



Flood Intelligence & Municipal Flood Emergency Plan

Edenhope Flood Investigation

West Wimmera Shire Council

4 June 2026



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ACKNOWLEDGEMENT OF COUNTRY

The Board and employees of Water Technology acknowledge and respect the Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of Country throughout Australia. We specifically acknowledge the Traditional Custodians of the land on which our offices reside and where we undertake our work.

We respect the knowledge, skills and lived experiences of Aboriginal and Torres Strait Islander Peoples, who we continue to learn from and collaborate with. We also extend our respect to all First Nations Peoples, their cultures and to their Elders, past and present.



Artwork by Maurice Goolagong 2023. This piece was commissioned by Water Technology and visualises the important connections we have to water, and the cultural significance of journeys taken by traditional custodians of our land to meeting places, where communities connect with each other around waterways.

The symbolism in the artwork includes:

- Seven circles representing each of the States and Territories in Australia where we do our work
- Blue dots between each circle representing the waterways that connect us
- The animals that rely on healthy waterways for their home
- Black and white dots representing all the different communities that we visit in our work
- Hands that are for the people we help on our journey



4 June 2026

Edwin Irvine
Senior Planning Officer
West Wimmera Shire Council
628-634 Midland Highway, Huntly VIC 3551

Via email: edwinirvine@westwimmera.vic.gov.au

Dear Edwin,

Edenhope Flood Investigation

Please see the attached Edenhope Flood Investigation Flood Intelligence Report and Municipal Flood Emergency Plan (MFEP) Documentation. The flood intelligence information within this report is presented in a format consistent with the Victoria State Emergency Service MFEP template and the information in this report should be used to update the West Wimmera Shire Council MFEP. The information within this report should be used prior to and during future floods events to inform emergency response actions.

If you have any questions regarding this report, please do not hesitate to contact me.

Yours sincerely

Ben Hughes
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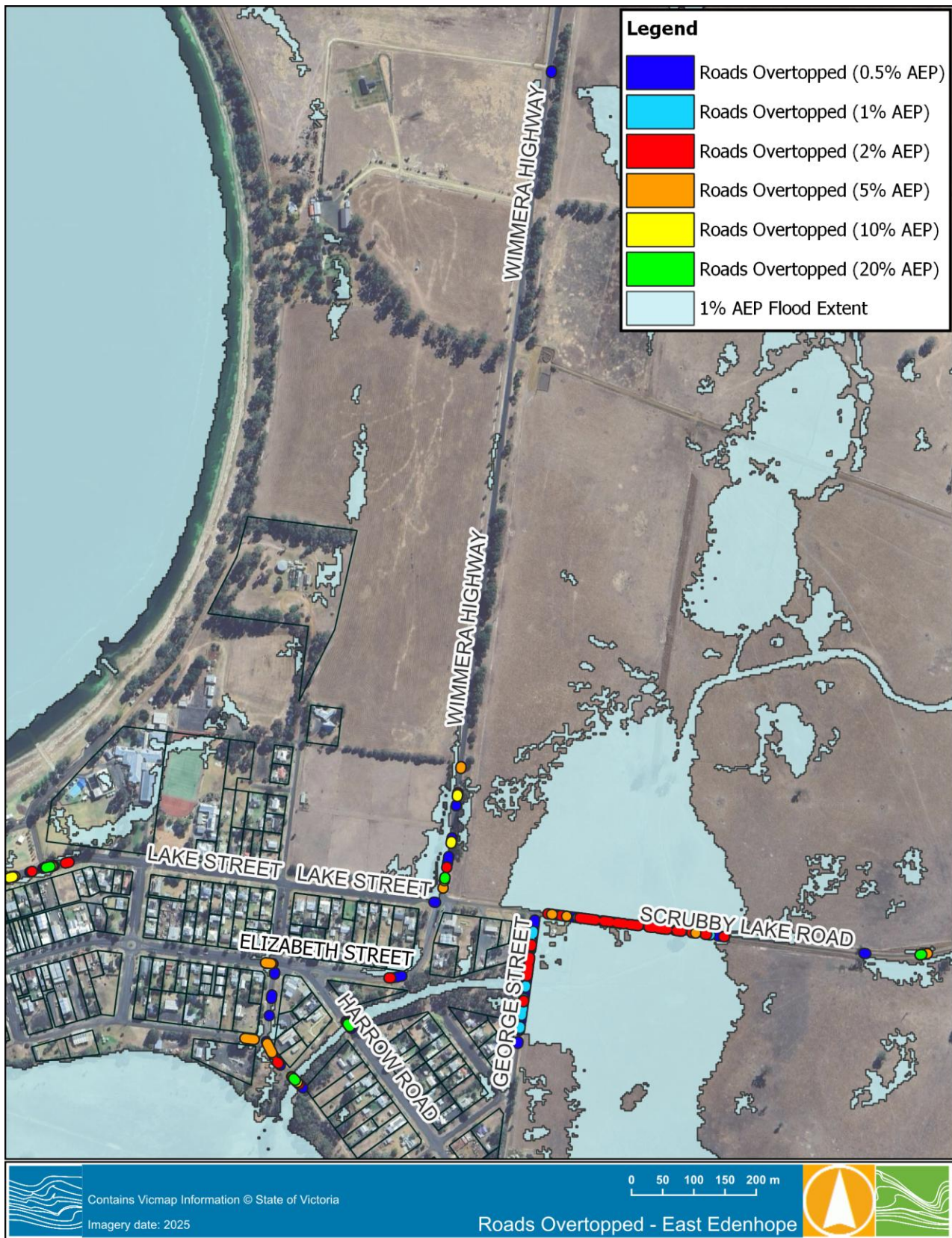
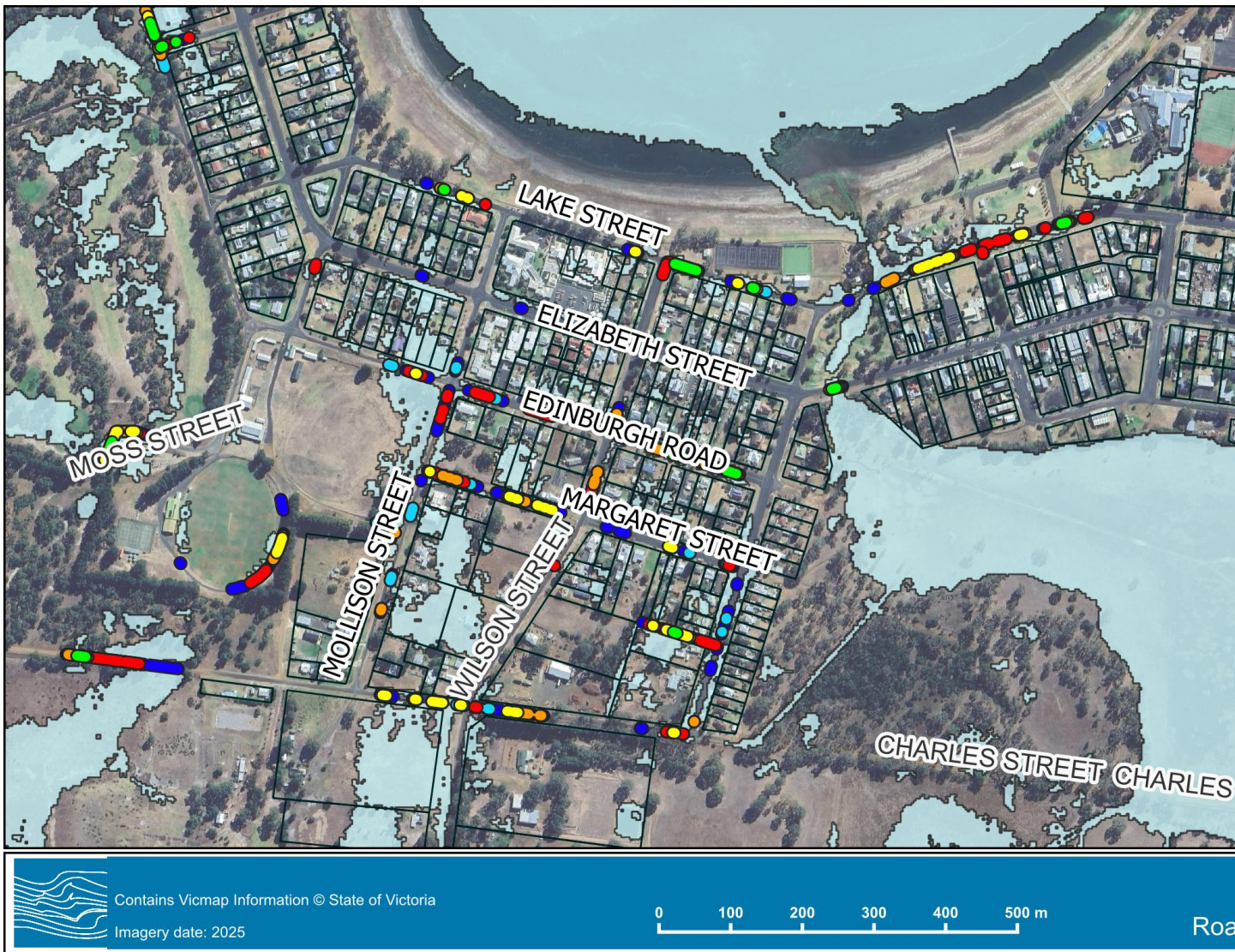


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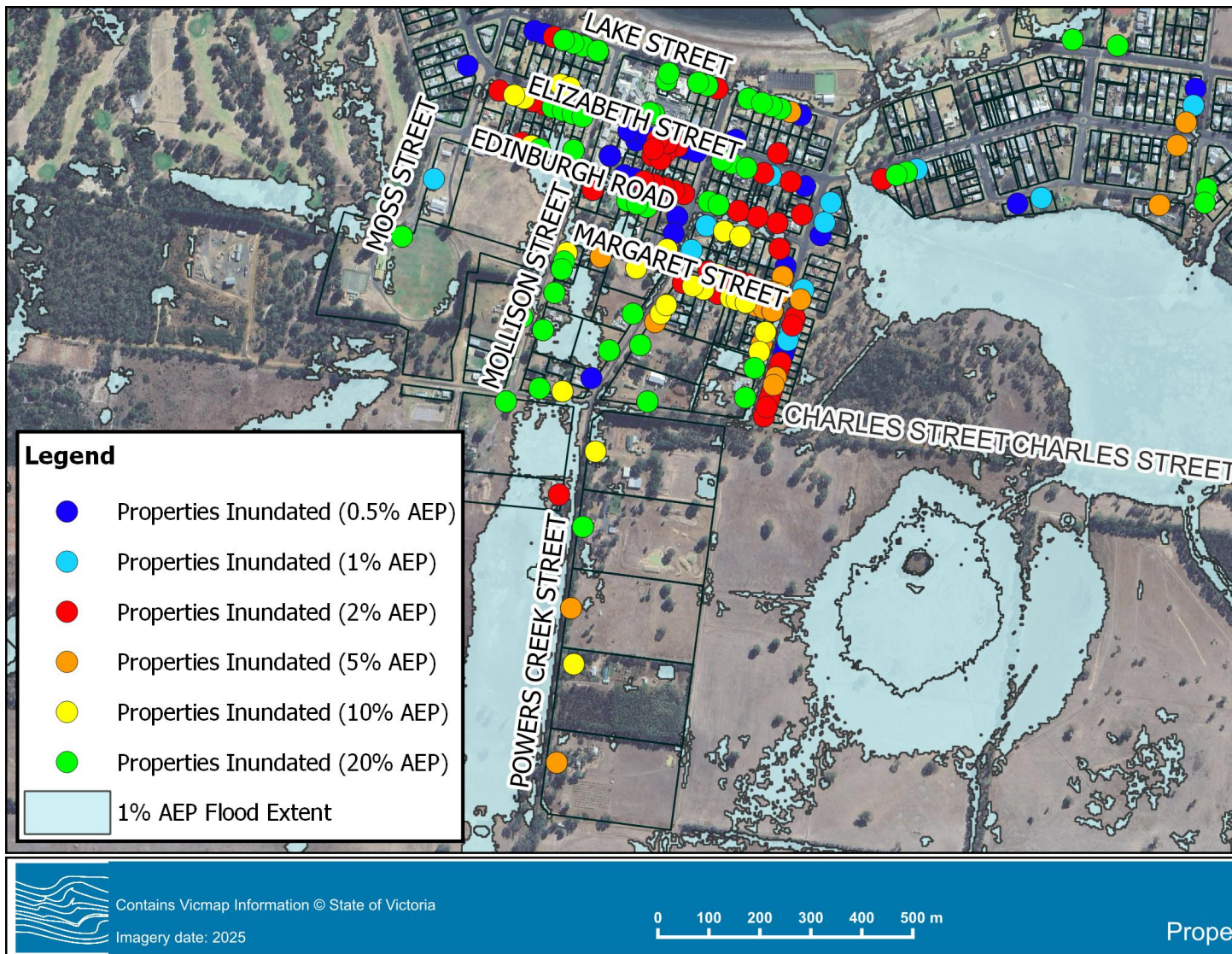


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1 INTRODUCTION

Water Technology was commissioned by West Wimmera Shire Council to undertake the Edenhope Flood Investigation. Edenhope is within the West Wimmera Shire Council municipality, located in Victoria's Wimmera region approximately 100 km southwest of Horsham. Edenhope is also within the Wimmera Catchment Management Authority (CMA) management area and the Millicent Coast drainage basin. Edenhope has a population of around 1,000 residents, located on the banks of Lake Wallace.

Edenhope is known to be prone to stormwater flood events, with events recorded in 1971, 1973, 1975, 1981, 1991, 1993, 2011, 2016 and 2022. Edenhope is at risk from overland flow from a series of local undefined waterways and wetlands located to the southeast.

There was no flood study for Edenhope prior to the Edenhope Flood Investigation, and prior to its completion flood risk information was based on compartmental information from council, SES and the Wimmera Wetland Hydrology Investigation, completed by Water Technology in 2019.

This study has produced reliable flood intelligence for use in emergency management situations and assessed the current township flood impact/exposure in terms of annual average damages caused by flooding. It has also produced planning scheme overlays for inclusion in the West Wimmera Shire Council planning scheme.

This report is one of a series documenting the outcomes of the Edenhope Flood Investigation. Each reporting stage is shown below:

- R01 – Data Collation, Model Development and Calibration Report.
- R02A – Design Modelling Report.
- **R03A – Flood Intelligence Report & Municipal Flood Emergency Plan (MFEP) Documentation – This Report.**
- R04A – Final Summary Report.

Note: Version A indicates Edenhope and version B indicates Apsley.

1.1 Study Area

Edenhope is located within western Victoria. Its location with respect to western Victoria is shown in Figure 1-1, with the study area for Edenhope in Figure 1-2.

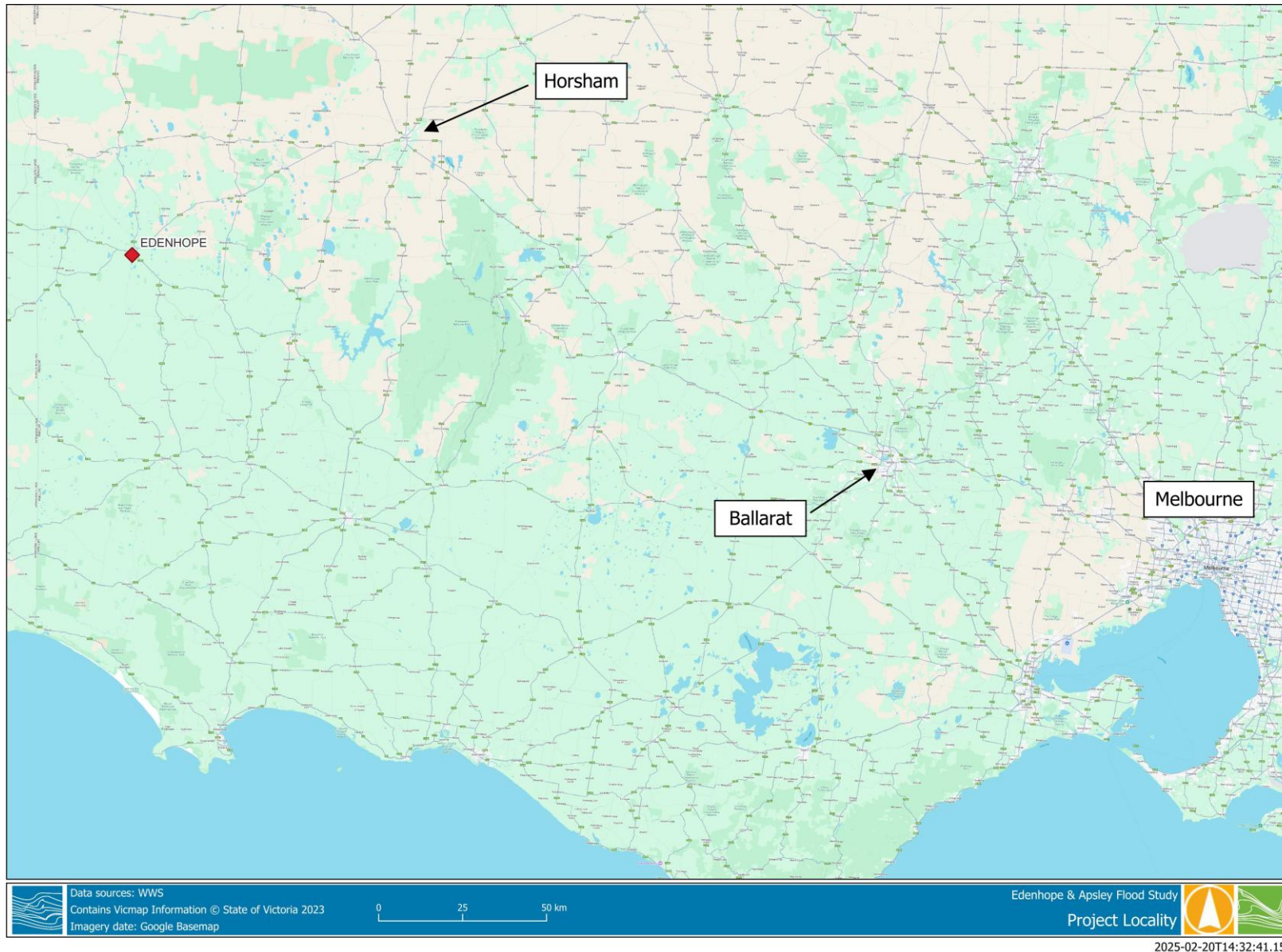


Figure 1-1 Edenhope with respect to western Victoria



Figure 1-2 Edenhope Study Area



2 GENERAL CATCHMENT AND FLOOD INFORMATION

2.1 Rainfall and Streamflow Gauge Monitoring Network

There are no streamflow gauges currently available within the study area or adjoining catchments. Inundation in Edenhope is also primarily driven by stormwater, rather than waterway flooding. As such, in predicting the likely magnitude of flooding through the township, the real time rainfall gauge network and rainfall forecasts are more useful than an upstream streamflow gauge. The nature of the flooding in Edenhope is such that short duration storm events (e.g. 6-12 hrs) are the likely to cause flooding and are considered to be “flash flooding” type events. Therefore, the warning time is too short for monitoring of streamflow to be of any use as a means of issuing early flood warning.

Daily gauges used in this investigation are outlined in Table 2-1 and Figure 2-1, with only Edenhope Airport (bolded) recording sub-daily information.

Table 2-1 Daily rainfall station information

Station Name & No.	Dist. From Apsley	Dist. From Edenhope	Start	End
Apsley Post Office, 079071	0.6 km	19.9 km	1953	Open
Apsley, 079001	3.4 km	17.3 km	1883	1947
Edenhope Airport, 079099	13.1 km	2.9 km	2005	Open
Edenhope Elizabeth Street, 079011	16.6 km	1.0 km	1890	Open
Benayeo, 079083	13.1 km	31.1 km	1972	Open
Patyah, 079107	22.9 km	25.3 km	1998	Open
Poolaijelo, 090164	23.5	24.8 km	1974	Open
Karnak (Rosedale), 079025	37.4	25.2 km	1890	2014
Harrow (Pine Hills), 079021	44.5	30.1 km	1884	2011

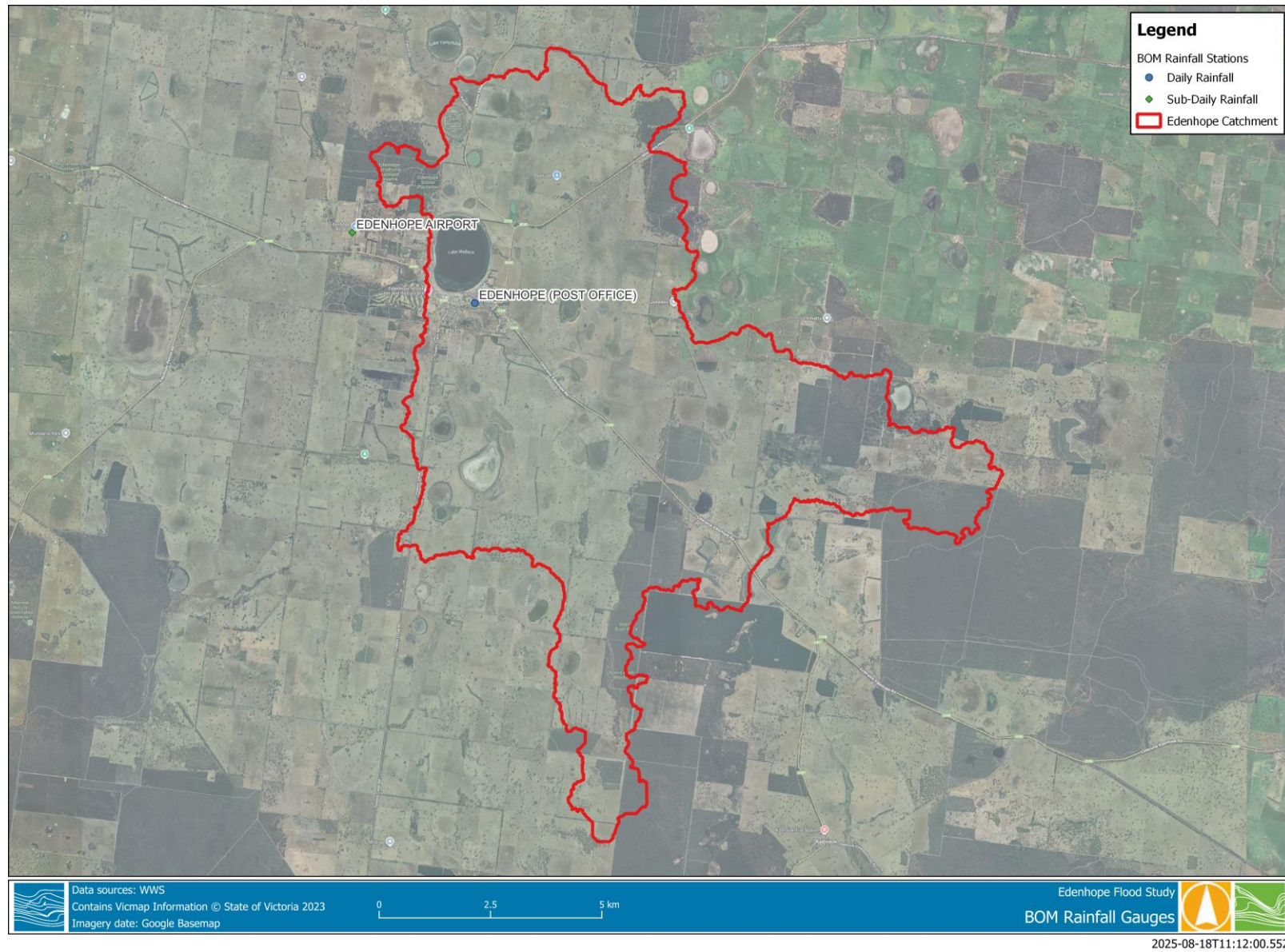


Figure 2-1 Rainfall Gauges Relevant to Edenhope and Apsley



2.2 Historic Floods

As mentioned in Section Figure 2-1, there are no stream gauges located within the Edenhope catchment. As such, historic flood events have been identified based upon local rainfall gauges, Lake Wallace water level records and consultation with the community.

Rainfall records for Edenhope are provided in Table 2-2. This demonstrates Edenhope witnessed its most significant recorded rainfall event in November 1970. However, it is noted that the impact of the 1970 event is unknown. Most recently, significant rainfall events have occurred in 2007 and 2010.

Table 2-2 Edenhope Rainfall Records

Event Rank	Date of Rainfall	Gauge	Total (mm)
1	16/11/1970	Edenhope Elizabeth Street, 079011	100.6
2	9/06/1980		88.0
3	6/03/1910		81.8
4	21/04/1980		77.0
5	27/10/1973		73.7
6	18/04/1938		72.4
7	14/01/1974		69.0
8	22/01/2007		67.8
9	16/03/1946		66.5
10	10/04/1978		66.0
11	5/06/1988		64.8
12	19/01/1946		63.0
13	8/12/2010		61.4
14	14/01/2010		61.4

2.3 Description of Major Waterways and Overland Flow Paths

As detailed in Section 1.1, Edenhope is at risk from overland flooding from a series of local undefined waterways and wetlands located to the southeast.

These overland flows originate in the southeastern region of the catchment, pass through the Edenhope township and discharge into Lake Wallace.

The Edenhope catchment contains multiple depressions creating a series of swamps, wetlands and lakes, all of which provide significant catchment storage. These wetlands are part of the South West Wimmera Wetland System. The South West Wimmera Wetland System and adjacent Natimuk-Douglas Saline Wetland System contain Seventy-five percent of the Wimmera region's wetlands, comprising more than 2,000 individual wetlands. Many of these depressions are ephemeral, only experiencing pooling water in periods of prolonged rainfall. The complex connectivity and water levels within them at the beginning of a storm event influence flood behaviour within the township.



3 TYPICAL FLOOD PEAK TRAVEL TIMES

Definitive information on the time it takes for flash flooding (i.e. resulting from heavy rainfall associated with severe weather or thunderstorm activity) to develop (i.e. to arrive at a location) following the start of heavy rain, and the time it takes for the maximum water depth/extent to be reached is not available. **However, the timing of inundation for the bulk of Edenhope is likely to be short: less than 60 minutes. The timing of inundation post rainfall along the largest flow path into Lake Wallace, via Back Swamp, is longer. This generally requires sustained rainfall.**

The time it takes for rainfall associated with severe weather or thunderstorm activity to develop into runoff and streamflow is highly dependent on catchment antecedent conditions (dryness). The lack of geographical spread of pluviographs within the catchment increases the difficulty in estimating rainfall-runoff response times. However, the sub-daily rainfall stations located close to the catchment, as shown in Figure 2-1, should be monitored as an indicator to direct flood response activities.

The speed a flood travels along a waterway is largely dependent on antecedent conditions and the magnitude of the flood. A flood on a 'dry' watercourse will generally travel more slowly than a flood on a 'wet' watercourse (e.g. the first flood after a dry period will travel more slowly than the second flood in a series of floods).

In large floods, often water levels will rise reasonably quickly initially as it travels through the channel, with the peak coming later as the floodplain flow travels through the catchment a little slower. Hence a range of factors, including recent flood history, soil moisture and forecast weather conditions all need to be considered when using the following information to direct flood response activities.

The reality that a community at risk can be inundated before the peak of the flood should not be overlooked. In the past, efforts have concentrated on estimating and forecasting the time of the peak, however, this can sometimes be detrimental. Messaging should focus on the expected extent and timing of inundation with respect to upstream areas and the broader floodplain, warning can focus on rainfall monitoring and forecasting, ensuring the prediction of the likelihood of a flood.

Table 3-1 shows the typical travel times along the overland flow paths into Lake Wallace. The rainfall temporal pattern and the storm duration or the combination of both can be the cause of varying flooding depths and timing at the Edenhope township driven by overland flows.

Table 3-1 Timing of Peak Flow

From	To	Typical travel time	Comments	Duration of inundation
North-Eastern Catchment				
Start of rainfall (catchment)	Start of inundation in Edenhope	1 hour	Timing depends on rainfall pattern	Generally <40 hours
Southern catchment				
Start of rainfall (catchment)	Start of inundation in Edenhope	1 hour	Timing depends on rainfall pattern	Generally <20 hours
Lake Wallace				
Start of rainfall (catchment)	Start of Water Rising in Lake Wallace	1 hour	Timing depends on rainfall pattern	Generally <20 hours



4 MUNICIPAL FLOOD EMERGENCY PLAN APPENDIX INSERT

4.1 Flood Warning

A total flood warning system concept includes many elements, including flood prediction; interpretation of the flood impact; messaging and communication of the flood risk; generating a timely response from the community and timely reviews of the system.

The Edenhope catchment is relatively small and inundation of private property and infrastructure is mainly driven by overland flow, hence, the major flood risk is considered to be flash flooding. There are no streamflow gauges in the catchment, which means the flood prediction element of the total flood warning system relies on rainfall forecasts and rainfall observations.

The Bureau of Meteorology (BoM) will provide Severe Weather Warnings and Flood Watches, forecasting likely conditions. Rainfall gauges available in the Edenhope area are shown in Figure 2-1. Rainfall gauges are available in daily or hourly and sub hourly intervals.

The forecast rainfall, made available via the BoM, and the above mentioned sub-daily rainfall gauges along with gridded radar rainfall could be used in combination with an early flood prediction tool to predict possible flash flooding.

4.1.1 Flood/No Flood Tool

The Intensity Frequency Duration (IFD) design rainfall data used in the development of the Edenhope Flood Study can be utilised along with forecast and observed rainfall data as an early warning tool. The data can be used to identify the likely magnitude of flooding and resulting consequences based on the predicted rainfall depths of an event.

To use the table, plot the total rainfall depth obtained against elapsed time since the start of the event. Exclude very light rain or drizzle when determining the event start point. Plotting of rainfall data should occur periodically as the event progresses. The likelihood and potential severity of flooding can be estimated by checking the rainfall and adopting the nearest curve AEP event as being likely. The table displays intensity-frequency-duration data developed using statistical analysis of a large number of sub daily rainfall gauges, the closest to Edenhope being Edenhope Airport (079099). The Flood/No Flood tool can be used in combination with these gauges and/or rainfall observed within the Edenhope catchment.

It may be appropriate to step up or down a level depending on catchment antecedent conditions, for example if the rainfall for a 12-hour duration indicates a 5% AEP event will occur, but the catchment is dry with most farm dams empty, it may be appropriate to “step down” to a 10% AEP event or even lower. Similarly, a very wet catchment will produce a greater response and may justify a “step up” in estimated AEP for response purposes.

The tool can provide a quick reference estimate as to whether there will be a flood and how severe that flood may be, however it must be stressed that the tool cannot provide accurate flood predictions and should not be relied upon entirely. Should life or property be in danger, a cautious approach should be taken.

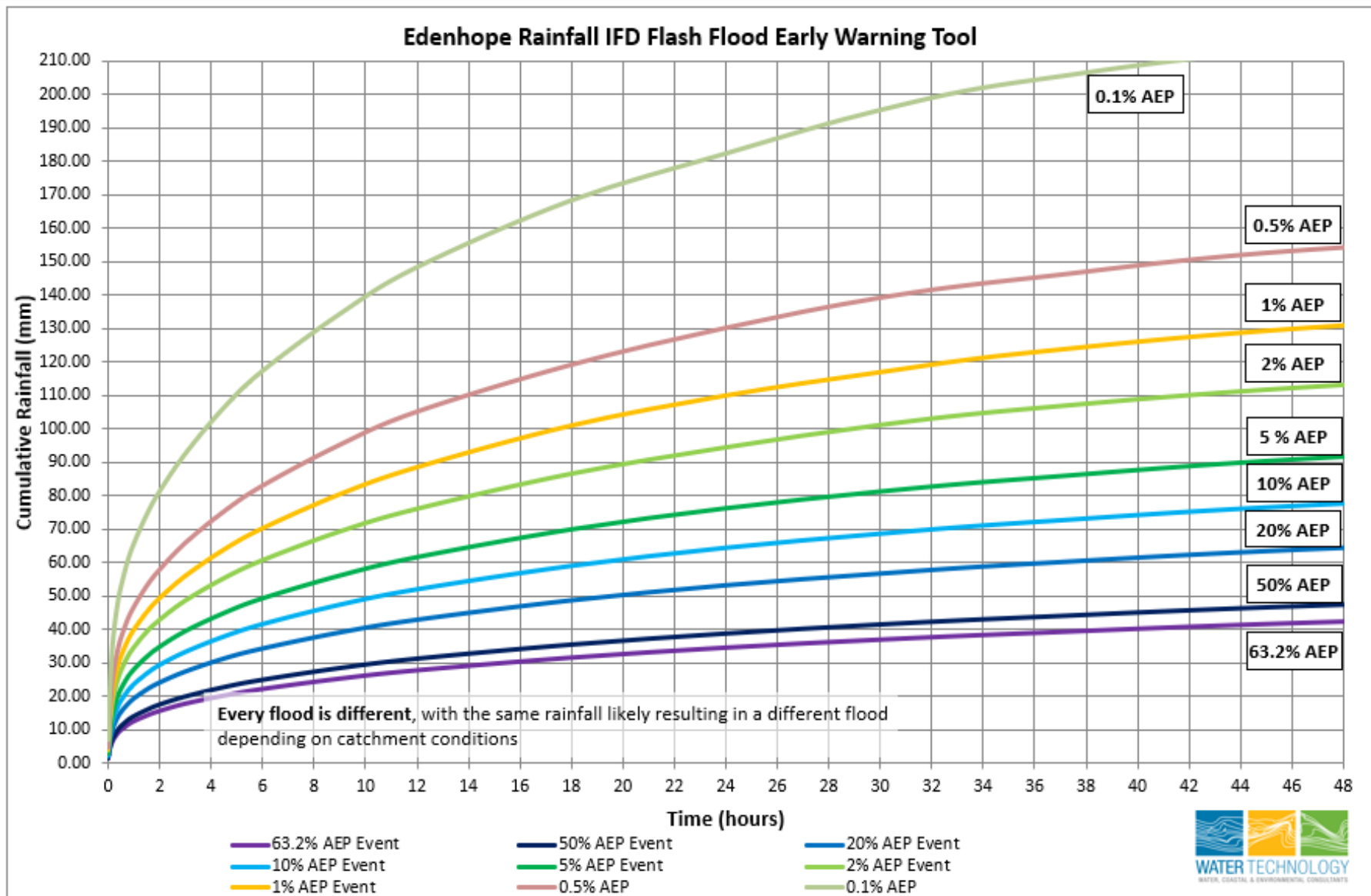


Figure 4-1 Edenhope Flood/No Flood Tool



4.2 Overview of Flooding Consequences

4.2.1 Warning Time

Inundation in the Edenhope township, impacting properties and infrastructure, is caused by overland flow from the southeastern region of the catchment. Due to the nature of the critical storm within that catchment, the warning time of the flash flooding at Edenhope is limited to less than an hour.

4.2.2 Areas Affected

The flood extent map at Edenhope and the section of this appendix “Flood Impacts and Required Actions”, provide guidance on where flooding is likely to occur within the township of Edenhope.

4.2.3 Roads Affected

The main access roads to and from the township of Edenhope include the Wimmera Highway, Kaniva-Edenhope Road, Harrow Road, Elizabeth Street and Lake Street.

Table 4-1 outlines the roads which are inundated by flooding in events ranging from the 20% AEP up to the 0.1% AEP event, with the location of these roads shown in Figure 4-2 to Figure 4-4.

Table 4-2 outlines the impassable roads where maximum depths exceed 0.3 m and become unsafe for vehicles. These impassable roads are shown separately in Figure 4-5 to Figure 4-7 with the comparison to the 1% AEP flood extent.

Table 4-1 Road Inundation Depth for Each AEP (m)

Roads inundated	Design Flood Depths (m)					
	20% AEP	10% AEP	5% AEP	2% AEP	1% AEP	0.5% AEP
ABIKHAIR STREET			0.14	0.15	0.16	0.16
ANNE STREET				0.13	0.13	0.14
ANZAC AVENUE				0.13	0.13	0.14
BATHS ROAD		0.07	0.09	0.13	0.13	0.15
BOGAROO TRACK		0.15	0.21	0.25	0.25	0.30
CHARLES STREET	0.19	0.39	0.42	0.79	0.80	0.82
COLERAINE-EDENHOPE ROAD	0.11	0.20	0.25	0.30	0.30	0.35
DUNDAS STREET						0.16
EALES ROAD				0.08	0.08	0.12
EDINBURGH ROAD	0.24	0.25	0.27	0.30	0.33	0.37
ELIZABETH STREET	0.42	0.59	0.72	0.89	1.13	1.39
FINCHS ROAD				0.11	0.11	0.13
GEORGE STREET				0.32	0.77	0.84
GLENELG AVENUE	0.17	0.24	0.30	0.38	0.45	0.49
HARROW ROAD	0.58	0.64	0.69	0.78	0.86	1.16



	Design Flood Depths (m)					
HINKLEYS AND TANSEYS ROAD			0.12	0.27	0.32	0.47
HINKLEYS ROAD	0.19	0.45	0.59	0.66	0.66	0.70
JENNINGS ROAD	0.13	0.21	0.24	0.28	0.31	0.62
JIM RYANS ROAD	0.18	0.23	0.27	0.32	0.31	0.36
JOHNSONS EXT ROAD	0.10	0.24	0.38	0.46	0.46	0.51
JOHNSONS ROAD		0.20	0.23	0.26	0.26	0.29
KADNOOK STREET	0.31	0.40	0.46	0.53	0.60	0.65
KANIVA-EDENHOPE ROAD	0.22	0.23	0.27	0.30	0.31	0.38
LAIDLAW AVENUE	0.45	0.46	0.48	0.49	0.50	0.52
LAKE STREET	0.20	0.21	0.23	0.41	0.41	0.42
LANGFORD STREET	0.13	0.20	0.27	0.34	0.41	0.59
MACKENZIES ROAD	0.08	0.17	0.38	0.46	0.46	0.51
MACQUARIE STREET			0.27	0.31	0.32	0.35
MAGOR AND DONALDSONS ROAD		0.11	0.15	0.19	0.20	0.23
MARGARET STREET		0.21	0.23	0.28	0.30	0.34
MOLLISON STREET			0.08	0.25	0.26	0.31
MOORES ROAD		0.13	0.20	0.27	0.27	0.32
MOSS STREET	0.23	0.34	0.39	0.43	0.45	0.47
OLIVE GROVE ROAD	0.24	0.43	0.58	0.75	0.77	0.90
ORME STREET			0.17	0.24	0.24	0.28
PATRICIAS ROAD	0.08	0.12	0.15	0.19	0.19	0.24
PATYAH ROAD	0.12	0.25	0.30	0.34	0.34	0.44
POWERS CREEK ROAD	0.21	0.22	0.25	0.27	0.29	0.35
READERS ROAD	0.14	0.17	0.21	0.24	0.24	0.31
SCRUBBY LAKE ROAD	0.18	0.20	0.33	0.56	0.58	0.63
SIMS ROAD		0.09	0.10	0.12	0.12	0.15
SYDNEY ROAD	0.28	0.29	0.30	0.49	0.50	0.50
W RIDLERS ROAD						0.07
WANNON AVENUE	0.12	0.22	0.28	0.35	0.37	0.40
WILSON STREET			0.12	0.18	0.18	0.19
WIMMERA HIGHWAY	0.18	0.22	0.25	0.26	0.27	0.33
YALLAKAR STREET			0.10	0.20	0.21	0.25



Table 4-2 Impassable Roads Inundation Depth for Each AEP (m)

Roads inundated	Design Flood Depth (m)					
	20% AEP	10% AEP	5% AEP	2% AEP	1% AEP	0.5% AEP
CHARLES STREET		0.39	0.42	0.79	0.80	0.82
COLERAINE-EDENHOPE ROAD						0.35
EDINBURGH ROAD				0.30	0.33	0.37
ELIZABETH STREET	0.42	0.59	0.72	0.89	1.13	1.39
GEORGE STREET				0.32	0.77	0.84
GLENELG AVENUE				0.38	0.45	0.49
HARROW ROAD	0.58	0.64	0.69	0.78	0.86	1.16
HINKLEYS AND TANSEYS ROAD					0.32	0.47
HINKLEYS ROAD		0.45	0.59	0.66	0.66	0.70
JENNINGS ROAD					0.31	0.62
JIM RYANS ROAD				0.32	0.31	0.36
JOHNSONS EXT ROAD			0.38	0.46	0.46	0.51
KADNOOK STREET	0.31	0.40	0.46	0.53	0.60	0.65
KANIVA-EDENHOPE ROAD					0.31	0.38
LAIDLAW AVENUE	0.45	0.46	0.48	0.49	0.50	0.52
LAKE STREET				0.41	0.41	0.42
LANGFORD STREET				0.34	0.41	0.59
MACKENZIES ROAD			0.38	0.46	0.46	0.51
MACQUARIE STREET				0.31	0.32	0.35
MARGARET STREET						0.34
MOLLISON STREET						0.31
MOORES ROAD						0.32
MOSS STREET		0.34	0.39	0.43	0.45	0.47
OLIVE GROVE ROAD		0.43	0.58	0.75	0.77	0.90
PATYAH ROAD				0.34	0.34	0.44
POWERS CREEK ROAD						0.35
READERS ROAD						0.31
SCRUBBY LAKE ROAD			0.33	0.56	0.58	0.63
SYDNEY ROAD				0.49	0.50	0.50
WANNON AVENUE				0.35	0.37	0.40
WIMMERA HIGHWAY						0.33



4.2.4 Isolated Areas

Flooding across the Edenhope township in all AEP events modelled (0.5% AEP down to the 20% AEP) is relatively shallow and/or slow moving. Therefore, the risk of isolation due to extended periods of road inundation at properties is relatively minimal.

Ingress/egress to and from these properties is possible as shown in the modelling completed in this assessment.

4.2.5 Essential Infrastructure

Regions of Edenhope College and St Malachy's School are inundated in all AEP events (0.5% AEP down to the 20% AEP) which requires action to protect children.

4.2.6 Property Inundation

Property inundation has been assessed based on the maximum flooding across the entire property parcel for each AEP event. Properties that did not contain residences or building structures are not reported on in this assessment. Building floor levels with respect to flooding depths have not been considered in this assessment due to the nature of flooding generally being relatively shallow.

The 1% AEP flood extent and the properties flooded during the range of modelled design events are shown in Figure 4-8 to Figure 4-10, with particular focus on the Edenhope township.

Table 4-3 outlines the properties which have recorded flood depths across their parcels in each respective AEP event.

Flooding depths greater than 1.0 metres across a property parcel are highlighted in **red**.

Table 4-3 Property Flooded (metres)

Properties inundated	Design Flood Depth (m)					
	20% AEP	10% AEP	5% AEP	2% AEP	1% AEP	0.5% AEP
1 DUNDAS STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.14
1 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.06	0.06	0.07
1 ELIZABETH STREET EDENHOPE 3318	0.12	0.13	0.14	0.15	0.16	0.17
1 HARROW ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.19
1/1 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.10	0.08	0.10	0.12
1/121 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.07	0.07
1/123 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.12	0.06	0.08
1/2 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.11	0.14	0.15	0.17
1/35 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.10
10 DUNDAS STREET EDENHOPE 3318	0.21	0.23	0.25	0.27	0.28	0.30
10 GLOUCESTER STREET EDENHOPE 3318	0.00	0.08	0.11	0.08	0.09	0.10
10 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.00	0.13	0.13	0.14
10 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.12	0.33
101 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.05	0.05	0.07
103 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.11	0.11



	Design Flood Depth (m)					
103 LAKE STREET EDENHOPE 3318	0.09	0.10	0.11	0.12	0.12	0.14
104 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.05	0.05	0.07
105 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.12	0.12	0.13
105 LAKE STREET EDENHOPE 3318	0.07	0.09	0.09	0.11	0.11	0.12
107 LAKE STREET EDENHOPE 3318	0.00	0.00	0.12	0.12	0.13	0.14
109 ELIZABETH STREET EDENHOPE 3318	0.07	0.07	0.08	0.05	0.06	0.06
109 POWERS CREEK ROAD EDENHOPE 3318	0.00	0.14	0.19	0.26	0.31	0.39
11 EDINBURGH ROAD EDENHOPE 3318	0.00	0.09	0.10	0.11	0.11	0.12
11 MARGARET STREET EDENHOPE 3318	0.00	0.07	0.08	0.09	0.09	0.07
111 ELIZABETH STREET EDENHOPE 3318	0.11	0.12	0.13	0.14	0.14	0.15
113 ELIZABETH STREET EDENHOPE 3318	0.15	0.16	0.17	0.18	0.18	0.19
114 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.06
115 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.08
117 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.13
119 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.08	0.09	0.14
12 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.10	0.10	0.11
12 HARROW ROAD EDENHOPE 3318	0.00	0.00	0.00	0.06	0.06	0.07
12 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.07	0.08
12 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.19	0.45
12 SCRUBBY LAKE ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.08	0.24
12 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.07	0.13	0.07
12-20 CHARLES STREET EDENHOPE 3318	0.10	0.11	0.11	0.12	0.13	0.18
121 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.07	0.07
121 LAKE STREET EDENHOPE 3318	0.10	0.12	0.12	0.14	0.14	0.15
123 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.12	0.06	0.08
124-134 ELIZABETH STREET EDENHOPE 3318	0.11	0.12	0.13	0.14	0.15	0.17
125 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.10
125 LAKE STREET EDENHOPE 3318	0.14	0.16	0.17	0.18	0.18	0.20
125 POWERS CREEK ROAD EDENHOPE 3318	0.00	0.00	0.08	0.15	0.15	0.17
127 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.11
127 LAKE STREET EDENHOPE 3318	0.14	0.16	0.17	0.18	0.18	0.20
129 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.12
129 LAKE STREET EDENHOPE 3318	0.11	0.13	0.13	0.07	0.07	0.10
13 GEORGE STREET EDENHOPE 3318	0.00	0.11	0.13	0.16	0.16	0.18
13 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.08	0.09
13 MOLLISON STREET EDENHOPE 3318	0.12	0.16	0.19	0.23	0.24	0.30
13 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.11	0.11	0.12



	Design Flood Depth (m)					
131 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.07	0.08
133 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.06
135 ELIZABETH STREET EDENHOPE 3318	0.06	0.08	0.09	0.10	0.10	0.13
135 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.06
137 ELIZABETH STREET EDENHOPE 3318	0.14	0.18	0.22	0.25	0.26	0.32
139 ELIZABETH STREET EDENHOPE 3318	0.21	0.23	0.27	0.30	0.31	0.37
14 HARROW ROAD EDENHOPE 3318	0.00	0.00	0.00	0.16	0.16	0.17
14 MARGARET STREET EDENHOPE 3318	0.00	0.07	0.08	0.09	0.09	0.10
14 WANNON AVENUE EDENHOPE 3318	0.10	0.13	0.19	0.27	0.33	0.38
14 WINDSOR AVENUE EDENHOPE 3318	0.00	0.08	0.10	0.11	0.12	0.13
140 ELIZABETH STREET EDENHOPE 3318	0.00	0.07	0.09	0.11	0.12	0.14
141 ELIZABETH STREET EDENHOPE 3318	0.09	0.10	0.11	0.12	0.13	0.16
142 ELIZABETH STREET EDENHOPE 3318	0.00	0.13	0.15	0.17	0.17	0.21
143 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.06	0.11
145 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.11	0.11	0.12
145 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09
147 ELIZABETH STREET EDENHOPE 3318	0.00	0.12	0.13	0.14	0.14	0.15
147 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.10
149 ELIZABETH STREET EDENHOPE 3318	0.00	0.14	0.14	0.16	0.16	0.16
149 LAKE STREET EDENHOPE 3318	0.12	0.14	0.14	0.16	0.16	0.17
15 EDINBURGH ROAD EDENHOPE 3318	0.00	0.10	0.11	0.13	0.13	0.14
15 KADNOOK STREET EDENHOPE 3318	0.05	0.10	0.11	0.19	0.25	0.30
15 MARGARET STREET EDENHOPE 3318	0.00	0.10	0.09	0.10	0.11	0.12
15 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.06
15-31 YALLAKAR STREET EDENHOPE 3318	0.16	0.18	0.70	0.84	0.93	1.01
151 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.54	0.54	0.55
151 LAKE STREET EDENHOPE 3318	0.12	0.13	0.14	0.16	0.16	0.17
153 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.05	0.05	0.07
155 LAKE STREET EDENHOPE 3318	0.00	0.00	0.10	0.07	0.07	0.09
157 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.12
16 ANDREW STREET EDENHOPE 3318	0.00	0.00	0.14	0.16	0.16	0.17
16 EDINBURGH ROAD EDENHOPE 3318	0.08	0.09	0.10	0.11	0.11	0.12
16 HARROW ROAD EDENHOPE 3318	0.00	0.00	0.00	0.09	0.09	0.10
16 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.00	0.08	0.13	0.13
16 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.21
162-164 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.14
163-165 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.10	0.10	0.11



	Design Flood Depth (m)					
167 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.07	0.08
169 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09
17 MARGARET STREET EDENHOPE 3318	0.00	0.08	0.09	0.10	0.10	0.11
17 WILSON STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.06
17-19 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.11	0.12	0.12	0.13
171 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.08	0.09	0.10
171 LAKE STREET EDENHOPE 3318	0.00	0.00	0.15	0.20	0.24	0.29
173 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.13	0.14	0.15
173 LAKE STREET EDENHOPE 3318	0.00	0.00	0.19	0.25	0.29	0.34
177 ELIZABETH STREET EDENHOPE 3318	0.09	0.10	0.11	0.12	0.13	0.14
179 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.08	0.08	0.08
18 EDINBURGH ROAD EDENHOPE 3318	0.08	0.09	0.10	0.11	0.11	0.12
18 WANNON AVENUE EDENHOPE 3318	0.12	0.19	0.25	0.32	0.39	0.44
181 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.08
183 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.06
185 ELIZABETH STREET EDENHOPE 3318	0.00	0.07	0.06	0.08	0.09	0.10
185 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.08
189 ELIZABETH STREET EDENHOPE 3318	0.07	0.08	0.12	0.14	0.15	0.16
19 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.05	0.06
19 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.00	0.08	0.08	0.09
19 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.10
191 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.12	0.13	0.15
191 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.07	0.08
191 POWERS CREEK ROAD EDENHOPE 3318	0.18	0.29	0.37	0.48	0.59	0.68
193 ELIZABETH STREET EDENHOPE 3318	0.05	0.07	0.07	0.12	0.06	0.07
195 ELIZABETH STREET EDENHOPE 3318	0.15	0.17	0.18	0.21	0.23	0.26
195 LAKE STREET EDENHOPE 3318	0.00	0.00	0.10	0.10	0.11	0.12
1A GEORGE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.14	0.30
2 CHARLES STREET EDENHOPE 3318	0.23	0.26	0.28	0.30	0.31	0.32
2 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.11	0.14	0.15	0.17
2/1 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.10	0.08	0.10	0.12
2/121 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.12
2/2 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.11	0.14	0.15	0.17
2/35 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.10
20 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.11	0.12	0.14
20 HARROW ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.11
20 MOSS STREET EDENHOPE 3318	0.09	0.17	0.21	0.25	0.27	0.29



	Design Flood Depth (m)					
200 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.10	0.15
201 ELIZABETH STREET EDENHOPE 3318	0.28	0.29	0.33	0.37	0.39	0.41
201 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.08	0.10
201 POWERS CREEK ROAD EDENHOPE 3318	0.00	0.09	0.11	0.16	0.16	0.17
205 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.05	0.06
206 ELIZABETH STREET EDENHOPE 3318	0.26	0.29	0.30	0.31	0.31	0.32
207 LAKE STREET EDENHOPE 3318	0.00	0.00	0.13	0.14	0.14	0.15
208-210 ELIZABETH STREET EDENHOPE 3318	0.00	0.14	0.15	0.16	0.17	0.18
209 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.10	0.15
209 LAKE STREET EDENHOPE 3318	0.00	0.00	0.09	0.10	0.11	0.12
21 BATHS ROAD EDENHOPE 3318	0.11	0.42	0.66	0.86	0.87	0.92
21 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.07	0.09	0.11
21-29 MARGARET STREET EDENHOPE 3318	0.00	0.10	0.11	0.13	0.14	0.15
211 ELIZABETH STREET EDENHOPE 3318	0.00	0.08	0.08	0.13	0.22	0.28
211 LAKE STREET EDENHOPE 3318	0.00	0.06	0.08	0.09	0.09	0.10
213 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.17	0.23
215 LAKE STREET EDENHOPE 3318	0.27	0.48	0.62	0.76	0.82	0.85
217 LAKE STREET EDENHOPE 3318	0.40	0.61	0.75	0.89	0.95	0.97
217 POWERS CREEK ROAD EDENHOPE 3318	0.32	0.48	0.76	0.88	0.89	1.00
219 LAKE STREET EDENHOPE 3318	0.00	0.13	0.15	0.17	0.18	0.19
22 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.12	0.12	0.14
22 LAIDLAW AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.06	0.07	0.08
22 WANNON AVENUE EDENHOPE 3318	0.07	0.09	0.10	0.11	0.15	0.19
22 WILSON STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.09	0.09
22-24 HARROW ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.16	0.17
226 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.06	0.07
23 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.09	0.10	0.10	0.11
23 ORME STREET EDENHOPE 3318	0.00	0.00	0.06	0.08	0.10	0.12
19-23 WILSON STREET EDENHOPE 3318	0.00	0.07	0.08	0.13	0.14	0.15
230 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.09	0.09
232 ELIZABETH STREET EDENHOPE 3318	0.20	0.22	0.23	0.24	0.24	0.26
234 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.10	0.13
237 ELIZABETH STREET EDENHOPE 3318	0.00	0.14	0.17	0.19	0.37	0.44
24 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.15	0.16	0.17
24 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.09	0.10	0.11	0.12
24 LAIDLAW AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.06	0.05	0.06
24 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.05	0.09



	Design Flood Depth (m)					
24 WANNON AVENUE EDENHOPE 3318	0.13	0.14	0.15	0.17	0.20	0.25
245 LAKE STREET EDENHOPE 3318	0.40	1.08	1.13	1.16	1.16	1.19
247 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.05
25 EDINBURGH ROAD EDENHOPE 3318	0.09	0.13	0.16	0.18	0.19	0.20
25-27 KADNOOK STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.06	0.08
26 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.08	0.09	0.10
26 LAIDLAW AVENUE EDENHOPE 3318	0.14	0.15	0.16	0.18	0.18	0.19
26 MOLLISON STREET EDENHOPE 3318	0.00	0.12	0.16	0.21	0.22	0.26
26 ORME STREET EDENHOPE 3318	0.00	0.00	0.10	0.12	0.13	0.16
26 WANNON AVENUE EDENHOPE 3318	0.09	0.10	0.11	0.13	0.16	0.21
268 WIMMERA HIGHWAY EDENHOPE 3318	0.17	0.27	0.48	0.69	0.82	0.92
27 EDINBURGH ROAD EDENHOPE 3318	0.23	0.29	0.31	0.34	0.35	0.36
28 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.13	0.13	0.14
28 LAIDLAW AVENUE EDENHOPE 3318	0.11	0.12	0.13	0.16	0.16	0.18
28 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.06	0.09
28 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.06	0.07	0.07
29 EDINBURGH ROAD EDENHOPE 3318	0.16	0.23	0.25	0.28	0.28	0.30
29 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.00	0.05	0.06
3 DUNDAS STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.11	0.12
3 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.07
3 GEORGE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09
3 LAKE STREET EDENHOPE 3318	0.17	0.20	0.24	0.30	0.34	0.40
3 LANGFORD STREET EDENHOPE 3318	0.43	0.62	0.75	0.94	1.18	1.44
3 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.06	0.07	0.07	0.08
3 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.08	0.08	0.08
3 WINDSOR AVENUE EDENHOPE 3318	0.16	0.17	0.18	0.18	0.19	0.19
3 YALLAKAR STREET EDENHOPE 3318	0.10	0.12	0.14	0.19	0.20	0.24
3/1 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.10	0.08	0.10	0.12
3/121 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.07	0.07
3/123 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.12	0.06	0.08
3/35 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.10
30 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.12
30 LAIDLAW AVENUE EDENHOPE 3318	0.12	0.14	0.15	0.16	0.17	0.19
30 MOLLISON STREET EDENHOPE 3318	0.10	0.13	0.15	0.17	0.18	0.20
30 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.07	0.11
30 WILSON STREET EDENHOPE 3318	0.00	0.13	0.14	0.15	0.16	0.16
31-33 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.06	0.08	0.09	0.11



	Design Flood Depth (m)					
311 WIMMERA HIGHWAY EDENHOPE 3318	0.19	0.48	0.68	0.85	1.00	1.11
314 POWERS CREEK ROAD EDENHOPE 3318	0.38	0.55	0.61	0.68	0.74	1.03
317 POWERS CREEK ROAD EDENHOPE 3318	0.00	0.09	0.11	0.12	0.12	0.14
319 POWERS CREEK ROAD EDENHOPE 3318	0.19	0.52	0.58	0.64	0.62	0.69
32 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.12
32 MOLLISON STREET EDENHOPE 3318	0.15	0.18	0.20	0.23	0.24	0.25
32 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.10	0.11
32 WILSON STREET EDENHOPE 3318	0.00	0.13	0.15	0.16	0.17	0.17
33-35 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.15	0.16	0.18	0.19	0.20	0.21
33-35 ORME STREET EDENHOPE 3318	0.00	0.15	0.17	0.19	0.20	0.21
34 LAKE STREET EDENHOPE 3318	0.10	0.11	0.15	0.15	0.16	0.18
34 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.09	0.08
34 SULLIVANS ROAD EDENHOPE 3318	0.21	0.35	0.42	0.45	0.45	0.48
34 WANNON AVENUE EDENHOPE 3318	0.07	0.08	0.09	0.13	0.13	0.08
34 WILSON STREET EDENHOPE 3318	0.00	0.00	0.14	0.15	0.16	0.16
35 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.10
35 RIFLE RANGE ROAD EDENHOPE 3318	0.00	0.00	0.32	0.37	0.38	0.40
36 LAIDLAW AVENUE EDENHOPE 3318	0.22	0.24	0.25	0.27	0.28	0.29
36 MOLLISON STREET EDENHOPE 3318	0.15	0.18	0.21	0.23	0.24	0.26
36 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09
36 WANNON AVENUE EDENHOPE 3318	0.12	0.13	0.16	0.21	0.21	0.26
36-42 WILSON STREET EDENHOPE 3318	0.17	0.20	0.22	0.24	0.24	0.26
37 MOLLISON STREET EDENHOPE 3318	0.08	0.09	0.10	0.12	0.12	0.13
37 ORME STREET EDENHOPE 3318	0.00	0.00	0.06	0.13	0.14	0.15
37 WANNON AVENUE EDENHOPE 3318	0.10	0.12	0.13	0.16	0.17	0.18
37 WILSON STREET EDENHOPE 3318	0.07	0.14	0.14	0.15	0.16	0.17
37-39 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.12	0.13	0.14	0.16	0.16	0.17
38 LAIDLAW AVENUE EDENHOPE 3318	0.19	0.21	0.23	0.25	0.26	0.28
38 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.11
39 ORME STREET EDENHOPE 3318	0.00	0.06	0.10	0.13	0.13	0.16
39 WILSON STREET EDENHOPE 3318	0.17	0.21	0.23	0.25	0.26	0.28
397 SCRUBBY LAKE ROAD EDENHOPE 3318	0.20	0.33	0.44	0.62	0.68	0.85
4 CHARLES STREET EDENHOPE 3318	0.00	0.05	0.07	0.10	0.11	0.13
4 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.12	0.12	0.13
4 ELIZABETH STREET EDENHOPE 3318	0.17	0.20	0.24	0.30	0.34	0.40
4 MOLLISON STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09



	Design Flood Depth (m)					
4 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09
4/35 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.10
40 LAIDLAW AVENUE EDENHOPE 3318	0.15	0.17	0.19	0.21	0.22	0.23
40 LANGFORD STREET EDENHOPE 3318	0.06	0.07	0.08	0.09	0.10	0.11
40 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.09	0.09	0.12
40-48 LAKE STREET EDENHOPE 3318	0.54	0.63	0.65	0.67	0.67	0.69
41 ORME STREET EDENHOPE 3318	0.16	0.20	0.23	0.26	0.26	0.30
41-43 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.12	0.13	0.14	0.16	0.16	0.17
42 LAIDLAW AVENUE EDENHOPE 3318	0.22	0.23	0.25	0.28	0.29	0.30
42 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.10	0.11	0.15
421 SCRUBBY LAKE ROAD EDENHOPE 3318	0.00	0.11	0.12	0.15	0.14	0.19
44 LAIDLAW AVENUE EDENHOPE 3318	0.14	0.15	0.18	0.20	0.21	0.23
44 ORME STREET EDENHOPE 3318	0.00	0.00	0.06	0.10	0.11	0.14
46 EDINBURGH ROAD EDENHOPE 3318	0.06	0.07	0.11	0.14	0.15	0.21
46 ORME STREET EDENHOPE 3318	0.00	0.00	0.09	0.13	0.14	0.17
47 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.00	0.00	0.06	0.09	0.09	0.12
47-53 ORME STREET EDENHOPE 3318	0.19	0.21	0.23	0.25	0.26	0.28
48 EDINBURGH ROAD EDENHOPE 3318	0.00	0.12	0.12	0.13	0.14	0.14
48 LAIDLAW AVENUE EDENHOPE 3318	0.13	0.16	0.22	0.26	0.27	0.30
48 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.09	0.11	0.14
49 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.05	0.17	0.23	0.26	0.26	0.29
49-51 WILSON STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.06
5 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.08	0.11	0.16
5 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.06	0.07	0.08	0.08
5-15 YALLAKAR STREET EDENHOPE 3318	0.00	0.00	0.06	0.07	0.13	0.18
5/35 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.10
50 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.06	0.06	0.13
50 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.09	0.11	0.08
50-52 LAIDLAW AVENUE EDENHOPE 3318	0.11	0.16	0.23	0.27	0.28	0.30
51 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.14	0.29	0.36	0.39	0.39	0.42
517 POWERS CREEK ROAD EDENHOPE 3318	0.76	0.82	0.85	0.89	0.89	0.95
52 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.05	0.06	0.06
53 LANGFORD STREET EDENHOPE 3318	0.00	0.00	0.11	0.16	0.16	0.17
54 ORME STREET EDENHOPE 3318	0.00	0.00	0.00	0.07	0.08	0.11
6 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.08	0.11	0.16



	Design Flood Depth (m)					
6 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.11
63 POWERS CREEK ROAD EDENHOPE 3318	0.00	0.22	0.32	0.45	0.54	0.68
65 RIFLE RANGE ROAD EDENHOPE 3318	0.27	0.34	0.41	0.50	0.52	0.59
67 LANGFORD STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.07	0.23
69 EALES ROAD EDENHOPE 3318	0.45	0.52	0.57	0.61	0.60	0.64
7 CHARLES STREET EDENHOPE 3318	0.17	0.21	0.24	0.26	0.29	0.35
7 LANGFORD STREET EDENHOPE 3318	0.15	0.24	0.37	0.56	0.80	1.06
7 MARGARET STREET EDENHOPE 3318	0.00	0.13	0.14	0.15	0.15	0.16
7 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.13	0.14	0.14
7160 KANIVA-EDENHOPE ROAD EDENHOPE 3318	0.75	0.82	0.85	0.90	0.88	0.99
73 LANGFORD STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.30
76 POWERS CREEK ROAD EDENHOPE 3318	0.00	0.00	0.00	0.18	0.23	0.28
78 TOBEN ROAD EDENHOPE 3318	0.20	0.28	0.35	0.48	0.52	0.66
79 POWERS CREEK ROAD EDENHOPE 3318	0.26	0.30	0.30	0.32	0.32	0.33
8 EDINBURGH ROAD EDENHOPE 3318	0.00	0.00	0.00	0.08	0.08	0.08
8 HARROW ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.11
8 MARGARET STREET EDENHOPE 3318	0.00	0.00	0.00	0.06	0.06	0.07
8 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.08
8-10 WANNON AVENUE EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.08
8172 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09
8241 COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.44	0.52	0.54	0.58	0.59	0.61
8815 WIMMERA HIGHWAY EDENHOPE 3318	0.00	0.12	0.21	0.33	0.34	0.36
87 LAKE STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.05
89 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.06	0.16
89 LAKE STREET EDENHOPE 3318	0.00	0.00	0.05	0.06	0.07	0.08
9 MARGARET STREET EDENHOPE 3318	0.00	0.11	0.12	0.13	0.14	0.14
9 SYDNEY ROAD EDENHOPE 3318	0.00	0.00	0.00	0.05	0.11	0.11
9 WANNON AVENUE EDENHOPE 3318	0.12	0.13	0.15	0.16	0.17	0.18
91 ELIZABETH STREET EDENHOPE 3318	0.12	0.29	0.23	0.38	0.61	0.87
91 LAKE STREET EDENHOPE 3318	0.05	0.06	0.07	0.07	0.06	0.07
9142 WIMMERA HIGHWAY EDENHOPE 3318	0.25	0.59	0.78	0.80	0.79	0.81
9196 WIMMERA HIGHWAY EDENHOPE 3318	0.13	0.15	0.17	0.19	0.19	0.21
93 ELIZABETH STREET EDENHOPE 3318	0.16	0.20	0.33	0.50	0.75	1.01
93 LAKE STREET EDENHOPE 3318	0.15	0.16	0.17	0.17	0.18	0.19
95 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.18	0.26	0.52
95 LAKE STREET EDENHOPE 3318	0.18	0.19	0.20	0.20	0.21	0.22



	Design Flood Depth (m)					
95 POWERS CREEK ROAD EDENHOPE 3318	0.00	0.00	0.09	0.11	0.11	0.12
97 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.09
97 LAKE STREET EDENHOPE 3318	0.07	0.07	0.09	0.13	0.08	0.09
98 PATRICIAS ROAD EDENHOPE 3318	0.00	0.00	0.05	0.08	0.07	0.11
99 ELIZABETH STREET EDENHOPE 3318	0.00	0.00	0.00	0.12	0.12	0.13
COLERAINE-EDENHOPE ROAD EDENHOPE 3318	0.00	0.00	0.00	0.00	0.00	0.05
KANIVA-EDENHOPE ROAD EDENHOPE 3318	0.49	0.58	0.65	0.75	0.77	0.85
MOSS STREET EDENHOPE 3318	0.00	0.00	0.00	0.00	0.10	0.11
PATRICIAS ROAD EDENHOPE 3318	0.00	0.07	0.08	0.10	0.10	0.22
PATRICIAS ROAD EDENHOPE 3318	0.00	0.07	0.08	0.10	0.10	0.22
SCRUBBY LAKE ROAD EDENHOPE 3318	0.09	0.12	0.13	0.37	0.41	0.49

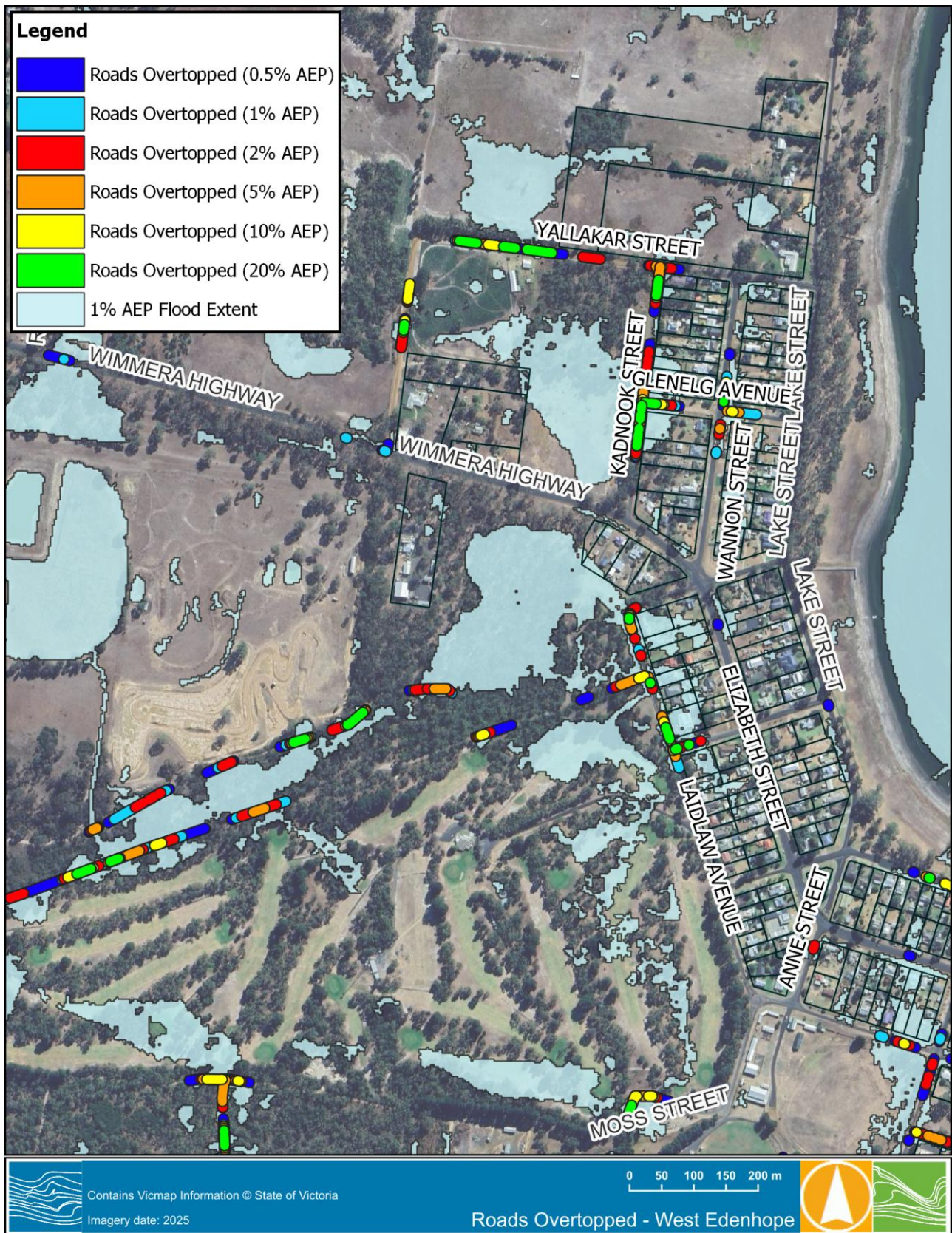


Figure 4-2 Roads overtopping – Edenhope West

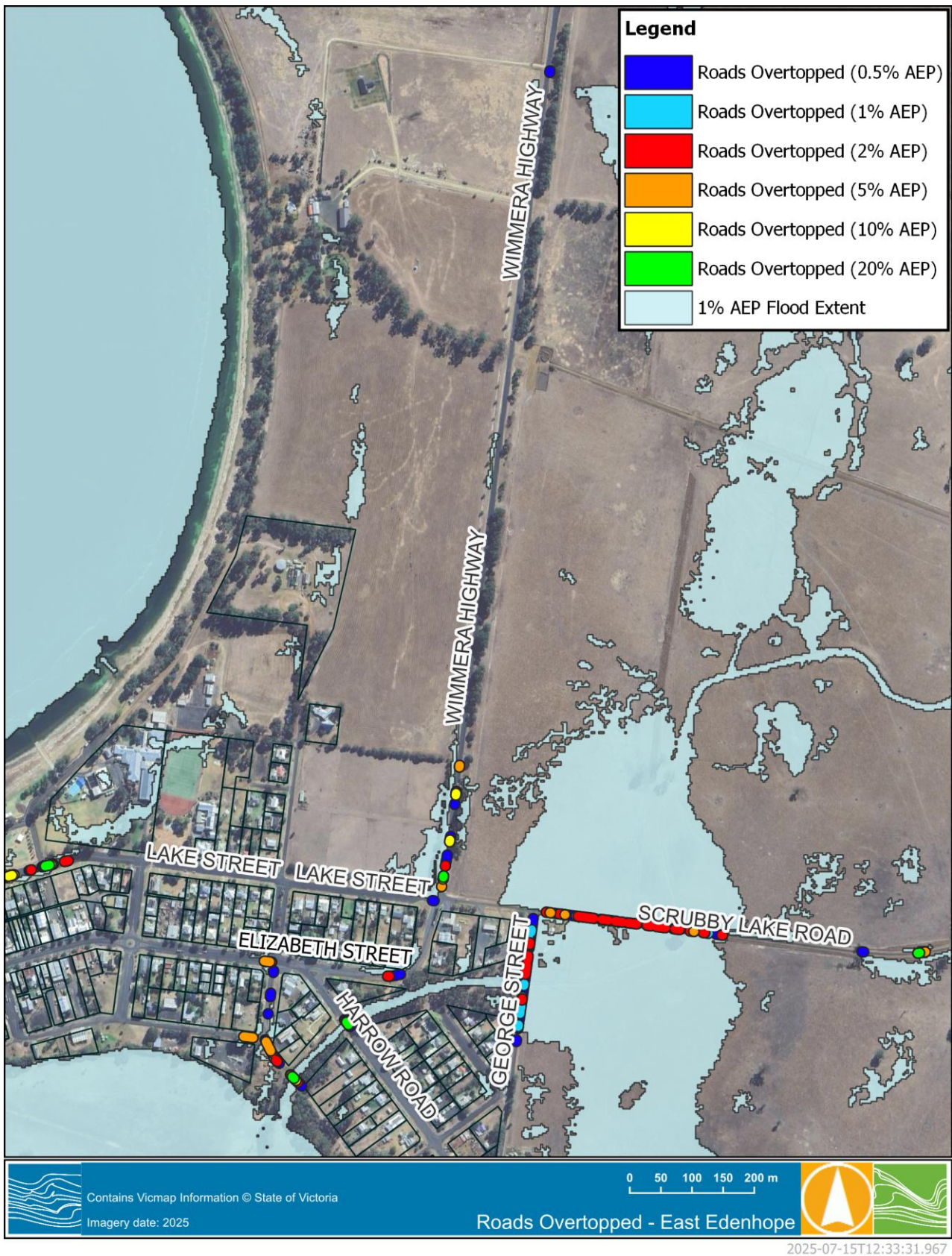


Figure 4-3 Roads overtopping – Edenhope East

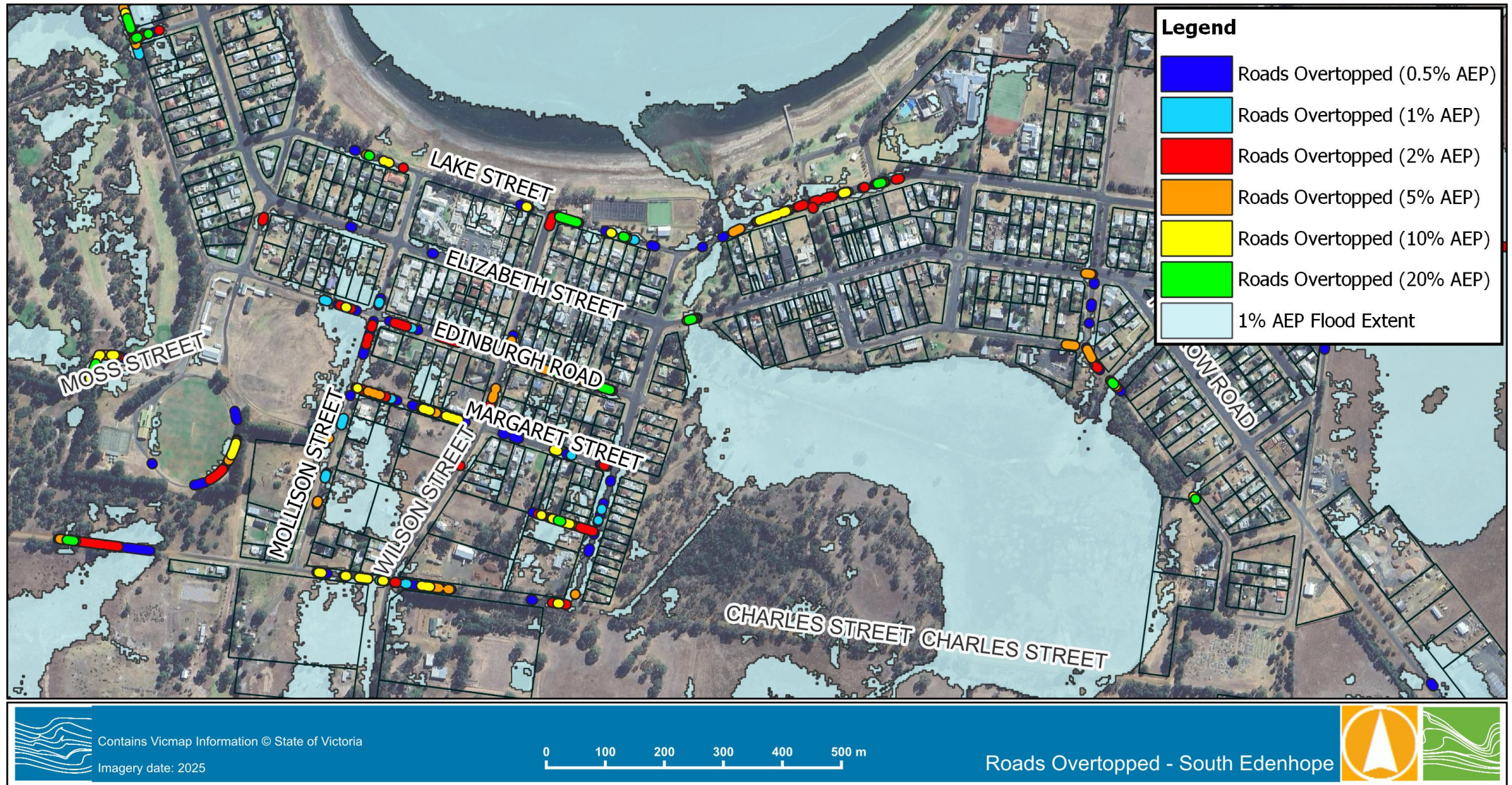


Figure 4-4 Roads overtopping – Edenhope South

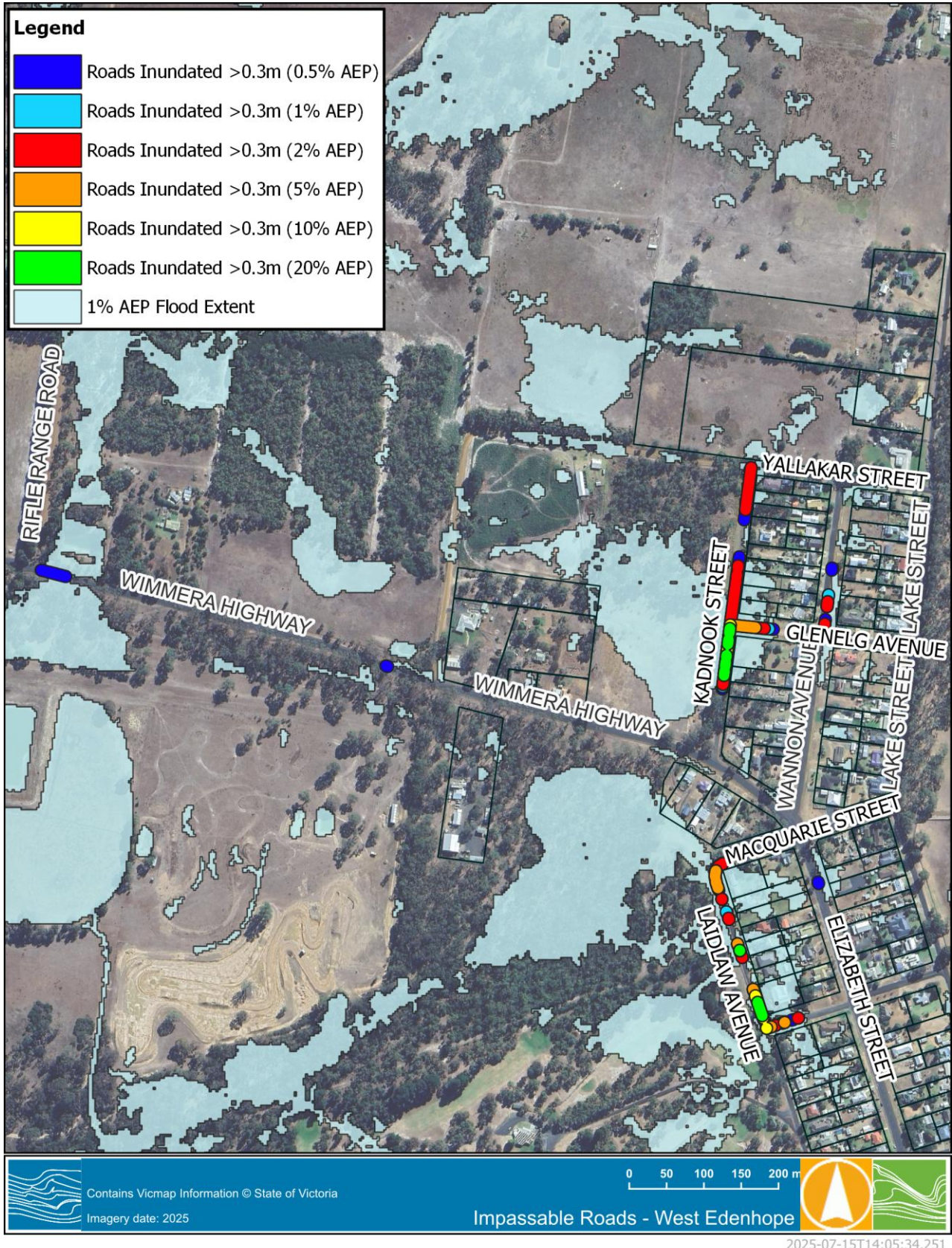


Figure 4-5 Impassable roads – Edenhope West

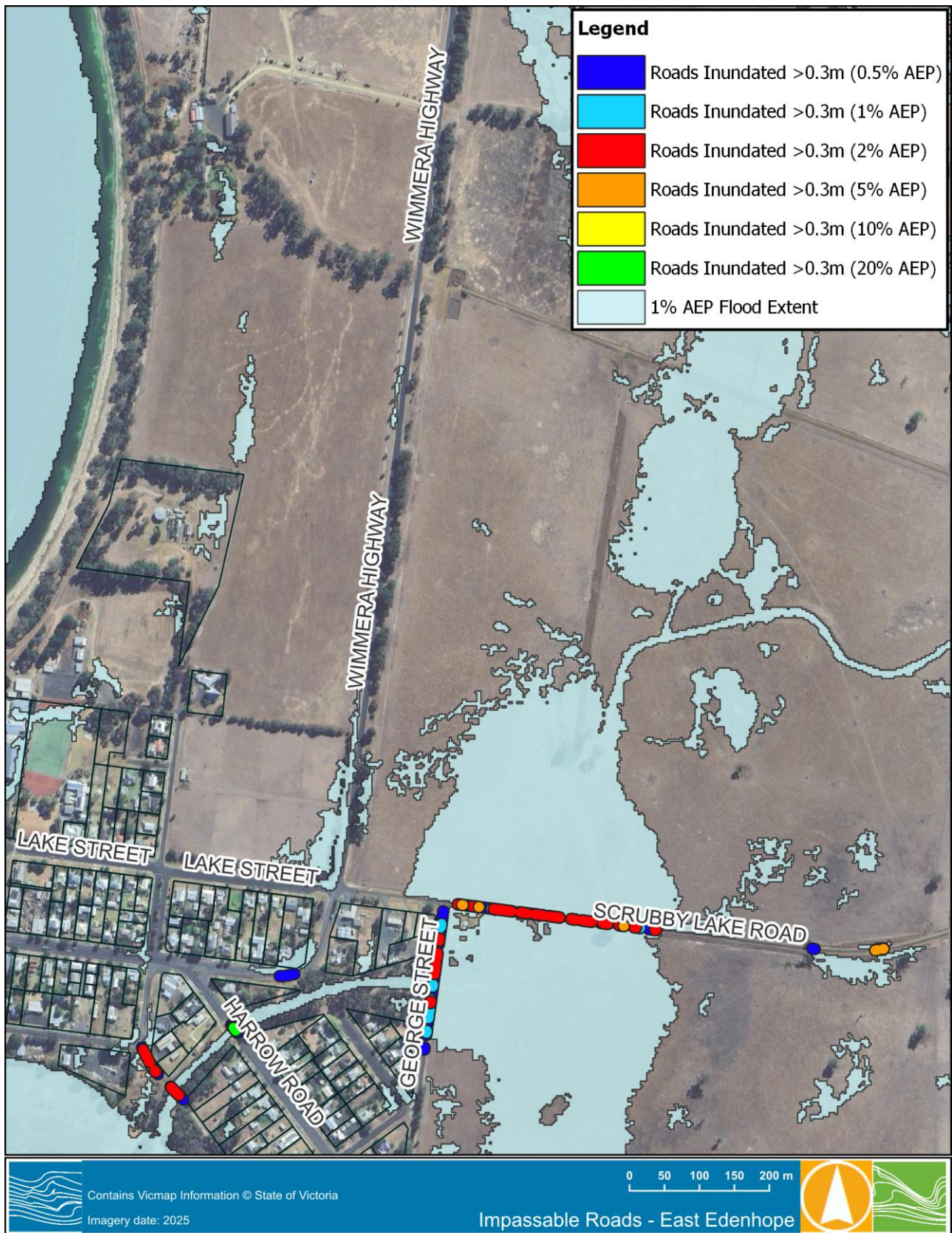


Figure 4-6 Impassable roads – Edenhope East

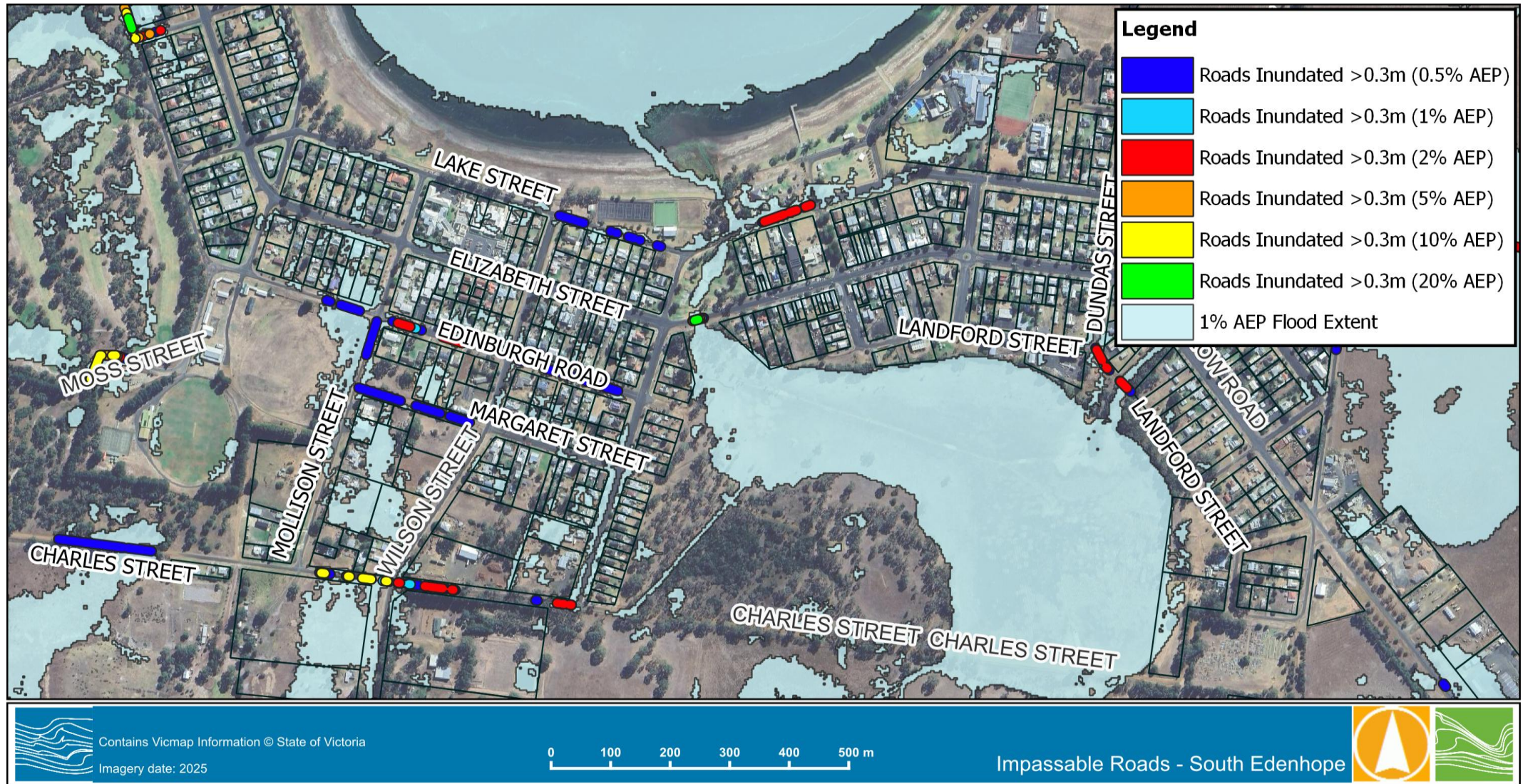


Figure 4-7 Impassable roads – Edenhope South

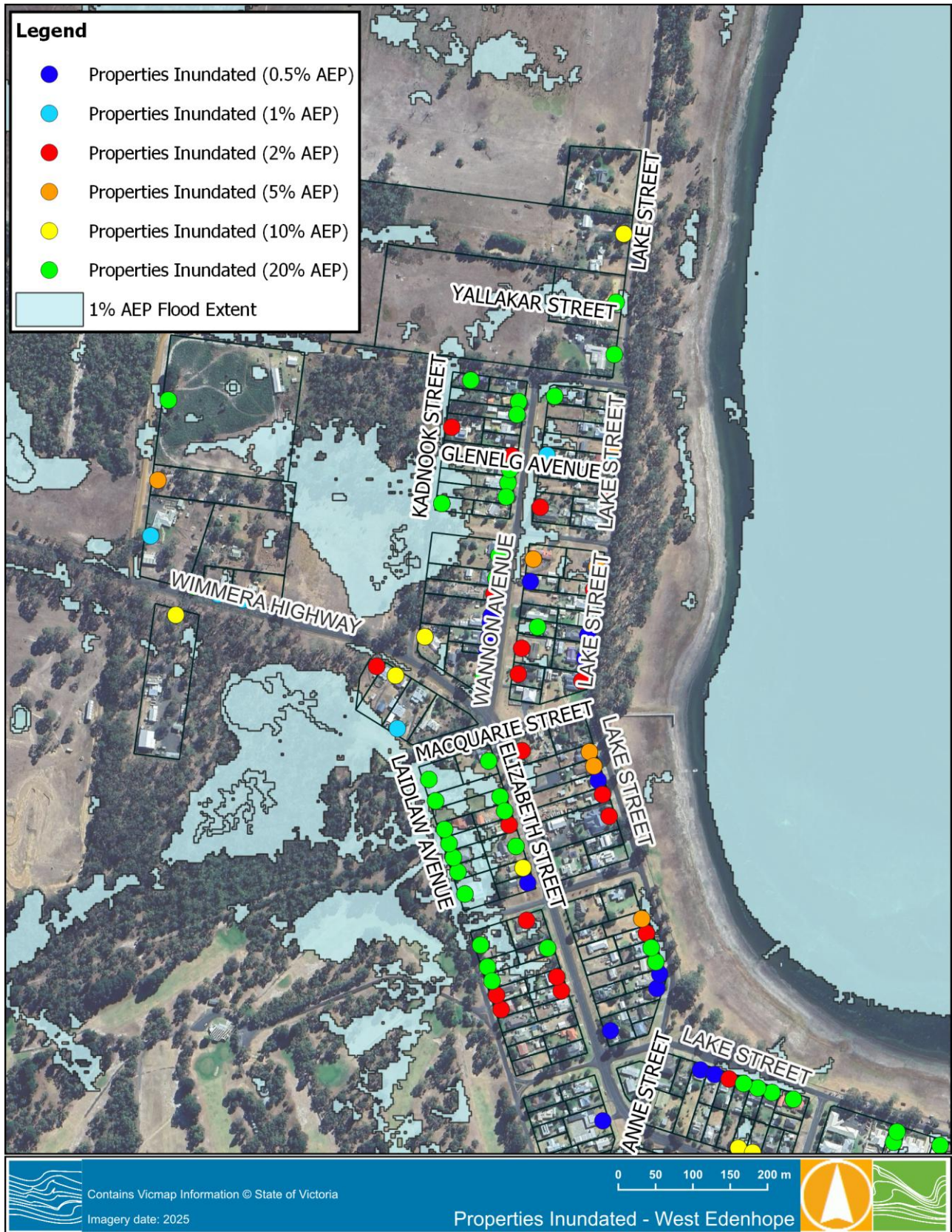


Figure 4-8 Properties Inundated – Edenhope West

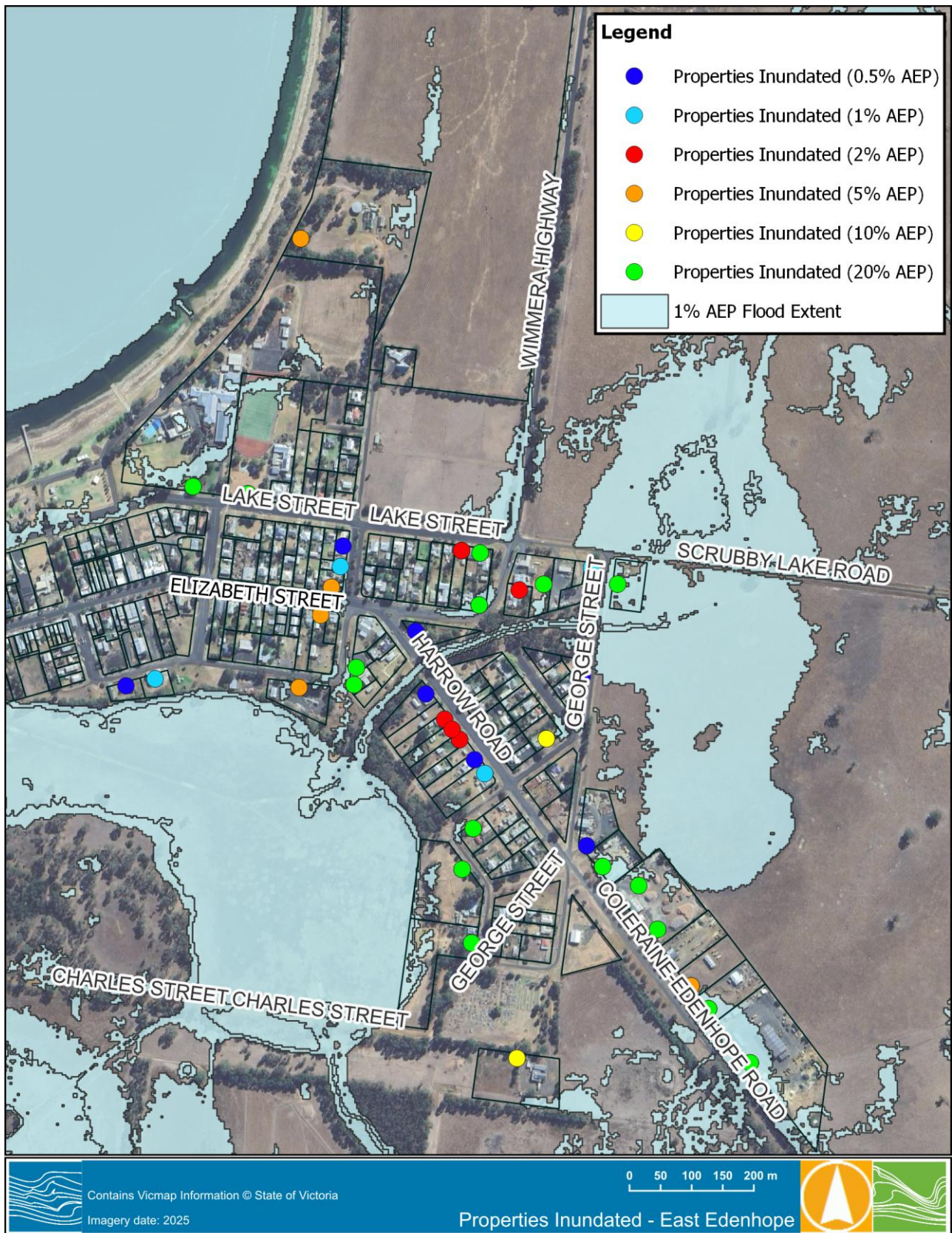


Figure 4-9 Properties Inundated – Edenhope East

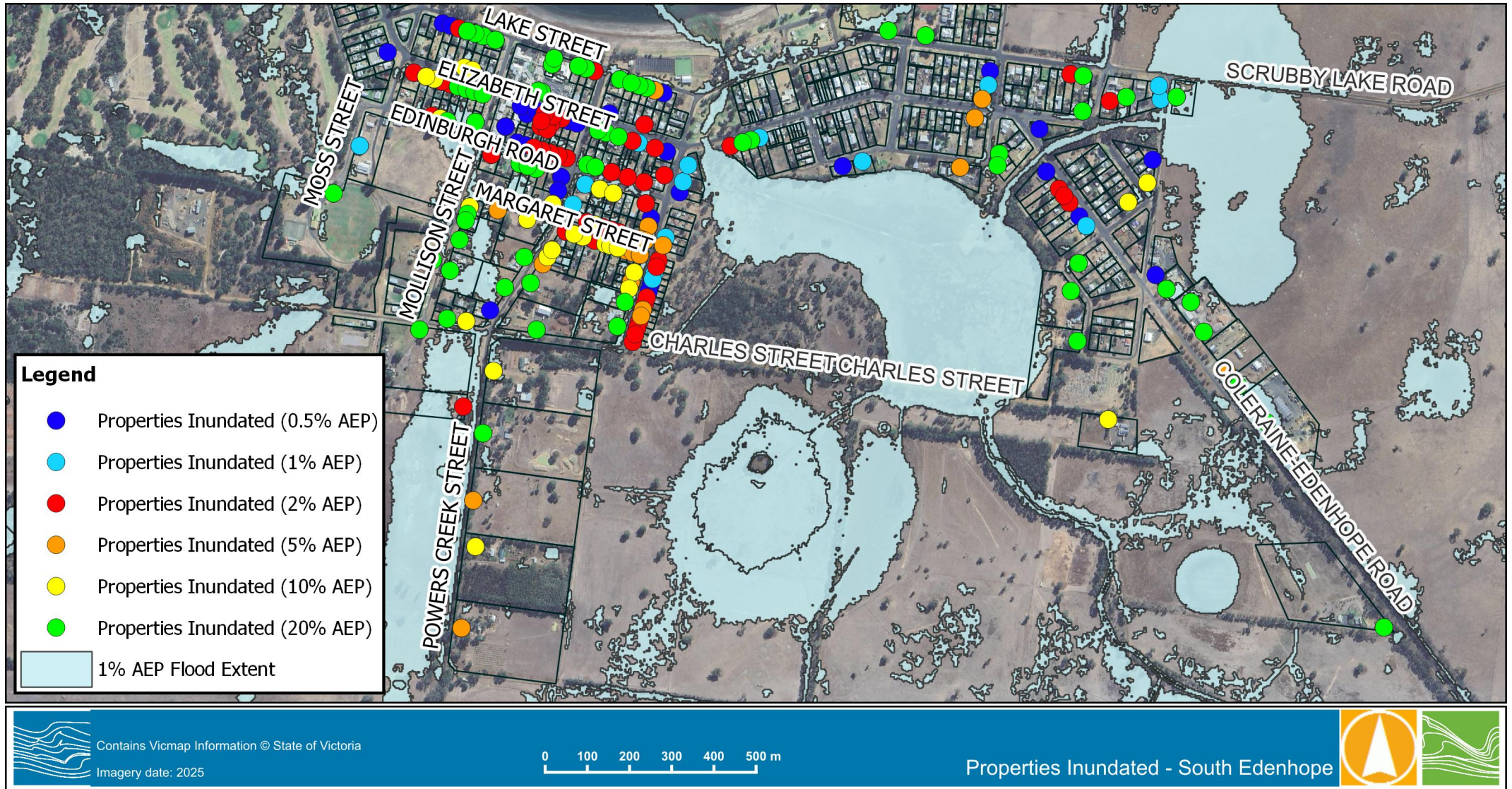


Figure 4-10 Properties Inundated – Edenhope South



4.2.7 Flood Intelligence Card

The flood mapping was produced to identify the consequences of flooding for various design flood events. Combined with the flash flood forecasting procedure describes in Section 4.1 the flood consequence table allows emergency services and council to quickly understand the likely impacts of flooding and plan accordingly. The flood intelligence card describes the key flooding consequences across the study area for each design event.

The table was developed to be read from top to bottom, with each subsequent larger magnitude event reporting on the incremental changes in consequences. For example, if the reader wants to understand the consequences of a 1% AEP event, then the flood characteristics should be read for the 50%, 20%, 10%, 5% and 1% AEP events in succession (as a combined list of likely impacts). It is also recommended that the reader refer to the standard PDF maps provided with this study. There is a separate map for each modelled design event, providing peak flood depths, extents and water surface elevations for each flood event.

While flood intelligence cards provide guidance on the relationship between flood magnitude and flood consequences, flood intelligence records are approximations. This is because no two floods at a location, even if they peak at the same height, will have identical impacts. Further, the hydrologic and hydraulic modelling that underpins much of the intelligence detailed below is informed by several assumptions and approximations that are unlikely to be replicated exactly during a flood event. Actual impacts under similar rainfall conditions are therefore expected to be similar but may not be exactly the same: there are likely to be some differences. More details about flood intelligence and its use can be found in the Australian Emergency Management Manuals flood series at <https://knowledge.aidr.org.au/resources/manual-series/> and in particular in Manual 21 “Flood Warning”.

As a result of the nature of flash flooding at Edenhope, residents will have very limited time to respond after the start of rain. It is recommended that each commercial property that is prone to flooding should have sandbags prepared to act immediately after the flood warning or severe weather warning is issued. Residents are likely to want access to sandbags as soon as possible after it becomes apparent that flooding is likely. Residents using sandbags need to be aware of the correct way to lay sandbags and also be aware that due to the length of inundation some water will pass through the bags. Flood Response Plans should be prepared for properties at risk of inundation to inform the community on appropriate actions before, during and after the flood.

A guidance on sandbagging published by VICSES is available in the SES sandbagging guide here detailed in Appendix A.



Observed Rainfall (see graph)	AEP of flood / year of peak	Consequence / Impact	Action Actions may include (but not limited to) evacuation, closure of roads, sandbagging, issue of warnings and who is responsible
It is important that the decision to mobilise to remove furniture etc from buildings is made early and that, in general, sandbagging is reserved for non-weatherboard buildings.			
USING THIS INTELLIGENCE CARD. Obtain rainfall data and use the flood guidance tool to determine the approximate flood severity. Consider the appropriate flood inundation tables and map. Review all consequences and actions in this table, from the first row down to the approximate expected severity of flooding. Initiate all actions in a logical sequence. Note that some actions may need to be initiated in an order that is different from their relative placement in this table.			
If response has been initiated locally, the first action should be a call to VICSES, followed by a call to the MERO at the West Wimmera Shire Council. Note time available – see below.			
~34 mm of rainfall in 6 hours ~43 mm of rainfall in 12 hours ~53 mm of rainfall in 24 hours	20% AEP (5-year ARI)	Overland flow path from the north-eastern catchment contained within waterway. Overland flow path from the southern catchment beginning to experience break out flows upstream of the Edenhope township. Impassable roads (depth above 0.3m) - Elizabeth Street - Harrow Road - Kadnook Street - Laidlaw Avenue	- Continue to monitor rainfall and water levels. - Close Kadnook Street between Glenelg Avenue and Wimmera Highway. - Close Laidlaw Avenue between Macquarie Street and Sydney Road. - Close Elizabeth Street between Orme Street and Anzac Avenue (to isolate the overland flow path from the southern catchment). - Close Harrow Road between Wimmera Highway and Windsor Avenue (to isolate the overland flow path from the north-eastern catchment). - If further inundation likely, implement evacuation plan and / or removal of furniture etc from buildings likely to be flooded over-floor in the 10% AEP event and / or sandbagging buildings.
~42 mm of rainfall in 6 hours ~52 mm of rainfall in 12 hours ~64 mm of rainfall in 24 hours	10% AEP (10-year ARI)	Overland flow path from the north-eastern catchment contained within waterway, however, now overtop Harrow Road. Overland flow path from the southern catchment beginning to experience break out flows upstream of the Edenhope township. Additional, impassable roads (depth above 0.3m) - Charles Street - Moss Street - Olive Grove Road (approximately 10km south of the Edenhope township)	- Continue to monitor rainfall and water levels. "Water over road" signs should be in place on Harrow Road at its intersection with the Wimmera Highway and at its intersection with Windsor Avenue. - Close Charles Street between Mollison Street and the intersection of Charles Street, Wilson Street and Powers Creek Road. - Close Moss Street north-west of the Edenhope Football & Netball Club. - Check inundation tables and implement associated actions.
~49 mm of rainfall in 6 hours ~62 mm of rainfall in 12 hours ~76 mm of rainfall in 24 hours	5% AEP (20-year ARI)	Overland flow path from the north-eastern catchment contained within waterway, overtopping Harrow Road. Flows are backing up along Scrubby Lake Road. Overland flow path from the southern catchment beginning to experience break out flows upstream of the Edenhope township. Additional, impassable roads (depth above 0.3m) - Johnsons Extension Road - Mackenzies Road - Scrubby Lake Road	- Continue to monitor rainfall and water levels. - Close Kadnook Street between Wimmera Highway and Yallakar Street and its intersection with Glenelg Avenue. - Close Kadnook Street between Wimmera Highway and Yallakar Street and its intersection with Glenelg Avenue. - If further inundation likely, implement evacuation plan and/or removal of furniture from buildings likely to be flooded over-floor and / or sandbagging buildings.



~61 mm of rainfall in 6 hours ~76 mm of rainfall in 12 hours ~94 mm of rainfall in 24 hours	2% AEP (50-year ARI)	Overland flow path from the north-eastern catchment contained within waterway, overtopping Harrow Road. Flows also overtopping Scrubby Lake Road/breaking out of the waterway and ponding south of the road. Overland flow path from the southern catchment recording significantly greater depths in open reserve. Additional, impassable roads (depth above 0.3m) • Edinburgh Road • George Street • Glenelg Avenue • Lake Street • Langford Street • Macquarie Street • Sydney Road • Wannon Avenue	• Continue to monitor rainfall and water levels. • Close Harrow Road between the Wimmera Highway and Windsor Avenue. • “Water over road” signs should be in place on George Street at its intersection with the Scrubby Lake Road and at its intersection with Windsor Avenue and Gloucester Street. • “Water over road” signs should be in place on Langford Street between Dundas Street and Windsor Avenue.
~70 mm of rainfall in 6 hours ~89 mm of rainfall in 12 hours ~110 mm of rainfall in 24 hours	1% AEP (100-year ARI)	Overland flow path from the north-eastern catchment experiencing the same impacts as the 2% AEP event. Overland flow path from the southern catchment recording significantly greater depths in open reserve. Additional, impassable roads (depth above 0.3m) • Jennings Road • Kaniva-Edenhope Road	• Continue to monitor rainfall and water levels. • Close Langford Street between Dundas Street and Windsor Avenue.
~83 mm of rainfall in 6 hours ~105 mm of rainfall in 12 hours ~130 mm of rainfall in 24 hours	0.5% AEP (200-year ARI)	Overland flow path from the north-eastern catchment experiencing the same impacts as the 1% and 2% AEP events. Overland flow path from the southern catchment recording significantly greater depths in open reserve. Ponding upstream of Edenhope is increased and flows overtop Charles Street west of the overland flow path. Additional, impassable roads (depth above 0.3m) • Mollison Street • Powers Creek Road • Wimmera Highway	• Continue to monitor rainfall and water levels. • Close George Street between its intersection with the Scrubby Lake Road and its intersection with Windsor Avenue and Gloucester Street.

Notes:
• Historical events should be linked to observed rainfall where possible.
• This card to be used with the inundation tables. Any actions necessary that are NOT in the inundation tables will be included here. This may include sandbagging infrastructure (e.g. pump stations), evacuating areas etc.
• There should be an action to notify the downstream municipalities.
• It is intended that this table be easily edited (i.e. it will be generated in word, not excel). Observed data and qualitative road closure information can be included here without depth of flooding.



USING THE INUNDATION TABLES: the % AEP Flood (Annual Exceedance Probability) depends on a variety of factors such as catchment saturation, antecedent stream levels and rainfall intensity/duration. The "flood/no Flood Calculator can provide a rough estimate of the flood magnitude. The CMA or a competent flood analyst should be consulted to assist in estimating the likely event magnitude.

AEP of Flood	Properties Impacted by Over floor Flooding [Note 1, 2, 7]	Depth over floor (m)	Type of Building	Sandbag? (Yes/No) [Note 3]	Properties whose access is impacted by flooding [Note 4,5]	Depth over access (m)	Time of isolation	Type of Building	Roads impacted by flooding and approximate location [Note 6]	Maximum Depth over road (m)	Action [Note 8]
20% AEP											
					217 Lake Street	0.4m	<20h	Residential	Elizabeth Street above the waterway from the southern catchment adjacent to Orme Street	<0.5m	Road closed signs
					217 Powers-Creek Road	0.32m	<20h	Rural-Residential	Harrow Road above the waterway from the north-eastern catchment near its intersection with Harrow Road	0.58m	Road closed signs
					245 Lake Street	0.4m	<20h	Rural-Residential	Kadnook Street between Wimmera Highway and Yallakar Street	<0.5m	Road closed signs
					3 Langford Street	0.43m	<20h	Rural-Residential	Laidlaw Street between Sydney Road and Macquarie Street	<0.5m	Road closed signs
					314 Powers Creek Road	0.38m	<20h	Rural-Residential			
					40-48 Lake Street	0.54m	<20h	School			

10% AEP											
					215 Lake Street	0.48m	<20h	Residential	Charles Street between Orme Street and Edenhope Football & Netball Club	<0.5m	Road closed signs
					217 Lake Street	0.61m	<20h	Residential	Elizabeth Street above the waterway from the southern	0.59m	Road closed signs



										catchment adjacent to Orme Street		
						217 Powers-Creek Road	0.48m	<20h	Rural-Residential	Harrow Road above the waterway from the north-eastern catchment near its intersection with Harrow Road	0.64m	Road closed signs
						245 Lake Street	1.08m	<20h	Rural-Residential	Kadnook Street between Wimmera Highway and Yallakar Street	<0.5m	Road closed signs
						3 Langford Street	0.62m	<20h	Rural-Residential	Laidlaw Street between Sydney Road and Macquarie Street	<0.5m	Road closed signs
						311 Wimmera Highway	0.48m	<20h	Edenhope Racecourse	Moss Street, north-west of Edenhope Football & Netball Club	<0.5m	Road closed signs
						314 Powers Creek Road	0.55m	<20h	Rural-Residential			
						319 Powers Creek Road	0.52m	<20h	Rural-Residential			
						34 Sullivans Road	0.35m	<20h	Non-Residential			
						40-48 Lake Street	0.63m	<20h	School			

5% AEP												
						15-31 Yallakar Street	0.7m	<20h	Rural-Residential	Charles Street between Orme Street and Edenhope Football & Netball Club	<0.5m	Road closed signs
						191 Powers Creek Road	0.37m	<20h	Rural-Residential	Elizabeth Street near Harrow Road and above the waterway from the southern catchment adjacent to Orme Street	0.72m	Road closed signs
						201 Elizabeth Street	0.33m	<20h	Residential	Glenelg Avenue between Kandook Street and Wannon Avenue	<0.5m	Road closed signs
						215 Lake Street	0.62m	<20h	Residential	Harrow Road above the waterway from the north-eastern catchment near its	0.69m	Road closed signs



										intersection with Harrow Road		
						217 Lake Street	0.75m	<20h	Residential	Kadnook Street between Wimmera Highway and Yallakar Street	<0.5m	Road closed signs
						217 Powers-Creek Road	0.76m	<20h	Rural-Residential	Laidlaw Street between Sydney Road and Macquarie Street	<0.5m	Road closed signs
						245 Lake Street	1.13m	<20h	Rural-Residential	Moss Street, north-west of Edenhope Football & Netball Club	<0.5m	Road closed signs
						268 Wimmera Highway	0.48m	<20h	Rural-Residential	Scrubby Lake Road near its intersection with Lake Street and George Street	<0.5m	Road closed signs
						27 Edinburgh Road	0.31m	<20h	Residential	Sydney Road between Laidlaw Avenue and Wimmera Highway	<0.5m	Road closed signs
						3 Langford Street	0.75m	<20h	Rural-Residential			
						311 Wimmera Highway	0.68m	<20h	Edenhope Racecourse			
						314 Powers Creek Road	0.61m	<20h	Rural-Residential			
						319 Powers Creek Road	0.58m	<20h	Rural-Residential			
						34 Sullivans Road	0.42m	<20h	Non-Residential			
						35 Rifle Range Road	0.32m	<20h	Residential			
						40-48 Lake Street	0.65m	<20h	School			
						51 Coleraine-Edenhope Road	0.36m	<20h	Non-Residential			
						63 Powers Creek Road	0.32m	<20h	Rural-Residential			
						7 Langford Street	0.37m	<20h	Rural-Residential			
						79 Powers Creek Road	0.3m	<20h	Rural-Residential			
						93 Elizabeth Street	0.33m	<20h	Residential			

2% AEP												
						137 Elizabeth Street	0.3m	<20h	Residential	Charles Street between Orme Street	0.79m	Road closed signs



										and Edenhope Football & Netball Club		
						15-31 Yallakar Street	0.84m	<20h	Rural-Residential	Edinburgh Road between Anne Street and Orme Street	<0.5m	Road closed signs
						137 Elizabeth Street	0.54m	<20h	Residential	Elizabeth Street near Harrow Road and above the waterway from the southern catchment adjacent to Orme Street	0.89m	Road closed signs
						18 Wannon Avenue	0.32m	<20h	Residential	George Street between Lake Street and the intersection of Windsor Avenue and Gloucester Street	0.32m	Road closed signs
						191 Powers Creek Road	0.48m	<20h	Rural-Residential	Glenelg Avenue between Kandook Street and Wannon Avenue	<0.5m	Road closed signs
						201 Elizabeth Street	0.37m	<20h	Residential	Harrow Road above the waterway from the north-eastern catchment near its intersection with Harrow Road	0.78m	Road closed signs
						206 Elizabeth Street	0.31m	<20h	Residential	Kadnook Street between Wimmera Highway and Yallakar Street	0.53m	Road closed signs
						215 Lake Street	0.76m	<20h	Residential	Laidlaw Street between Sydney Road and Macquarie Street	<0.5m	Road closed signs
						217 Lake Street	0.89m	<20h	Residential	Lake Street between Orme Street and Anzac Avenue	<0.5m	Road closed signs
						217 Powers-Creek Road	0.88m	<20h	Rural-Residential	Langford Street near its intersection with Dundas Street	<0.5m	Road closed signs
						245 Lake Street	1.16m	<20h	Rural-Residential	Macquarie Street near its intersection with Laidlaw Street	<0.5m	Road closed signs
						268 Wimmera Highway	0.69m	<20h	Rural-Residential	Moss Street, north-west of Edenhope Football & Netball Club	<0.5m	Road closed signs
						27 Edinburgh Road	0.34m	<20h	Residential	Scrubby Lake Road near its intersection	0.56m	Road closed signs



										with Lake Street and George Street		
						3 Lake Street	0.3m	<20h	Residential	Sydney Road between Laidlaw Avenue and Wimmera Highway	<0.5m	Road closed signs
						3 Langford Street	0.94m	<20h	Rural-Residential	Wannon Avenue between Yallakar Street and Glenelg Avenue	<0.5m	Road closed signs
						311 Wimmera Highway	0.85m	<20h	Edenhope Racecourse			
						314 Powers Creek Road	0.68m	<20h	Rural-Residential			
						319 Powers Creek Road	0.64m	<20h	Rural-Residential			
						34 Sullivans Road	0.45m	<20h	Non-Residential			
						35 Rifle Range Road	0.37m	<20h	Residential			
						4 Elizabeth Street	0.3m	<20h	Residential			
						40-48 Lake Street	0.67m	<20h	School			
						51 Coleraine-Edenhope Road	0.39m	<20h	Non-Residential			
						63 Powers Creek Road	0.45m	<20h	Rural-Residential			
						7 Langford Street	0.56m	<20h	Rural-Residential			
						79 Powers Creek Road	0.32m	<20h	Rural-Residential			
						91 Elizabeth Street	0.38m	<20h	Residential			
						93 Elizabeth Street	0.5m	<20h	Residential			
						Scrubby Lake Road	0.37	<20h	Non-Residential			

1% AEP												
						109 Powers Creek Road	0.31m	<20h	Rural-Residential	Charles Street between Orme Street and Edenhope Football & Netball Club	0.8m	Road closed signs
						137 Elizabeth Street	0.31m	<20h	Residential	Coleraine-Edenhope Road near West Wimmera Shire Depot	<0.5m	Road closed signs



					14 Wannon Avenue	0.33m	<20h	Residential	Edinburgh Road between Anne Street and Orme Street	<0.5m	Road closed signs
					15-31 Yallakar Street	0.93m	<20h	Rural-Residential	Elizabeth Street near Harrow Road and above the waterway from the southern catchment adjacent to Orme Street	1.13m	Road closed signs
					137 Elizabeth Street	0.54m	<20h	Residential	George Street between Lake Street and the intersection of Windsor Avenue and Gloucester Street	0.77m	Road closed signs
					18 Wannon Avenue	0.39m	<20h	Residential	Glenelg Avenue between Kandook Street and Wannon Avenue	<0.5m	Road closed signs
					191 Powers Creek Road	0.59m	<20h	Rural-Residential	Harrow Road above the waterway from the north-eastern catchment near its intersection with Harrow Road	0.86m	Road closed signs
					2 Charles Street	0.31m	<20h	Non-residential	Jennings Road north of the Wimmera Highway	<0.5m	Road closed signs
					201 Elizabeth Street	0.39m	<20h	Residential	Kadnook Street between Wimmera Highway and Yallakar Street	0.6m	Road closed signs
					206 Elizabeth Street	0.31m	<20h	Residential	Laidlaw Street between Sydney Road and Macquarie Street	0.5m	Road closed signs
					215 Lake Street	0.82m	<20h	Residential	Lake Street between Orme Street and Anzac Avenue	<0.5m	Road closed signs
					217 Lake Street	0.95m	<20h	Residential	Langford Street near its intersection with Dundas Street	<0.5m	Road closed signs
					217 Powers-Creek Road	0.89m	<20h	Rural-Residential	Macquarie Street near its intersection with Laidlaw Street	<0.5m	Road closed signs
					237 Elizabeth Street	0.37m	<20h	Residential	Moss Street, north-west of Edenhope Football & Netball Club	<0.5m	Road closed signs
					245 Lake Street	1.16m	<20h	Rural-Residential	Scrubby Lake Road near its intersection	0.58m	Road closed signs



										with Lake Street and George Street		
						268 Wimmera Highway	0.82m	<20h	Rural-Residential	Sydney Road between Laidlaw Avenue and Wimmera Highway	0.5m	Road closed signs
						27 Edinburgh Road	0.35m	<20h	Residential	Wannon Avenue between Yallakar Street and Glenelg Avenue	<0.5m	Road closed signs
						3 Lake Street	0.34m	<20h	Residential			
						3 Langford Street	1.18m	<20h	Rural-Residential			
						311 Wimmera Highway	1.00m	<20h	Edenhope Racecourse			
						314 Powers Creek Road	0.74m	<20h	Rural-Residential			
						319 Powers Creek Road	0.62m	<20h	Rural-Residential			
						34 Sullivans Road	0.45m	<20h	Non-Residential			
						35 Rifle Range Road	0.38m	<20h	Residential			
						4 Elizabeth Street	0.34m	<20h	Residential			
						40-48 Lake Street	0.57m	<20h	School			
						51 Coleraine-Edenhope Road	0.39m	<20h	Non-Residential			
						63 Powers Creek Road	0.54m	<20h	Rural-Residential			
						7 Langford Street	0.8m	<20h	Rural-Residential			
						79 Powers Creek Road	0.32m	<20h	Rural-Residential			
						91 Elizabeth Street	0.61m	<20h	Residential			
						93 Elizabeth Street	0.75m	<20h	Residential			
						Scrubby Lake Road	0.41	<20h	Non-Residential			

0.5% AEP												
						10 Dundas Street	0.3m	<20h	Residential	Charles Street between Orme Street and Mollison Street	0.82m	Road closed signs
						10 Orme Street	0.33m	<20h	Residential	Charles Street near Edenhope Football & Netball Club	<0.5m	Road closed signs



					109 Powers Creek Road	0.39m	<20h	Rural-Residential	Coleraine-Edenhope Road near West Wimmera Shire Depot	<0.5m	Road closed signs
					12 Orme Street	0.45m	<20h	Residential	Edinburgh Road between Anne Street and Mollison Street	<0.5m	Road closed signs
					137 Elizabeth Street	0.32m	<20h	Residential	Edinburgh Road between Mollison Street and Orme Street	<0.5m	Road closed signs
					139 Elizabeth Street	0.37m	<20h	Residential	Elizabeth Street near Macquarie Street, near Harrow Road and above the waterway from the southern catchment adjacent to Orme Street	1.39m	Road closed signs
					14 Wannon Avenue	0.38m	<20h	Residential	Elizabeth Street near its intersection with Macquarie Street	<0.5m	Road closed signs
					15 Kadnook Street	0.3m	<20h	Residential (Greenfield)	Elizabeth Street between Dundas Street and Lake Street	<0.5m	Road closed signs
					15-31 Yallakar Street	1.01m	<20h	Rural-Residential	George Street between Lake Street and the intersection of Windsor Avenue and Gloucester Street	0.83m	Road closed signs
					151 Elizabeth Street	0.55m	<20h	Residential	Glenelg Avenue between Kandook Street and Wannon Avenue	<0.5m	Road closed signs
					173 Lake Street	0.34m	<20h	Residential	Harrow Road above the waterway from the north-eastern catchment near its intersection with Harrow Road	1.16m	Road closed signs
					18 Wannon Avenue	0.44m	<20h	Residential	Jennings Road north of the Wimmera Highway	0.62m	Road closed signs
					191 Powers Creek Road	0.68m	<20h	Rural-Residential	Kadnook Street between Wimmera Highway and Yallakar Street	0.65m	Road closed signs
					2 Charles Street	0.32m	<20h	Non-residential	Laidlaw Street between Sydney	0.52m	Road closed signs



										Road and Macquarie Street		
						201 Elizabeth Street	0.41m	<20h	Residential	Lake Street between Wilson Street and Orme Street	<0.5m	Road closed signs
						206 Elizabeth Street	0.32m	<20h	Residential	Lake Street between Orme Street and Anzac Avenue	<0.5m	Road closed signs
						215 Lake Street	0.85m	<20h	Residential	Langford Street near its intersection with Dundas Street	0.59m	Road closed signs
						217 Lake Street	0.97m	<20h	Residential	Macquarie Street near its intersection with Laidlaw Street	<0.5m	Road closed signs
						217 Powers-Creek Road	1.0m	<20h	Rural-Residential	Margaret Street between Mollison Street and Wilson Street	<0.5m	Road closed signs
						237 Elizabeth Street	0.44m	<20h	Residential	Mollison Street between Edinburgh Road and Margaret Street	<0.5m	Road closed signs
						245 Lake Street	1.19m	<20h	Rural-Residential	Moss Street, north-west of Edenhope Football & Netball Club	<0.5m	Road closed signs
						268 Wimmera Highway	0.92m	<20h	Rural-Residential	Powers Creek Road immediately south of Charles Street	<0.5m	Road closed signs
						27 Edinburgh Road	0.36m	<20h	Residential	Scrubby Lake Road near its intersection with Lake Street and George Street	0.63m	Road closed signs
						29 Edinburgh Road	0.3m	<20h	Residential	Sydney Road between Laidlaw Avenue and Wimmera Highway	0.5m	Road closed signs
						3 Lake Street	0.4m	<20h	Residential	Wannon Avenue between Yallakar Street and Glenelg Avenue	<0.5m	Road closed signs
						3 Langford Street	1.44m	<20h	Rural-Residential	Wimmera Highway between Rifle Range Road and Yallakar Street	<0.5m	Road closed signs
						311 Wimmera Highway	1.11m	<20h	Edenhope Racecourse			
						314 Powers Creek Road	1.03m	<20h	Rural-Residential			
						319 Powers Creek Road	0.69m	<20h	Rural-Residential			



					34 Sullivans Road	0.48m	<20h	Non-Residential			
					35 Rifle Range Road	0.4m	<20h	Residential			
					4 Elizabeth Street	0.4m	<20h	Residential			
					40-48 Lake Street	0.69m	<20h	School			
					41-43 Coleraine-Edenhope Road	0.3m	<20h	Non-Residential			
					48 Laidlaw Avenue	0.3m	<20h	Residential			
					50-52 Laidlaw Avenue	0.3m	<20h	Residential			
					51 Coleraine-Edenhope Road	0.42m	<20h	Non-Residential			
					63 Powers Creek Road	0.68m	<20h	Rural-Residential			
					7 Charles Street	0.35m	<20h	Rural-Residential			
					7 Langford Street	1.06m	<20h	Rural-Residential			
					79 Powers Creek Road	0.33m	<20h	Rural-Residential			
					91 Elizabeth Street	0.87m	<20h	Residential			
					93 Elizabeth Street	1.01m	<20h	Residential			
					95 Elizabeth Street	0.52m	<20h	Residential			
					Scrubby Lake Road	0.49	<20h	Non-Residential			

NOTES:

[1]	Ordered alphabetically by street name - emergency response will likely be street by street. Properties that come within an appropriate model accuracy (e.g. 100mm) should be included.
[2]	Properties will be listed at every AEP they are affected. i.e. if a property floods at all AEPs, it will be included in every table. Intention is for a single inundation table to be printed without having to reference actions from smaller events. Note this is in contrast to the flood intelligence card.
[3]	This will depend on the building type, perimeter etc. Can also include indicative number of sandbags required
[4]	Can group similar properties (i.e. dwellings) together. See example
[5]	Isolated properties. If large numbers of properties in a single area are isolated (i.e. by one or two roads flooding, blocking the entire area) it may be more appropriate to list them as 'Area A', 'Area B' etc. with further detail provided in a separate section/map
[6]	For roads with long stretches of inundation/patchy inundation, will need to specify where signs will go
[7]	Public infrastructure and high risk facilities (e.g. aged care) should be highlighted.
[8]	Actions to be decided in consultation with SES through the PCG.



5 FLOOD DAMAGE ASSESSMENT

A summary of the flood damages with respect to each AEP event has been assessed with respect the number of properties flooded; direct damage cost; and indirect damage cost. A summary of this information is summarised in Table 5-1, Table 5-2 and Table 5-3 respectively.

Based on this information, the Average Annual Damage has been calculated to be **\$86,466**.

Furthermore, the total cost with respect to each AEP event is presented in Figure 5-1.



Table 5-1 Properties Flooded

AEP	0.5% (200-year ARI)	1% (100-year ARI)	2% (50-year ARI)	5% (20-year ARI)	10% (10-year ARI)	20% (5-year ARI)
Residential Buildings Flooded Above Floor	0	0	0	0	0	0
Commercial Buildings Flooded Above Floor	0	0	0	0	0	0
Properties Flooded Below Floor	343	275	255	194	162	118
Total Properties Flooded	343	275	255	194	162	118

Table 5-2 Direct Cost

AEP	0.5% (200-year ARI)	1% (100-year ARI)	2% (50-year ARI)	5% (20-year ARI)	10% (10-year ARI)	20% (5-year ARI)
Direct Potential External Damage Cost	\$461,538	\$305,813	\$249,581	\$152,552	\$97,767	\$45,292
Direct Potential Residential Damage Cost	\$0	\$0	\$0	\$0	\$0	\$0
Direct Potential Commercial Damage Cost	\$0	\$0	\$0	\$0	\$0	\$0
Total Direct Potential Damage Cost	\$461,538	\$305,813	\$249,581	\$152,552	\$97,767	\$45,292
Total Actual Damage Cost (0.8*Potential)	\$369,230	\$244,650	\$199,665	\$122,042	\$78,214	\$36,234
Infrastructure Damage Cost	\$773,459	\$490,557	\$479,482	\$300,199	\$184,143	\$53,382

Table 5-3 Indirect Cost

AEP	0.5% (200-year ARI)	1% (100-year ARI)	2% (50-year ARI)	5% (20-year ARI)	10% (10-year ARI)	20% (5-year ARI)
Indirect Clean Up Cost	\$0	\$0	\$0	\$0	\$0	\$0
Indirect Residential Relocation Cost	\$0	\$0	\$0	\$0	\$0	\$0
Indirect Emergency Response Cost	\$0	\$0	\$0	\$0	\$0	\$0
Total Indirect Cost	\$0	\$0	\$0	\$0	\$0	\$0
Rural Cost	\$321,100	\$224,521	\$223,102	\$152,426	\$106,838	\$48,123



AEP	0.5% (200-year ARI)	1% (100-year ARI)	2% (50-year ARI)	5% (20-year ARI)	10% (10-year ARI)	20% (5-year ARI)
Total Cost (Total Actual Damage Cost, Infrastructure Damage Cost, Total Indirect Cost & Rural Cost)	\$1,463,790	\$959,728	\$902,250	\$574,666	\$369,195	\$137,739

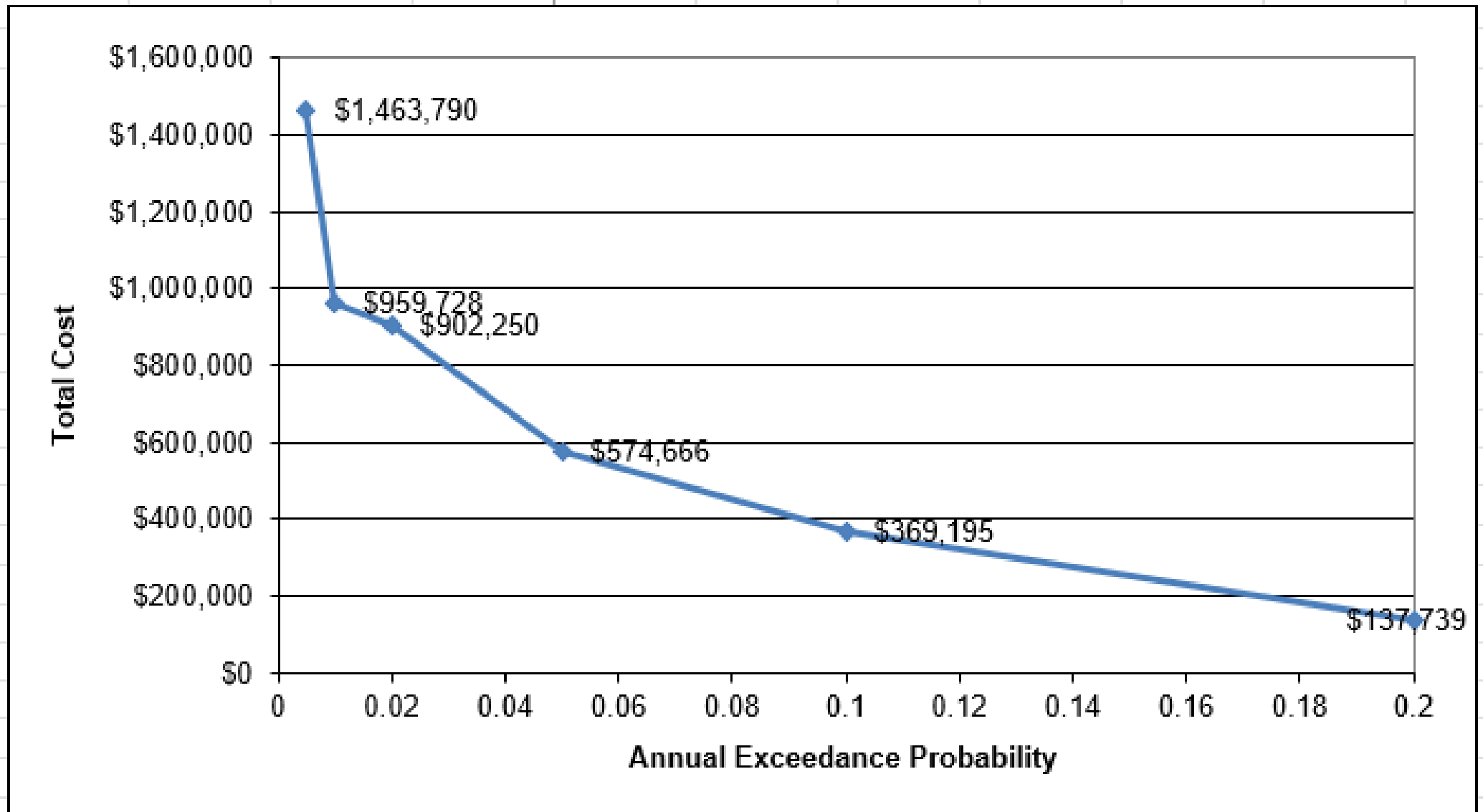


Figure 5-1 Flood Damage Assessment based on AEP Event



6 SUMMARY

This report details the background information used to produce flood intelligence for inclusion in the West Wimmera Shire Council Municipal Flood Emergency Plan (MFEP). The report should be used as a reference document during flood events to confirm flood response actions required.

An early flood warning tool was developed using design rainfall IFD at Edenhope; however, the community have very limited time to respond to the event due to the nature of flash flooding.

The typical warning time is likely to be less than an hour. The isolated road and flooded properties were outlined in this report based on each modelled event. Flood intelligence card was developed to help council understand the potential impact for a range of design event.



APPENDIX A

VICSES SANDBAGGING GUIDE

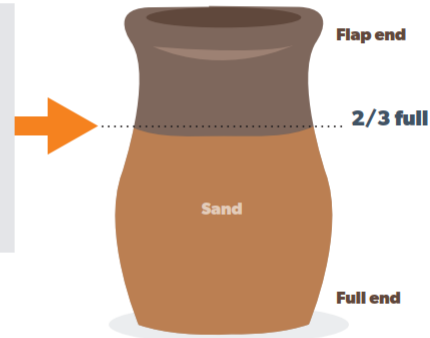


Sandbagging

Sandbags won't stop the water completely, but can reduce the amount of water entering your home.

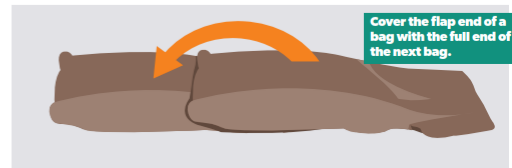
How do I fill a sandbag?

- Only use sand to fill hessian bags. Do not use dirt.
- Only fill sandbag two-thirds full.
- Do not over fill the sandbag as it will be too heavy to carry.
- Do not tie the top of the sandbag.
- Take care when filling and lifting the sandbag, to avoid injury.



How do I lay sandbags?

- Lay sandbags like brickwork. Stagger rows so that the joins do not line up.
- Start at one end and work to the other end.
- Ensure the unfilled part of the bag is covered by the next bag.
- Tuck flap under the bag at the end of the row.
- If the sandbag wall is going to be more than five (5) bags high, you will need to lay two (2) rows wide.



Where do I place the sandbags?

- Place sandbags in plastic bags to cover drainage holes in home (e.g. showers, toilets, sinks) to stop back flow of water.
- Place a small wall across doorways, at least the height of the expected water level. Be careful not to trap yourself inside.
- If available, plastic sheeting may be used under sandbags to reduce the seepage.

Block it

Toilets, bath and all drain holes



What do I do once I have finished with the sandbags?

- Sturdy gloves should be worn when handling wet sandbags as they can contain chemicals, waste and diseases.
- Sandbags that have been in contact with floodwater need to be thrown away.
- Contact your local council to find out how to dispose of your sandbags safely.

Melbourne

15 Business Park Drive
Notting Hill VIC 3168
Telephone (03) 8526 0800

Sydney

Suite 3, Level 1, 20 Wentworth Street
Parramatta NSW 2150
Telephone (02) 9354 0300

Brisbane

Level 5, 43 Peel Street
South Brisbane QLD 4101
Telephone (07) 3105 1460

Adelaide

1/198 Greenhill Road
Eastwood SA 5063
Telephone (08) 8378 8000

Perth

Ground Floor, 430 Roberts Road
Subiaco WA 6008
Telephone (08) 6555 0105

New Zealand

7/3 Empire Street
Cambridge New Zealand 3434
Telephone +64 27 777 0989

Wangaratta

First Floor, 40 Rowan Street
Wangaratta VIC 3677
Telephone (03) 5721 2650

Geelong

51 Little Fyans Street
Geelong VIC 3220
Telephone (03) 8526 0800

Wimmera

597 Joel South Road
Stawell VIC 3380
Telephone 0438 510 240

Gold Coast

Suite 37, Level 4, 194 Varsity Parade
Varsity Lakes QLD 4227
Telephone (07) 5676 7602

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