo TAB \*.dat, \*.id, \*.map, \*.tab  
 MapInfo Mid/Mif \*.MIDI Sequence, \*.mif  
 OTHER(insert)

**STEP 4. Messaging/spatial data, is it supplied via**

- DMportal - specify filenames below  
 FTP - specify filenames below  
 Email  
 Other (please specify)

Filename:

Type (please use capitals for clarity) or handwrite Voice message (Ideally message should be less than 450 characters).

Emergency emergency This is a dam failure warning message from the Ipswich city council. Imminent failure of Marburg detention basin. Localities affected Marburg take action to protect life now warn neighbours and move to higher ground. for more information listen to ABC radio or visit [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

Type or handwrite SMS below (maximum of 160 characters including spaces)

Emergency Emergency Ipswich Council advises Possible failure of Marburg Referable Dam. Take Action Now. Warn Others, Move to Higher Ground. visit [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

SEND TO

TO CONFIRM

## FOR USE BY SDCC

Requesting Officer:

Signature / /20

EA User Name:

Signature / /20

Authorising Officer Name:

Signature / /20

Manual Transmission

EMS Transmission

EA Campaign No. \_\_\_\_\_

EMS Report ID: \_\_\_\_\_

EA Manual and the Emergency Alert Request Form Template are available at: [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

## DO NOT SEND THIS PAGE

### GUIDE TO COMPLETE STEPS 1 – 4

<b>STEP 1.</b>	EA Polygon Area (e.g. detailed description and location reference to allow positive identification of message area, including street names with cross street, areas of interest such as parks, rivers, dams, coastal areas) it is preferable to attach a map identifying the message area. If a Threat Direction has been requested, please clearly indicate it on the map.
<b>STEP 2.</b>	Tick applicable box and note the file name.
<b>STEP 3.</b>	<p>Voice Message: type or handwritten the required message. As the message will be translated by a text-to-speech process it is important that words are not unintelligible when translated e.g. “qld” used in a web site address must be entered as “q l d”, similarly the word “dot” must be entered into a web address instead of a full stop.</p> <p>Voice Message ideally should have no more than 450 characters including spaces. Do not use special characters – refer to EA Manual for details. Warning message must start with “Emergency Emergency”</p>
<b>STEP 4.</b>	SMS Is restricted to a maximum of 160 characters including spaces and punctuation. Either type the message or handwrite the characters into the boxes.

**Example:** *SMS Flash Flood Warning from SES for Opal Valley-immediate threat to life/property-Warn others-Leave area/prepare NOW or seek higher ground-Listen to local radio*

**If using template EA messages, please provide the appropriate variables that are in the template message guides. Refer to the Queensland Emergency Alert Manual for copies of the template message guides.**

//RELEVANTAUTHORITY//

//DIRECTIONANDAREA//

//NAME//

//NUMBER//

//TIME//

//TIMEandDAY//

//DIRECTIONandPLACE//

//HOURSMINUTES//

//PLACE//

//PLACEPLACE//

//EXTERNAL/INTERNAL//

//SUBURBS//

//FireIncident//

**APPENDIX F3**  
**PMF Failure – Stand Up Activation Level Emergency**  
**Alert Request Form**



# EMERGENCY ALERT REQUEST

Location: Springfield Lakes Dams

Date: / /  
Time: : hrs

Requesting Officer:

Telephone:

Agency/Position:

Email:

Event Type

- Cyclone       Storm Surge       Flash Flood       Flood  
 Bushfire       Fire Incident       Smoke or Toxic Plume       Chemical Spill  
 Tsunami (NOTE Tsunami EA campaigns will be sent as Location Based Text Message ONLY)  
 Other (please specify): Extreme Flood Event Dam Failure

Message Severity

- Emergency Warning (NOTE activates the SEWS)       Watch & Act       Advice

Campaign Mode

- Voice       SMS – Location Based       SMS – Service Address Based

LDMG Advised

- YES  NO

DDMG Advised

- YES  NO

Threat Direction Required?

- YES  NO

Note: Can only be used for Emergency Warnings. Indicate direction on map

**STEP 1. EA Polygon Area:**  Map attached

**STEP 2. Filename:**

**STEP 3. Spatial format:** (Indicate the format used)

- KML \*.kml (preferred format as per Spatial guidelines)  
 ESRI \*.dbf, \*.prj, \*.shp, \*.shx  
 GML \*.gml, \*.xsd  
 MapInfo TAB \*.dat, \*.id, \*.map, \*.tab  
 MapInfo Mid/Mif \*.MIDI Sequence, \*.mif  
 OTHER(insert)

**STEP 4. Messaging/spatial data, is it supplied via**

- DMportal - specify filenames below  
 FTP - specify filenames below  
 Email  
 Other (please specify)

Filename:

Type (please use capitals for clarity) or handwrite Voice message (Ideally message should be less than 450 characters).

Emergency emergency This is a dam failure warning message from the Ipswich city council. Imminent failure of Marburg detention basin. Localities affected Marburg take action to protect life now warn neighbours and move to higher ground. for more information listen to ABC radio or visit [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

Type or handwrite SMS below (maximum of 160 characters including spaces)

Emergency Emergency Ipswich Council advises imminent failure of Marburg Referable Dam. Take Action Now. Warn Others, Move to Higher Ground. visit [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

SEND TO

TO CONFIRM

## FOR USE BY SDCC

Requesting Officer:

Signature / /20

EA User Name:

Signature / /20

Authorising Officer Name:

Signature / /20

Manual Transmission

EMS Transmission

EA Campaign No. \_\_\_\_\_

EMS Report ID: \_\_\_\_\_

EA Manual and the Emergency Alert Request Form Template are available at: [www.disaster.qld.gov.au](http://www.disaster.qld.gov.au)

## DO NOT SEND THIS PAGE

### GUIDE TO COMPLETE STEPS 1 – 4

<b>STEP 1.</b>	EA Polygon Area (e.g. detailed description and location reference to allow positive identification of message area, including street names with cross street, areas of interest such as parks, rivers, dams, coastal areas) it is preferable to attach a map identifying the message area. If a Threat Direction has been requested, please clearly indicate it on the map.
<b>STEP 2.</b>	Tick applicable box and note the file name.
<b>STEP 3.</b>	<p>Voice Message: type or handwritten the required message. As the message will be translated by a text-to-speech process it is important that words are not unintelligible when translated e.g. "qld" used in a web site address must be entered as "q l d", similarly the word "dot" must be entered into a web address instead of a full stop.</p> <p>Voice Message ideally should have no more than 450 characters including spaces. Do not use special characters – refer to EA Manual for details. Warning message must start with "Emergency Emergency"</p>
<b>STEP 4.</b>	SMS Is restricted to a maximum of 160 characters including spaces and punctuation. Either type the message or handwrite the characters into the boxes.

**Example:** *SMS Flash Flood Warning from SES for Opal Valley-immediate threat to life/property-Warn others-Leave area/prepare NOW or seek higher ground-Listen to local radio*

**If using template EA messages, please provide the appropriate variables that are in the template message guides. Refer to the Queensland Emergency Alert Manual for copies of the template message guides.**

//RELEVANTAUTHORITY//

//DIRECTIONANDAREA//

//NAME//

//NUMBER//

//TIME//

//TIMEandDAY//

//DIRECTIONandPLACE//

//HOURSMINUTES//

//PLACE//

//PLACEPLACE//

//EXTERNAL/INTERNAL//

//SUBURBS//

//FireIncident//

## **Appendix G – Australian Warning System Pre-prepared Messages**

Appendix G shows pre-prepared Australian Warning System (AWS) messages, in accordance with the Queensland flood warning templates (July 2023) issued by the Queensland Fire and Emergency Services. The yellow highlighted fields indicate content that will likely requires adapting/input according to specific circumstances.

# PREPARE TO LEAVE

## Watch and Act - Flood



**Marburg Township**

**Warning area:** Marburg Township.

**Warning issued:** xx

**Details:** Flash flood conditions may occur., with possible failure of Marburg detention basin.

**Act now:** Prepare to leave so you can go quickly if conditions worsen. Decide where you will go. Warn friends, family, and neighbours.

**Flash Flood > Watch and Act > Prepare to Leave**

PREPARE TO LEAVE – Marburg Township – possible failure of Marburg Detention Basin as at [time, day, date, year].

**Warning Level:** Watch and Act

**Warning Area:** Marburg township are downstream (north) of Marburg detention basin

**People in the following places must prepare to leave:**

- Marburg Township
- Black Snake Creek catchment

[Provide link to map of affected area – Appendix 1 of EAP]

**Water levels in roads may rise rapidly in addition to rainfall. Prepare to move to higher ground.**

Do not expect emergency services to come to your door.

If your life is in danger, call Triple Zero (000) immediately. For flood and storm emergency help, call the SES on 132 500.

**Impacts in your area:**

- Flooding above ground floor level possible in some places.
- Roads may be closed due to flooding.
- Evacuation routes might be cut off. You could be stuck.
- Power, phones, internet and water might stop working.
- Public transport could stop soon.

**What you should do**

- Go and stay in a safe place in a high part of Ipswich, away from the warning area. This could be with family or friends.
- If you do not have a safe place, [an evacuation centre has / evacuation centres have] been set up at:
  - venue name and full address [add map link if available].

- If you find it hard to move quickly leave as soon as you can. If you do not drive, call your support service, a family member or a friend to organise transport.
- Decide how you will get to your safe place. If you come to a flooded road, turn around and go another way. Do not drive through floodwater.
- Take your pets, pet food, pet lead or crate, mobile phone, charger, enough clothes for two days, important documents (like identification, insurance papers and passports), medicine, cash and keys with you.
- If you have very young children, pack enough nappies for up to five days, wipes, bottles, formula or baby food. Plan to not have a fridge or microwave.
- If you have children make sure they stay with you or a responsible adult.
- If it is still safe, prepare your home quickly before you leave:
  - Lift important things onto benches, tables, high shelves or upstairs.
  - Block toilets, sinks and drains with sandbags to stop sewerage backflow if you can.
  - Move cars to high ground.
  - Lock doors and windows.
  - Help others if you can.
- Stay informed:
  - Click here for all warnings [insert website/channel where this warning will be published].
  - Listen to your local radio station 94.9FM.

### More information

- Ipswich City Council updates and a map of areas that flood near you, go to [\[website link\]](#)
- Weather warnings go to [Bureau of Meteorology Queensland warnings page](#).
- Power outage information, go to [Energex / Ergon](#).
- Traffic information and closed roads, go to [QLD Traffic](#) or call 13 19 40.
- Public transport information go to [Translink](#).

The next update will be issued at **[time, day, date]** or when the situation changes.

<b>LEAVE IMMEDIATELY</b>	
<b>Emergency Warning - Flood</b>	
	
<b>Marburg Township</b>	
<b>Warning area:</b>	Marburg Township
<b>Warning issued:</b>	xx
<b>Details:</b>	Flash flood conditions likely, with potential failure of Marburg detention basin.
<b>Act now:</b>	Leave immediately, or move to higher ground away from flash floodwater now.

**Flash Flood > Emergency Warning > Leave Immediately**

LEAVE IMMEDIATELY –Marburg – potential failure of Marburg Detention Basin as at [time, day, date, year].

**Warning Level:** Emergency Warning

**Warning Area:** Marburg township of Marburg detention basin

**People in the following places must prepare to leave:**

- Marburg Township
- Black Snake Creek catchment

[Provide link to map of affected area – Appendix A1 of EAP]

**People in these places must leave immediately. Fast moving flash floodwater may occur.**

Do not expect emergency services to come to your door.

**If your life is in danger, call Triple Zero (000) immediately. For flood and storm emergency help, call the SES on 132 500.**

**Impacts in your area:**

- Flooding above ground floor level possible in some places.
- Roads may be closed due to flooding.
- Evacuation routes might be cut off. You could be stuck.
- Power, phones, internet and water might stop working.
- Public transport could stop soon.

**What you should do**

- Go now to a safe place in a high part of Ipswich, away from the warning area. This could be with family or friends.
- If you do not have a safe place, [an evacuation centre has / evacuation centres have] been set up at:

- venue name and full address [add map link if available].
- If you do not drive, call your support service, a family member or a friend to organise transport.
- Take your pets, pet food, pet lead or crate, mobile phone, charger, enough clothes for two days, important documents (like identification, insurance papers and passports), medicine, cash and keys with you.
- If you have very young children, pack enough nappies for up to five days, wipes, bottles, formula or baby food. Plan to not have a fridge or microwave.
- If you have children make sure they stay with you or a responsible adult.
- Stay informed:
  - Click here for all warnings [insert website / channel where this warning will be published].
  - Listen to your local radio station 94.9FM.

### **If you are inside and can't leave safely**

- Stay inside and be aware of rising floodwater.
- If floodwater comes inside, move to a higher point like the kitchen bench or second storey and call Triple Zero (000).

### **If you are outside**

- Stay away from trees, drains, low areas, creeks, canals and floodwater.
- Move indoors away from floodwater now.

### **If you need to drive to get to a safe place**

- Slow right down.
- Do not drive through floodwater. If the road is flooded, go a different way.
- Watch for mud, debris, damaged roads, fallen trees and landslides.
- If driving is dangerous, find a high safe place to pull over – away from trees and drains.
- Listen to your local radio station 94.9 FM for warnings and traffic updates.

### **More information**

- Ipswich City Council updates and a map of areas that flood near you, go to [website link]
- Weather warnings go to [Bureau of Meteorology Queensland warnings page](#).
- Power outage information, go to [Energex / Ergon](#).
- Traffic information and closed roads, go to [QLD Traffic](#) or call 13 19 40.
- Public transport information go to [Translink](#).

**The next update will be issued at [time, day, date] or when the situation changes.**

# RETURN SAFELY

## Advice - Flood



### Marburg Township

<b>Warning area:</b>	Marburg Township
<b>Warning issued:</b>	XX
<b>Details:</b>	Failure of Marburg detention basin no longer possible. Flash flooding conditions have ceased.
<b>Act now:</b>	If you have left, it is now safe to come back.

### Flash Flood > Advice > Return safely

RETURN SAFELY – Marburg Township – flash flood conditions ceased at [time, day, date, year].

**Warning Level:** Advice

**Warning Area:** Marburg Township are downstream (north) of Marburg detention basin:

- Marburg Township
- Black Snake Creek catchment

[Provide link to map of affected area – Appendix A1 of EAP]

**Failure of detention basin no longer likely. Flash flood conditions has stopped and water has gone down. If you left, it is now safe to come back. Be careful of damage.**

#### What you should do

- Return to your home or business to check the damage.
- Stay away from creeks, rivers and drains.
- If you have children make sure they are with you or an adult you trust.
- Drive slowly, obey all road signs and never drive through floodwaters. If the road is flooded or damaged, go another way.
- Stay away from the area unless you live or work there, or you are helping.

#### If your home or business has been flooded

- Check for building damage before you go inside.
- Have all electrical and gas equipment professionally tested before use.
- If water went above power points have the house checked by an electrician before turning the power back on.
- Clean and dry out the building as soon as you can.
- Be careful where you walk – do not trip or slip.
- Protect your health and safety:
  - Wear strong boots, gloves and protective clothing when cleaning up.
  - Wash your hands and clothes often.
  - Do not eat food that has touched floodwater or mud.

- Throw away food that should be kept cold or frozen if you lost power.
  - Drink only fresh drinking water, like bottled water.
- For flood and storm emergency help, call the SES on 132 500 or download the SES Assistance Queensland app. Help yourself and others if you can.

#### **Support and recovery help**

- Go to Ipswich City Council [[website](#)] for clean-up and recovery information.
- Recovery services are available [[insert details of organisations actively involved; ideally on the ground](#)]:
  - Agency – Location, full address and times.
  - Agency – Location, full address and times.
- For general relief and recovery information go to [getready.qld.gov.au/after-disaster](http://getready.qld.gov.au/after-disaster).
- Natural disasters can affect your mental health. If you need help, call any of these groups:
  - Lifeline: Go to [www.lifeline.org.au](http://www.lifeline.org.au) or phone 13 11 14.
  - Beyond Blue: Go to [www.beyondblue.org.au](http://www.beyondblue.org.au) or phone 1300 224 636.
  - Kids Helpline: Go to [www.kidshelpline.com.au](http://www.kidshelpline.com.au) or phone 1800 551 800.

**This will be the last warning issued for this flood in Marburg Township.**