Alpine Shire

FLOOD & STORM EMERGENCY PLAN

A Sub-Plan of the Municipal Emergency Management Plan

For Alpine Shire Council
and
VICSES Bright, Myrtleford & Falls Creek Units

Version 1.3, 2021

ALPINE SHIRE COUNCIL

VICTORIA State Government

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Distribution of MFSEP

Once endorsed and signed the, MFSEP should be distributed to all MFSEP committee members, MEMPC Chair, council, MEMO, Deputy MEMO, Representatives from; BoM, CMA, DELWP, Parks Victoria, Ambulance Victoria, VicRoads, DFFH, relevant utilities, FRV, MERC, RERC, Police station, VICSES Units, VICSES Regional office, CFA Brigades, CFA Regional office

Document Transmittal Form / Amendment Certificate

This Municipal Flood & Storm Emergency Plan (MFSEP) will be amended, maintained, and distributed as required or every 3 years facilitated by VICSES in consultation with the Municipal Emergency Management Planning Committee (MEMPC)

Suggestions for amendments to this Plan should be forwarded to VICSES Regional Office via

Regional Manager
North East Region
Victoria State Emergency Service
64 Sydney Road, Benalla,
Victoria 3672

Phone: (03) 9256 9650
Fax: (03) 9256 9671
Email: northeast@ses.vic.gov.au

Amendments listed below have been included in this Plan and updated as a new version.

Amendment Number	Date of Amendment	Amendment Entered By	Summary of Amendment
V0.2	17th April 14	Steve Schneider	**Initial draft for MFEP sub committee consultation**
V0.4	11th August 14	Sara-Jane Bowering	**Local knowledge feedback from Bright Unit**
V0.5	Aug 2015	Steve Schneider	**MFEP sub committee review**
V0.6	Jan 2016	Steve Schneider	**Incorporated amendments from EMP review**
V1.0	July 2016	Steve Schneider	**Final**
V1.1	Sept 2020	Toby Richards	**Updated plan to new Template**
V1.2	Aug 2021	Charlie Sexton	**Update intel card actions and changes to the EMLA Act 2018 and references to the new SEMP**
V1.3	Oct 2021 Nov 2021	Charlie Sexton Tim Loffler Karen van Huizen MEMPC	Review and update Intelligence cards, catchment systems, mitigation structures and actions Sign off and adoption by MEMPC

This Plan will be maintained on the VICSES website at www.ses.vic.gov.au/get-ready/your-local-flood-information and Alpine Shire Council website www.alpineshire.vic.gov.au

List of Abbreviations & Acronyms

The following abbreviations and acronyms are used in the Plan			
AAR	After Action Review	FRV	Fire Rescue Victoria
AEP	Annual Exceedance Probability (%)	**IEMT**	Incident Emergency Management Team
AHD	Australian Height Datum (the height of a location above mean sea level in metres)	IMT	Incident Management Team
AIDR	Australian Institute of Disaster Resilience	**IMS**	Incident Management System
ARI	Average Recurrence Interval (years)	**IWO**	Information & Warnings Officer
AV	Ambulance Victoria	**JSOP**	Joint Standard Operations Procedure
BoM	Bureau of Meteorology	**LSIO**	Land Subject to Inundation Overlay
CALD	Culturally and Linguistically Diverse	**MEMO**	Municipal Emergency Management Officer
CEOC	Council Emergency Operations Centre	**MEMP**	Municipal Emergency Management Plan
CERA	Community Emergency Risk Assessment	**MEMPC**	Municipal Emergency Management Planning Committee
CFA	Country Fire Authority	**MERC**	Municipal Emergency Response Coordinator
CMA	Catchment Management Authority	**MFSEP**	Municipal Flood & Storm Emergency Plan
RERC	Regional Emergency Response Coordinator	**MFSEPC**	Municipal Flood & Storm Emergency Planning Committee
DFFH	Department of Families, Fairness and Housing	**MRM**	Municipal Recovery Manager
DJPR	Department of Jobs Precincts and Regions (Ag Vic)	**PIO**	Public Information Officer
DELWP	Department of Environment, Land, Water and Planning	**PMF**	Probable Maximum Flood
DRA	Dynamic Risk Assessment	**RAC**	Regional Agency Commander
EA	Emergency Alert	**RCC**	Regional Control Centre
EMCOP	Emergency Management Common Operating Picture	**RDO**	Regional Duty Officer
EMLO	Emergency Management Liaison Officer	**RFEP**	Regional Flood Emergency Plan
EMT	Emergency Management Team	**RRV**	Regional Roads Victoria
EMV	Emergency Management Victoria	**SAC**	State Agency Commander
ERC	Emergency Relief Centre	**SBO**	Special Building Overlay
FO	Floodway Overlay	**SCC**	State Control Centre

GAR	Great Alpine Road	**SDO**	State Duty Officer
IC	Incident Controller	**SEMP**	State Emergency Management Plan
IIA	Initial Impact Assessment	**VICSES**	Victoria State Emergency Service
SEWS	Standard Emergency Warning Signal		
VICPOL	Victoria Police		

Part 1. Introduction

1.1 Approval and Endorsement

This Municipal Flood & Strom Emergency Plan (MFSEP) has been prepared by the Municipal Flood & Storm Planning Committee with the authority of the Alpine Shire Municipal Emergency Planning Committee (MEMPC) –pursuant to Section 20 of the Emergency Management Act 1986 (as amended).

The Alpine Shire MFSPC have undertaken the following consultations with the community about the arrangements contained within this plan:

- *Alpine Shire MEMPC community representatives*

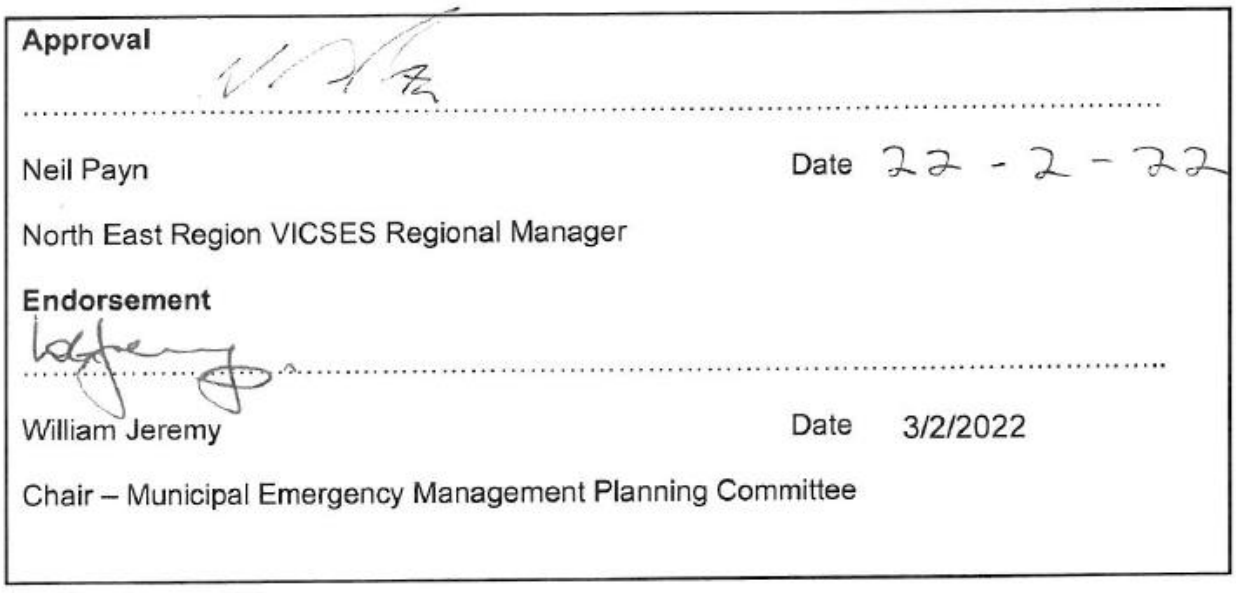
This MFSEP is a sub plan to the Alpine Shire Emergency Management Plan (MEMP), is consistent with the Emergency Management Legislation Amendment Act 2018 (EMLA Act) and the Victorian Floodplain Management Strategy (2016), and takes into account the outcomes of the Community Emergency Risk Assessment (CERA) process undertaken by the Municipal Emergency Management Planning Committee (MEMPC).

The MFSEP is consistent with the Regional Flood Emergency Plan (RFEP) and the State Emergency Management Plan (SEMP) – Flood sub-plan.

This MFSEP is a result of the cooperative efforts of the MFSPC and its member agencies.

This Plan is approved by the VICSES Regional Manager.

This Plan is endorsed by the Alpine Shire MEMPC as a sub-plan to the MEMP.



1.2 Purpose and Scope of this Flood Emergency Plan

The purpose of this MFSEP is to detail arrangements agreed for managing a flood and storm emergency before, during and after it occurs or potentially occurs within Alpine Shire

As such, the scope of the Plan is to:

- Identify the local flood risk;
- Support the implementation of mitigation and planning measures to minimise the causes and impacts of flooding;
- Detail emergency management arrangements;
- Identify linkages with Local, Regional and State emergency and wider planning arrangements with a specific emphasis on those relevant to flood.

1.3 Municipal Flood & Storm Planning Committee (MFSPC)

Membership of the Alpine Shire Flood & Storm Planning Committee (MFPC) comprises of the following representatives from the following agencies and organisations:

- VICSES (i.e. Unit Controller & Regional Officer – Emergency Management) **(Chair)**,
- Alpine Shire Council (i.e. Municipal Emergency Management Officer)
- Victoria Police (i.e. Municipal Emergency Response Co-ordinator) (MERC),
- North East Catchment Management Authority (CMA),
- Department of Families, Fairness and Housing (DFFH) as required,
- Department of Environment, Land, Water and Planning (DELWP) as required,
- North East Catchment Management Authority,
- Water authorities as required,
- Bureau of Meteorology as required,
- Local community representatives

1.4 Responsibility for Planning, Review & Maintenance of this Plan

This MFSEP must be maintained in order to remain effective.

VICSES through the MFSPC has responsibility for facilitating the preparation, review, maintenance and distribution of this plan.

The MFSPC will meet at least once per year. The plan should be reviewed following:

- A new flood study;
- A significant change in flood mitigation measures;
- After the occurrence of a significant flood event within the Municipality;
- Or if none of the above occur, every 3 years.

Part 2. BEFORE: Prevention / preparedness arrangements

2.1 Community Engagement and Awareness

Details of this MFSEP will be released to the community through; local media, any Flood and StormSafe engagement initiatives and websites (VICSES and the Municipality) upon formal adoption by VICSES and the Alpine Shire.

VICSES with the support of Alpine Shire and North East CMA will coordinate targeted community flood and storm engagement programs within the council area.

Refer to appendix H – LFG, StormSafe and FloodSafe Information.

2.2 Structural Flood Mitigation Measures

The following summary of structural flood mitigation measures exist within the Council area:

Myrtleford

Flood mitigation works for Myrtleford were investigated as part of the Myrtleford Floodplain Management Study (2000). A Community Based Committee was subsequently appointed to develop a Water Management Scheme under the *Water Act 1989*. The Water Management Scheme subsequently adopted (Option H) which includes the following components:

- Construction of a diversion channel from Happy Valley Creek to the Ovens River on the upstream side of Myrtleford.
- Sealing of openings in a section of the Rail Trail embankment.
- Excavation and re-shaping of natural depressions in combination with road crossing structure upgrades to form a network of floodways.
- Construction of a new 1.6 km levee on the town side of Happy Valley Creek.
- Reconstruction of an existing levee along the southern side of Happy Valley Creek.
- Removal of two short sections of existing levees.
- Extensive waterway management works on the Ovens River and Happy Valley Creek.

The diversion channel from Happy Valley Creek to the Ovens River was constructed in 2009 and opened in 2010, prior to the flood events of September 2010. The remaining works, were investigated through a consultancy managed by Alpine Shire in 2015 but did not proceed following a review of cost estimates and community consultation.

Works were undertaken in 2018 to provide a single lane bypass route around an area of frequent flooding over the Great Alpine Road at Eurobin (east of Wobonga Lane), providing for vehicle movement (<20T) under traffic control.

Refer to appendix C for detailed information of structural flood mitigation measures.

2.3 Non-structural Flood Mitigation Measures

2.3.1 Exercising the Plan

Arrangements for exercising this Plan will be at the discretion of the MEMPC. It is recommended that the MFSEP is exercised on an annual basis and reviewed in line with Section 1.4.

2.3.2 Flood Warning

Arrangements for Bureau issued Flood Watch and Flood Warning and storm warning products are contained within the SEMPSub Plan – Flood (www.ses.vic.gov.au/about-us/state-and-regional-emergency-plans) and on the Bureau of Meteorology (BoM) website www.bom.gov.au.

Details on Warnings issued by VICSES through VicEmergency and VICSES channels are outlined in **Appendix E**.

2.3.3 Local Knowledge

Community Observers provide local knowledge to VICSES and the Incident Control Centre regarding local insights and the potential impacts and consequences of an incident and may assist with the dissemination of information to community members.

2.3.4 Snap Send Solve – Flood Observations

Snap Send Solve is an existing app currently used by the community to notify local councils and other authorities of issues that need addressing such as cracked pavements, parking problems, dumped rubbish, graffiti etc.

The existing functionality of the smartphone app has been adapted for VICSES in a well presented and user friendly way. The app is used to capture flood observations by filling in a simple form on your smartphone and using the camera to upload photos, this information is then displayed through an administration portal to collate and view the flood data.

The app component has been made available to flood observers in VICSES Units with plans for other emergency services and trusted members of the community. Their observations will be visible in EMCOP where Intelligence personnel in IMT's can access them during flood events.

The intent is that better access to local knowledge will add to information sources in order to maximise public information communications and flood response efforts.

Part 3. DURING: Response arrangements

3.1 Introduction

3.1.1 Activation of Response

Flood response arrangements may be activated by the Regional Duty Officer (RDO) VICSES North East Region or Regional Agency Commander (RAC).

The VICSES Incident Controller (IC)/RDO will activate agencies as required as documented in the State Emergency Management Plan - Flood.

3.1.2 Responsibilities

There are a number of agencies with specific roles that will act in support of VICSES and provide support to the community in the event of a serious flood or storm within the Alpine Shire. These agencies will be engaged through the EMT.

The roles and responsibilities of supporting agencies are as agreed within the SEMP, Table 10 – Response support agencies and SEMP Sub Plan – Flood/storm and Regional Flood/storm Emergency Plan.

3.1.3 Emergency Coordination Centre or equivalent

If established, liaison with the emergency coordination centre will be through the established Division/Sector Command and through Municipal involvement in the IEMT, in particular the Municipal Emergency Response Coordinator (MERC). The VICSES RDO / ICC will liaise with the centre directly if no Division/Sector Command is established.

The function, location, establishment and operation of an emergency coordination centre if relevant will be as detailed in the MEMP.

3.1.4 Escalation

Many flood incidents are of local concern and an appropriate response can usually be coordinated using local resources. However, when these resources are exhausted, the State's arrangements provide for further resources to be made available, firstly from neighbouring Municipalities (on a regional basis) and then on a State-wide basis.

Resourcing and event escalation arrangements are described in the SEMP.

3.2 The six C's

Arrangements in this MFSEP must be consistent with the 6 C's detailed in State and Regional Flood Emergency Plans and the MEMP. For further information, refer to the SEMP.

- **Command:** Overall direction of response activity in an emergency.
- **Control:** Internal direction of personnel and resources within an agency.
- **Coordination:** Bringing together agencies and resources to ensure effective preparation for response and recovery.
- **Consequence:** Management of the effect of emergencies on individuals, communities, infrastructure and the environment.
- **Communication:** Engagement and provision of information across agencies and proactively with the community around preparation, response and recovery in emergencies.
- **Community Connection:** Understanding and connecting with trusted networks, leaders and communities around resilience and decision making.

Specific details of arrangements for this plan are to be provided in **Appendix C**.

3.2.1 Control

Functions 5(a) and 5(c) at Part 2 of *the Victoria State Emergency Service Act 1986 (as amended)* detail the authority for VICSES to plan for and respond to flood.

Table 9 – Roles and Responsibilities in the SEMP prepared under the ELMA Act 2018, identifies VICSES as the Control Agency for Flood and Storm. It also identifies a number of support agencies in Table 10. A more detailed explanation of roles and responsibilities can be found in the tables on the EMV website.

The SEMP identifies DELWP as the Control Agency responsible for "dam safety, water and sewerage asset related incidents" and other emergencies. A more detailed explanation of roles and responsibilities is available on the EMV website

All flood response activities within the Alpine Shire including those arising from a dam failure or retarding basin / levee bank failure incident will therefore be under the control of the appointed IC, or delegated representative.

3.2.2 Incident Controller (IC)

An Incident Controller (IC) will be appointed by the VICSES (as the Control Agency) to command and control available resources in response to a flood or storm event on the advice of the Bureau of Meteorology (or other reliable source) that a flood or storm event will occur or is occurring. The IC responsibilities are as defined in the SEMP.

3.2.3 Incident Control Centre (ICC)

As required, the IC will establish an Incident Control Centre (ICC) from which to initiate incident response command and control functions. The decision as to if and when the ICC should be activated, rests with the Control Agency (i.e. VICSES).

Pre-determined ICC locations are available in the Alpine MEMP.

Incident Level	Location	ICC Location	Facility owner	Key contact
2	VICSES Hume Regional Office	64 Sydney Road, Benalla	VICSES	Benalla SES ICC 9256 7799 or RAC
3	CFA District 23 Headquarters	1 Ely Street, Wangaratta	CFA	Wangaratta ICC 5720 2300 or CFA duty officer
3	CFA District 24 Headquarters	55 Moorefield Park Drive, Wodonga	CFA	Wodonga ICC 02) 6043 4400 or CFA duty officer

3.2.4 Divisions and Sectors

To ensure that effective Command and Control arrangements are in place, the IC may establish Divisions and sectors depending upon the complexity of the event and resource capacities.

The following Divisions and Sectors may be established to where applicable to assist with the management of flooding within the Municipality:

Division	Sector
Bright Fire Brigade (CFA) – If Alpine CEOC operating alternately report to Wangaratta Div Com)	Bright Unit LHQ – 16 Churchill Ave, Bright, VIC 3741 03 5755 2099
	Myrtleford Unit LHQ – 16 Jubilee St, Myrtleford VIC 3737 03 5752 2122
	Mt Beauty (CFA) - Lakeside Ave, Mount Beauty VIC 3699 03 5754 4060
Wangaratta DCP – SES Wangaratta LHQ, 36 Handley Street, Wangaratta VIC 3676 03 5722 1900	Wangaratta DCP – SES Wangaratta LHQ, 36 Handley Street, Wangaratta VIC 3676 03 5722 1900

VICSES Field Operations Vehicles (FOVs) are also available for deployment where appropriate through the VICSES North East RDO.

3.2.5 Incident Management Team (IMT)

The IC will form an Incident Management Team (IMT).

Refer to the SEMP for guidance on IMTs and Incident Management Systems (IMSs).

3.2.6 Emergency Management Team (IEMT)

The IC will establish a multi-agency Incident Emergency Management Team (IEMT) to assist the flood response. The IEMT consists of key personnel (with appropriate authority) from stakeholder agencies and relevant organisations who need to be informed of strategic issues related to incident control. They are able to provide high level strategic guidance and policy advice to the IC for consideration in developing incident management strategies.

Organisations, including Alpine Shire, required within the IEMT will provide an Emergency Management Liaison Officer (EMLO) to the ICC if and as required as well as other staff and / or resources identified as being necessary, within the capacity of the organisation.

Refer to 3 of the SEMP for guidance on IEMTs.

3.2.7 On Receipt of a Flood Watch / Severe Weather Warning

SES SOP008 and SES SOP009 outline in detail the actions to be undertaken upon receipt of a Flood Watch/Flood Warning or Severe Weather Warning. VICSES RDO (until an incident controller is appointed) or IC will undertake actions as defined within the flood intelligence cards (**Appendix C**). General considerations by the IC/VICSES RDO will be as follows:

- Review flood intelligence to assess likely flood consequences. This can include contacting the BoM Flood Desk
- Monitor weather and flood information – www.bom.gov.au
- Assess Command and Control requirements.
- Ensure flood warnings and community information is prepared and issued to the community in the timeframe allocated
  - Flood (Riverine and flash) Warnings are managed by the RDO/RAC. Issuing a Flood Watch will become automated by BoM from 1/12/21.
  - Severe Weather/ Thunderstorm warnings are managed by SDO/SAC
- Develop media and public information management strategy
- Review local resources and consider needs for further resources regarding personnel, property protection, flood rescue and air support
- Notify and brief appropriate officers. This includes Regional Control Centre (RCC) (if established), State Control Centre (SCC) (if established), Council, other emergency services through the EMT.
- Assess ICC readiness (including staffing of IMT and IEMT) and open if required
- Monitor watercourses and undertake reconnaissance of low-lying areas
- Ensure flood mitigation works are being checked by owners
- Develop and issue incident action plan, if required
- Develop and issue situation report, if required

3.2.8 On Receipt of the First and Subsequent Flood Warnings

VICSES RDO (until an incident controller is appointed) or IC will undertake actions as defined within the flood intelligence cards **(Appendix C).** General considerations by the IC/VICSES RDO will be as follows:

- Develop an appreciation of current flood levels and predicted levels. Are floodwaters rising, steady, peaking or falling?
- Review flood intelligence to assess likely flood consequences.
- Consider:
  - What areas may be at risk of inundation?
  - What areas may be at risk of isolation?
  - What areas may be at risk of indirect affects as a consequence of power, gas, water, telephone, sewerage, health, transport or emergency service infrastructure interruption?
  - The characteristics of the populations at risk
- Determine what the at-risk community need to know and do as the flood develops.
- Warn the at-risk community including ensuring that an appropriate warning and community information strategy is implemented including details of: (as are established sections in warning templates)

- The current flood situation
- Flood predictions
- What the consequences of predicted levels may be
- Public safety advice
- Who to contact for further information
- Who to contact for emergency assistance

- Liaise with relevant asset owners as appropriate (eg. Water, power utilities)
- Implement response strategies as required based upon flood consequence assessment.
- Continue to monitor the flood situation – www.bom.gov.au/vic/flood/
- Continue to conduct reconnaissance of low-lying areas
- Liaise with relevant flood mitigation infrastructure managers

3.3 Initial Impact assessment

Initial impact assessments will be conducted in accordance with the SEMP & Victorian Preparedness Framework to assess and record the extent and nature of damage caused by flood or storm. This information may then be used to provide the basis for further needs assessment and recovery planning by DFFH and recovery agencies.

3.4 Preliminary Deployments

When flooding or storms are expected to be severe enough to cut access to towns, suburbs and/or communities the IC will consult with relevant agencies to ensure that resources are in place if required to provide emergency response. These resources might include emergency service personnel, food items and non-food items such as medical supplies, shelter, assembly areas, relief centres etc.

3.5 Response to Flash Flooding

Emergency management response to flash flooding should be consistent with the guideline for the emergency management of flash flooding contained within the State Emergency Management Plan (SEMP) - Flood.

When conducting pre-event planning for flash floods the following steps should be followed, and in the order as given:

1. Determine if there are barriers to evacuation by considering warning time, safe routes, resources available and etc;

2. If evacuation is possible, then evacuation should be the adopted strategy and it must be supported by a public information capability and a rescue contingency plan;

3. Where it is likely people will become trapped by floodwaters due to limited evacuation time or options safety advice needs to be provided to people at risk. Advise should be given to not attempt to flee by entering floodwater. If people become trapped, it may be safer to seek the highest point within the building and to telephone 000 if they require rescue. (Included in warning template content)

4. For buildings known to be structurally un-suitable an earlier evacuation trigger will need to be established (return to step 1 of this cycle).

5. If an earlier evacuation is not possible then specific preparations must be made to rescue occupants trapped in structurally unsuitable buildings either pre-emptively or as those people call for help.

6. Contact the Alpine Shire MERC and MEMO at the earliest opportunity to allow for relief preparation to commence.

Due to the rapid development of flash flooding it will often be difficult, to establish relief centres ahead of actually triggering the evacuation. This is normal practice but this is insufficient justification for not adopting evacuation.

3.6 Evacuation

The IC decides whether to warn people to evacuate or if it is recommended to evacuate immediately.

Once the decision is made VicPol are responsible for the management of the evacuation process where possible. VICSES and other agencies will assist where practical. VICSES is responsible for the development and communication of evacuation warnings.

VicPol and/or Australian Red Cross may take on the responsibility of registering people affected by a flood emergency including those who have been evacuated through Register, Find, Reunite.

Refer to the Victoria Police Roles and Responsibilities - Role Statement, as part of the SEMP

Refer to **Appendix C** of this Plan and the MEMP for additional local evacuation considerations for the municipality.

3.7 Flood Rescue

VICSES may conduct flood rescues. Appropriately trained and equipped VICSES units or other agencies that have appropriate training, equipment and support may carry out rescues.

Rescue operations may be undertaken where voluntary evacuation is not possible, has failed or is considered too dangerous for an at-risk person or community. An assessment of available flood rescue resources (if not already done prior to the event) should be undertaken prior to the commencement of Rescue operations.

Rescue is considered a high-risk strategy to both rescuers and persons requiring rescue and should not be regarded as a preferred emergency management strategy. Rescuers should always undertake a dynamic risk assessment (DRA) before attempting to undertake a flood rescue.

Victoria Police Rescue Coordination Centre should be notified of any rescues that occur: (03) 9399 7500

The following resources are available within Alpine Shire to assist with rescue operations:

Boat	**Location**
NIL Vessels in Alpine Shire	
Boat 574 – Achilles SG-140	VICSES Wangaratta Unit

Other vessels available from neighbouring Units at request of VICSES RDO

3.8 Aircraft Management

Aircraft can be used for a variety of purposes during flood operations including evacuation, resupply, reconnaissance, intelligence gathering and emergency travel.

Air support operations will be conducted under the control of the IC

The IC may request aircraft support through the State Air Desk located at the SCC will establish priorities.

Suitable airbase facilities are located at:

- Wangaratta Aerodrome: located 7km directly south of the city, close to the Hume Highway and is owned and operated by the Rural City of Wangaratta.
- Porepunkah: Two nautical miles south of Porepunkah located in the Buckland Valley on the east side of Mount Buffalo National Park. More info at http://www.ypok.org.au/
- Mt. Beauty: Approximately one kilometre north of Mount Beauty. It is immediately north of the hydropower station regulating pondage and approximately one kilometre east of the Kiewa Valley Highway. More info at http://www.ymbt.org.au/

3.9 Resupply

Communities, neighbourhoods or households can become isolated during floods as a consequence of road closures or damage to roads, bridges and causeways. Under such circumstances, the need may arise to resupply isolated communities/properties with essential items.

When predictions/intelligence indicates that communities, neighbourhoods and/or households may become isolated, VICSES will advise businesses and/or households that they should stock up on essential items.

After the impact, VICSES can support isolated communities through assisting with the transport of essential items to isolated communities and assisting with logistics functions.

Resupply operations are to be included as part of the emergency relief arrangements with VICSES working with the relief agencies and Alpine Shire to service communities that are isolated.

3.10 Essential Community Infrastructure and Property Protection

Essential Community Infrastructure and Property (e.g. residences, businesses, roads, power supply etc.) may be affected in the event of a flood.

The Alpine Shire maintains a small stock of sandbags, and back-up supplies are available through the VICSES Regional Headquarters. The IC will determine the priorities related the use of sandbags, which will be consistent with the strategic priorities.

If VICSES sandbags are becoming limited in supply, then priority will be given to protection of Essential Community Infrastructure. Other high priorities may include for example the protection of historical buildings.

Property may be protected by:

- Sandbagging to minimise entry of water into buildings
- Encouraging businesses and households to lift or move contents
- Construction of temporary levees in consultation with the CMA, Alpine Shire and VICPOL and within appropriate approval frameworks.

The IC will ensure that owners of Essential Community Infrastructure are kept advised of the flood situation. Essential Community Infrastructure providers must keep the IC informed of their status and ongoing ability to provide services.

Contact your local VICSES representative for the most current Sandbag Guidelines or download it from IMT Toolbox in EMCOP- Operations.

Refer to **Appendix C** for further specific details of essential infrastructure requiring protection and location of sandbag collection point(s).

3.11 Disruption to Services

Disruption to services other than essential community infrastructure and property can occur in flood events. Refer to **Appendix C** for specific details of likely disruption to services and proposed arrangements to respond to service disruptions in Alpine Shire.

3.12 Road Closures

Alpine Shire and Regional Roads Victoria (RRV) will carry out their formal functions of road closures including observation and placement of warning signs, road blocks etc. to its designated local and regional roads, bridges, walking and bike trails. Alpine Shire staff should also liaise with and advise RRV as to the need or advisability of erecting warning signs and / or of closing roads and bridges under its jurisdiction. RRV are responsible for designated main roads and highways and councils are responsible for the designated local and regional road network.

RRV and Alpine Shire will communicate community information regarding road closures. Information will be updated on the VIC Traffic website: https://traffic.vicroads.vic.gov.au/

Refer to **Appendix C** for specific details of potential road closures.

3.13 Dam Spilling/ Failure

DELWP is the Control Agency for dam safety incidents (e.g. breach, failure or potential breach / failure of a dam), however VICSES is the Control Agency for any flooding that may result.

DELWP have developed Dam Safety Emergency Plans for municipalities where it is applicable.

Major dams with potential to cause structural and community damage within the Municipality are described in **Appendix A**.

3.14 Waste Water related Public Health Issues and Critical Sewerage Assets

Inundation of critical sewerage assets including septic tanks and sewerage pump stations may result in water quality problems within the Municipality. Where this is likely to occur or has occurred the responsibility agency for the critical sewerage asset should undertake the following:

- Advise VICSES of the security of critical sewerage assets to assist preparedness and response activities in the event of flood;
- Maintain or improve the security of critical sewerage assets;
- Check and correct where possible the operation of critical sewerage assets in times of flood;
- Advise the ICC in the event of inundation of critical sewerage assets.

It is the responsibility of the Alpine Shire Environmental Health Officer to inspect and report to the MEMO and the ICC on any water quality issues relating to flooding.

3.14.1 Public Health Issues and Critical Sewerage Assets

Inundation of sewerage assets including sewerage pump stations during surface flooding may result in water quality problems within the municipality. Where this is likely to or has occurred, the relevant Water Corporation will be responsible for:

- Identification and monitoring critical assets to assist preparedness and response activities in the event of flooding
- Advising VICSES/ICC of any potential or current service delivery continuity threats to critical sewerage infrastructure
- Developing action plan(s) in consultation with the Incident Controller to protect critical sewerage infrastructure assets

Inundation of septic tank systems may also result in similar water quality problems. In the event of flood waters contaminated by septic tank systems, the Alpine Shire Environmental Health Officer is to advise the ICC and relevant Water Corporation. Assessment and actions are detailed above.

North East Water on-call Duty Officer or Duty Manager support can be made via the MEMPlan contact list which is held in EMCOP under the Alpine Shire space or Hume region contacts.

3.14.2 Preventing Illness from Contaminated Water

Drinking water (potable reticulated water supply systems) have the capacity to deal with flood situations due to protective barriers such as positive pressure and chlorine unless there is damage to key infrastructure or the system experiences a mains failure during the flood event. The relevant Water Corporation will be responsible for:

- Monitoring the performance and capacity of their respective potable water supply system
- Providing advice to the Incident Controller (IC) of any potential threat to supply or critical infrastructure
- Advising the IC whether town water (potable) supply is at risk, in consultation with the Incident Controller and Department of Health and Human Services will notify consumers and the community if the water is not safe to drink, including issuing the necessary advice (e.g. Boil Water Advisory Notice)
- Developing an action plan in consultation with the IC to protect critical water supply assets

The Municipal Environmental Health Officer will provide oversight and assistance for private domestic systems and support the relevant Water Corporation as needed.

The Incident Controller will develop drinking water warnings in consultation with the relevant Water Corporation(s) (e.g. North East Water for urban supplies and Goulburn-Murray Water for non-town water users for stock and domestic), Municipal Environmental Health Officer and Health Commander

3.15 Access to Technical Specialists

VICSSES Manages contracts with private technical specialists who can provide technical assistance in the event of flood operations or geotechnical expertise. Refer to VICSES SOP061 for the procedure to engage these specialists.

3.16 After Action Review

VICSES will coordinate the after action review arrangements of flood operations as soon as practical following an event.

All agencies involved in the flood incident should be represented at the after action review.

Part 4. AFTER: Emergency relief and recovery arrangements

4.1 General

Arrangements for recovery from a flood and/or storm event within Alpine Shire is detailed in the Alpine Shire Council's Relief and Recovery Operational Guidelines within the MEMP.

4.2 Emergency Relief

The decision to recommend the opening of an emergency relief centre sits with the IC in consultation with the Alpine Shire MRM. The IC is responsible for ensuring that relief arrangements have been considered and implemented where required under the SEMP.

The range and type of emergency relief services to be provided in response to a flood event will be dependent upon the size, impact, and scale of the flood or storm. Refer to the SEMP for details of the range of emergency relief services that may be provided.

Suitable relief facilities identified for use during floods are detailed in **Appendix C** and the Alpine Shire MEMP.

Details of the relief arrangements are available in the MEMP.

4.3 Animal Welfare

Matters relating to the welfare of livestock and companion animals (including feeding and rescue) are to be referred to Department of Jobs, Precincts and Regions (DJPR (Agriculture Victoria)).

Requests for emergency supply and/or delivery of fodder to stranded livestock or for livestock rescue are passed to DJPR (Agriculture Victoria).

Matters relating to the welfare of wildlife are to be referred to the DELWP RAC.

Refer to **Appendix C** for animal shelter compound locations.

4.4 Transition from Response to Recovery

VICSES as the Control Agency is responsible for ensuring effective transition from response to recovery. This transition will be conducted in accordance with existing arrangements as detailed in the SEMP or the Alpine Shire MEMP.

Appendix A: Overview of flood threats for Alpine Shire

This Appendix is to provide a broad overview of flood risk within the Alpine Shire. Detailed Flood Risk Information for Individual Communities found in **Appendix C.**

- C1 – River Systems Overview & Schematics
- C2 – Harrietville Flood Emergency Plan
- C3 – Bright Flood Emergency Plan
- C4 – Porepunkah Environs Flood Emergency Plan
- C5 – Myrtleford Flood Emergency Plan
- C6 – Mt. Beauty Flood Emergency Plan

General

The Alpine Shire encompasses the upper and middle reaches of the Ovens River and the Kiewa River catchments.

Ovens River

The Ovens River and its tributaries drain from the north-eastern alpine country from Mount Feathertop across to Mount Howitt and Mount Stirling. Within Alpine Shire the Ovens River passes through the townships of Harrietville, Bright, Porepunkah and Myrtleford. Major tributaries within the Alpine Shire are the Buckland River (entering the Ovens River downstream of Porepunkah), Happy Valley Creek (confluence near Ovens) Buffalo River and Buffalo Creek (confluence adjacent and downstream of Myrtleford) and Barwidgee Creek (Myrtleford) and Morses Creek from Wandiligong into Bright.

Downstream of Alpine Shire, the Ovens River meets the King River at Wangaratta then continues north-west to join the Murray River at Bundalong.

The October 1993 flood event in the Ovens River has been recognised as having an equivalent average return interval (ARI) of approximately 60 years (1.7%AEP) at Rocky Point downstream of Myrtleford. while the September 1998 and May 1974 events have an ARI of 45 years (2%AEP) and 15 years (7% AEP) respectively. The flood event of September 2010 was of similar magnitude to the September 1998 event.

The Kiewa River

The east and west branches of the Kiewa River rise in the alpine landscapes of the Great Dividing Range, southeast of Victoria's highest mountain, Mt Bogong. The western branch rises near Mount Hotham, then flows northward, largely unregulated, from the high plains through a steep forested valley. The eastern branch rises as creeks above Falls Creek and its upper reach is impounded by the Rocky Valley storage. Leaving the high plains, the east Kiewa branch flows north through a steep forested valley, delivering water to a series of pondages, tunnels and aqueducts for the largest hydro-electric scheme in Victoria. The east branch of the Kiewa River is joined by the Bogong and Mountain creeks before merging with west branch of the Kiewa north of Mount Beauty.

After Mount Beauty, the Kiewa River flows north along a widening valley, cleared for agriculture, dairy in particular. The valley is some of the most productive land in north-east Victoria. Significant stands or remnant areas of vegetation are found along most of the valley. The lower reaches of the river divert into floodplain wetlands before merging with the River Murray between Lake Hume and Albury-Wodonga.

The landscape of the Kiewa catchment ranges from the high plains of the Great Dividing Range, around 1,600 m high, to the northern floodplains near Albury–Wodonga with an elevation of around 160 metres.

Most of the catchment receives more than 700 mm average annual rainfall, with the Bogong High Plains experiencing much higher falls (to almost 2,500 mm) including snow in winter.

Historic Floods

Year	Waterway	Description
Oct 1993	Ovens River	Major flooding in Ovens Valley (largest on record) Bright, Harrietville, Kiewa Valley, Myrtleford and vast rural areas, resulting in extensive damage to homes, infrastructure and the community.) 90 homes and 32 businesses in Myrtleford flooded above floor level and 202 properties cut off by floodwater.
Oct 1996	Ovens River	Flooding in Myrtleford area
Sept 1998	Ovens & Kiewa River's & Happy Valley Creek	Major flooding in Ovens & Kiewa Valleys (largest on record for Kiewa valley) 112 buildings flooded above floor level in Myrtleford. Extensive flooding in the floodplain between Happy Valley Creek & the Ovens River. Many road closures
Sept 2010	Ovens & Kiewa River's & Happy Valley Creek	Major flooding in the Ovens and Kiewa valley. 18 Low lying houses were evacuated around Myrtleford, water flooded the car park behind Target and impacted shops backing onto Happy Valley Creek.
Dec 2010	Ovens & Kiewa River's & Happy Valley Creek	Moderate flooding in the Ovens and Major Flooding in the Kiewa valley (but smaller than Sept 2010 at Mongans Bridge) 19 People evacuated from the Myrtleford and Arderns Caravan Parks
Oct 2016	Ovens River at Myrtleford	10 properties at risk of flooding when the Ovens River at Eurobin peaked at 6.18m at Major Flood Class Level. Many properties isolated on the Ovens River and Happy Valley Creek Flood Plain. Evacuation message sent as predicted Flood height was well above the Major Flood level

Description of Major Waterways and Drains

Waterway or Drain	Description
Ovens River	The Ovens River and its tributaries carry run-off from the north-eastern alpine country from Mount Feathertop across to Mount Speculation. The Ovens River passes through the townships of Harrietville, Bright, Porepunkah and Myrtleford. Major tributaries are the Buckland River, Happy Valley Creek, Buffalo Creek, Buffalo River and Barwidgee Creek and Morses Creek. Downstream of Alpine Shire the Ovens River is joined by the King River, Fifteen Mile Creek and Reedy Creek near Wangaratta before continuing north-west to the Murray River at Bundalong.
Buckland River	The Buckland River drains the northern slopes of the Victorian Alps west of Mount Hotham and the east facing slopes of Mt Buffalo. The confluence with the Ovens River is located a short distance downstream of Porepunkah.
Buffalo River and Buffalo Creek	The Buffalo River (and tributaries Catherine River and Rose River) drains the northern slopes of the Victorian Alps between Mt Selwyn and Mt Cobbler and the western slopes of Mt Buffalo. Lake Buffalo located approximately 20 km south of Myrtleford provides limited flood mitigation due to the small size of the storage. The Buffalo River enters the Ovens River at Merriang a short distance downstream of Myrtleford. Buffalo Creek, draining the northern slopes of Mt Buffalo enters the Ovens River floodplain upstream of the Buffalo River Road.
Happy Valley Creek	Happy Valley Creek drains forested and farming land from Rosewhite through to Ovens. Happy Valley Creek enters the Ovens River at the township of Ovens. During significant flood events floodwaters from the Ovens River break out to the northern floodplain of the Ovens River upstream of Selzers Lane and are then conveyed by Happy Valley Creek along the northern margin of the floodplain through to Myrtleford.
Barwidgee Creek	Barwidgee Creek drains the catchment north and north-east of Myrtleford before skirting the northern side of Myrtleford, entering the Ovens River near the Ovens River / Happy Valley Creek confluence.
Kiewa River	The main river is formed by the confluence of the Kiewa River East branch and West Kiewa River at Towonga South. The Kiewa River flows generally north northwest, joined by eleven minor tributaries, towards its confluence with the Murray River, southeast of Albury and east of Wodonga.
Morses Creek	Morses Creek drains from the steep catchment around the Wandiligong Valley, including the Wandiligong township. The creek then flows towards Bright, through parts of the town itself (including caravan parks) and joins the Ovens River at Centennial Park in the main CBD of Bright.

Dam Spilling/ Failure

Flooding resulting from spilling or failure of the following dams is likely to cause significant structural and community damage.

DELWP is the Control Agency for dam safety incidents (e.g. breach, failure or potential breach / failure of a dam), however VICSES is the Control Agency for any flooding that may result.

Flooding resulting from failure of the following dams is likely to cause significant structural and community damage within the Alpine Shire.

The following supporting documentation is available from VICSES Regional HQ Office:

Ovens River Catchment				
Location	**Owner**	**Dam Height**	**Dam Capacity**	**Comments**
Lake Buffalo	Goulburn Murray Water	Embankment height 31m	24,000 ML	Located on the Buffalo River at the foot of the western slope of Mount Buffalo National Park.
Kiewa River Catchment				
Location	**Owner**	**Dam Height**	**Dam Capacity**	**Comments**
Rocky Valley Dam	AGL Energy (Operator)	30.5 m	29,110 ML	Located on Rocky Valley Creek, a tributary of the Kiewa River East Branch. Provides headwater storage for McKay Creek Power Station.
Pretty Valley Dam	AGL Energy (Operator)	8.2 m	350 ML	Located on Pretty Valley Creek, a tributary of the Kiewa River East Branch. Provides headwater storage for McKay Creek Power Station.
Junction Dam (Lake Guy)	AGL Energy (Operator)	26 m	1630 ML	Located on Kiewa River East Branch, receives discharge from McKay Creek PS via Bogong PS and acts and acts as headwater storage for Clover PS
Clover Dam	AGL Energy (Operator)	20 m	290 ML	Located on Kiewa River East Branch, receives discharge from Clover PS and acts as headwater storage for diversion of flows to West Kiewa PS.
Mt Beauty Regulating Pondage	AGL Energy (Operator)	6.1 m	900 ML	Receives outfalls from West Kiewa PS (diversion from Clover Dam on Kiewa River East Branch) and regulates flows prior to release to Kiewa River West Branch at Mt Beauty

Flood Mitigation

Mitigation	Description	Protection	Comments
Ovens & King River systems			
Happy Valley Creek Diversion Channel (Upstream of Myrtleford)	Constructed Diversion Channel	Effective up to 5.0m on the Ovens River at Eurobin Gauge (below Moderate Flood Class Level)	Diversion channel assists in diverting floodwater from the Happy Valley Creek to the Ovens River
Rail Trail vehicle bypass	Single-lane bypass suitable for carrying vehicles up to a 20 tonne gross mass between Myrtleford & Bright	Access for community and emergency services vehicles between Bright and Myrtleford during floods	A 976 metre section of the Murray to Mountains Rail Trail upgraded to a single-lane bypass suitable for carrying vehicles up to a 20 tonne gross mass.
Harrietville Levees	Earth levees: • Left bank of Ovens River East branch between Bon Accord Track and Feathertop Lane. • Right bank of Ovens River (downstream of confluence)	East Branch levee is above 1% AEP level, Floodwaters break out from East Branch (around and downstream of School Bridge) to land behind the east bank levee at approximate 20% AEP	Levees constructed during gold mining operations in the 1950s. The levees are not constructed to modern standards and may be prone to erosion or breach.

Appendix A1: Overview of storm threats for Alpine Shire

Overview

The Alpine Shire has experienced and is susceptible to severe weather events all year around. A combination of topography throughout the municipality, the public and private land interface, rural and agricultural settings and significant townships and tourism activities and events nestled amongst mature native vegetation and bushland means tree damage during wind events is a significant risk.

The Australian Alps also present a significant risk with the alpine areas around Falls Creek and Mount Hotham attracting visitors all year round combined with their altitude, snow and significant winds can create road closures, tree damage, significant rain and blizzards.

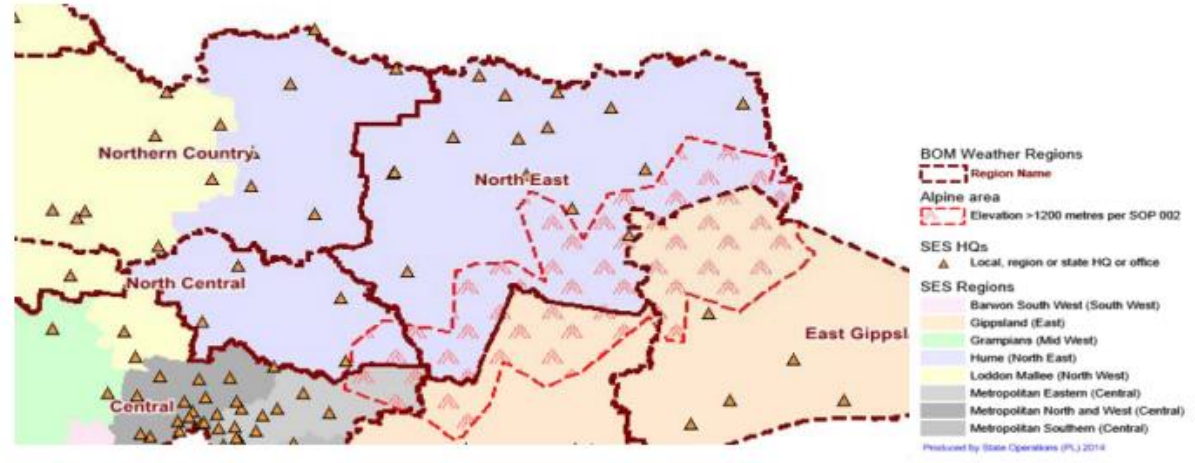
BoM's storm archive (www.bom.gov.au/australia/stormarchive/) and VICSES' records of recent events show the North East (Hume) Region to be very susceptible to severe storms, including tornadoes, large hail, flash flooding, severe winds and lightning. Though there are few dust storm events that have specifically impacted this region. There have also been isolated occurrences of atmospheric downbursts/microburst in Myrtleford and adjacent municipalities that have been very damaging.

People in the open, under trees or camping/tourists, are statistically the most vulnerable to death due to storm.

Older homes may be more susceptible to damage, as can properties undergoing development and renovation. Construction works can interfere, and excavations can interfere with natural drainage or stability of existing trees. Blocked drains and pits, or drainage systems that may be insufficiently sized also contribute to the effects of storm activity. Severe storm activity could result in injuries and an increase in road accidents. Damaging wind events can lead to trees down, with damage to the built and natural environment.

Obstructions across roads could disrupt services, affect community functioning and have great potential for road traffic delays for access and egress of the community and emergency services. Infrastructure near waterways, such as pedestrian bridges or their approaches may become damaged either directly or from debris that has been washed into the current, especially during flood events.

The VICSES North East (Hume) Region (see map below) includes four Bureau of Meteorology (BOM) weather districts (parts or all of): Northern Country, North East, North Central, and the Alpine area.



Historic Storm Events

Year	Location	Details
2019	GAR B/W Harrietville & Mt Hotham	Blizzard conditions closed Great Alpine Road after multiple vehicles became stuck in cold, slippery conditions. Evacuation of people from stuck vehicle to mt Hotham and Harrietville conducted.
Dec 2017	Bright	Storm event resulted in Building damage to 4 homes
Jan 2016	Mount Beauty	Storm event resulted in building damage to 4 homes
Nov 2002	Myrtleford	Severe wind storm passed through Myrtleford; 35 homes damaged with several uninhabitable
2013	Harrietville to Mt Hotham	Severe storm and flash flooding closed the Great Alpine Road between Harrietville and Hotham for 6 weeks for road repair after landslide in the “Harrietville fire” footprint..

VICSES Requests for Assistance – Severe Weather – Alpine Shire

This data uses Request for Assistance information from the Victoria State Emergency Service (VICSES) to display areas at risk from severe weather events. VICSES Severe Weather Requests for Assistance. The Victoria State Emergency Service records requests for assistance made by the public during severe weather events. Additional calls may have been made directly to Council during these events.

The Table below is a breakdown of requests for assistance (RFA) by type during the period Jan 2009 and June 2021 in relation to severe weather and storm events.

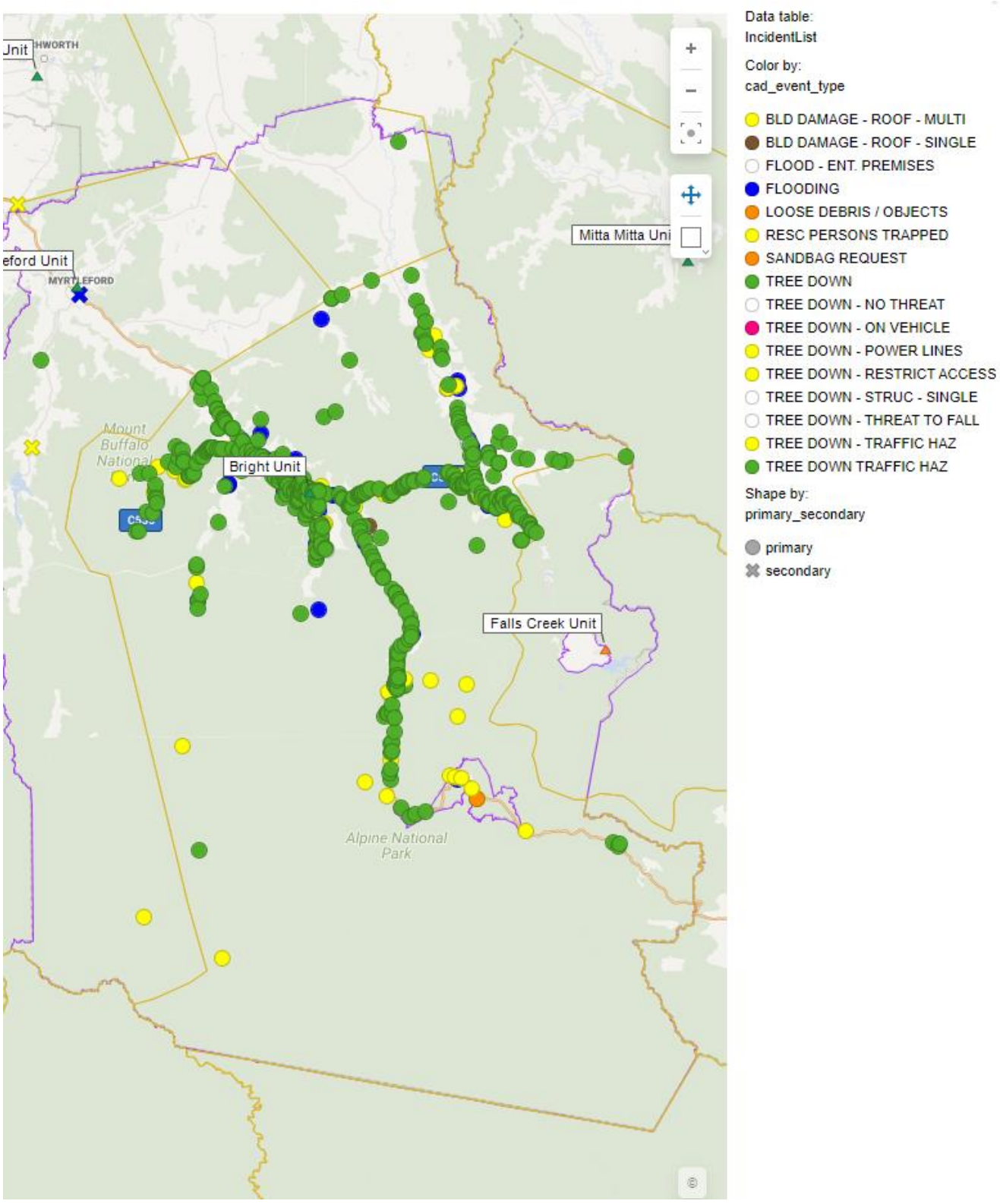
VICSES Storm & Flood Requets for Assistance Jan 2009 - June 2021 - Bright Unit

CAD Event Type	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
BLD DAMAGE - ROOF - MULTI												1	
TREE DOWN - ON VEHICLE											1	1	
FLOOD - ENT. PREMISES											1	2	
TREE DOWN - RESTRICT ACCESS											1	2	1
TREE DOWN - STRUC - SINGLE											1	2	
BLD DAMAGE - ROOF - SINGLE											2	3	
TREE DOWN - NO THREAT											1	3	
TREE DOWN - POWER LINES												3	
TREE DOWN - THREAT TO FALL											2	3	
RESC PERSONS TRAPPED	4	1	3	3	3	1		1	4	3	4	5	2
TREE DOWN - TRAFFIC HAZ											25	29	1
FLOODING	8	55	5	7	5	1	5	13	24	4			
LOOSE DEBRIS / OBJECTS											1		
SANDBAG REQUEST										1			
TREE DOWN	15	2	7	7	4	33	19	14	5	8	1		
TREE DOWN TRAFFIC HAZ	21	23	15	22	52	70	45	86	53	48	26		
Grand total	**48**	**81**	**30**	**39**	**64**	**105**	**69**	**114**	**86**	**64**	**66**	**54**	**4**

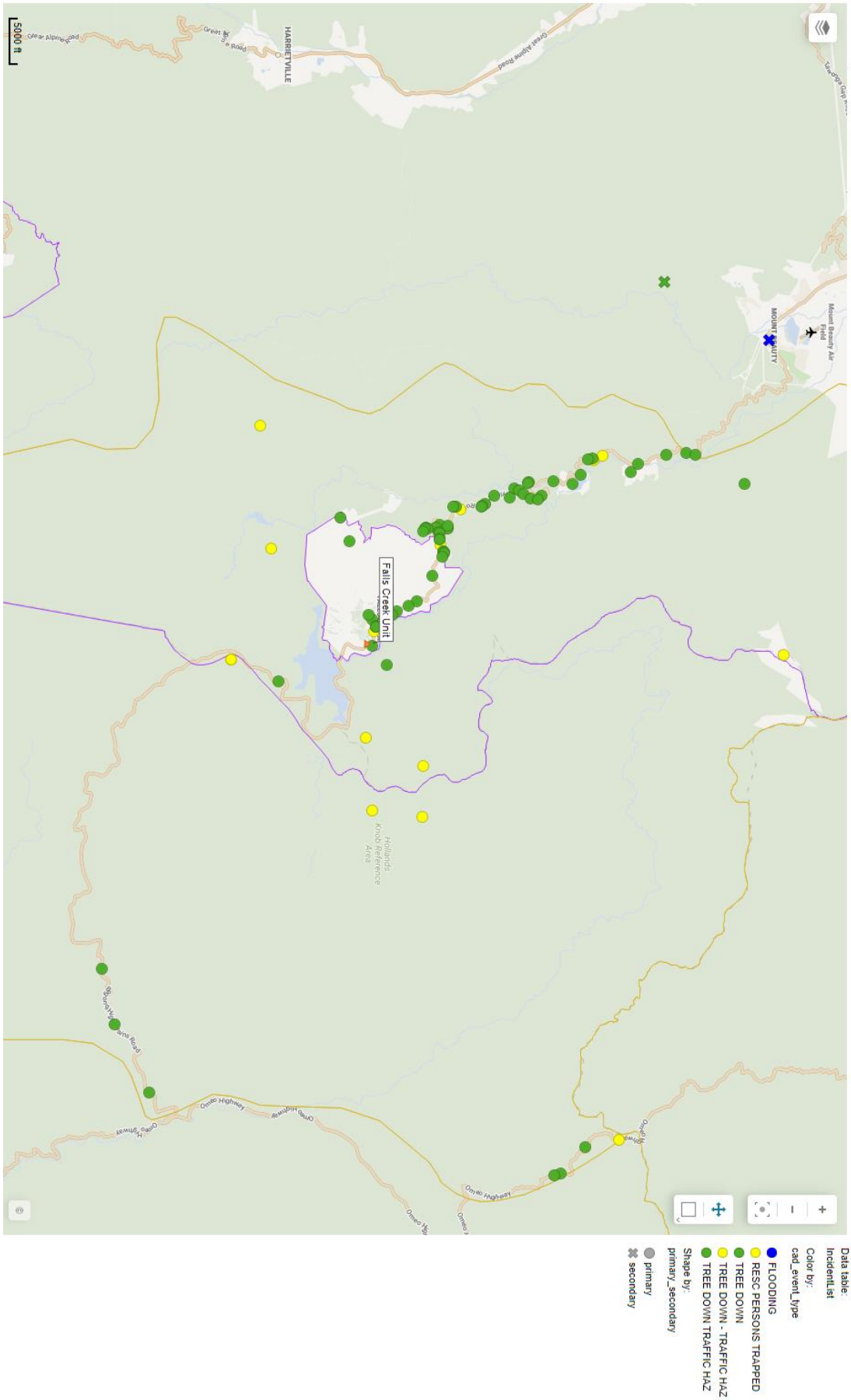
VICSES Storm & Flood Requets for Assistance Jan 2009 - June 2021 - Myrtleford Unit												
CAD Event Type	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
BLD DAMAGE - ROOF - SINGLE											3	2
RESC PERSONS TRAPPED	1	4	2	1	1		1		2	2	2	2
TREE DOWN - RESTRICT ACCESS												2
TREE DOWN - TRAFFIC HAZ											15	36
FLOOD - ENT. PREMISES											1	
FLOOD - POT TO ENT. PREMISES											3	
FLOODING	1	110	21		2	1	6	43	16	16		
TREE DOWN	11	7	3	1	8	4	10	13	4	3	3	
TREE DOWN - NO THREAT											2	
TREE DOWN - NOT THREATENING											1	
TREE DOWN - ON VEHICLE											1	
TREE DOWN - POWER LINES											1	
TREE DOWN - THREAT TO FALL											3	
TREE DOWN TRAFFIC HAZ	13	17	10	19	30	31	25	54	26	30	19	
Grand total	**26**	**138**	**36**	**21**	**41**	**36**	**42**	**110**	**48**	**51**	**54**	**42**

VICSES Storm & Flood Requets for Assistance Jan 2009 - June 2021 - Falls Creek Unit												
CAD Event Type	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
RESC PERSONS TRAPPED	1	1	1	1	2	1		1	2	2	3	2
TREE DOWN - TRAFFIC HAZ											3	3
FLOODING									1			
TREE DOWN	2	1		1		1	1		2			
TREE DOWN TRAFFIC HAZ	1	4	2	7	7	8	6	4	11	8	6	
Grand total	**4**	**6**	**3**	**9**	**9**	**10**	**7**	**5**	**16**	**10**	**12**	**5**

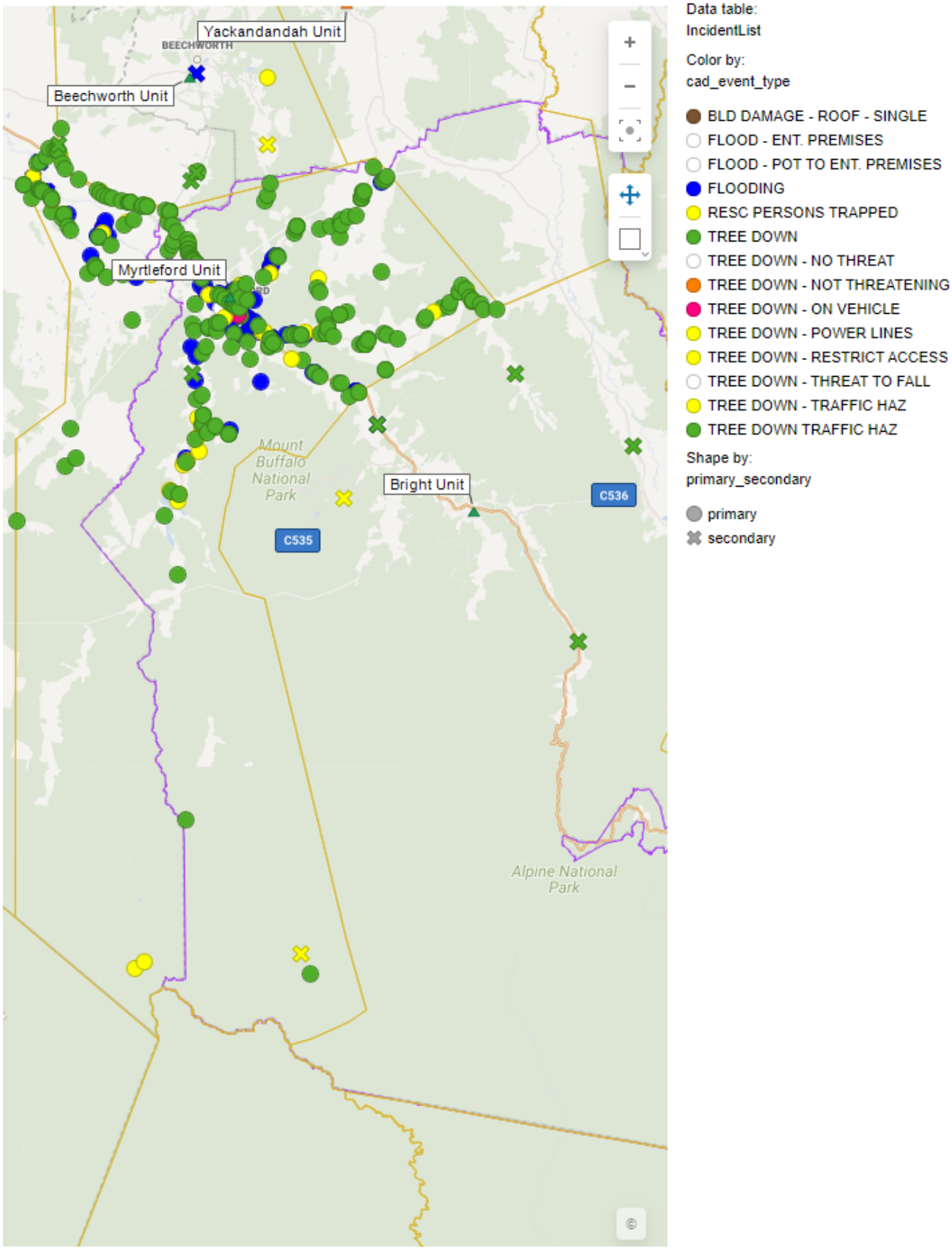
VICSES Severe Weather Requests for Assistance Mapping – Bright Unit – Jan 2009-Jun 2021



VICSES Severe Weather Requests for Assistance Mapping – Falls Creek Unit – Jan 2009- Jun 2021



VICSES Severe Weather Requests for Assistance Mapping – Myrtleford Unit – Jan 2009- Jun 2021

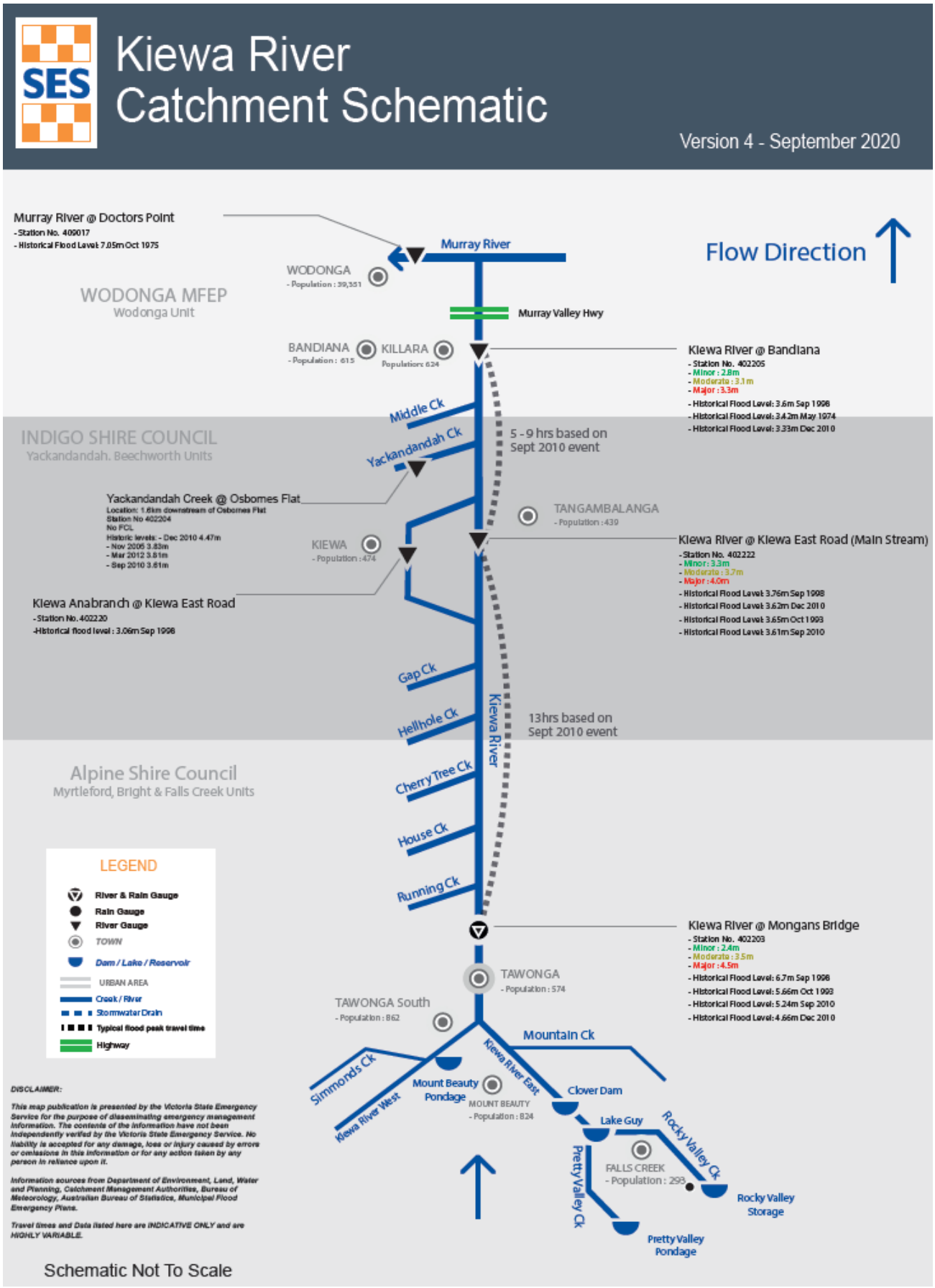


Appendix B: Typical flood peak travel times

Location From:	Location To:	Observed Travel Time (hrs)					Typical Travel Time	Comments
Ovens River								
		May 1974	Oct 1993	Sep 1998	Sep / Dec 2010	Mar 2012		
Start of Rainfall (upper Catchment)	Harrietville						~ 10-20 hours	Will Vary depending on duration of rainfall event and catchment conditions
Harrietville	Bright		10	6		3.8	~7 hours	Will vary depending on which is the dominant tributary leading to peak at Bright (Morses Creek can cause significant peak at Bright) Short 1993 travel time results from early peak at Bright due to local tributaries (particularly Morses Creek).
Bright	Porepunkah						1 hour	
Porepunkah	Eurobin						2 hours	Eurobin is also substantially influenced by Buckland River flows so early peak may occur
Eurobin	Myrtleford						6 hours	Eurobin gauge is the most effective warning gauge for Myrtleford impacts
Myrtleford	Rocky Point						2 hours	Peak at Rocky Point is also influenced by timing of Buffalo River peak
Rocky Point	Wangaratta						16 hours	Wangaratta timing will also be influenced by King River peak.
Buffalo River D/S Lake Buffalo	Rocky Point						7 hours	
Morses Creek								
		May 1974	Oct 1993	Sep 1998	Sep / Dec 2010	Mar 2012		
Start of Rainfall	Wandiligong						~6-22 hours	Will vary depending on duration of rainfall event and catchment conditions

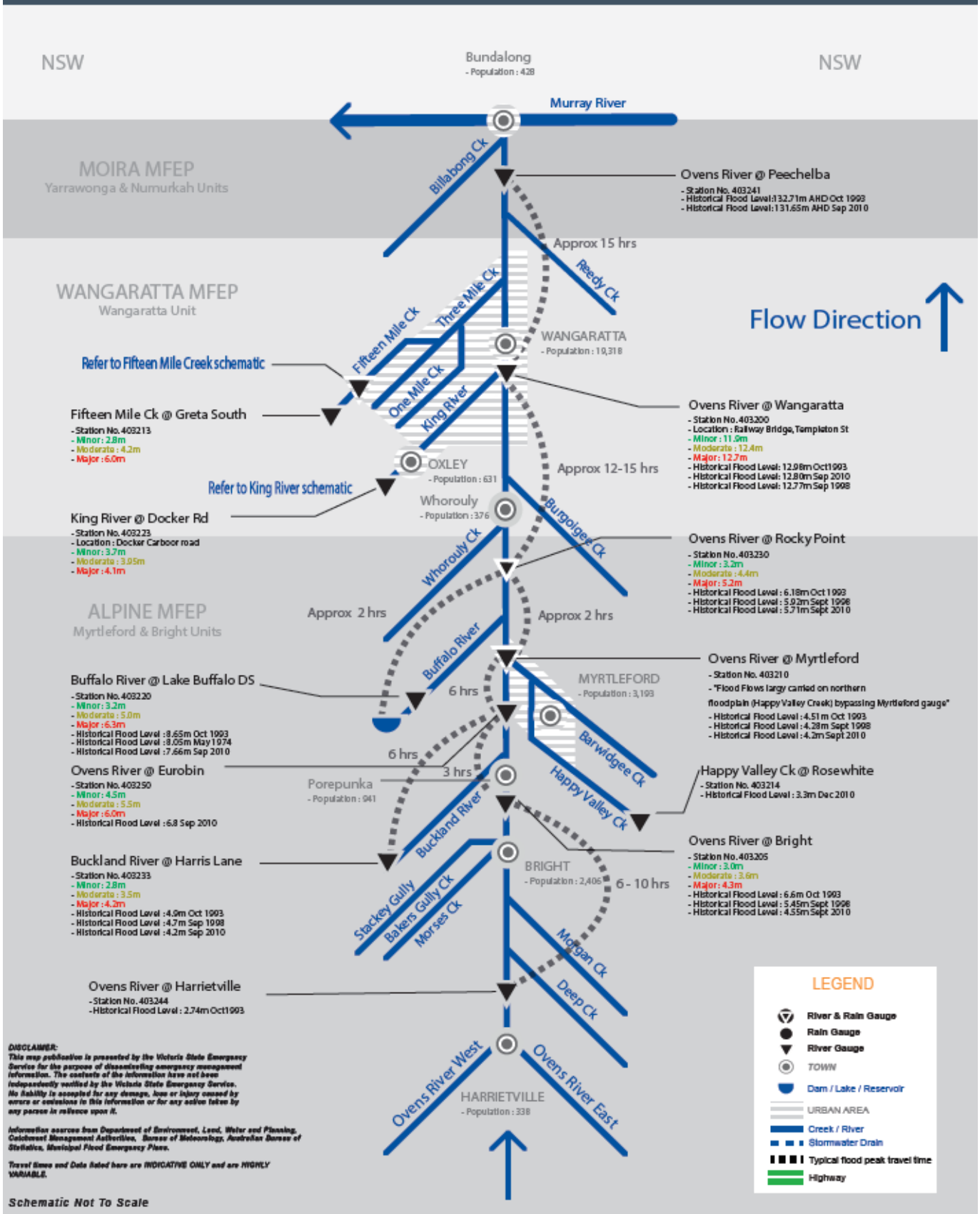
Wandiligong Gauge	Bright						~1 hour	
Buckland River								
		May 1974	Oct 1993	Sep 1998	Sep / Dec 2010	Mar 2012		
Start of Rainfall	Buckland River at Upper Buckland/Twelve Mile						~12 - 30 hours	Will vary depending on duration of rainfall event and catchment conditions
Buckland River at Upper Buckland / Twelve Mile	Harris Lane						~1-4 hours	Upper Buckland is not a strong predictor of Harris Lane peak. Upper Buckland and Harris Lane often peak very nearly simultaneously due to runoff from intervening catchment (Mt Buffalo).
Harris Lane	Ovens River at Eurobin						3 hours	
Buffalo River								
		May 1974	Oct 1993	Sep 1998	Sep / Dec 2010	Mar 2012		
Buffalo downstream of Rose River	Buffalo D/S						3 hours	Timing of peak downstream of L:ake Buffalo is variable dependent but typically < 5 hours after peak of upstream tributaries
Buffalo D/S of Lake Buffalo	Rocky Point		6.5	8.7		2.8	7 hours	Nominal 7-hour travel time on Buffalo River but Rocky Point peak time influenced by timing of Ovens and Buffalo peaks.
Kiewa River								
Kiewa River West Branch @ U/S of offtake	Mt Beauty						2 hours	Timing of peak at Mt Beauty is influenced by both East Branch (no gauge) and West Branch
Mt Beauty	Mongans Bridge						6 hours	
Mongans Bridge	Kiewa						17 hours	

Appendix C1: River Systems Overview & Schematics



Ovens River Catchment Schematic

Version 4 - September 2020



Appendix C2: Harrietville – Germantown Flood Emergency Plan

Overview of Flooding Consequences

Harrietville

Harrietville is located on the Great Alpine Road at the confluence of the East and West Branches of the Ovens River. The town occupies the valley floor surrounded by the steep slopes of the adjacent ranges. Isolation of the community can occur, in particular due to flooding over the Great Alpine Road around Frosty Corner / Stony Creek to the north of Harrietville (threshold for road flooding between approx. 20% AEP)

Significant flood events have impacted Harrietville as summarised below. The onset of flooding is rapid given the location of the town at the base of the adjacent hills.

The stream form of the Ovens River around Harrietville was modified by historic gold dredging (1940s to 1954) and the alignment of the East Branch of the river was modified. A levee (comprising non-cohesive alluvial material) extends along the western bank of the East Branch between Bon Accord Track and Feathertop Lane. A smaller levee extends along the eastern bank of the Ovens River (downstream of the confluence)

Downstream of the East Branch levee (principally between Feathertop Lane and the School Bridge on the Great Alpine Road) flows may break out from the East Branch with resultant impact on properties between the East and West Branch.

The levee downstream of the Ovens River confluence provides protection for properties between the Ovens River and Great Alpine Road up to approximate 10% AEP however in the 5% AEP event flows break out from the Ovens River East Branch upstream of the confluence to impact properties along the Great Alpine Road.

Neither levee is subject to overtopping in the 1% AEP event (as modelled) however the steep stream gradient, high flow velocity, mobile sediment and potential for debris blockages result in unstable flow conditions and a risk of levee erosion and overtopping with resultant impact on properties.

In September 1998 approximately 80 properties, both residential and commercial premises, experienced inundation within the property and approximately 11 with over floor flooding.

Downstream of Harrietville the Ovens River heads north and north-west through Smoko, Freeburgh and Germantown. The floodplain width in this reach varies from less than 100 m to around 700 m. The floodplain is predominantly agricultural land with scattered residences and flood depths outside of the Ovens River channel are generally shallow.

Flood impacts throughout this reach are described based on the Ovens River @ Harrietville stream gauge.

Overview of Flooding Consequences

Parameter	No Flood Class Level for Harrietville			
	2.0 – 3.0m	3.0 – 4.0m	4.0 – 5.0m	Total
Roads Impacted by water	1	13	4	18
Caravan Parks Impacted by floodwater	Harrietville Cabin and Caravan Park – limited impact until 10% AEP			

Flood Mitigation

As noted above, parts of Harrietville are protected from flooding by existing levees on the Ovens River East Branch and Ovens River downstream of the confluence. These levees are not built to modern standards (constructed in the 1950s as part of gold mining operations in the area) and may be prone to failure due to erosion, breaching or overtopping. Levee condition should be monitored during any period of flooding.

Ungauged Flood location Warnings

Where there are no set Flood Class Levels for a gauge, VICSES NEDO/IWO will need to consider issuing “Ungauged Flood warnings” (Minor to Major) with confirmed impact examples at each level.

Impact Guide below:

A Minor Flood Warning means floodwater can:	A Moderate Flood Warning means floodwater can:	A Major Flood Warning means floodwater can:
Spill over river banks and cover nearby low lying areas.	Spill over river banks and cover larger areas of land.	Cause widespread flooding.
Come up through drains in nearby streets.	Reach above floor levels in some houses and buildings.	Many houses and businesses are inundated above floor level.
Require the removal of stock in some cases.	Require evacuation in some areas.	Cause properties and whole areas to be isolated by water.
Cover riverside camping areas and affect some low-lying caravan parks.	Affect traffic routes.	Closes major roads and rail routes.
Cover minor roads paths, tracks and low level bridges.	Require the removal of stock in rural areas.	Require many evacuations.
Affect backyards and buildings below floor level.		Affect utility services (power, water, sewage etc).

This table provides guidance on the BoM definitions of each warning category

Flood Intelligence Card – Ovens River at Harrietville (Harrietville-Germantown)

Gauge Location: Ovens River at Harrietville

As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing “Ungauged Flood warning templates” (Minor to Major) with confirmed impact examples at each level.

This table provides guidance on the BoM definitions of each warning category.

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Harrietville			**No Flood Class Levels at this Gauge**		As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Ungauged Flood warning with confirmed impacts at each level.	
	2.37	2,830	**20%**	• Minor breakouts in Harrietville along West Ovens Branch with water over Charlie Miley Walk. • Shallow flooding into the lower sites / camping areas of Harrietville Caravan Park (Camping Park Road) • Potential isolation of properties on west bank of Ovens River West Branch upstream of Mountain View Walk • No impact from Ovens River East Branch upstream of Great Alpine Road / School Bridge - flooding constrained to park and car-park (Pioneer Park and Tavare Park) • Breakout to cleared land west of Ovens River between Ovens River confluence and Monarch Lane - potential impact around dwellings at Monarch Lane • Shallow breakout to land around dwellings at 48 and 50 Great Alpine Road (near Howards Lane)	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Minor Level Ungauged Flood warning with confirmed impacts at this level Alpine Shire close Charlie Miley Walk VICSES to respond on a request by request basis VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Harrietville	**2.37**	2,830	**20%**	• Flooding over Great Alpine Road north and south of Stony Creek Road ("Frosty Corner") - threshold likely to be higher than this based on recent events - not apparently overtopped Oct 2016 with • 2.7m peak • Flooding over Bibby Lane, cuttting access to one dwelling • Flooding over un-named lane (private access) around 600m north of Bibby Lane (impact confirmed by Oct 2016 oblique imagery) • Flooding over McMahons Ln, Smoko (river side of plantation) • Breakout flows to agricultural land including around dwellings around and downstream of 1255 Great Alpine Road, Smoko **Water over Road** • **Great Alpine Road at Stoney Creek Road ("Frosty Corner")** • **Great Alpine Road at Northwest Spur Track south of Smoko (modelling shows flooding at this level but no impact observed in recent events).**	RRV to determine if road closure of Great Alpine Road at Northwest Spur Track / Stony Creek Road/Frosty Corner south of Smoko near trout farm required	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018
	2.57	3,720	**10%**	• Flooding over Monarch Lane, Harrietville - to west of Ovens River • Flooding around 68 Great Alpine Road, Harrietville • Flooding around shed to north-east of 2179 GAR, Harrietville with breakout flows over the river flats • Breakout resulting in shallow flooding around dwelling / sheds at 1640-1721 GAR Smoko, observed Oct 2016 after 2.7m peak (consistent with 10% AEP mapping) • Shallow flooding over Great Alpine Road near Smoko Campground	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Minor Level Ungauged Flood warning with confirmed impacts at this level. VICSES to respond on a request by request basis VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Harrietville	**2.57**	3,720	**10%**	• Breakout resulting in shallow flooding around dwelling / sheds at 1069-1083 and 837-839 GAR Freeburgh, observed Oct 2016 after 2.7m peak (consistent with 10% AEP mapping) • First modelled impact onto Discovery Parks - Bright Caravan Park (Websters Lane, Freeburgh) - impact restricted to undeveloped part of site. No significant further impact until 2% AEP event • Breakouts in Harrietville begin to enter land at several residential properties located along the east branch between Feathertop Lane and the School Bridge • Minor breakouts of the Ovens River begin to enter residential and commercial properties upstream of Howards Bridge between the Great Alpine Road and the Ovens River. • Increased flow across the floodplain between Smoko and Freeburgh; shallow flooding at several residences on rural properties. • Shallow flooding on rural properties. **Water over Road** • **Great Alpine Road at Stoney Creek Road ("Frosty Corner")** • **Monarch Lane, Harrietville**	RRV to determine if road closure of Great Alpine Road at Stony Creek Rd (Frosty Corner) and Alpine Shire to close Road Monarch Lane	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018
	2.80	5,120	**5%**	• Shallow breakouts from Ovens River East Branch upstream of confluence resulting in flooding around 195-197 GAR and overtopping of GAR upstream of School Bridge • Breakouts on east side of Ovens River from near the confluence impacting multiple residential lots on west side of GAR between 168 and 72 GAR and overtopping of GAR upstream of Monarch Lane / Newmans Lane before discharge to dredge hole. All shallow flooding.	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Minor Level Ungauged Flood warning with confirmed impacts at this level VICSES to respond on a request by request basis VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Harrietville	**2.80**	5,120	**5%**	• Shallow breakout from Ovens River upstream of river crossing at Howards Bridge - shallow flooding around dwellings at 10-20 GAR • Breakout downstream of School bridge in Harrietville, inundating land behind the levee and impacting on several residential properties. • Floodwater begins to enter residential properties downstream of Feathertop Lane between Ovens east and west branch • Breakouts upstream of Howards Bridge on the Ovens River enters residential properties between the Ovens River and the Great Alpine Road near Newmans Lane • Floodwater increases into residential properties in Freeburgh between Websters Lane and Old Harrietville Road **Water over Road** • **Great Alpine Road upstream of school bridge**	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Moderate to Major Level Ungauged Flood warning templates with confirmed impacts at this level RRV to close the Great Alpine Road at Stoney Creek Rd (Frosty Corner) IMT required to consider the consequences of closing GAR and access to Harrietville community IMT to consideration requirement for a relief centre	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018
	3.02	6,570	**2%**	• Breakout across Great Alpine Road south of Howards Bridge, increasing significantly at 1% AEP • Increased flood extent in Discovery Parks - Bright (Websters Lane Freeburgh) • Flooding over Great Alpine Road, north of McMahons Lane, Smoko • Breakouts through Harrietville along Mountain View Walk. **Water over Road** • **Great Alpine Road south of Howards Bridge** • **Possible Tawonga Gap Road Bridge across the Ovens River (RRV to Check)** • **Great Alpine Road, north of McMahons Lane, Smoko**	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Moderate to Major Level Ungauged Flood warning templates with confirmed impacts at this level RRV to investigate the Towonga Road Gap Bridge and Close the Great Alpine Road at Smoko	

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Harrietville	**3.14**	8,290	**1%**	• Spills from Ovens River near Monarch Lane / Newmans Lane extend to dredge hole before re-etnering Ovens River downstream of Howards Bridge • Major breakouts through Harrietville with large flows trapped behind the levee and joining the Ovens River downstream of Howards Bridge. • Inundation impacting residential properties on the western side of the Great Alpine Road, downstream of the School Bridge and North of Mountain View Walk between the Ovens West Branch and Ovens East Branch. • Large breakouts from the Ovens River downstream of Howards Bridge across rural land. **Water over Road** • **Great Alpine Road, South of Smoko to north of Howards bridge**	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Moderate to Major Level Ungauged Flood warning templates with confirmed impacts at this level VICSES to respond on a request by request basis VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018
	3.55	15,600	**0.5%**	• Major breakouts through Harrietville impacting residential properties between the Great Alpine Road and the Ovens River downstream of the confluence. • Water overtopping the levee at several locations. • Major breakouts impacting residential properties on Great Alpine Road north of Feathertop Lane • Large breakouts from the Ovens River downstream of Howards Bridge impacting rural properties. • Major breakouts downstream of Freeburgh, between Flinn Crescent and Old Harrietville Road impacting residential properties, rural and forested land.	IC & VICPOL Evacuation Manager to consider Evacuation of homes identified As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Moderate to Major Level Ungauged Flood warning templates with confirmed impacts at this level VICSES to respond on a request by request basis	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Harrietville	**3.55**	15,600	**0.5%**	**Properties at Risk** • **Great Alpine Road** • **Newmans Lane** • **Howards Lane** **Water over Road** • **Great Alpine Road** • **Feathertop Track** • **Mountain View Walk** • **Newmnas Lane** • **Millers Track** • **Stoney Creek Road** • **Bibby Lane** • **Miley Lane** • **Mcmahons Lane** • **Websters Lane/Bridge** • **Old Harrietville Road Bridge** • **Back Germantown Road**	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Moderate to Major Level Ungauged Flood warning templates with confirmed impacts at this level VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering Alpine Shire/RRV to close road identified	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018
	3.67	18,700	**0.2%**	• Howards Bridge over the Ovens River at Harrietville overtopped.	VICSES to respond on a request by request basis	
	4.90	38,800	**PMF**	• Wide floodplain flow along the Ovens River. • Major inundation through Harrietville impacting residential properties North of Bon Accord Track. • The floodwaters are restricted in the east by the ridge along which Feathertop Track runs.	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Major Level Ungauged Flood warning templates with confirmed impacts at this level IC & VICPOL Evacuation Manager to consider Evacuation of homes identified VICSES NEDO/IWO to consider issuing a Major/Evacuation Level Ungauged Flood warning with confirmed impacts at this level	

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Harrietville	**4.90**	38,800	**PMF**	• Broad floodplain flow through Smoko, Freeburgh and Germantown, inundating a large number of residential properties along the Ovens River. • Bridge over Ovens between Great Alpine Road and Stony Creek Road overtopped • Residential roads in Harrietville inundated; Hoskings Lane, Attridges Lane, Feathertop Lane and Feathertop Track • Multiple sections of Great Alpine Road Inundated between Harrietville and Bright. **Water over Road** • **Hoskings Lane** • **Attridges Lane** • **Feathertop Lane** • **Feathertop Track**	VICSES to respond on a request by request basis Alpine Shire to close road identified	Upper Ovens Regional Flood Mapping - Flood Behaviour Report 2018

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Appendix C3: Bright Flood Emergency Plan

Overview of Flooding Consequences

Bright

Bright is located adjacent the Ovens River approximately 30 km south-east of Myrtleford. The CBD and the majority of the residential area lies to the south of the Ovens River, with a smaller residential area to the north of the Ovens River.

The CBD and major residential areas are well elevated above Ovens River flood levels however flooding can result from south bank tributaries which pass through Bright – Morses Creek, Bakers Gully Creek and Stackey Gully.

The extensive flood damage which occurred in Bright in the major flood event of October 1993 was dominantly a result of flooding from Bakers Gully Creek and Stackey Gully and, to a lesser degree, the Ovens River. With limited rain gauge data and no stream gauging in Bakers Gully and Stackey Gully the 1993 magnitude has not been formally assessed however was likely around 1% AEP based on flooding in the adjacent Morses Creek catchment (Earth Tech, 2004). The 1993 event for the Ovens River at Bright has been assessed as approximately 2% AEP (Water Technology, 2018).

Across Bright and Porepunkah the October 1993 event, was reported (Hydrotechnology, 1995) to have impacted on 70 residential properties, 15 commercial premises, 7 public properties and two Caravan Parks.

Bright can be isolated by floodwaters due to flooding of the Great Alpine road Road at Wabonga Lane near Eurobin (limited capacity bypass now available for emergency services via the upgraded Rail trail) and at Stoney Creek / Frosty Corner between Bright and Harrietville. Additional flooding over the Great Alpine Road which may further impact access to and from Bright has occurred within Myrtleford, west of Porepunkah (at One Mile Creek) and on the western end of Bright (around Stackey Gully).

Flood impacts around Bright are best described based on the Ovens River @ Bright gauge and Morses Creek @ Wandiligong gauge. Bakers Gully and Stackey Gully (and other waterways which drain from the steep slopes above the urban area) are ungauged and respond rapidly to rainfall so there is limited ability to provide flood warnings.

Ovens River

Upstream of the Morses Creek confluence (near Mountbatten Avenue) flooding from the Ovens River through Bright is generally confined by the steep topography with no known flood impacts on dwellings or commercial buildings for floods smaller than 0.5% AEP.

Between Morses Creek and Star Road the flood extent increases in width, impacting (in 1993) on the public open space and infrastructure within Centenary Park. The holiday units on Riverside Avenue upstream of Star Road were subject to deep, high velocity flooding in 1993. The lower parts of the Bright Riverside Holiday Park to the north of the Ovens River, are subject to flooding in events approaching the magnitude of the October 1993 flood.

Between Star Road and Canyon Lane flood extents are generally less than 100 m in width but impacting on the rear of properties on Showers Avenue and Gavan Street with at least one house in this area subject to above floor flooding in 1993.

Downstream of Canyon Lane, there is a substantial increase in floodplain width with a broad, undeveloped area south of the Ovens River subject to deep flooding.

Bakers Gully Creek

Bakers Gully is a south bank tributary of the Ovens River, with an 800 ha (8 km2) catchment directly south of Bright. Flooding from Bakers Gully Creek in the 1993 event caused breakaway flows to discharge down Cobden Street, Ireland Street, Wills Street, and Camp Street toward Morses Creek. These breakout flows resulted in shallow but high velocity flooding through much of the commercial area, but sandbagging prevented major damage to commercial properties. Bakers Gully Road was cut where the creek crosses the road (near Sommer Avenue).

The 1995 Hydro Technology report indicates that two culverts in particular (Bakers Gully Road and Wood Street are directly referenced) caused flooding problems. This was in part due to the significant quantities of sediment / gravel exported from the catchment which are reported to have choked the culverts, severely limiting their discharge capacity. The Railway Avenue culvert would however appear to have been the most significant factor in initiating breakaway flows into Cobden Street. The degree of sediment blockage at the Railway Avenue culvert in the 1993 flood is uncertain with varying reports giving conflicting accounts.

In addition to limited discharge capacity, Bakers Gully Creek is characterised by the presence of urban development extending in some locations to the edge of the waterway (e.g. semi impervious fences constructed to the edge of the creek, shedding similarly constructed very close to the creek, and housing located on the adjoining overbank areas). This has continued to occur in recent years (e.g. upstream of Railway Avenue on the east side of the creek). This type of development causes obstruction of floodwaters, which can initiate breakaway flows. It also increases the risk of flooding of houses and other buildings.

Stackey Gully

Stackey Gully has a catchment area of approximately 335 ha (3.3 km2) in a steep forested catchment south of Bright. Within Bright the waterway and culverts has limited capacity, particularly over the 300 m reach between Walnut Grove and the Great Alpine Road / Gavan Street. In 1993 this resulted in breakout flows to the east of Stackey Gully and inundation of properties to the south of the Great Alpine Road between Stackey Gully Road and Walkers Lane.

Morses Creek

Morses Creek in the Wandiligong Valley has a catchment of approximately 130 km2 above Bright. Within the Bright township area (downstream of Coronation Avenue / Morses Creek Road) flood impacts for events up to 1% AEP are confined to public land along Morses Creek frontage with no identified impacts other than flooding of the State Battery site (Morses Creek Road) and some of the lower sites at the NRMA Bright Holiday Park off Cherry Lane) (commencing at 20% AEP with impact on camping sites to the south of Morses Creek) and flooding of the park area (Coronation Park) adjacent the Ovens River confluence.

For events up to 0.2% AEP the extent of flooding within the Holiday Park increases and the Bright Motor Inn and adjacent units on Mountbatten Avenue are subject to flooding from the combined effect of Morses Creek and the Ovens River

The stream flow gauge on Morses Creek (established in 1972) was washed away by floodwaters during the 1993 flood. The 1993 flood is by far the largest flood experienced on Morses Creek in the past 50 years and may possibly have been equivalent to a 1% AEP event. (Earth Tech, 2004).

Major damage to upstream road approaches and bridges on Morses Creek, upstream of Bright, occurred during the 1993 flood. A significant quantity of debris and sediment was deposited in the lower reaches of the creek.

Overview of Flooding Consequences

Parameter	Flood Class Level			
	Minor	Moderate	Major	Total
Roads Impacted by water			11 and entire Bright CBD	11 Plus
Caravan Parks Impacted by floodwater			3	3

Flood Mitigation

There are no structural flood mitigation measures in Bright.

Ungauged Flood location Warnings

Where there are no set Flood Class Levels for a gauge, VICSES NEDO/IWO will need to consider issuing “Ungauged Flood warnings” (Minor to Major) with confirmed impact examples at each level.

Impact Guide below:

A Minor Flood Warning means floodwater can:	A Moderate Flood Warning means floodwater can:	A Major Flood Warning means floodwater can:
Spill over river banks and cover nearby low lying areas.	Spill over river banks and cover larger areas of land.	Cause widespread flooding.
Come up through drains in nearby streets.	Reach above floor levels in some houses and buildings.	Many houses and businesses are inundated above floor level.
Require the removal of stock in some cases.	Require evacuation in some areas.	Cause properties and whole areas to be isolated by water.
Cover riverside camping areas and affect some low-lying caravan parks.	Affect traffic routes.	Closes major roads and rail routes.
Cover minor roads paths, tracks and low level bridges.	Require the removal of stock in rural areas.	Require many evacuations.
Affect backyards and buildings below floor level.		Affect utility services (power, water, sewage etc).

This table provides guidance on the BoM definitions of each warning category

Flood Intelligence Card – Ovens River at Bright

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
PLEASE NOTE: Impacts in this intelligence card are aligned with Ovens River Gauge Heights. Majority of impacts in Bright occur from overflowing of the Bakers Gully & Stackey Gully Creeks and must be observed during significant rain events						
Ovens River at Bright	**3.0**	4,480	**Minor Flood Level**		BOM will issue and VICSES to publish Minor flood warning to community with tailored information from this plan The North East Duty Officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response to suit the level of the incident	Ovens Catchment Flood Study 2012
	3.6	7,020	**Moderate Flood Level**		VICSES to consider Base IMT rostered/standby or Base IMT in place depending on forecast BOM will issue and VICSES to publish Moderate flood warning to community VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	Ovens Catchment Flood Study 2012
	3.7			**Porepunkah** • Flooding around lower part of playground (shade sail area) at Porepunkah riverside park. Entire park (up to around level of the toilet block) flooded at 5% AEP @ Bright 5.91m • Porepunkah Bridge Caravan Park not flooded but impact is imminent		October 2016 ground photos (NECMA)
	4.2			**Bright** • Flooding into southern floodplain between Canyon Lane and Fraser Lane, impacting shed at rear of 23 Gavan Street	VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine impacts	October 2016 ground photos (NECMA)

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**4.2**			• Ovens River near bank full from Morses Creek to Star Road but no impact on Centenary Park downstream of Morses Creek. • Flooding over footpaths, seats, diving board etc at Morses Creek confluence (upstream of Ovens River weir footbridge). No access to Morses Creek footbridge. Potential shallow flooding of carpark near Sound Shell. • Flooding of lowest camping sites at Bright Riverside Holiday Park (bench below cabins) **Downstream of Bright** • Flooding of riparian forest and golf course downstream of Ashwood Avenue - no impact on other assets. **Porepunkah** • Flooding of most of Porepunkah riverside area, shallow flooding over road.	VICSES NEDO/IWO to add to Moderate Flood warning impacts at this level VICSES to respond on a request by request basis Alpine Shire to close Centenary Park, carpark near sound shell in Bright and Porepunkah riverside area Evacuation of lowest camping sites at Bright Riverside Holiday Park to commence	October 2016 ground photos (NECMA)
	4.3	10,400	**Major Flood Level**		BOM will issue and VICSES to publish Major flood warning to community VICSES to consider Base IMT in place or Core in place with observed activity	Ovens Catchment Flood Study 2012
	4.41	10,800	**20% AEP**	**Upstream of Bright** • flooding of pine plantations and forest from Tawonga Gap Road to Iarias Lane and Tyntynder Lane to Hawthorn Lane. No impact on assets/infrastructure up to 0.5% AEP (Bright gauge 6.8m) **Bright** • likely flooding into lower parts of site at 4 Star Road, Bright (holiday units)	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine impacts	Upper Ovens Regional Flood Mapping Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**4.41**	10,800	**20% AEP**	• Flooding into camping sites and camp kitchen on south side of Morses Creek - Bright Caravan Park (Morses Creek @ Wandiligong gauge 2.04m). Impact on caravan park increases for larger floods but limited Morses Creek impacts in Bright up to 1% AEP level (impacts to Mountain Bike Park, State Battery etc). • Breakouts from the Ovens River onto the open land behind the Bright Sports Centre and into Centenary Park • Breakouts from the Ovens River enters the Bright Memorial Gardens **Porepunkah** • Backwater flooding (Ovens River) through lower sites of Mount Buffalo Caravan Park (Harrison Lane). Flooding may increase rapidly above this level with high hazard conditions. • Porepunkah Bridge Caravan Park shallow breakout flows through central part of site. **Eurobin** • Flooding into plantation at Cavedons Lane, Eurobin • Flooding over Eurobin Creek Track, Eurobin • Extensive flooding into floodplain pockets opposite Westons Ln and upstream of Wobonga Ln, Eurobin.	VICSES to respond on a request by request basis Alpine Shire to close Centenary park/Car parks Alpine Shire/RRV to determine appropriate road closures for Bright township from this level	Upper Ovens Regional Flood Mapping Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**4.41**	10,800	**20% AEP**	**Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* • Water overflows most roads in Bright CBD and surrounds bordering the Ovens River, Morses Creek and Bakers Gully Creek. (this flooding is caused by flows from Bakers Gully and is not represented by the Bright gauge levels). • Agricultural and adjacent to Stackey Gully inundated to the west **Water over Road** • **Stackey Gully Road** • **Bakers Gully Road** • **Great Alpine Road from Stackey Gully, Bright**	VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine impacts Alpine Shire/RRV to commence closure of roads identified	Upper Ovens Regional Flood Mapping Report 2018
	5.04	14,300	**10% AEP**	**Bright** • Impact around 33 Gavan St (elevated dwelling) and 1 Canyon Lane (flood prone) **Porepunkah** • Riverview Caravan Park - onset of flooding from Buckland River • flooding throughout Porepunkah Bridge Caravan Park - hazard conditions increase rapidly above this level. **Properties at Risk** • **1 Canyon Lane** • **Porepunkah Bridge Caravan Park** • **Riverview Caravan Park, Porepunkah**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis IC & VICPOL Evacuation Manager to consider Evacuation and relief for properties identified	Upper Ovens Regional Flood Mapping Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**5.04**	14,300	**10% AEP**	**Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* • Minor breakouts from Bakers Gully through Bright impacting central Bright north of Cobden St • Residential and commercial properties impacted between Burke St and Woolshed Trk • Breakouts east of Stackey Gully Rd to the end of Alexandra Crt, impacting residential and commercial properties **Water over Road** • **Gavan Street (GAR) – In Bright** • **Ireland Street,** • **Mill Road,** • **Burke Street,** • **Wills Street,** • **Wood Street.**	VICSES to respond on a request by request basis VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts Alpine Shire/RRV to commence closure of roads identified	Upper Ovens Regional Flood Mapping Report 2018
	5.45	16,700		• September 1998 flood Peak height		
	5.91	19,600	**5% AEP**	**Bright** • Flooding to rear of properties on GAR between Tyntynder Ave and Mountbatten Ave but no known impact on buildings. • Flooding of cabins in Bright Riverside Caravan Park and flooding of the entire site at 4 Star Road (units) • Flooding over Frasers Lane (Ovens River) resulting in isolation of property at 16 Frasers Lane • Impacts to dwellings and sheds along Gavan Street between Bakers Gully and Walkers Lane	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts	Upper Ovens Regional Flood Mapping Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**5.91**	19,600	**5% AEP**	**Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* • Flows west along Railway Avenue from Bakers Gully Creek impacting residential properties between Railway Avenue and Gavan Street. • Further inundation of streets in central Bright and Howitt Park • Majority of streets and roads along Ovens River at Bright inundated **Properties at Risk** • **Kilfinan Cr,** • **Mill Road,** • **Bakers Gully Rd,** • **Wood St,** • **Station St,** • **Gavan St (GAR)** • **Canyon Ln**	Alpine Shire to close Howitt Park IC & VICPOL Evacuation Manager to consider Evacuation of properties identified IMT to consideration requirement for a relief centre Alpine Shire/RRV to commence closure of roads identified	Upper Ovens Regional Flood Mapping Report 2018
	6.1	25,000		• Approx level only due to subsequent gauge changes (original record 5.41). Ovens River impacts around Canyon Lane, Star Road. Concurrent flooding from Bakers Gully impacting CBD and Stackey Gully breakouts. 2 caravan parks in Bright reported flooded. (Morses Creek and Bright Riverside). Porepunkah Bridge Caravan Park amenities blocks flooded above floor level		1993 flood report (Hydro Technology, 1995)
	6.77	25,700	**2% AEP**	**Bright** • commencement of impact to dwellings along south side of Showers Avenue	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis	

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**6.77**	25,700	**2% AEP**	• Impact on North East Water pump offtake (Hawthorn Lane). Not sure if this is still active after construction of Bright off stream storage? **Porepunkah** • First known impact on residential properties from Ovens River - 28 Nicholson Street and 38 Service Street. **Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* • Inundation of properties between Gavan Street and Riverside Avenue • Flood waters impacting the Sports Centre on Gavan Street and the properties adjacent (to the east and west)	VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts	Upper Ovens Regional Flood Mapping Report 2018
	7.38	30,600	**1% AEP**	**Upstream of Bright** • flooding near perimeter of buildings at 330 and 336 Back Germantown Road (dwelling sites impacted at 0.5% AEP) • flooding over Old Harrietville Road just north (downstream) of bridge at Germantown • flooding over Back Germantown Road north (downstream) of Harpers Lane **Bright** • Inundation begins at the Big4 Bright Caravan Park from additional breakouts of Morses Creek and the Ovens River • Further inundation north of the Ovens River along Showers Avenue and south of Toorak Road at The Bright Riverside Holiday Park	VICSES NEDO/IWO to add to Major Flood warning impacts at this level IC & VICPOL Evacuation Manager to consider Evacuation of properties identified VICSES to respond on a request by request basis VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts	Upper Ovens Regional Flood Mapping Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**7.38**	30,600	**1% AEP**	**Downstream of Bright** • extensive flooding of Bright Golf Course. Imminent impact around clubrooms. **Porepunkah** • imminent impact on dwellings between GAR and Ovens River around and downstream of Mill Bend Road **Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* **Properties at Risk** **Canyon Lane,** • **33-65 Gavan St (GAR)** • **Star Road** • **the Big4 Bright Caravan Park** • **Bright Riverside Holiday Park** • **Lowen Drive**	VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts IC & VICPOL Evacuation Manager to consider Evacuation of properties identified	Upper Ovens Regional Flood Mapping Report 2018
	9.44	61,000	**0.5% AEP**	**Bright** • flooding over Back Germantown Road approximately 1 km east of Star Road. • flooding impacts residential properties at Kinchella Court (Ovens River). Potential impacts in this area from Stackey Gully Creek **Porepunkah** • breakout flows from Ovens River through main urban part of Porepunkah - mostly shallow flooding.	VICSES NEDO/IWO to add to Major Flood warning impacts at this level IC & VICPOL Evacuation Manager to consider Evacuation of properties identified VICSES to respond on a request by request basis	Upper Ovens Regional Flood Mapping Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**9.44**	61,000	**0.5% AEP**	**Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* • Breakouts impacting commercial properties along Mountbatten Avenue • Flows impacting properties along Camp Street and north of Gavan Street at the confluence of Morses Creek and the Ovens River • Inundation of most properties along Gavan Street between Canyon Lane and Star Road • Flood waters approaching Back Porepunkah Road north of the Ovens River • Breakouts from Stackey Gully and the Ovens River impacting properties along Frasers Lane and parcels south on Gavan Street, across from the Sports Centre • Flood waters impacting residential properties South of the Ovens River, east and west of Mill Bend Road and north of the Great Alpine Road. **Properties at Risk** • **Bright Motor Inn (Mountbatten Av)** • **Centenary Peaks Accommodation (Mountbatten Av)** • **Camp Street** • **Frasers Lane** • **Gavan Street (GAR)** • **Bright Sports Centre** • **Mill Bend Rd** **Water over Road** • **Gavan St Bridge over Morses Creek** • **Showers Av & Back Germantown Road**	VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts Alpine Shire/RRV to commence closure of roads identified	Upper Ovens Regional Flood Mapping Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Bright	**10.03**	73,500	**0.2% AEP**	**Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* • Breakout from the Ovens River impacting residential properties in Bright, off the Great Alpine Road, near Ashwood Avenue. • Gavan St Bridge over Morses Creek at Bright overtopped. • Showers Avenue at Bright inundated. • Back Germantown Road inundated along Ovens north east of Bright. • Increased inundation of Bright Country Golf Club.	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts Alpine Shire/RRV to commence closure of roads identified	Upper Ovens Regional Flood Mapping Report 2018
	13.80	381,000	**PMF**	**Bakers Gully & Stackey Gully Creeks – Bright** *High rainfall associated with this size flood event may see the following impacts:* • Central Bright inundated north of Cobden Street. Flood impacts from Morses Creek, Bakers Gully and Ovens River • Breakouts from Stackey gully and Ovens River impacting residential properties and undeveloped land between Porcellatos Lane and Back Porepunkah Road • Murray to the Mountains Rail Trail Bridge over Ovens overtopped, east of Bright • Hawthorn Land Bridge over Ovens at Bright overtopped. • Widespread inundation of streets and roads at Bright between Back Porepunkah Rd/Toorak Road and Cobden Street	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis VICSES to consider deployment of crews and Snap Send Solve Flood Observers to determine property impacts Alpine Shire to close rail trail and other park trails and paths earlier?	Upper Ovens Regional Flood Mapping Report 2018

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Flood Intelligence Card – Morses Creek at Wandiligong

Gauge Location: Morses Creek at Wandiligong

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Morses Creek at Wandiligong			**No Flood Class Levels at this Gauge**	Gauge reading not available on BOM website but is available through FloodZoom		
	2.04	3,890	**20% AEP**	• Shallow flooding over Morses Creek Road north of Taylors Bridge (south of Wandiligong) • Flooding throughout the Diggings Reserve area in Porepunkah • Shallow flooding in proximity to dwelling at 130 Star Road, Wandiligong • Onset of flooding (Morses Creek) into NRMA Bright Holiday Park - around the camp kitchen south of Morses Creek and lowest sites on Oriental Track. Impact on caravan park increases for larger floods but limited Morses Creek impacts in Bright up to 1% AEP level (impacts to Mountain Bike Park, State Battery etc). • Flooding throughout Splash Park and adjacent park area at Morses Creek / Ovens River confluence • Flooding over Morses Creek Road north of Taylors Bridge and around dwellings at 675-695 Morses Creek Road, Wandiligong **Water over Road** • **Morses Creek Road north of Taylors Bridge**	VICSES to respond on a request by request basis Alpine Shire to close Morses Creek Rd north of Taylors Bridge Alpine Shire to close Splash Park, Centenary Park, Mountain Bike Park, State Battery etc) As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Minor Level Ungauged Flood warning templates with confirmed impacts at this level IMT required to consider the consequences of closing Morses Creek Rd and access to Wandiligong community	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Morses Creek at Wandiligong	**2.2**			• September 2010 & October 2016 Flood Peak Height		NECMA
	2.29	4,840	**10% AEP**	• Further increase in flood extent within NRMA Bright Holiday Park - principally south of Morses Creek • Limited additional flood extent / impact but flooding around 130 White Star Road, Wandiligong	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Minor Level Ungauged Flood warning templates with confirmed impacts at this level	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018
	2.76	6,570	**5% AEP**	• Flooding around a number of houses downstream of Inces Ln, Wandilgong • Some inundation along Morses Creek Road South of Wandiligong near Mills Bridge	Alpine Shire to determine further closure of Morses Creek Rd	
	3,02			• September 1998 Flood Peak Height		NECMA
	3.46	8,810	**2% AEP**	• Breakout from Morses Creek cuts access and impacts around dwellings on White Star Road, Wandiligong • Flooding around State Battery Historic site, Coronation Ave, Bright **Water over Road** • **Martins Bridge at Morses Creek Road is overtopped**	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Moderate to Major Level Ungauged Flood warning templates with confirmed impacts at this level VICSES to consider deploying Snap Send Solve Flood observers or local crews to determine river heights on Morses Creek and impacts on White Star Road Alpine Shire to close Morses Creek Rd	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018
	3.86	10,800	**1% AEP**	• Inundation at the rear of properties along Morses Creek in Wandiligong and into Alpine Park sports ground	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Minor Level Ungauged Flood warning templates with confirmed impacts at this level VICSES to consider deploying Snap Send Solve Flood observers or local crews to determine river heights on manual gauges on Morses Creek	

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Morses Creek at Wandiligong	**4.57**	18,900	**0.5% AEP**	• Flooding over Centenary Ave at Stephens Bridge and White Star Road, Wandiligong • Flooding over Coronation Ave, Bright **Water over Road** • **Martins Bridge at Morses Creek Road is overtopped Morses Creek Rd bridge over Morses Creek south east of Bright overtopped** • **Smithy Lane Bridge over Morses Creek at Wandiligong overtopped** • **Centenary Ave at Stephens Bridge** • **White Star Road, Wandiligong** • **Coronation Ave, Bright**	As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Moderate (prepare to evacuate) to Major (evacuate now) Level Ungauged Flood warning templates with confirmed impacts at this level. These templates include evacuation advice where required. Alpine Shire to close Roads identified	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018
	4.81	22,600	**0.2% AEP**	• As above		
	7.30	108,000	**PMF**	• Multiple sections of Morses Creek Road inundated south of Bright		
	No Record			• Largest event on record but no peak recorded as gauge washed away. Resulted in damage to multiple bridges between Wandiligong and Bright. Very limited impact from Morses Creek in Bright due to entrenched waterway. Some flooding of Caravan Park and sediment deposition at Ovens River confluence.		NECMA

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain

Appendix C4: Porepunkah & Buckland Flood Emergency Plan

Porepunkah

Porepunkah is located adjacent to the Ovens River, 24 km south-east of Myrtleford a short distance upstream of the Buckland River confluence. The Great Alpine Road between Myrtleford and Bright can be cut by floodwater over the road at Eurobin and thus Porepunkah can be subject to isolation from Myrtleford (although an emergency bypass has now been constructed at Eurobin).

The main residential and commercial area of Porepunkah is located on the north bank of the Ovens River, with a smaller residential / commercial area on the south bank between the Great Alpine Road and the Ovens River. These developments are located on land predominantly above the Ovens River 1% AEP flood level with only limited impact around dwellings (Nicholson St / Service St / Great Alpine Road). In larger events (0.5% AEP) significant inundation through the central part of Porepunkah occurs impacting a large part of the residential area.

Caravan parks adjacent Porepunkah are significantly flood prone (Ovens River and Buckland River) as outlined in following sections.

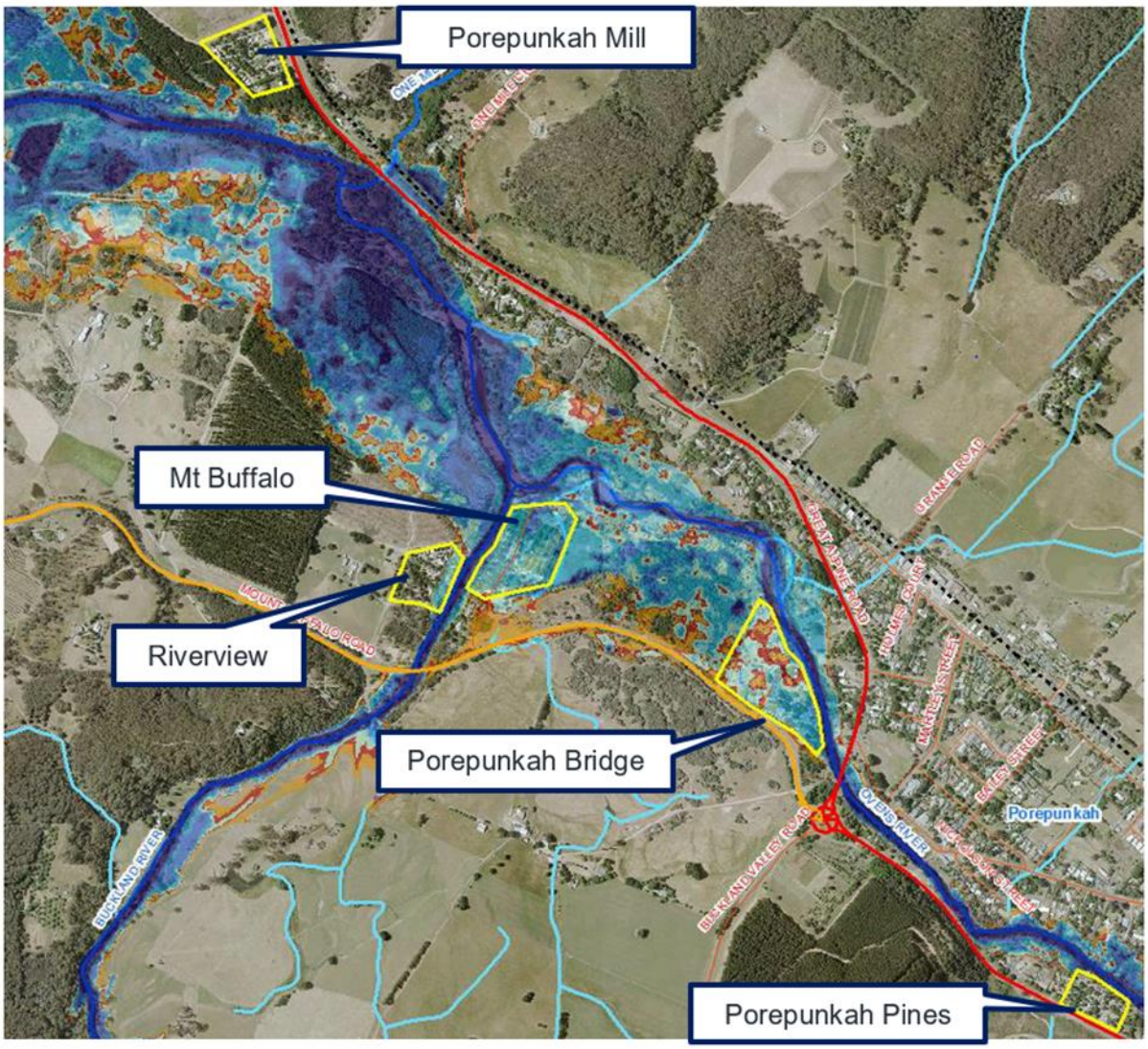
Flood impacts for the Porepunkah township and caravan parks on the Ovens River are described based on the Ovens River @ Bright stream gauge.

Parts of the Porepunkah township on the north side of the Ovens River are subject to shallow flooding impacts from tributaries draining from the hillslopes to the north (as occurred in 1993). This tributary flooding impacts on land to the north-east of Station Street and along drainage lines around Wood Street, McCullogh Street and Martley Street.

The other flood exposure in proximity to Porepunkah is on Wallace Drive adjacent the Buckland River approximately 4 km south-west of Porepunkah. This is a residential area with 24 dwellings with flooding commencing at approximately 20% AEP. Further detail is provided below.

Flood impacts for the Wallace Drive area and caravan parks adjacent the Buckland River are described based on the Buckland River @ Harris Lane gauge.

Caravan Parks adjacent Porepunkah (approximate site boundaries, relative to 1% AEP flood extent)



Porepunkah Bridge Holiday Park

Porepunkah Pines Holiday Park adjacent the Great Alpine Road south-east of Mount Buffalo Road roundabout has limited flood exposure to the Ovens River. Lower parts of the site may flood around 5% AEP however approximately half of the site remains above 0.2% AEP level.

The Porepunkah Bridge Holiday Park is located on the south side of the Ovens River downstream of the Great Alpine Road Bridge crossing. The Holiday Park is located on leased Crown Land and privately operated. Flooding into the park commences at approximately 20% AEP with extensive (shallow) flooding at 10% AEP and deep flooding throughout the park at 2% AEP.

The majority of the Holiday Park was subject to severe flooding in the October 1993 flood. Major damage to Park facilities / infrastructure was incurred as a result of the 1993 flood.

Flooding at the Park in September 1998 was of a relatively minor nature as described by the lease owner at the time. The majority of the Park remained above the floodwaters.. A low level levee adjacent to the top of the south side riverbank within the upstream section of the holiday park was established in the aftermath of the 1993 flood. This levee bank is reported by the then lease owner to

have assisted in limiting floodwater encroaching into the park during the 1998 flood, with only minor overtopping of this levee reported to have occurred.

Mount Buffalo Caravan Park

The Mount Buffalo Caravan Park is located at the southeast corner of the junction of the Ovens and Buckland Rivers. The Mount Buffalo Caravan Park was subject to major flooding in both the 1993 and 1998 floods. These floods have been assessed as follows:

- October 1993 flood – Ovens River flooding equivalent to 2% AEP, Buckland River flooding equivalent to 2% AEP.
- September 1998 flood - Ovens River flooding equivalent to 5-10% AEP, Buckland River flooding equivalent to 5% AEP.

The entire Park infrastructure including the Park office area was inundated during both the 1993 and 1998 floods.

Site inspections of the current park layout have identified the following:

- The lower most areas adjacent to the Buckland and Ovens River channels are not occupied by fixed or semi fixed structures.
- Some of the more recent structure development within the Park is raised above ground level for flood protection purposes (e.g. house size dwelling located in the north east corner of the Park).
- Eastern boundary of the Park is aligned with a low level levee (height generally around 0.5 metre) constructed adjacent to a wetland and drainage channel / depression.

The 1993 flood level is reported to have lapped the floor level of the Park office. The 1998 flood level was approximately 0.1 metres lower. The Park floods prior to flooding occurring on the adjacent Riverview Caravan Park located on the opposite side of the Buckland River.

Riverview Caravan Park

The Riverview Caravan Park is located on the west side of the Buckland River, approximately 200 metres upstream of the confluence of the Ovens River. The lower sections of the park were subject to flooding in 1993 and 1998.

The Riverview Caravan Park has a reduced flood risk in comparison to the adjoining Mount Buffalo Caravan Park on the opposite side of the Buckland River. The 1998 flood was equivalent to around a 3% AEP event. Given the limited amount of flood damage caused by this event, the average annual flood damages for this caravan park will be relatively low. The threshold for flooding is likely to be in the vicinity of a 5 % AEP event.

Buckland River System

Wallace Drive

The Wallace Drive residential area is located adjacent the Buckland River, approximately 4 kilometres south of Porepunkah. The catchment of the Buckland River upstream of Wallace Drive is 435 km^2 draining the northern slopes of the Victorian Alps. Upstream of Wallace Drive the catchment is largely forested with little development. Significant numbers of “free” Campers are also known to frequent the nearby property just west of the Buckland River/Harris Lane Bridge.

The access bridge (Harris Lane Bridge) leads to 24 existing dwellings (including 3 on Harris Lane) and a number of vacant allotments within the subdivision. The Wallace Drive area has been subject to both isolation and severe flooding in October 1993 (approx. 45 year ARI), September 1998 (approx.

35 year ARI) and September 2010 (approx.. 17 year ARI). Available modelling indicates that 16 of the 19 houses in Wallace Drive are subject to above floor flooding in the 100 year ARI event, with the most flood prone dwellings (1, 12 and 23 Wallace Drive) subject to flooding in events > approximate 5 year ARI.

Flooding occurs through overtopping of Harris Lane near the intersection of Harris Lane and also through overtopping of the river bank downstream of the Harris Lane Bridge. The onset of breakout flows is at approximate Harris Lane gauge level 4.0 m. The depth and velocity of floodwaters through Wallace Drive is such that wading access is not feasible and vehicular or boat access may not be safe.

The stream gauge at Upper Buckland (12 Mile) provides limited warning time for flooding at Wallace Drive, with flood peak levels at the Harris Lane Drive often coinciding with the peak at Upper Buckland. This likely results from local runoff from immediate runoff from the adjacent steep slopes of Mt Buffalo arriving at Harris Lane prior to floodwaters from the upper catchment. In the event of an upper catchment flood (with limited rain over Mt Buffalo) the Upper Buckland gauge may provide approximately 2 hours warning for Harris Lane.

Overview of Flooding Consequences

Parameter	Flood Class Level			
	Minor	Moderate	Major	Total
Roads Impacted by water	4	1	8	13
Caravan Parks Impacted by floodwater	1	2		3

Flooding in Porepunkah Caravan Park 4th October 1993 (Hydrotechnology 1995)

Flood Mitigation

There are no structural flood mitigation measures in the Porepunkah area.

Ungauged Flood location Warnings

Where there are no set Flood Class Levels for a gauge, VICSES NEDO/IWO will need to consider issuing “Ungauged Flood warnings” (Minor to Major) with confirmed impact examples at each level.

Impact Guide below:

A Minor Flood Warning means floodwater can:	A Moderate Flood Warning means floodwater can:	A Major Flood Warning means floodwater can:
Spill over river banks and cover nearby low lying areas.	Spill over river banks and cover larger areas of land.	Cause widespread flooding.
Come up through drains in nearby streets.	Reach above floor levels in some houses and buildings.	Many houses and businesses are inundated above floor level.
Require the removal of stock in some cases.	Require evacuation in some areas.	Cause properties and whole areas to be isolated by water.
Cover riverside camping areas and affect some low-lying caravan parks.	Affect traffic routes.	Closes major roads and rail routes.
Cover minor roads paths, tracks and low level bridges.	Require the removal of stock in rural areas.	Require many evacuations.
Affect backyards and buildings below floor level.		Affect utility services (power, water, sewage etc).

This table provides guidance on the BoM definitions of each warning category

Flood Intelligence Card – Buckland River at Upper Buckland

Gauge Location: Buckland River at Upper Buckland

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buckland River at Upper Buckland			**No Flood Class Levels at this Gauge**		As there are no set FCL for this gauge location, VICSES NEDO/IWO to consider issuing Minor to Major Level Ungauged Flood warning templates with confirmed impacts at this location	
	2.9			• Dec-10		NECMA
	3.22			• Jul-16		
	3.39			• September 2010 Flood Peak Height • Resulted in flooding at Wallace Drive (4.17m at Harris Lane). Note there is poor correlation of gauge peaks at Upper Buckland and Harris Lane.	Information only	
	3.72			• February 2003 Flood Peak Height • Post-fire debris flow event. Only 1.9m at Harris Ln, no impacts	Information only	
	4.6			• October 2016 Flood Peak Height • Recorded peak was around 4.9 but this appears to be erroneous data. 4.6 is more representative of actual peak conditions. No known impacts at Wallace Drive (3.58m peak at Harris Ln)	Information only	

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Flood Intelligence Card – Buckland River at Harris Lane

Gauge Location: Buckland River at Harris Lane

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buckland River at Harris Lane	**2.8**	7,200	**Minor Flood Level**		BOM will issue and VICSES publish Minor flood warning to community with tailored information from this plan The North East Duty Officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response to suit the level of the incident	
	3.5	11,005	**Moderate Flood Level**		BOM will issue and VICSES to publish Moderate flood warning to community VICSES to consider Base IMT rostered/standby or Base IMT in place depending on forecast VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	
	3.58	11,320		• River bank full immediately downstream of bridge, just avoids impact on gardens etc, no flooding to any land around dwellings. • Some overland flows along Harris Lane from local catchment		NECMA
	3.74			• December 2010 Flood Peak Height		NECMA
	3.82	10,300	**20% AEP**	• Shallow breakouts near the confluence of Ovens River and Buckland River inundating residential land south of the Ovens River between Mount Buffalo Road and the Great Alpine Road • Inundation north of the Ovens River along Telford Lane • Flood water begins to overtop Harrisons Lane and enters the Mt Buffalo Caravan Park (east of Buckland River)	VICSES NEDO/IWO to add to Moderate Flood warning impacts at this level. VICSES RDO/IMT to contact and warn the Mount Buffalo Caravan Park and inform them to enact their Emergency plan.	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buckland River at Harris Lane	**3.82**	10,300	**20% AEP**	• Several breakouts along the Buckland River with impact to residences along Wallace Drive • Flooding across Wobonga Lane due to breakouts from the Ovens River at Eurobin impacting rural land **Properties at Risk (Above Floor)** • **Wallace Drive, Buckland** **Water over Road** • **Harrisons Lane, Porepunkah** • **Harris Lane, Buckland** • **Wallace Drive, Buckland** • **Wabonga Land, Eurobin**	VICSES to consider deployment of Snap Send Solve Flood Observers to check flood levels at Wallace Drive, Buckland Threshold for flooding into Wallace Drive subdivision. VICSES to respond on a request by request basis Alpine Shire/RRV to commence closure of roads identified	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018 NECMA
	4.17			• September 2010 flood peak height • Deep flooding along length of Wallace Drive		NECMA
	4.19	13,000	**10% AEP**	• Modelled threshold for flooding into Riverview Caravan Park (west of Buckland River). • This threshold lower than 4.7m threshold previously adopted in original FIC and may be conservative. Extent increase significantly at 5% AEP. • Original threshold on Ovens FIC for flooding to cross Harris Lane / Wallace Dr intersection &/or enter rear of lots from river bank. • Small breakout from the north bank of the Ovens River along the eastern section of the Porepunkah River Walk. • Breakout from the Buckland River along Mount Buffalo Road	VICSES NEDO/IWO to add to Moderate Flood warning impacts at this level VICSES to respond on a request by request basis	NECMA Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buckland River at Harris Lane	**4.19**	13,000	**10% AEP**	• Small breakout from the north bank of the Ovens River along the eastern section of the Porepunkah River Walk. • Breakout from the Buckland River along Mount Buffalo Road • Increased depths through Harris Lane • Breakouts of the Ovens River at Eurobin, impacting residential properties along Wobonga Lane **Properties at Risk** • **Wallace Drive** • Porepunkah Bridge Caravan Park • Mt Buffalo Caravan Park	Alpine Shire/RRV to determine if road closures are required on Mt Buffalo Road VICSES to deploy crew or Snap Send Solve Flood Observers determine impacts	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018
	4.2		**Major Flood Level**		VICSES to consider Base IMT in place or Core in place with observed activity BOM will issue and VICSES to publish Major flood warning to community	
	4.72	16,900	**5% AEP**	• Minor breakouts to the south of Ovens River across from the Porepunkah River Walk impacting undeveloped land • Breakout across the Great Alpine Road at One Mile Creek Road • Impacts to residential properties along Harris Lane • Deep flooding throughout Wallace Drive area • Breakout from the Buckland River upstream of Mc Cormacks Road • Major breakouts from the Ovens River under the rail trail and across the Great Alpine Road downstream of Eurobin.	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to deploy crew or Snap Send Solve Flood Observers determine further impacts at Harris Lane and Wallace Drive and Wabonga Drive IC & VICPOL Evacuation Manager to consider Evacuation of properties identified VICSES to respond on a request by request basis	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buckland River at Harris Lane	**4.72**	16,900	**5% AEP**	• Impact to residential properties between the Great Alpine Road and Wobonga Lane **Water over Road** • **Mount Buffalo Road at bridge over Buckland River** • **Deans Lane**	RRV to determine if road closure required on GAR at One Mile Rd and at Eurobin	
	4.87	24,421		• Overtopping of Harris Lane to east of bridge resulting in flows through Wallace Drive and multiple above floor flooded	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis	NECMA 1993 impacts
	5.48	25,000	**2% AEP**	• All land parcels on Harris Lane and Wallace Drive are inundated • Increased breakouts north of the Great Alpine Road impacting residential properties and rural land north and south of the Great Alpine Road, downstream of Eurobin • Flooding to Punky Rocks sand and gravel pit downstream of Wallace Drive • Flooding over Mt Buffalo Road at Buckland River (east of bridge crossing) **Water over Road** • **Harris Lane Bridge over the Buckland River** • **Great Alpine Road at Porepunkah** • **Mount Buffalo Road at bridge over Buckland River**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis VICSES to consider deployment of a crew or Snap Send Solve Flood Observers to determine impacts at Harris Lane and GAR at Eurobin RRV to close Harris Road and GAR at Porepunkah	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buckland River at Harris Lane	**5.78**	30,300	**1% AEP**	• Flood water enters Properties from the Ovens River between the Great Alpine Road and McCullough Street, south of Francis Street • Breakouts along Junction Road at the confluence of Buckland River and Ovens River • Breakouts across rural properties between Cavedons Lane and Dawsons Lane upstream of Eurobin	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018
	5.78	30,300	**1% AEP**	**Water over Road** • **Junction Road**	RRV/Alpine Shire/HVP to close Junction Road	
	6.33	45,400	**0.5% AEP**	• Further breakouts at the confluence of Buckland River and Ovens River impacting plantations • Intersection of Great Alpine Road and Buckland Valley Road at Porepunkah inundated. **Water over Road** • **Great Alpine Road at Hoppers Crossing Bridge Porepunkah**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis RRV/ to close GAR at Porepunkah	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018
	6.57	54,800	**0.2% AEP**	• Intersection of Great Alpine Road and Buckland Valley Road at Porepunkah inundated. • Harrison Lane and Mt Buffalo Rd near confluence of Buckland and Ovens Rivers inundated. • Wallace Drive and Harris Lane inundated along Buckland River. • Breakout from the Ovens River impacting residential properties in Eurobin, located on the Great Alpine Road, upstream of Flemings Lane	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis	Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buckland River at Harris Lane	**6.57**	54,800	**0.2% AEP**	• Inundation of most land parcels downstream of Eurobin (data ending at 5627-5997 Great Alpine Road)		Upper Ovens Regional Flood Mapping -Flood Behaviour Report 2018
	9.56	297,000	**PMF**	• Inundation of Porepunkah from south of the Great Alpine Road (where it lies south of the Ovens River) up to north of Station Street • Large flow path inundating parcels north of the Great Alpine Road, in Eurobin and bounded by Wobonga Lane in the south.	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis	
	9.56	297,000	**PMF**	• Inundation between Mount Buffalo Road and across the Great Alpine Road at the confluence of the Buckland River and the Ovens River • Roads and rail trail along the Ovens River between Porepunkah and Eurobin inundated in multiple sections. This includes the Great Alpine Road, Hughes Lane and the Murray to Mountains Rail Trail. **Water over Road** • **Great Alpine Road** • **Hughes Lane**	Alpine Shire to close rail trail and other park trails and paths earlier? RRV/Alpine Shire/HVP to close roads identified	

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Appendix C5: Myrtleford Flood Emergency Plan

Myrtleford

Myrtleford is located adjacent the Ovens River just upstream of the Buffalo River confluence. Flood flows from the Ovens River are carried predominantly on the northern side of the floodplain along and adjacent the Happy Valley Creek which is a developing anabranch of the Ovens River. These breakout flows commence downstream of Fernydale Lane (10 km upstream of Myrtleford) and more significantly around and downstream of Selzers Lane. The Ovens River @ Myrtleford stream gauge is largely bypassed by these flood flows and hence warnings and expected impacts for Myrtleford are most appropriately derived from the Ovens River @ Eurobin gauge, located approximately 17 km upstream of Myrtleford (approximately 6 hours flood travel time).

The breakout flows to Happy Valley Creek have historically been associated with a gauge level of 4.5 m for the Ovens River @ Eurobin (Minor FCL) however in recent events (August 2016 onwards) breakouts have occurred just downstream of Selzers Lane at a lower threshold (4.3 m). As Ovens River flows increase above this threshold Happy Valley Creek carries an increasing proportion of flows and bankfull flows occur along Happy Valley Creek in Myrtleford around 5-5.5 m. Significant out-of-bank flows along Happy Valley Creek commence at Eurobin gauge 5.7 m.

In Myrtleford, the diversion channel from Happy Valley Creek to the Ovens River was constructed in 2009 and opened in 2010, prior to the flood events of September 2010. This channel, instigated as part of the Myrtleford Floodplain Management Study (2000) and constructed as a Water management Scheme under the Water Act 1989, is designed to divert floodwater and reduce impact during an Ovens River flood. Up to Moderate flooding, floodwater is diverted from Happy Valley Creek (at the Whalleys Lane culverts) back into the Ovens River near the end of Gerraty's Lane. Above Moderate the channel is overtopped and also increases that speed of floodwater travel along the diversion channel. The channel helped reduce the impact of the 2010 flood on the town but does not completely mitigate the flood risk from around 5.0m on the Eurobin Gauge.

The commercial centre and adjacent residential areas along and (predominantly) to the south of the Great Alpine Road / Myrtle Street are subject to flooding from the Ovens River / Happy Valley Creek however there is also exposure to flooding from Nil Gully (a tributary of Barwidgee Creek) in the northern part of town. Residential and agricultural properties within the Ovens River floodplain to the south of Happy Valley Creek (Maude Street, Lewis Avenue, Standish Street, Gerratys Lane, Whalleys Lane, Clancy Lane) are particularly exposed to flooding and isolation.

Flooding along Happy Valley Creek also occurs as a result of rainfall in the Happy Valley Creek catchment east of the Ovens township. Runoff from the Happy Valley Creek catchment (in the absence of significant breakouts from the Oven River) does not result in significant flooding in Myrtleford but is sufficient to close the Standish Street causeway when Happy Valley Creek @ Rosewhite exceeds 1.3 m.

Myrtleford has experienced significant flooding in May 1974, October 1993, September 1998, September and December 2010 and October 2016, with October 1993 being the largest event on record (although possibly exceed by an event in 1917 for which little data is available). The 1993 and 1998 flooding arose from rainfall totals of 250-300 mm over 3 days over the upper catchment of the Ovens and Buffalo Rivers. In 1993, over-floor flooding was experienced at around 90 dwellings and 32 businesses along with extensive damage to crops, livestock, pumps, machinery and fencing of rural property abutting the river network of the Ovens River and Happy Valley Creek.

Predicted impacts around Myrtleford are derived from the assessment in the Myrtleford Floodplain Management Study (2000) which provides mapping and identifies impacted dwellings for the 10%, 5%, 2%, 1%, 0.5% and 0.2% AEP events. The flood study mapping was related to expected levels at the Ovens River @ Eurobin gauge however the gauge was only installed in July 2000 and hence the correlations were approximate only. Based on a recent review correlating the Eurobin, Myrtleford and Rocky Point gauges a revised relationship between the Eurobin gauge and the mapped impacts at Myrtleford has been developed (as tabulated below).

While this must be treated with caution, in the absence of detailed hydraulic assessment, it has been observed to provide a good match and relationship between observed impacts in events between 2010 and 2021 and should be used as a revised guide for impacts at recorded heights in the Myrtleford Floodplain Management Study 2000.

AEP (%)	Ovens River @ Eurobin gauge level identified in	Revised Ovens River @ Eurobin gauge level based on recent correlation
10%	5.3	6.2
5%	5.9	6.7
2%	6.2	7.0
1%	6.6	7.5
0.5%	7	8.0
0.2%	7.5	8.7

For the 0.5% AEP event predicted height of 8.0m on the Ovens River at Eurobin, 194 properties could be impacted above floor, 174 properties below floor totalling 368 properties. By comparison, the 1993 flood (which preceded installation of the Eurobin gauge) is estimated to have peaked at a level of approximately 7.1 m at the Eurobin gauge.

A detailed list of addresses impacted during flooding in Myrtleford are included in the Flood intelligence card in Appendix J.

Significant Road closures occur around Myrtleford during large floods:

- Great Alpine Road west of Myrtleford – near the sewage farm around Lower River Road East
- Great Alpine Road east of Myrtleford – to the east of Wabonga Lane (near the Deer Farm). A single lane emergency services bypass has now been constructed (reinforced) along the rail trail around this area.
- Standish Street causeway over Happy Valley Creek – flooded from Happy Valley Creek for Happy Valley Creek @ Rosewhite > 1.3 m or Ovens River @ Eurobin > 4.5 m. While this can be initially bypassed via Lewis Avenue this route is also flooded once Eurobin level exceeds approximate 5.5 m with flooding over Lewis Avenue, Maude Street, Whalleys Lane and Buffalo River Road resulting in loss of access up the Buffalo River valley.

Overview of Flooding Consequences

Property Impacts Myrtleford

Parameter	Annual Exceedance Probability (%AEP)				
	0.5%	1%	2%	5%	10%
Above Floor Flooding					
Urban Residential Properties	68		23	5	2
Commercial Buildings	72		15	8	6
Industrial Buildings	10		10	6	1
Public	7		2	1	1
Rural Residential Properties	35		12	7	0
Above Floor Properties Flooded	**192**		**62**	**27**	**10**
Below Floor Flooding					
Urban Residential Properties	95		78	64	43
Commercial Buildings	35		19	15	10
Industrial Buildings	0		0	1	3
Public	9		4	5	2
Rural Residential Properties	34		37	25	13
Below floor Properties Flooded	**173**		**138**	**110**	**71**
Total affected properties	**365**		**201**	**137**	**81**

Flood Mitigation

Mitigation	Description	Protection	Comments
Diversion Channel (Upstream of Myrtleford)	Constructed Diversion Channel	Effective up to 5.0m on the Ovens River at Eurobin Gauge (below Moderate Flood Class Level)	Diversion channel assists in diverting floodwater from the Happy Valley Reek to the Ovens river
Rail Trail vehicle bypass	Single-lane bypass suitable for carrying vehicles up to a 20 tonne gross mass between Myrtleford & Bright	Access for community and emergency services vehicles between Bright and Myrtleford during floods	A 976 metre section of the Murray to Mountains Rail Trail upgraded to a single-lane bypass suitable for carrying vehicles up to a 20 tonne gross mass.

Ungauged Flood location Warnings

Where there are no set Flood Class Levels for a gauge, VICSES NEDO/IWO will need to consider issuing “Ungauged Flood warnings” (Minor to Major) with confirmed impact examples at each level.

Impact Guide below:

A Minor Flood Warning means floodwater can:	A Moderate Flood Warning means floodwater can:	A Major Flood Warning means floodwater can:
Spill over river banks and cover nearby low lying areas.	Spill over river banks and cover larger areas of land.	Cause widespread flooding.
Come up through drains in nearby streets.	Reach above floor levels in some houses and buildings.	Many houses and businesses are inundated above floor level.
Require the removal of stock in some cases.	Require evacuation in some areas.	Cause properties and whole areas to be isolated by water.
Cover riverside camping areas and affect some low-lying caravan parks.	Affect traffic routes.	Closes major roads and rail routes.
Cover minor roads paths, tracks and low level bridges.	Require the removal of stock in rural areas.	Require many evacuations.
Affect backyards and buildings below floor level.		Affect utility services (power, water, sewage etc).

This table provides guidance on the BoM definitions of each warning category

Flood Intelligence Card – Ovens River at Eurobin (Use for Myrtleford)

Gauge Location: Ovens River at Eurobin

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**4.2**		**Below Minor Flood Class Level**	• Initial breakouts from Ovens River south-west of Selzers Lane toward GAR / Happy Valley Creek (Mummery Break) – Observed in Aug 2017 **Water over Road** • **Standish Street**	BOM will issue a Flood Watch and VICSES to publish a Flood Watch to community with potentially tailored information from this plan. Alpine Shire/RRV to close Standish Street	NECMA **VICSES Jul 17 2021 Obs**
	4.5		**Minor Flood Level**	Commencement of main break from Ovens River toward Happy Valley Creek upstream of Selzers Lane, leading to increased flow through Myrtleford. **Water over Road** • **Standish Street**	BOM will issue and VICSES to publish Minor flood warning to community with tailored information from this plan The North East Duty Officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response to suit the level of the incident Alpine Shire/RRV to close Standish Street	NECMA
	4.9			• Diversion channel is full, 300mm additional rise in Happy Valley Creek before impact on Whalleys Lane. • Selzers Lane impacted from Ovens River. **Water over Road** • **Selzers Lane, Ovens**	VICSES NEDO/IWO to add to Minor Flood warning impacts at this level Alpine Shire to consider closure of Selzers Lane	NECMA

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**5.0**			• Happy Valley Creek at Selzers Lane bank full. • Whalleys Lane diversion operating toward Ovens River (level marginally below Whalleys Lane). • Happy Valley Creek on threshold of flooding at Gerraty Lane impacting toward Lewis Ave and Maude Street. • Standish Street causeway deep flooding but no known impact to caravan park.		Oct 2016 ground photos (NECMA)
	5.5		**Moderate Flood Level**		BOM will issue and VICSES to publish Moderate flood warning to community VICSES to consider Base IMT rostered/standby or Base IMT in place depending on forecast VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	
	5.66			• Deep flooding over land immediately upstream of Wobonga Lane out to corner of GAR. Wobonga Lane remains open. Ovens River in-channel at Wobonga Lane bridge but breakouts commencing on north bank upstream of bridge.		Oct 2016 ground photos (NECMA)
	5.7			• Happy Valley Creek breaks banks upstream of Selzers Lane with flows spilling from Ovens River to Happy Valley Creek via Wallaces Race upstream of Selzers Lane (local gauge 1.15m) • Happy Valley Creek flows break out over Whalleys Lane near corner of Gerratys Lane - leading to onset of flooding through Lewis Ave, Maude St area • Happy Valley Creek marginally overbank downstream of Standish Street (behind supermarket etc)	VICSES NEDO/IWO to add to Moderate Flood warning impacts at this level VICSES to respond on a request by request basis VICSES to consider deployment of a crew or Snap Send Solve Flood Observers to determine impacts at Lewis Ave, Maude St and behind supermarket area	Oct 2016 ground photos (NECMA)

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**5.7**			**Water over Road** • **Lewis Ave, Myrtleford** • **Maude St, Myrtleford**	Alpine Shire to close roads identified	
	6.0		**Major Flood Level**	• Flooding to rear of shops along GAR downstream of Lewis Ave, flooding over tennis courts and around clubhouse buildings	BOM will issue and VICSES to publish Major flood warning to community VICSES to consider Base IMT in place or Core in place with observed activity Alpine Shire to close Tennis Courts and Clubhouse	Oct 2016 ground photos (NECMA)
	6.1			• GAR and Wobonga Lane flooded from Ovens River. Flooding extends to rail trail at Wobonga Lane intersection. Flooding all around 6040 GAR. Consistent with Upper Ovens FS 20% AEP which approximates Eurobin 6.28m • Flooding from Happy Valley Creek extends to GAR from Willow Grove to beyond Mitre 10 • Flooding at Happy Valley Creek / Standish Street causeway extends up Standish Street past King Street intersection (to roadside parking bays at Target). • Extensive flooding over Standish Street south of Happy Valley Creek. • Likely impact into Myrtleford Caravan Park. **Water over Road** • **Great Alpine Road near Wabonga Lane, Eurobin** • **Wabonga Lane, Eurobin** • **Willow Grove, Myrtleford**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis VICSES to consider deployment of a crew or Snap Send Solve Flood Observers to determine impacts VICSES RDO/IMT to contact and warn the Myrtleford Caravan Park and inform them to enact their Emergency plan. IC & VICPOL Evacuation Manager to consider Evacuation of the Myrtleford Caravan Park and roads identified Alpine Shire/RRV to close roads identified	Oct 2016 ground photos (NECMA)

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**6.19**			• October 2016 peak flood Height • Extensive floodplain inundation downstream of Ovens, flooding over Happy Valley Creek / Ovens River floodplain at Myrtleford throughout Lewis Ave, Maude St, Standish St area.	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis	NECMA
	6.2		**10% AEP**	10 Properties affected above floor level 71 Properties affected below floor level 81 properties in total • For Specific Myrtleford Property flood listings please refer to Appendix J **Properties at Risk (Above Floor)** • **1 & 2 35 Standish St** • **Commercial/Municipal properties at risk (above floor)** • **4 King St** • **91, 145,190 & 218 Myrtle St** • **49C Standish Street** • **21A Standish St** • **Public facility Myrtle St (GAR)** **Properties at Risk (by Street)** • **Lewis Ave** • **Myrtle St (GAR)** • **Standish St** • **Willow Gv** • **Maude St** • **Clancy St** • **King St** • **Merriang Rd** • **Old Ovens Hwy**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis VICSES to consider the use of Snap, Send, Solve Flood observers Alpine Shire to monitor and inspect roads to determine any further road closures IC & VICPOL Evacuation Manager to consider Evacuation of addresses identified IC/Alpine Shire to determine activation of Relief centre/s	Ovens Catchment Flood Study 2012

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**6.2**		**10% AEP**	• **Prince St** • **Smith St** • **Whalleys Ln** • **Willow Gv**		
	6.7		**5% AEP**	27 Properties Flooded above floor level 111 Properties affected below floor level 38 properties in total • For Specific Myrtleford Property flood listings please refer to Appendix J **Properties at Risk (Above Floor): 17 Additional properties (27 in total)** • **126 Old Ovens Hwy** • **## Clancy Lane** • **13 &16 Standish St** • **Lot 10, RMB 44, RMB 425 Whalleys Ln** • **4, 14 & 16 Maude ST** **Commercial/Municipal properties at risk (above floor)** • **## Lewis Ave** • **21 & 35 Myrtle St (GAR)** • **21 Maude St** • **4 Old Ovens Hwy** • **46 & 48 Standish St** **Properties at Risk (by Street)** • **Lewis Ave** • **Blewett Ln** • **Clancy Ln** • **Geoffrey St**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level IC & VICPOL Evacuation Manager to consider Evacuation of addresses identified VICSES to respond on a request by request basis VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts IMT will consider critical services infrastructure Alpine Shire and RRV to monitor, inspect or close roads or determine any further road closures	Ovens Catchment Flood Study 2012

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**6.7**		**5% AEP**	• **Gerratys Ln** • **King St** • **Maude St** • **Merriang Rd** • **Myrtle St** • **Old Ovens Hwy** • **Prince St** • **Smith St** • **Standish St** • **Toniazzo Ln** • **Whalleys Ln** • **Willow Gv**		
	6.83			• September 2010 estimated Flood Peak Height - gauge was not in operation until 2000		NECMA
	7.0		**2% AEP**	63 Properties Flooded above floor level 158 Properties affected below floor level 221 properties in total For Specific Myrtleford Property flood listings please refer to Appendix J **Properties at Risk (Above Floor): 36 Additional properties (63 in total)** • **420 Gerraty's Ln** • **RMB 437, RMB ###, 450 & 490 Whalleys Ln** • **0 Blewett Ln** • **42 & 52 Lewis Ave** • **4,5,14,15,16 & 19 Maude St** • **31, 37, 39, 57, 141, 21A Myrtle St (GAR)** • **10 Old Oven Hwy** • **81 Prince St**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level IC & VICPOL Evacuation Manager to consider Evacuation of addresses identified VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts VICSES to respond on a request by request basis Alpine Shire and RRV to monitor, inspect or close roads or determine any further road closures	Ovens Catchment Flood Study 2012

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**7.0**		**2% AEP**	• **6 Smith St** • **31 & 36 Standish St** • **# Clancy Ln** **Commercial/Municipal properties at risk (above floor)** • **47 Clyde St** • **6 Geoffrey St** • **2 Unnumbered properties in Lewis Av** • **17, 41, 91, 145, 151, 190 & 218 Myrtle St (GAR)** • **1 Willow Gv** • **31, 35 & 39 King St** • **35 Myrtle St** • **36742? Standish St**		Ovens Catchment Flood Study 2012
	7.1			• Oct 1993 estimated Flood Peak Height gauge was not in operation until 2000. • Flooding throughout Ovens and Happy Valley Creek floodplain, extending across Myrtle Street	VICSES NEDO/IWO to add to Major Flood warning impacts at this level	NECMA
	8.0		**0.5% AEP**	• 194 Properties Flooded above floor level • 174 Properties affected below floor level • 368 properties in total **For Specific Myrtleford Property flood listings please refer to Appendix J** **Properties at Risk (Above Floor): 131 Additional properties (194 in total)** • **32, 421 & 423 Gerraty's Ln** • **2, 10, 42, 44, 46, 48, 50, 52, 62, 64, 68, 72, 96, Old Ovens Hwy**	Incident Controller and VicPol Evacuation Manager to consider enacting an Evacuations Plan VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts VICSES to respond on a request by request basis	Ovens Catchment Flood Study 2012

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Ovens River at Eurobin	**8.0**		**0.5% AEP**	• **13, 16, 18, 23, 25, 26, 30, 31, 36, 38, 39, 43, 45, 27-29, 35/1, 35/2 Standish St** • **5 Unnumbered Properties Toniazzo Lne** • **Lot 10, RMB 400, 401, 405, 425, 430, 435, 437, 450, 455, 457, 467, 490 Whalleys Lne** • **2 Unnumbered Properties Blewett Lne** • **3 & 4 Jones St** • **11, 13, & 28 King St** • **7, 18, 29, 31, 41, 49 & 69 Lewis Ave** • **4, 5, 7, 14, 15, 16, 17, 19, Maude St** • **9, 13, 31, 37, 39, 57, 69, 71, 139, 141, 174, 177, 220, 21A Myrtle St (GAR)** • **6, 8, 10, 24 Smith St** • **81 Prince St** **Commercial/Municipal properties at risk (above floor)** • **Most properties in Clyde St** • **Most properties in Myrtle St (GAR)** • **Most properties in Standish St** • **4 King St** • **2 unnumbered properties in Lewis St** • **37 Smith St** • **31, 35, 39 King St** • **1 Willow Gv** • **31, 35, 39 King St** • **21 Maude St** • **35 Myrtle St** • **4 Old Ovens Hwy** • **14 Clyde St** • **Multiple Public properties in Lewis St, Myrtle St, Smith St, Standish St, and Clancy Lne**	Alpine Shire and RRV to monitor, inspect or close roads or determine any further road closures VICSES to respond on a request by request basis	Ovens Catchment Flood Study 2012

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Flood Intelligence Card – Happy Valley Creek at Rosewhite

Gauge Location: Happy Valley Creek at Rosewhite

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Happy Valley Creek at Rosewhite	**1.3**		**No Flood Class Levels at this Gauge**	• Flows of this magnitude from Happy Valley Creek closed Standish Street causeway (Myrt) in July 2016 and 31 Aug 2016 even in the absence of breakout flows from the Ovens River at Selzers Lane (although this was during a period of sustained minor flooding and catchment saturation so is probably conservative i.e. lower than would normally be expected.) **Level also exceeded:** • 26/8/2010 (1.8m), • 4/9/2010 (2.2m), • 16/10/2010 (1.6m), • 14/11/2010 (1.5m), • 9/12/2010 (3.3m), • 5/2/2011 (1.9m), • 11/2/2011 (1.4m), • 18/8/2011 (1.6m), • 10/11/2011 (1.24m), • 28/2/2012 (1.28m), • 1/3/2012 (2.36m), • 4/3/2012 (1.3m), • 12/8/2013 (1.55m), • 24/8/2013 (1.25m), • 2/8/2015 (1.26m). **Water over Road** • **At 1.3m Happy Valley Creek will close Standish Street at Myrtleford**	The North East Duty Officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response to suit the level of the incident As there are no set FCL for this gauge, VICSES NEDO/IWO to consider issuing Minor Level Ungauged Flood warning with confirmed impacts at this level Alpine Shire/RRV to monitor and determine if Standish Road Myrtleford requires closure from 1.3m	July 2016 ground photos (NECMA)

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Happy Valley Creek at Rosewhite	**2.1**	3,244	**36% AEP**	• Happy Valley Creek flows (in the absence of any breakout events from the Ovens River upstream) break from Happy Valley Creek at Carlassare Ct, across Hop Gardens and return to Happy Valley Creek to rear of 120 GAR, Myrtleford (Lupos) -		Sept 2021 ground photos (NECMA)
	2.5	4,514	**22% AEP**	• October 2016 Flood peak Height		
	3.1		**10% AEP**			
	3.3	5,291		• May 1974 Flood Peak Height • Flooding of Ovens store and houses opposite, Shop House above floor • Water Over Road Myrtleford side Happy Valley Bridge **Water over Road** • **Great Alpine Road near Happy Valley Bridge**	VICSES NEDO/IWO to consider issuing a Major Level Ungauged Flood warning with confirmed impacts at this level VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts RRV to determine if GAR requires closure	Upper Ovens Flood Study 2004
	4.0		**2% AEP**	• Large flow path inundating parcels north of the Great Alpine Road, in Eurobin and bounded by Wobonga Lane in the south.	RRV to determine if GAR requires closure	Upper Ovens Flood Study 2004
	4.4	8,493	**1% AEP approx**	• 6 dwellings (north of Happy Valley Rd) + shop and 1 dwelling south of Happy Valley Road subject to flooding.	VICSES NEDO/IWO to consider issuing a Major Level Ungauged Flood warning with confirmed impacts at this level VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts	Upper Ovens Flood Study 2004

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Flood Intelligence Card – Buffalo River Downstream of Lake Buffalo

Gauge Location: Buffalo River – D/S of Lake Buffalo

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buffalo River – D/S of Lake Buffalo	**3.2**	9,090	**Minor Flood Level**		BOM will issue and VICSES to publish Minor flood warning to community with tailored information from this plan The North East Duty Officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response to suit the level of the incident	NECMA
	4.1			• August 2016 Flood peak Height • Breakouts commencing on agricultural land near near Nug Nug Road, Buffalo River Rd, Nug Nug and Back Creek Road. • No known road or dwelling impacts.		NECMA
	5.0	11,700	**Moderate Flood Level**	• Potential isolation issues of Merriang and Merriang South (Access via Whorouly Kneebones Gap).	BOM will issue and VICSES to publish Moderate flood warning to community VICSES to consider Base IMT rostered/standby or Base IMT in place depending on forecast VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	
	5.6			• October 2016 Flood Peak Height • Flooding over Merriang South Road between the Buffalo River and Merriang Homestead Road,		NECMA

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buffalo River – D/S of Lake Buffalo	**5.6**			• Extensive flooding of agricultural land downstream of Back Creek Road. • Likely flooding over Merriang South Road (around 196 Merr Sth Rd) from local runoff. **Water over Road** • **Merriang South Road between the Buffalo River and Merriang Homestead Road**	VICSES NEDO/IWO to add to Moderate Flood warning impacts at this level VICSES to respond on a request by request basis Alpine Shire and RRV to determine if road closures required at identified roads	NECMA
	5.73	22,100	**20% AEP**			Ovens Catchment Flood Study 2012
	6.3	**17,200**	**Major Flood Level**		BOM will issue and VICSES to publish Major flood warning to community VICSES to consider Base IMT in place or Core in place with observed activity	
	6.65	30,000	10% AEP			
	7.6	40,300		• September 1998 Flood Peak • Extensive rural flooding both upstream and downstream of Merriang South Road. • No identified dwelling impacts but flooding in proximity to a number of dwellings on Buffalo River Road and Merriang South Road. **Water over Road** • **Possibly over Buffalo River Road near Back Creek Road.**	VICSES to respond on a request by request basis Alpine Shire and RRV to determine if road closures required at identified roads	Ovens Catchment Flood Study 2012 NECMA

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Buffalo River – D/S of Lake Buffalo	7.63	40,600	4% AEP			
	7.66			• Sept 2010 Flood Peak • No identified dwelling impacts however houses on Merriang Road west of Crameri Ln likely isolated. **Water over Road** • **Merriang South Road and Merriang Road.** • **Buffalo River Road from Sandy Creek (upstream of Nug Nug) and Ableits Lane (downstream of Merriang Sth Rd)**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis Alpine Shire and RRV to determine if road closures required at identified roads	
	7.68	40,450		• September 2010 Flood Peak		
	7.99	45,100		• May 1974 Flood Peak		
	8.27	48,900	2% AEP			
	8.65	54,300		• October 1993 Flood Peak • Extensive floodplain inundation. • HydroTechnology 1995 flood report notes "there was little damage to property directly from the Buffalo River floodwaters, apart from some rural properties near the confluence with the Ovens River."	VICSES NEDO/IWO to add to Major Flood warning impacts at this level	
	8.85	57,200	1% AEP			

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Appendix C6: Mount Beauty Flood Emergency Plan

Mt Beauty

Mt Beauty is located between the Kiewa River West Branch and the Kiewa River East Branch a short distance upstream of the confluence of the 2 branches. The centre of the township is located on rising ground above the Mt Beauty Regulating Pondage. The regulating pondage is an off-stream storage which acts to regulate outflows from the Kiewa West Power Station tailrace prior to release to the Kiewa River West Branch.

Flooding impacts in Mt Beauty / Tawonga result principally from the Kiewa River West Branch and breakout flows from Simmonds Creek which impact the area north of Simmonds Creek Road through to the Kiewa Valley Highway (overtopping the highway) with flows returning to the Kiewa River West Branch around and to the south of the Mt Beauty Holiday Centre. The lower parts of the Holiday Centre were subject to flooding in 1998. Damage to roads and bridges along the Kiewa River East Branch (i.e. Damms Road) is known to have occurred in 1998.

The nearest active flood warning service gauge on the Kiewa River is at Mongans Bridge approximately 17 km downstream of Mt Beauty, with no real time gauging data available from upstream of the town. Both the Kiewa River East Branch and Kiewa River West Branch upstream of Mt Beauty are impacted by the operation of the Kiewa Hydro scheme however significant flood events are unlikely to be significantly impacted by hydro operations. Some real-time stream flow information may be available from AGL Energy in Mt Beauty during a flood event.

Overview of Flooding Consequences

Parameter	Flood Class Level			
	Minor	Moderate	Major	Total
Roads Impacted by water				
Caravan Parks Impacted by floodwater			2	2

Flood Mitigation

Mitigation	Description	Protection	Comments
Diversion Channel – Big Hill Mountain Path	Constructed Diversion Channel		Diversion channel assists in diverting floodwater from the Bogong High Plains Road from the township
Mt Beauty Drainage system	Constructed roadway drains within township		Drains are installed in the following streets to move water from the township and aid in flood mitigation. Arthur Street, Hill Street, Bogong Ave & Towonga Cresent

Flood Intelligence Card – Kiewa River at Mongans Bridge

Gauge Location: Kiewa River at Mongans Bridge

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Kiewa River at Mongans Bridge	**2.4**	**6,400**	**Minor Flood Level**		BOM will issue and VICSES to publish Minor flood warning to community with tailored information from this plan The North East Duty Officer in conjunction with the Regional Agency Commander will maintain operational awareness and form an appropriate response to suit the level of the incident	Kiewa Catchment Flood Study 2012
	3.5	**12,500**	**Moderate Flood Level**	• Flooding to just beyond top of bank in Mt Beauty Holiday Centre. • Flooding of Tawonga Caravan Park - around riverside BBQ areas and low sites near river. Northern billabong (open area) flooded. • No known impacts in the rural reach downstream of Mt Beauty.	BOM will issue and VICSES to publish Moderate flood warning to community VICSES to consider Base IMT rostered/standby or Base IMT in place depending on forecast VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering	NECMA July 2016 observations Kiewa Catchment Flood Study 2012
	3.77	**14,340**		• Tawonga Caravan Park not impacted (bankfull) - contrasts with July 2016 observation of 3.5m causing substantial flooding **Water over Road** • **Boyd Road, Gundowring**	Alpine Shire determine if road closures required at Roads identified	NECMA April 2020 observations

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Kiewa River at Mongans Bridge	**3.92**	**15,900**	**20% AEP**			Strategic Flood Intel Report 2011
	4.5	**19,500**	**Major Flood Level**		BOM will issue and VICSES to publish Major flood warning to community VICSES to consider Base IMT in place or Core in place with observed activity	Kiewa Catchment Flood Study 2012
	4.52	**20,300**	**10% AEP**			Strategic Flood Intel Report 2011
	4.66	**20,800**		• December 2010 - Did not impact Mongans Bridge Caravan Park • Simmonds Creek flows unable to get away on confluence of Kiewa River West Branch. Water can back up and flood over the Kiewa Valley Highway near Simmonds Creek Rd. **Water over Road** • **Kiewa Valley Highway, Mt Beauty**	VICSES to consider deployment of a crew or Snap Send Solve Flood Observers to determine impacts Alpine Shire and RRV to monitor, inspect or close roads or determine any further road closures	GHD 2012 assessment for Alpine Shire
	4.7	**21,100**		• Approximate threshold for impact onto Mongans Bridge Caravan Park - complete flooding of Caravan Park within around 1 hour after onset	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to respond on a request by request basis VICSES RDO/IMT to contact and warn the Mongans Bridge Caravan Park and inform them to enact their Emergency plan. IC & VICPOL Evacuation Manager to consider Evacuation of the Mongans Bridge Caravan Park	GHD 2012 assessment for Alpine Shire

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Kiewa River at Mongans Bridge	**4.96**	**23,500**		• Sep-75		Strategic Flood Intel Report 2011
	5.24	**26,000**	**5% AEP**	• September 2010 Peak Flood Height • Tawonga Caravan Park flooded • 1/09/2010 - Flooded through Mongans Bridge Caravan Park - most caravans flooded above floor level **Water over Road** • **Keegans Lane, Upper Gundowering**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES RDO/IMT to contact and warn the Tawonga Caravan Park and inform them to enact their Emergency plan. IC & VICPOL Evacuation Manager to consider Evacuation of the Mongans Bridge Caravan Park VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts VICSES to respond on a request by request basis Alpine Shire determine if road closures required at Roads identified	Strategic Flood Intel Report 2011 NECMA
	5.66	**29,000**		• October 1993 Peak Flood height • 1/10/1993 - Mt Beauty Holiday Centre 12 sites impacted with Kiewa River flows along the Kiewa Hwy to front entrance of park. • Mongans Bridge Caravan Park flooded - most caravans flooded above floor level (Oct 1993)	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts VICSES to respond on a request by request basis	Strategic Flood Intel Report 2011

Gauge	River Height (m)	River Flow (ML/d)	Flood Class Level & Annual Exceedance Probability (%AEP)	Consequence/ Impact	Action Actions may include: Evacuation, closure of road, sandbagging, issue warning and who is responsible etc.	Reference
Kiewa River at Mongans Bridge	**6.59**	**31,000**	**2% AEP**			
	6.62	**36,800**	**1% AEP**	• Flooding effects of the Mt Beauty Holiday centre are caused by the west Kiewa System.	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts VICSES to respond on a request by request basis	Strategic Flood Intel Report 2011
	6.69	**36,100**		• September 1998 Peak Flood Height • 1/09/1998 - Mt Beauty Holiday Centre 12 sites impacted. • Tawonga Caravan Park (Mountain Creek Road) flooded to depth of 0.5m, 90% of sites impacted but office and kiosk can be protected by sandbagging (Caravan Park EM Plan) • Mongans Bridge Caravan Park flooded - most caravans flooded above floor level. **Water over Road** • **Kergunyah Road, Kergunyah (Indigo Shire)** • **Boyd Road, Gundowering** • **Bay Creek Lane, Mongans Bridge**	VICSES NEDO/IWO to add to Major Flood warning impacts at this level VICSES to consider deployment of crews or Snap Send Solve Flood Observers to determine impacts VICSES to respond on a request by request basis Alpine Shire and RRV to monitor, inspect or close roads or determine any further road closures	Strategic Flood Intel Report 2011 NECMA

Note: 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. Flood intelligence cards detail the relationship between flood magnitude and flood consequences. More details about flood intelligence and its use can be found in the Australian Institute of Disaster Resilience (AIDR) Handbook series on managing the Floodplain.

Appendix D - Flood evacuation arrangements

Phase 1 - Decision to Evacuate

The role of evacuation is the responsibility of Victoria Police. Victoria Police discharge their responsibility for evacuation. Therefore the decision to evacuate is to be made in consultation with the MERO, MERC, DHHS, Health Commander and other key agencies and expert advice (CMA's and Flood Intelligence specialists).

Once the Incident Controller has made the decision to evacuation the IC must notify Victoria Police representative, IMT, IEMT, agency chain of command and incident personnel.

The Incident Controller may make the decision to evacuate an at-risk community under the following circumstances:

- Properties are likely to become inundated;
- Properties are likely to become isolated and occupants are not suitable for isolated conditions;
- Public health is at threat as a consequence of flooding and evacuation is considered the most effective risk treatment. This is the role of the Health Commander of the incident to assess and manage. Refer to the State Health Emergency Response Plan (SHERP) for details);
- Essential services have been damaged and are not available to a community and evacuation is considered the most effective risk treatment.

The following should be considered when planning for evacuation:

- Evacuation warning options: Prepare to Evacuate or Evacuate Now / Too late to leave
- Anticipated flood consequences and their timing and reliability of predictions;
- Size and location of the community to be evacuated;
- Likely duration of evacuation;
- Forecast weather;
- Flood Models;
- Predicted timing of flood consequences;
- Time required and available to conduct the evacuation;
- Evacuation priorities and evacuation planning arrangements;
- Access and egress routes available and their potential flood liability;
- Current and likely future status of essential infrastructure;
- Is cross border assistance required or evacuation to another municipality relief centre?;
- Resources required and available to conduct the evacuation;
- Shelter including Emergency Relief Centres, Assembly Areas etc.;
- Vulnerable people and facilities;
- Transportation;
- Registration
- People of CALD (non English speaking) background and transient/tourist populations; often with minimal local knowledge
- Safety of emergency service personnel;

- Different stages of an evacuation process.

The table below details triggers for evacuation, if these heights are predicted or are likely to occur evacuation should be considered

Location	Gauge	Trigger	Actions/Considerations
Harrietville	Ovens River at Harrietville	3.55m	Initial flooding of GAR at Frosty Corner modelled to occur at gauge 2.37 m – not known to have occurred in Aug 2017 (2.57 m or Oct 2016 (2.7 m). Requires monitoring to verify Closure of GAR at multiple locations at 3.55m creates additional points of isolation for the Harrietville community. At 3.55m multiple roads within the township are inundated impeding access and travel
Bright	Ovens River at Bright	5.91m	Multiple residential and commercial properties at risk of inundation from Bakers Gully and Stackey Gully at 5% AEP (cannot be directly related to Ovens River @ Bright gauge). Multiple road closures required and consideration of relief centre locations required.
Buckland	Buckland River at Harris Lane	4.0m	Impacts to residential properties in Harris Lane, and Wallace Drive. 4m and access is not safe (refer Sep 2010 conditions at 4.2m)
Myrtleford	Ovens River at Eurobin	About 4.2 m (Minor) 5.9m	Low lying properties along the Floodplain between Happy Valley Creek and the Ovens River (Standish St flooding) are the early priority. Multiple commercial and residential properties at risk from this height. Multiple road closures required as Happy Valley Creek breakout flows impact Lewis Ave, Maude St area Consideration of relief centres required.

Phase 2 – Warning

Warnings may include a warning to 'prepare to evacuate' and a warning to 'evacuate now'. Once the decision to evacuate has been made, the at-risk community will be warned to evacuate. Evacuation warnings should be disseminated via methods listed in section 3.3 of this plan.

Phase 3 – Withdrawal

VICPOL is the responsible agency for evacuation. VICSES will provide advice regarding most appropriate evacuation routes and locations for at-risk communities to evacuate to.

VICSES, CFA, AV and Local Government will provide resources where available to support VICPOL/VICROADS with route control and may assist VICPOL in arranging evacuation transportation.

VICPOL will control security of evacuated areas.

Evacuees will be encouraged to move using their own transport where possible. Transport for those without vehicles or other means will be arranged through the EMT at the established ICC.

Possible Evacuation Routes to be used:

Sector	Evacuation Route	Evacuation route closure point and gauge height of closure

Landing zones for helicopters (if possible) are located at:

- DELWP Office at Ovens
- Bright Sports Ground

Special needs groups will be/are identified in Council's vulnerable Person register or vulnerable facilities section in the MEMP. This can be done through community network organisations. Further information on Council's 'residents at risk' register can be obtained from EMCOP or Alpine Shire's SharePoint.

Phase 4 – Shelter

Relief Centres and/or assembly areas which cater for people's basic needs for floods may be established to meet the immediate needs of people affected by flooding. The Emergency Relief Centres are listed in the table below:

Shelter type (Relief Centre/ Assembly Area (include address)	Comments
	Refer to Appendix of the Alpine Shire MEMP

VICPOL in consultation with VICSES will liaise with Local Government and DHHS (where regional coordination is required) via the relevant control centre to plan for the opening and operation of relief centres. This can best be achieved through the Emergency Management Team (EMT).

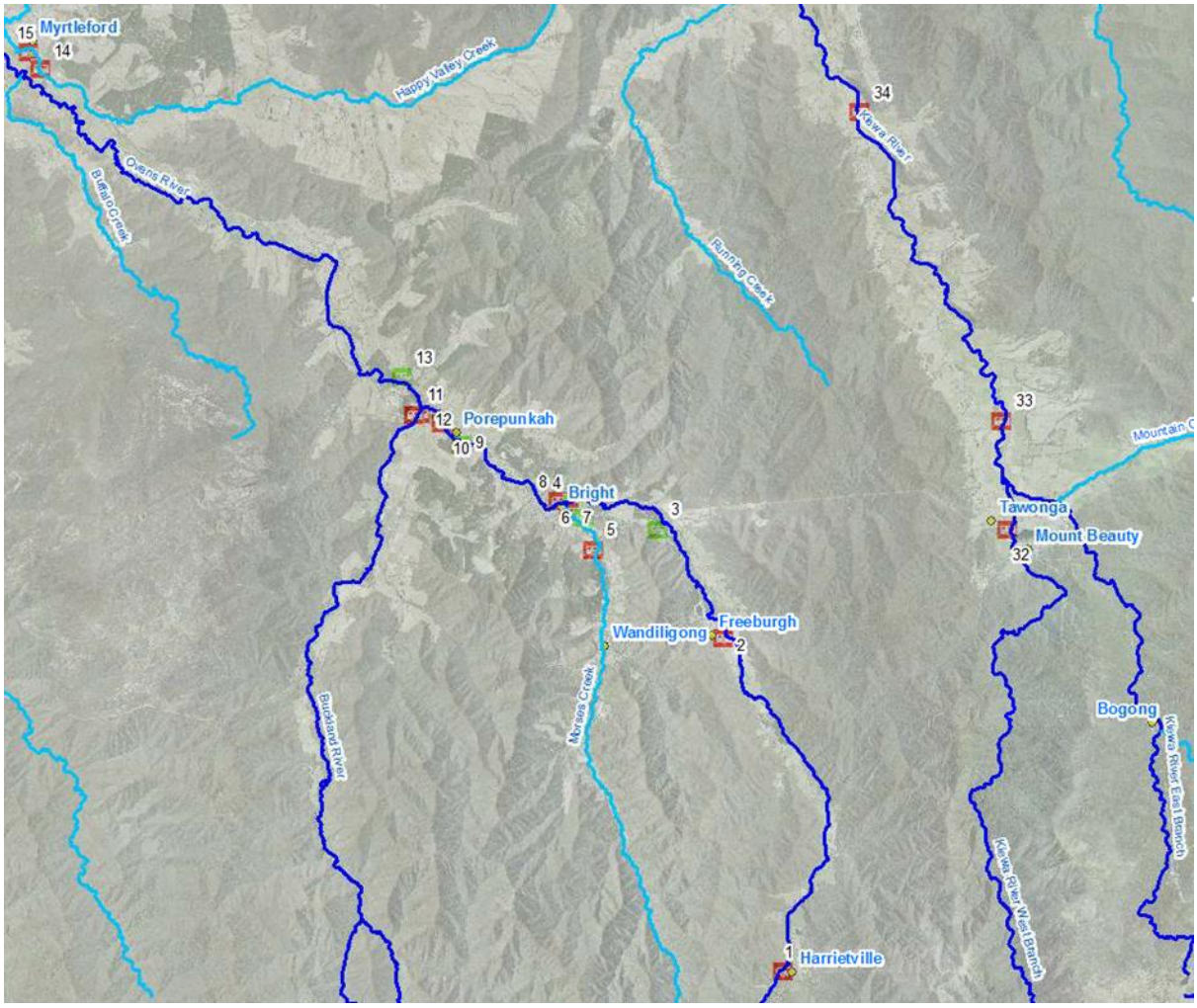
Animal Shelter

Animal shelter compounds will be established for domestic pets and companion animals of evacuees. These facilities may be located at locations detailed below and coordinated by [Enter Name] or provide reference to MEMP.

Animal Shelter (include address)	Comments
	Floods during big floods (major level and access roads isolated)

Caravans

Caravan parks in the area are shown below. The majority of the parks are located adjacent waterways but have variable exposure to flooding.



Caravans or caravan parks may be relocated to the following locations:

Sector	Caravan evacuation location (include address)	Comments
Myrtleford Caravan Park		
Arderns Caravan Park Myrtleford		
Mt Buffalo Caravan Park, Porepunkah	Porepunkah Pines Caravan Park?	
Riverview Caravan Park, Porepunkah	Porepunkah Pines Caravan Park? Porepunkah Mill?	
Porepunkah Bridge Holiday Park		
Big 4 Bright Holiday Park		
Freeburgh Cabins and Caravan Park		Site has a high degree of flood immunity (up to ## AEP) and would likely internally relocate residents to other areas of the park.
Harrietville Caravan Park		

Phase 5 – Return

The Incident Controller in consultation with VICPOL will determine when it is safe for evacuees to return to their properties and will arrange for the notification of the community.

VicPol will manage the return of evacuated people with the assistance of other agencies as required.

Considerations for deciding whether to evacuate include:

- Current flood situation;
- Status of flood mitigation systems;
- Size and location of the community;
- Access and egress routes available and their status;
- Resources required to coordinate the return;
- Special needs groups;
- Forecast weather;
- Transportation particularly for people without access to transport

Disruption to Services

Disruption to a range of services can occur in the event of a flood. This may include road closures affecting school bus routes, truck routes, water treatment plant affecting potable water supplies etc.

[List facilities, trigger point for action and strategy to be employed. Consequence maps based on AEP may exist.]

Service	Impact	Trigger Point for action	Strategy/ Temporary Measures
Myrtleford Water Treatment Plant	Often affected in floods resulting in Boil Water Notices		

Essential Community Infrastructure and Property Protection

Essential Community Infrastructure and properties (e.g. residences, businesses, roads, power supply etc.) that require protection are:

[List facilities, trigger point for action and strategy to be employed. Consequence maps based on AEP may exist.]]

Facility	Impact	Trigger Point for action	Strategy/ Temporary Measures

Alpine Shire will establish a sandbag collection point at

- [Enter details as appropriate e.g: front of Council Depot or another community facility]

Appendix E: Public Information and Warnings

VICSES uses VicEmergency EMCOP Public Publishing and Emergency Alert Telephone warnings to distribute riverine and flash flood (and other hazards) warnings in Victoria.

BoM Flood Warning products and Flood Class Levels can be found on the BoM website. Flood Warning Products include Severe Thunderstorm Warnings, Severe Weather Warnings, Flood Watches and Flood Warnings.

The EMCOP Public Publishing platform enables automatic publishing to the VicEmergency app, website, and hotline (1800 226 226). Communities can also access this information through EMV and VICSES **social media channels** (VicEmergency, Victoria State Emergency Service on Facebook and VICSES News on Twitter etc) and **emergency broadcasters**, such as, ABC radio 106.5 FM/ Bright 89.7 FM/ Myrtleford 91.7 FM and Alpine Radio is officially broadcasting into the Kiewa Valley on 96.5FM, the Ovens Valley – in particular Bright & Porepunkah- on 92.9 FM & Harrietville on 94.5 FM. It was recognised as an Official Emergency Services Broadcaster on 25 January 2011.

Sky News TV (current list available via the EMV website).

VICSES Regional staff (eg RDO) (or ICCs where established) lead the issuing of warnings for riverine flood events when pre-determined triggers are met (issuing of a BOM Flood Watch or Warning), and share locally tailored information via the EMV (Vic Emergency) and standard VICSES communication channels (VICSES social media, traditional media, web and face to face). These activities are coordinated by the VICSES RDO and approved by the VICSES RAC, or the PIO and IC respectively (when an ICC is active).

If verified reports are received of flash flooding posing, or resulting in, a significant threat to life or property, VICSES Regions (or ICCs) will issue a flash flood warning product via EM-COP.

VICSES at the state tier (or SCC Public Information Section) plays an important role in sharing riverine and flash flood information via state-based standard communication channels.

During some emergencies, VICSES may alert communities by sounding a local siren (where this exists) or via media broadcasters by the use of SEWS, or by using the Emergency Alert (EA) platform to send an SMS to mobile phones or a voice message to landlines. The use of sirens for higher-end warnings has been pre-determined, and mapped to relevant warning templates in EMCOP. Sirens also appear in the warning polygon when drawn over an area where official community alerting sirens exist.

EMCOP Public Publishing **Business Rules for Riverine and Flash Flood** are available in the Public Information tab of the IMT Toolbox, providing further guidance on specific triggers, roles and responsibilities. VICSES SOP057 and JSOP 04.01 provide further guidance

Advice - Flood

Message reference number: 14767

Issued For:	the Ovens River at Wangaratta
Incident Location:	the Ovens River at Wangaratta
Incident Name:	FloodNorthEastOctober
Issued:	12/10/2020 10:51 AM
Next Update Expected:	13/10/2020 11:00 AM
Contact For Media:	SES - 1300 783 933

This **Minor Flood Warning** is being issued for the Ovens River at Wangaratta.

MINOR FLOODING EASING IN THE OVENS AND KING RIVERS.

Minor flooding is easing in the Ovens River and in the King River at Docker Rd Bridge. River levels will continue to fall during Monday.

No significant rain is forecast for the next few days.

Ovens River downstream of Rocky Point:
Minor flooding is easing along the Ovens River downstream of Rocky Point.

The Ovens River at Wangaratta peaked at 11.91 metres around 04:45 am Monday 12 October (minor flood level 11.90 m) and is currently at 11.88 metres and falling.

River levels will continue to fall during Monday.

Stay informed - monitor yo ur local conditions and remain alert.

What you should do:

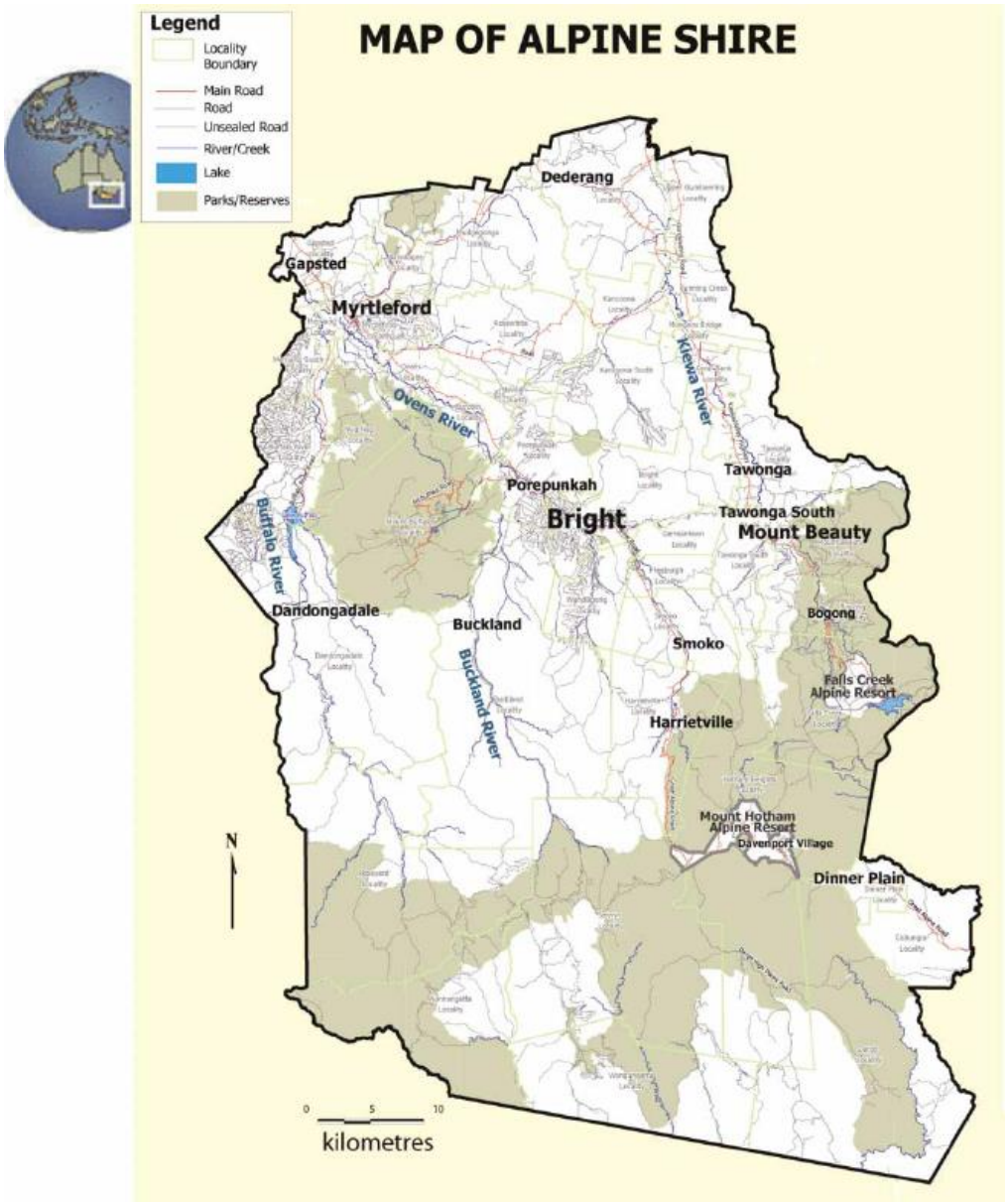
- Listen to emergency broadcasters and monitor warnings.
- Decide what you and your family will do if flooding impacts you.
- For information on how to prepare goto www.ses.vic.gov.au/get-ready/floodsafe (https://www.ses.vic.gov.au/get-ready/floodsafe).
- Review your emergency plan and check your emergency kit is fully stocked, if you have one.
- Farmers should consider moving livestock and machinery to higher ground.
- Floodwater is dangerous - never drive, walk or ride through floodwater.

Impacts in your area:

- Low lying caravan parks and camping grounds may be flooded.
- Access routes into Lower Ovens National Park cut by flows in Boundary Creek (Francis Ln, Frosts Crossing).
- Heavy rainfall increases the risk of landslides and debris in fire affected areas. Trees damaged by heat or fire may be unstable and more likely to fall in windy or wet conditions.
- Local roads may be closed and low bridges may be underwater.
- At this flood level, inundation of farmland is likely to occur in some locations.
- The Great Alpine Road is closed near Wangaratta due to flooding of Yellow Creek, with detour traffic by Detour Road.
- Riverside carparks are closed due to predicted flooding including; Sydney Beach, Bickerton Street and Baker Street.
- Bike paths and walking tracks around and downstream of Apex Park and the Northern Beaches are closed.

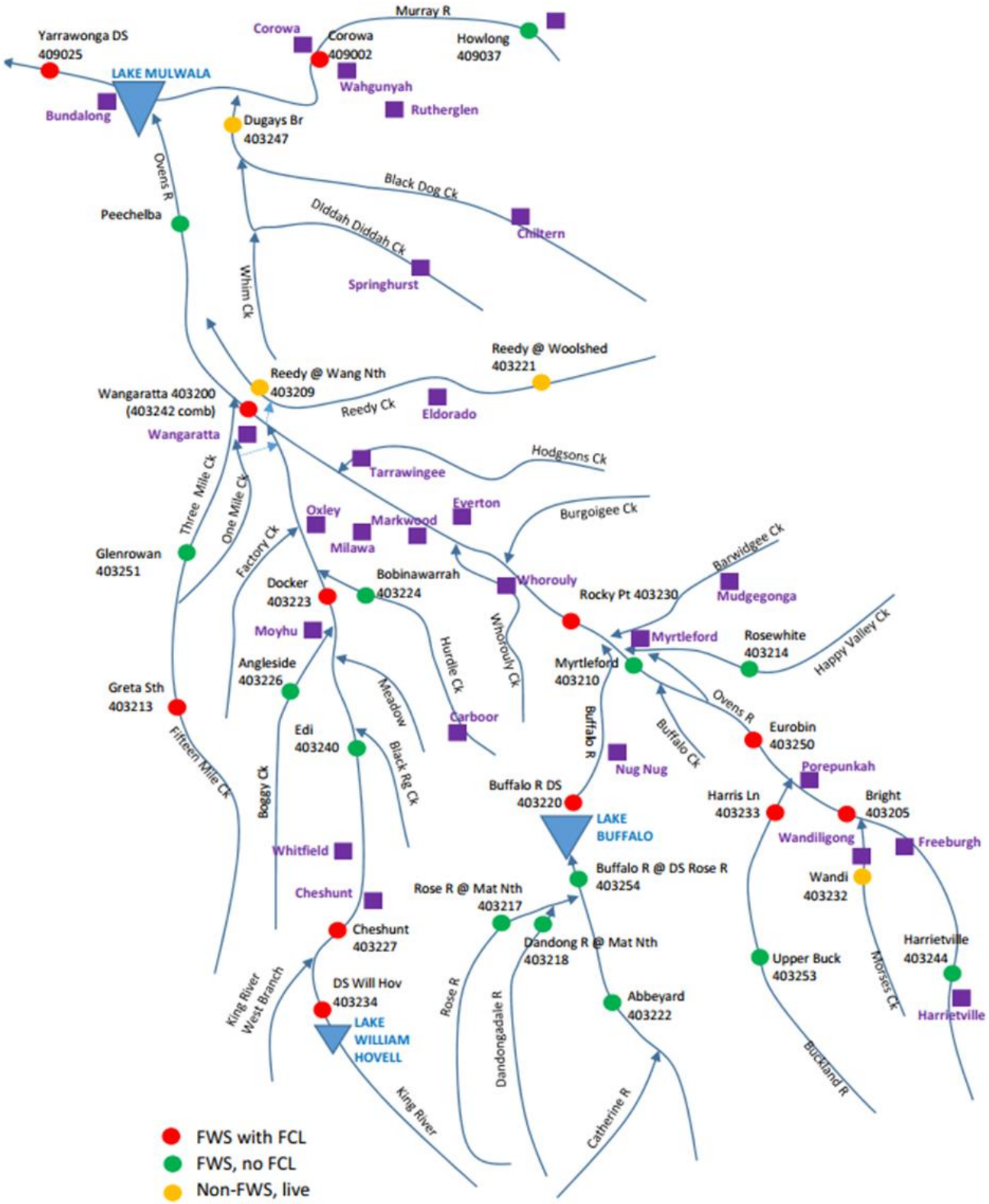
Appendix F - Maps

Council Area Maps;

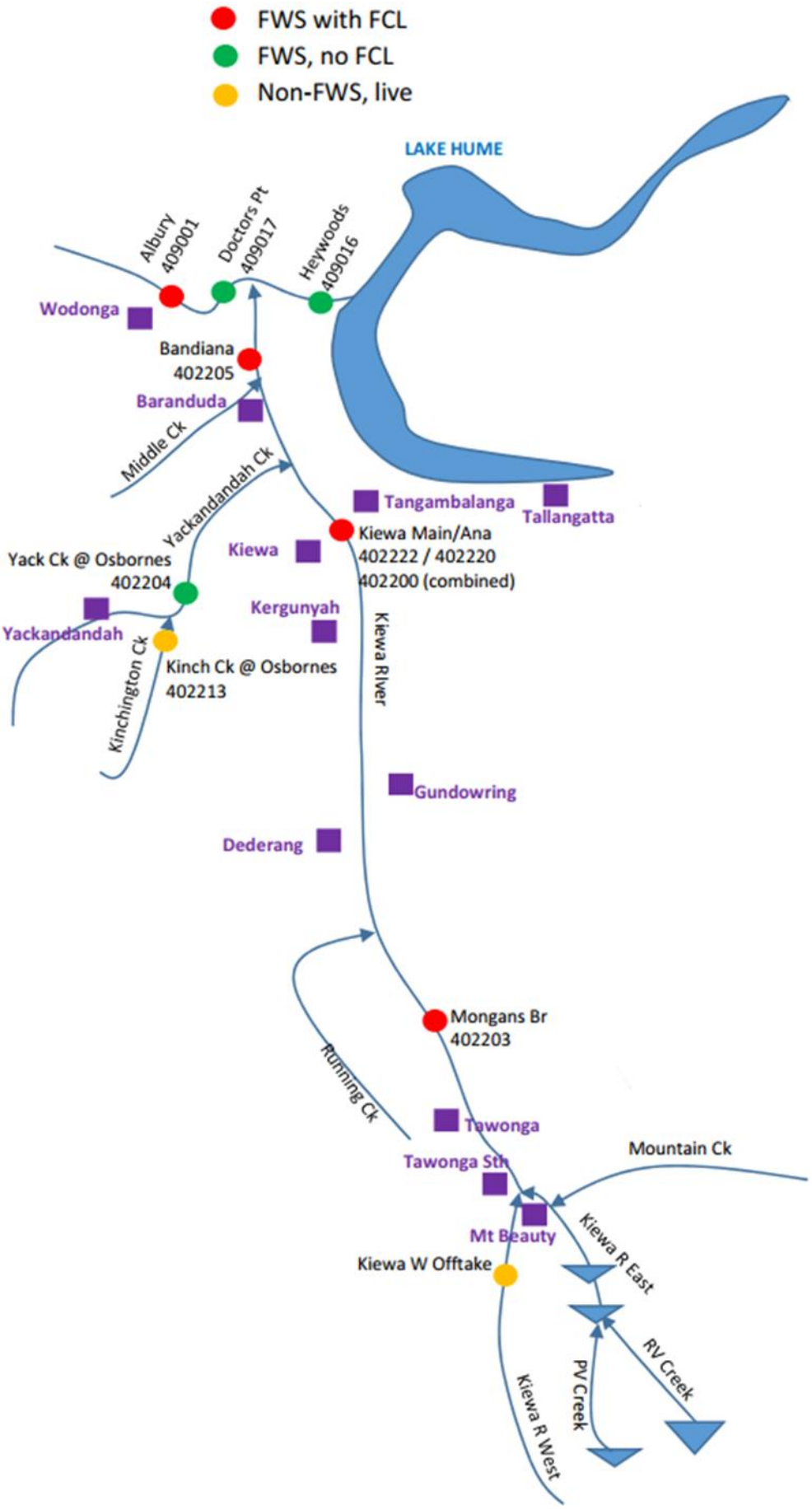


Catchment Maps

Ovens River Basin Map with River Gauges

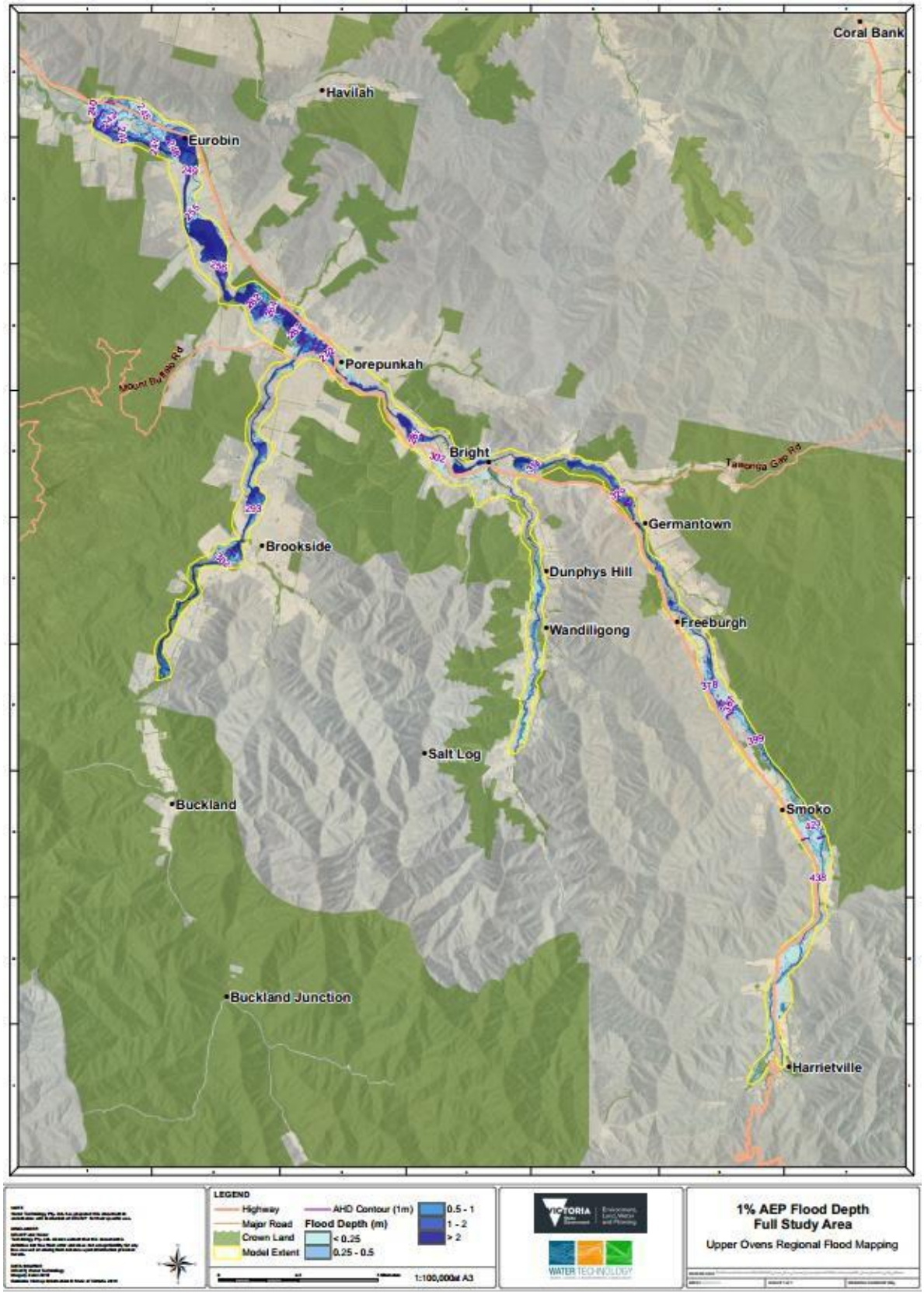


Kiewa River Basin Map with River Gauges



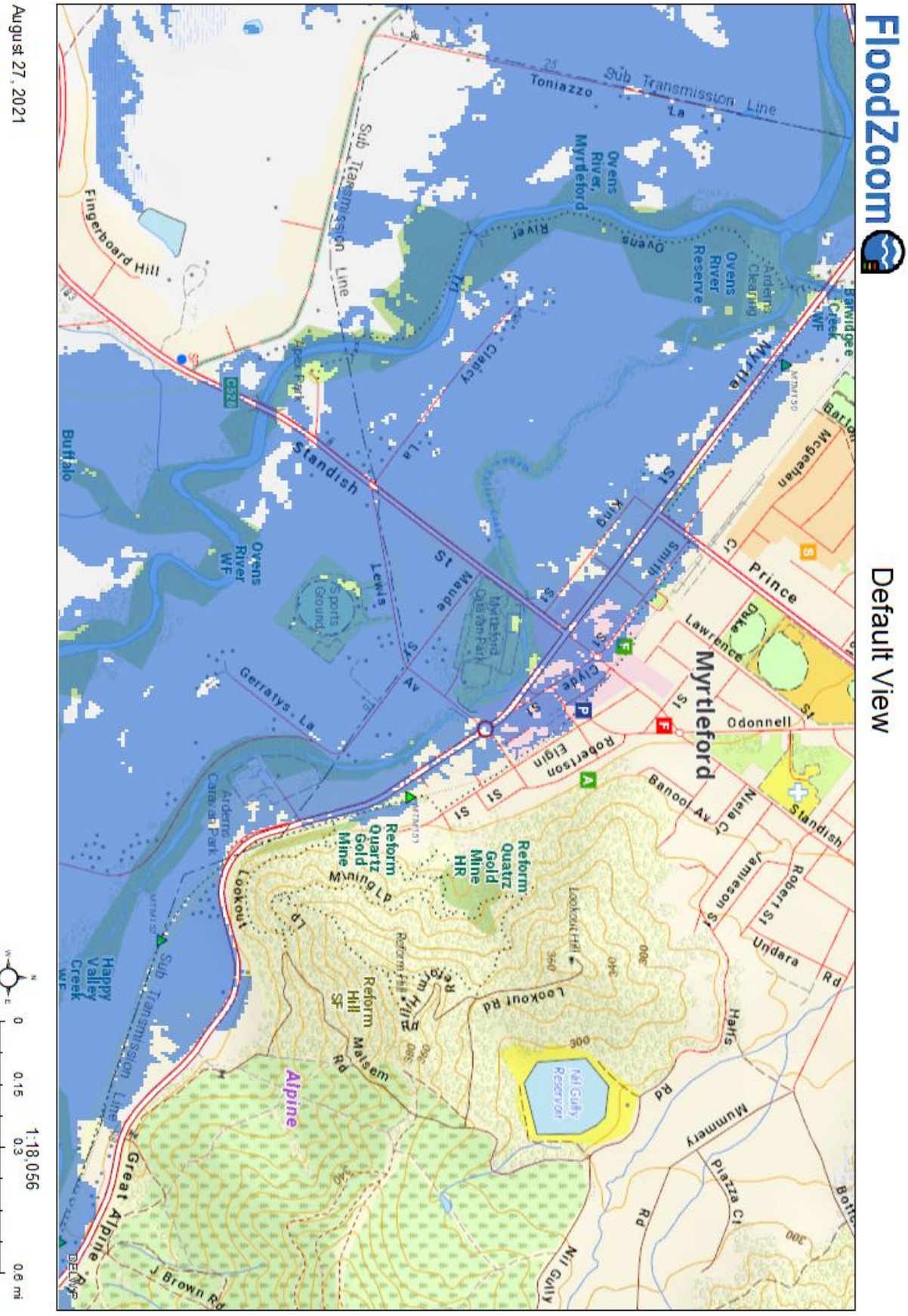
Inundation Maps.

1% AEP Design Flood Map of Upper Ovens River catchment



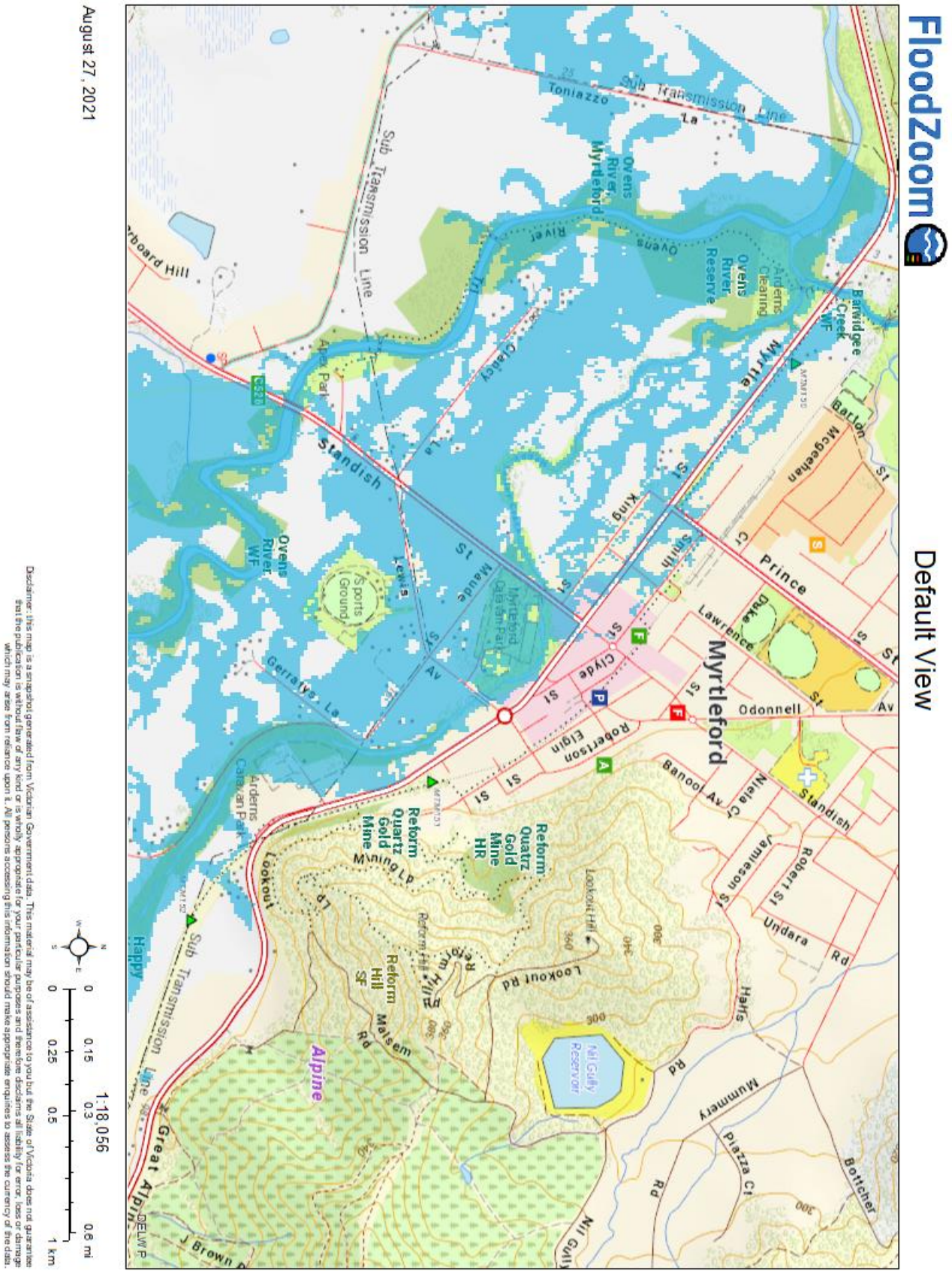
1% AEP Inundation Map – Myrtleford Township

Ovens River at Eurobin at 1% AEP



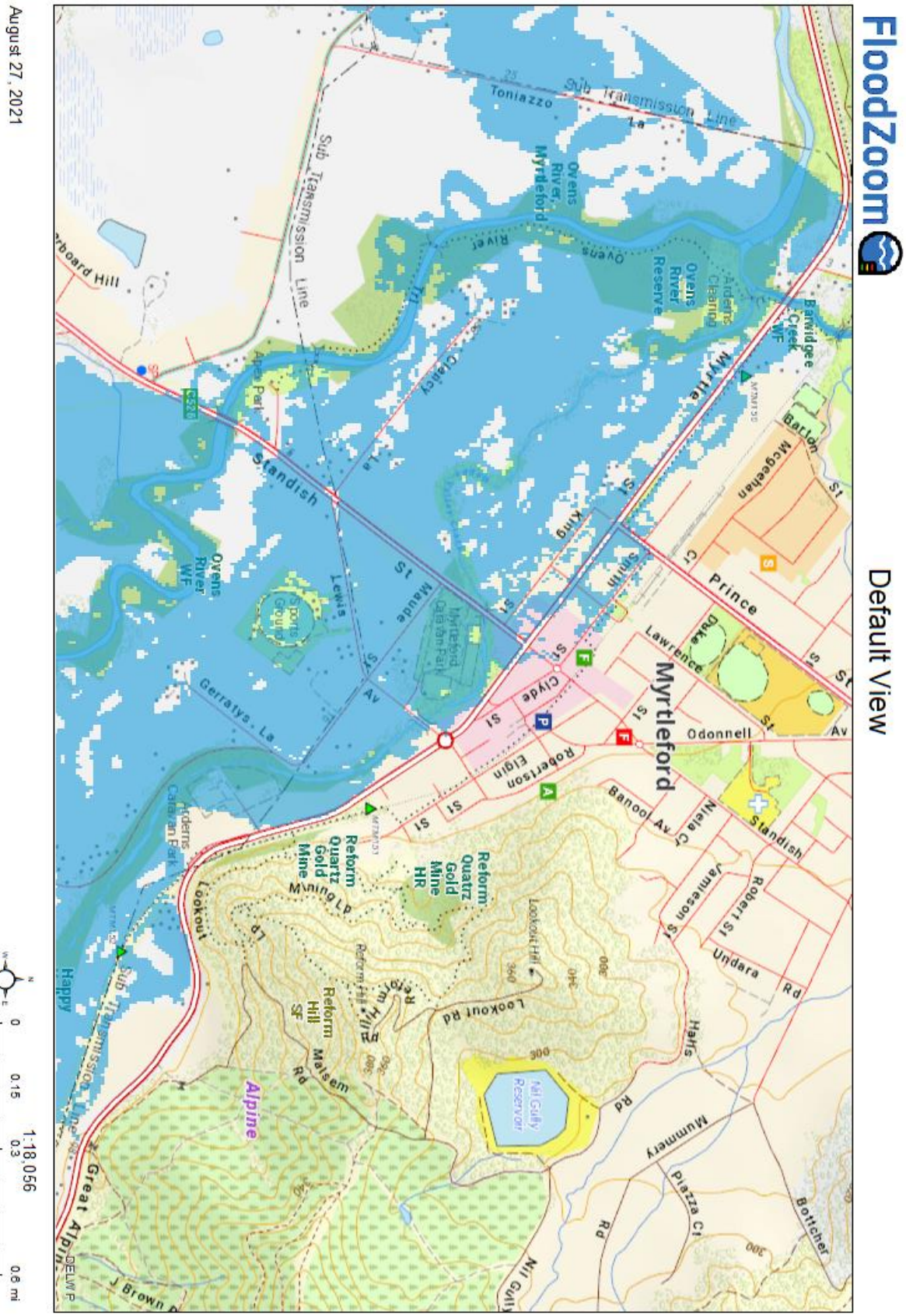
10% AEP Inundation Map – Myrtleford Township

Ovens River at Eurobin at 10% AEP



20% AEP Inundation Map – Myrtleford Township

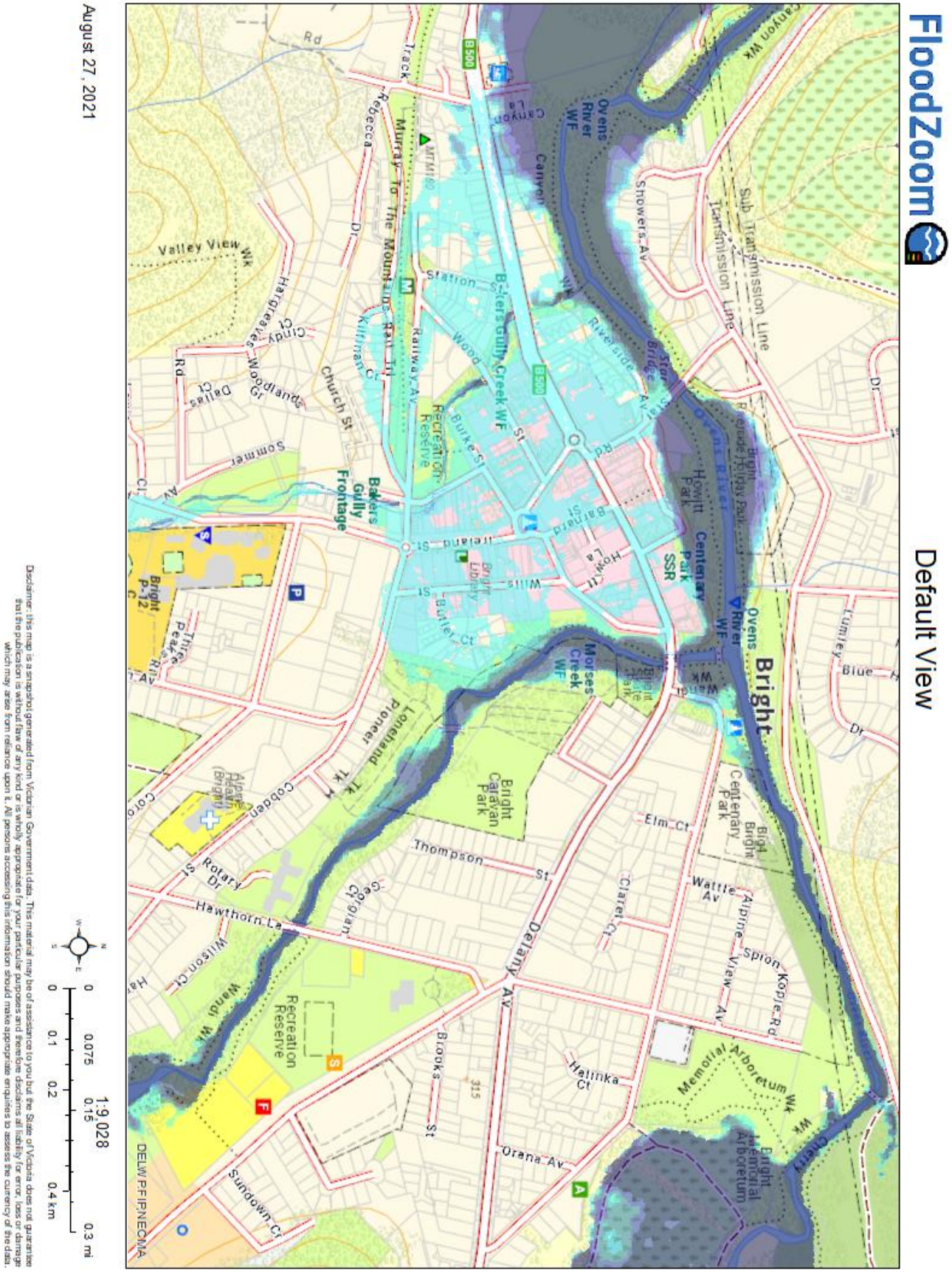
Ovens River at Eurobin at 20% AEP



Disclaimer: this map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

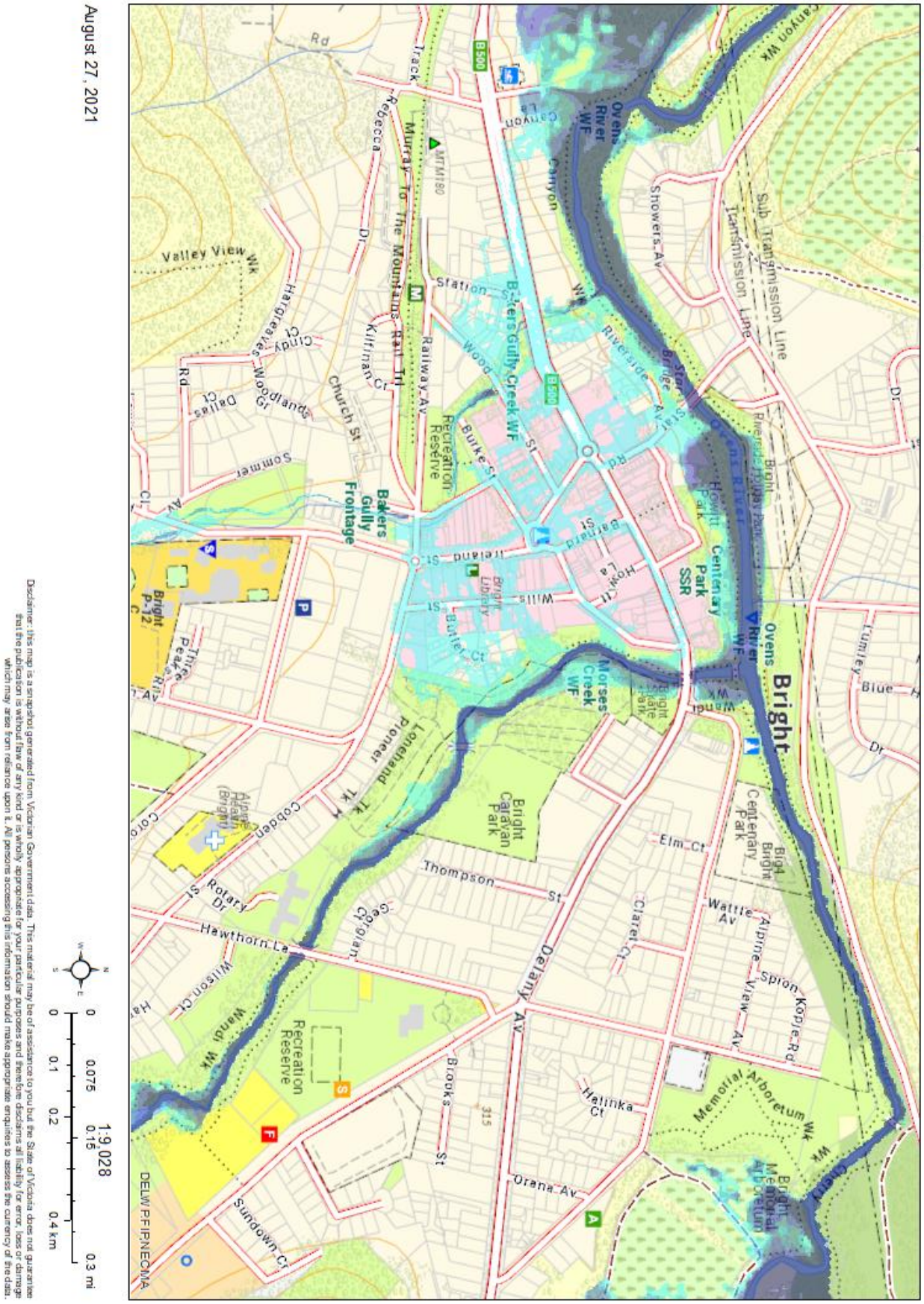
1% AEP Inundation Map – Bright Township

Ovens River at Bright at 1% AEP



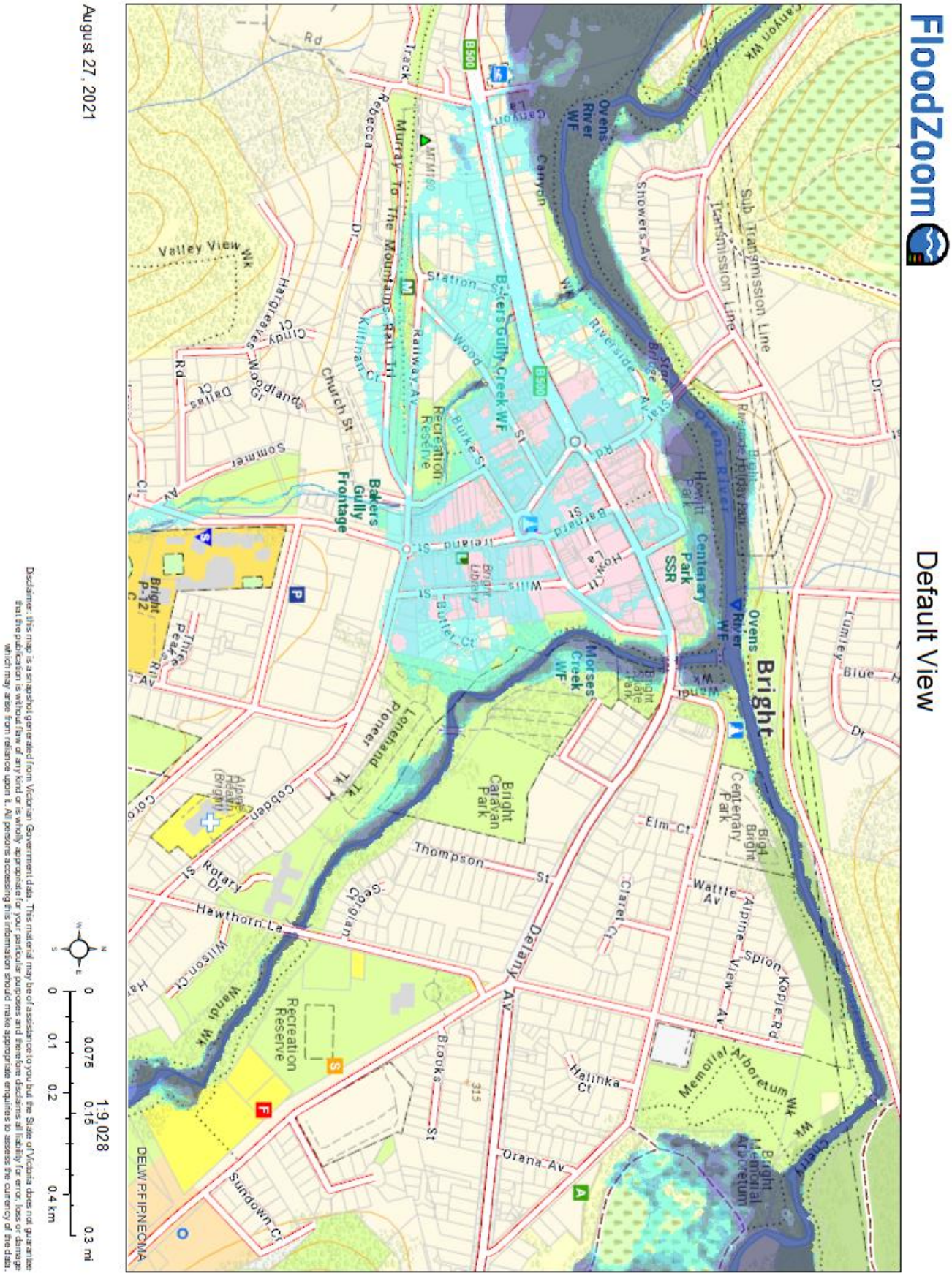
10% AEP Inundation Map – Bright Township

Ovens River at Bright at 10% AEP



20% AEP Inundation Map – Bright Township

Ovens River at Bright at 20% AEP

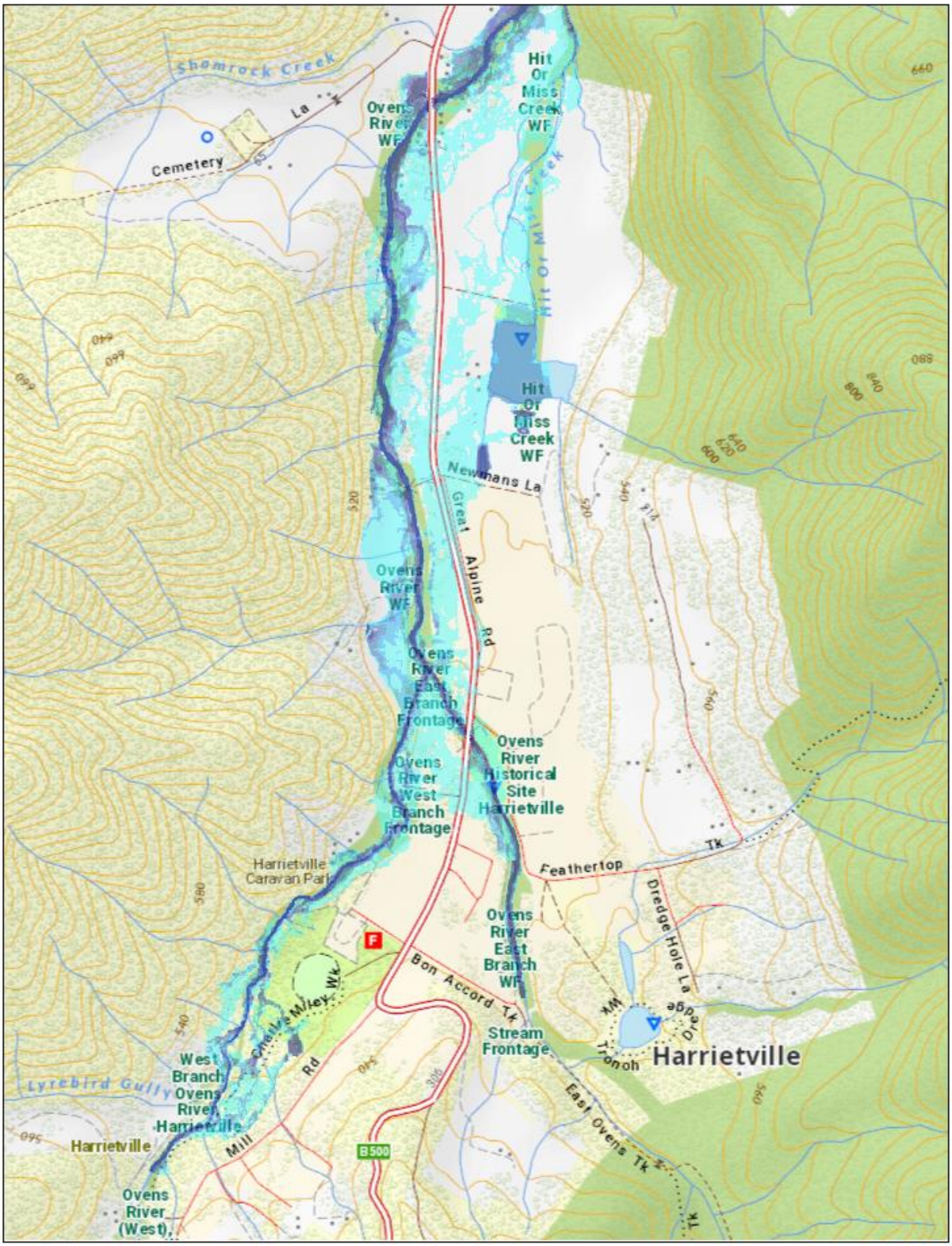


Disclaimer: this map is a snapshot generated from Victorian Government data. This material may be of assistance to you but the State of Victoria does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for error, loss or damage which may arise from reliance upon it. All persons accessing this information should make appropriate enquiries to assess the currency of the data.

1% AEP Inundation Map – Harrietville Township

Ovens River at Harrietville at 1% AEP

FloodZoom Default View



August 27, 2021

DELWP,FIP,NECMA

1:18,056

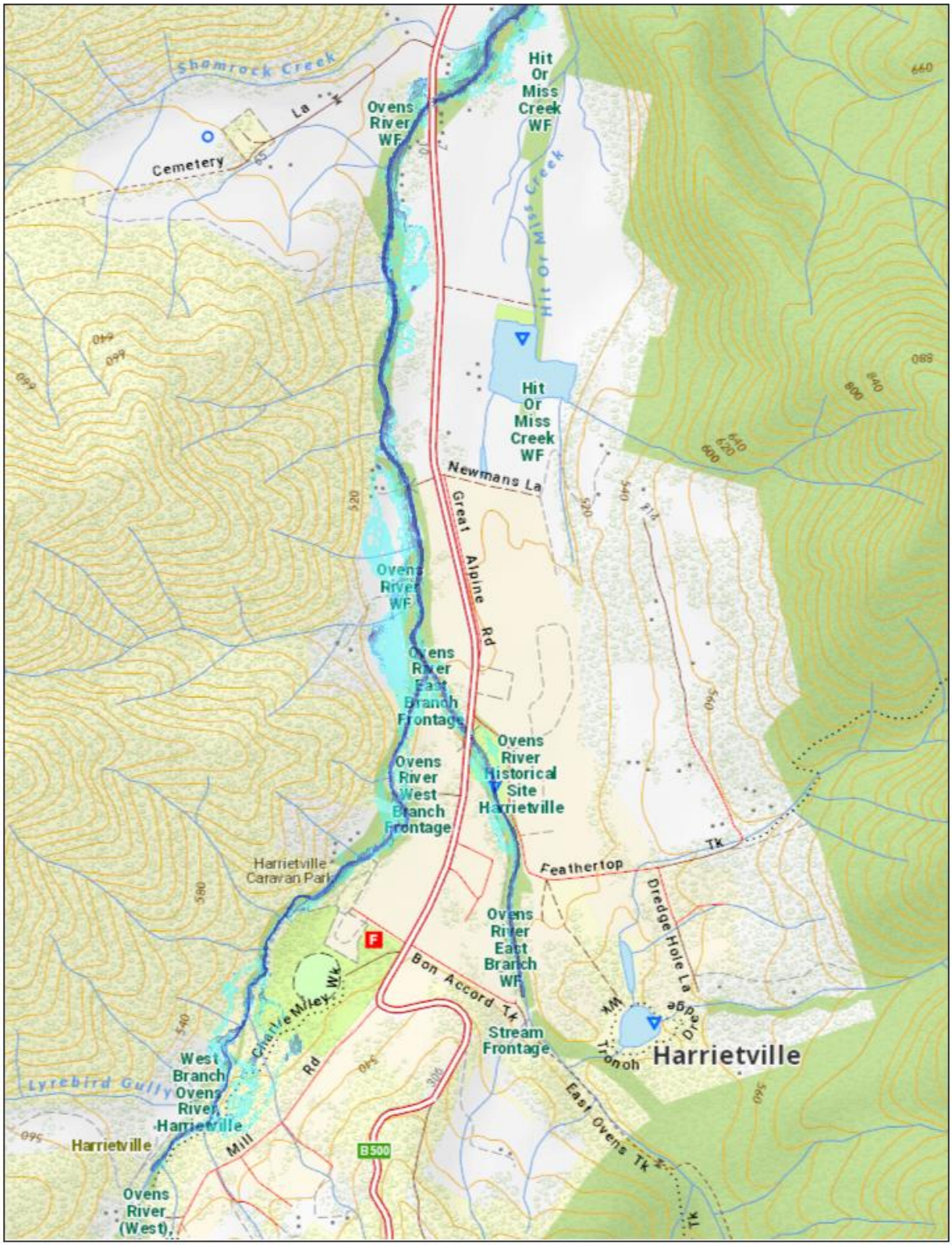
0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

10% AEP Inundation Map – Harrietville Township

Ovens River at Harrietville at 10% AEP

FloodZoom Default View



August 27, 2021

DELWP,FP,NECMA

1:18,056

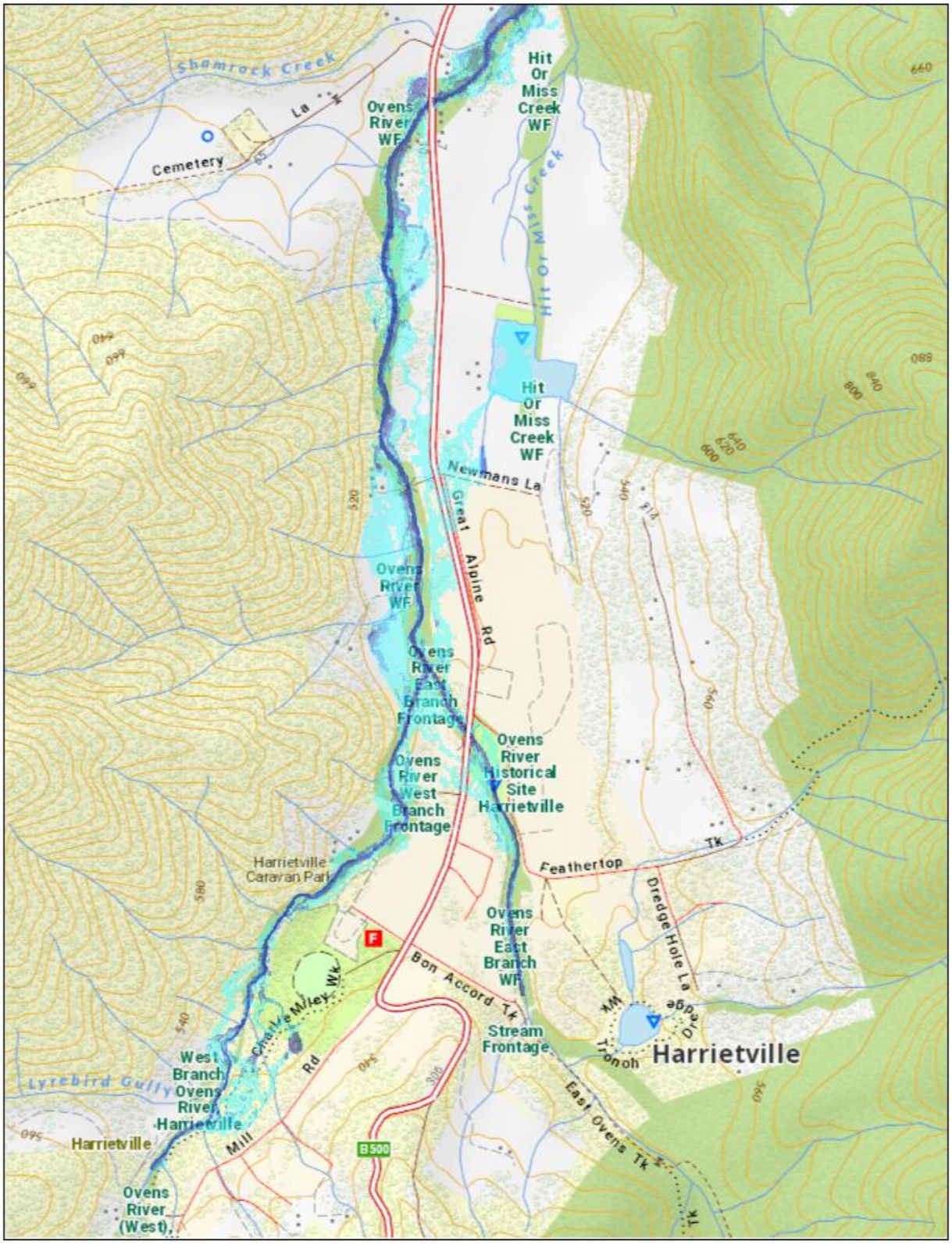
0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

20% AEP Inundation Map – Harrietville Township

Ovens River at Harrietville at 20% AEP

FloodZoom Default View



August 27, 2021

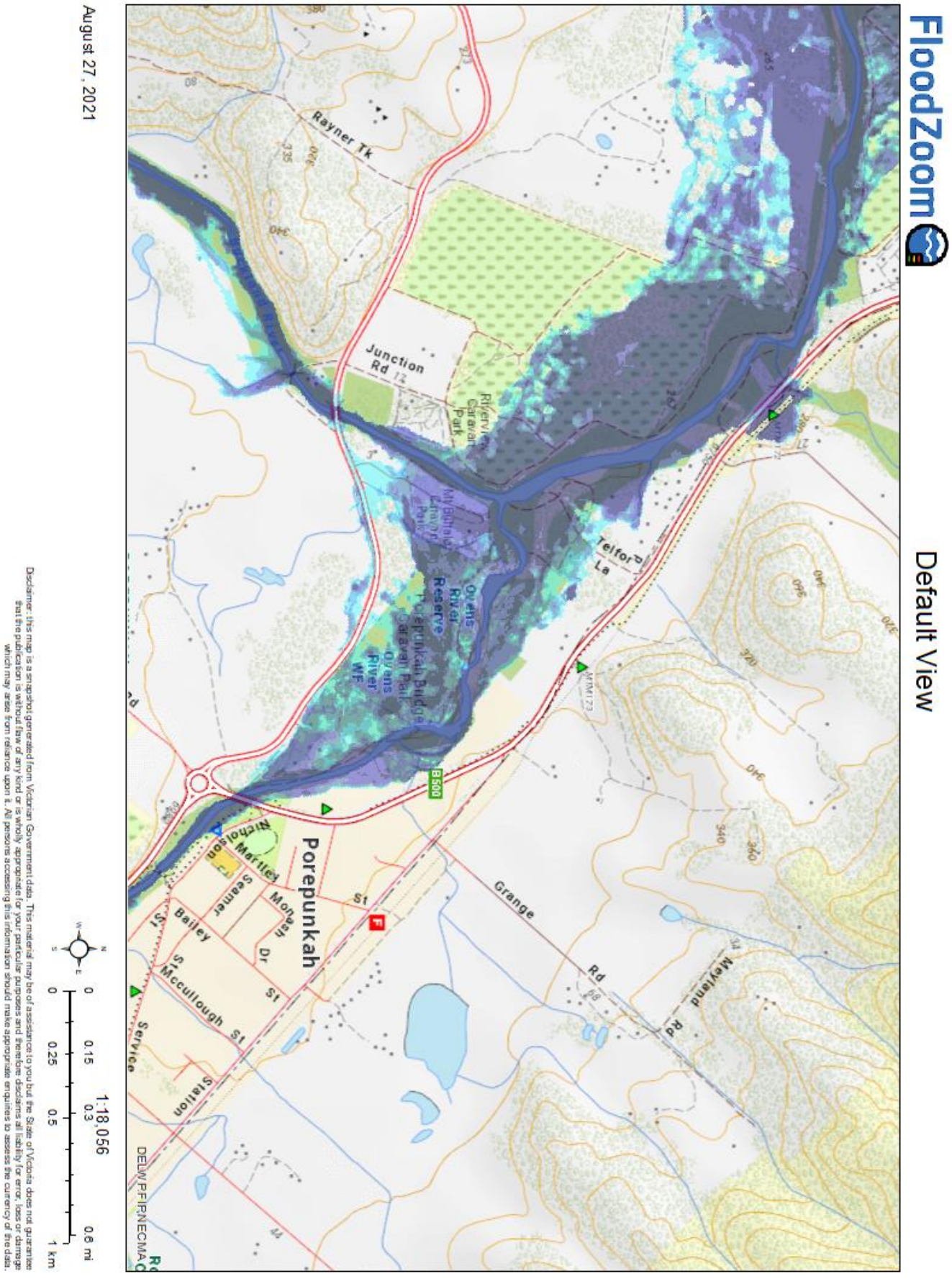
DELWP,FIP,NECMA 1:18,056

0 0.15 0.3 0.6 mi

0 0.25 0.5 1 km

1% AEP Inundation Map – Porepunkah Township

Ovens River at Eurobin and Buckland River at Harris Lane at 1% AEP



Appendix G: Local knowledge arrangements

As control agency for flood in Victoria, VICSES is committed to ensuring the incorporation of local knowledge in decision making before, during and after incidents.

Snap Send Solve

The gathering of local flood intelligence during an event is varied and inefficient. It creates a frustrating and difficult environment for intelligence teams in an Incident Management Team (IMT) to sift through relevant information. VICSES has teamed up with Snap Send Solve to pilot a flood observation App and Portal.

Snap Send Solve is an existing app currently used by the community to notify local councils and other authorities of issues that need addressing such as cracked pavements, parking problems, dumped rubbish, graffiti etc.

The existing functionality of the smartphone app has been adapted for VICSES in a well presented and user-friendly way. The app is used to capture flood observations by filling in a simple form on a smartphone and using the camera to upload photos, this information is then displayed through an administration portal to collate and view the flood data .

The app component will be made available to trusted flood observers in the community, and their observations will be visible EMCOP where Intelligence personnel in Incident Management Teams can access them during flood events. The intent is that better access to local knowledge will add to information sources in order to maximise public information communications and flood response efforts.

Trusted flood observers include both internal and external stakeholders (community members, ESOs eg CFA/VICPOL) who can be activated and deployed by the VICSES RDO to use the app during a flood event and to report on valuable flood information with a level of accuracy.

The portal has been successfully integrated with EMCOP, both platforms are available to use in an IMT. The Snap Send Solve logo also appears within the intelligence section on the EM-COP desktop for easy access to the portal.

Appendix H: Local flood & Storm information

Local Flood Guides

Communities can use local flood guides to identify and better understand their local flood risk. They include information about flood history, how to prepare & respond to floods and who to contact.

The two Myrtleford Local Flood Guides (LFG) can be found on the VICSES website by visiting the 'Your Local Flood information' section or by visiting the link below. There is also an Italian version for the large Italian community in Myrtleford.

English Version:

https://www.ses.vic.gov.au/documents/8655930/9320019/VICSES+Local+Flood+Guide_Myrtleford_English_29.01.18.pdf/b0ca7335-b908-89ed-b3f1-ec0489cf29fd?t=1619568509838

Italian Version:

https://www.ses.vic.gov.au/documents/8655930/9320019/Local+Flood+Guide_+Myrtleford_Italian_29.01.18+%281%29.pdf/7e299d99-f327-1d86-4b75-7cf5886d1c45?t=1619568662759

The Harrietville Local Flood Guide (LFG) as at Nov 2021 is in the final stages of development, agency and community consultation and signoff.

The Kiewa Valley Local Flood Guide (LFG) as at Nov 2021 is under development.

Bright and Porepunkah LFGs will begin development in 2022.

Once finalised these new LFG's will be found on the VICSES website by visiting the 'Your Local Flood information' section

How to use Sandbags to protect your home

There are a number of things that you can do to make sure you and your property stay safe during flooding.

Sandbags will not stop the water completely but can reduce the amount of water entering your home. During low-level flooding, sandbags placed in the right locations around your home can reduce the impact of flooding.

Further information on Sandbagging can be found on the VICSES website by visiting the 'How to use sandbags to protect your home' section or by visiting the links below:

VICSES sandbag quick reference guide

https://www.ses.vic.gov.au/documents/8655930/8700895/sandbagging+guide.pdf/c1e56ac5-198f-ae1e-8507-70d8e896afba?t=1621231534359

Sandbagging demonstration video

https://www.youtube.com/watch?v=-_T--I3b-34&t=1s

Storms – Plan and Stay Safe

There are a number of things that you can do to make sure you and your property stay safe during storms. For information on how to plan to be safe during a storm, what to do during a storm, and recovery after a storm visit the VICSES website on the link below for more information

https://www.ses.vic.gov.au/plan-and-stay-safe/emergencies/storm

Appendix I: Victoria State Emergency Service Statewide Guideline – Sandbags

This document outlines guidelines for the procurement, storage, distribution, use and disposal of sandbags during flood emergencies.

1. Introduction

The Victoria State Emergency Service (VICSES) is the control agency for flood emergencies. VICSES' responsibilities include the management of the state-wide procurement and storage of sandbags for flood emergencies. This includes providing sandbags to local areas for distribution based on the requirements identified in the Municipal Flood & Storm Emergency Plan (MFSEP).

The final report of the 2010/2011 Victorian Flood Review observed that during the floods there was inadequate access to sandbags and a lack of knowledge about the filling and use of sandbags. VICSES also noted similar problems during the 2012 North East floods.

Prior to the development of this guideline, sandbag management was not regulated and there was no formal arrangement in place to define the roles and responsibilities for funding the procurement, storage, use and distribution of sandbags.

VICSES, in conjunction with Municipal Association of Victoria (MAV) and local councils, has developed this guideline to assist emergency managers and the community to plan for effective use of sandbags during flood emergencies.

Emergency managers are guided by the state strategic control priorities for flood emergencies. Incident Controllers will apply the strategic control priorities when considering the supply and distribution of sandbags to the community in preparation for and during flood emergencies (Refer to Section 8).

2. Purpose

The guideline will assist in ensuring that a consistent approach to the procurement, storage, distribution, safe use and disposal of sandbags is applied at a state level. Further, it is intended to assist in the development of regional and local sandbag guidelines and agreements.

3. Use of sandbags for flood emergencies

Sandbags can be used to block doorways, drains and other openings into properties as well as to weigh-down manhole covers, garden furniture and to block sinks, toilets and bath drains to prevent water backing up. They have proven to be successful in keeping water out for short periods of time.

Sandbagging is not always the most effective option and should be considered in the context of a Flood Emergency Plan which includes alternatives for managing flood risk. Other alternatives include moving possessions to higher places, securing objects so they do not float away and placing valuables in water tight containers. The Incident Controller and operational staff in the flood affected community will assess the overall risk to communities and allocate sandbag resources based on risk.

Sandbags have also been used as temporary levees through the construction of sandbag walls.

This guideline does not address the use of sandbags in the construction of temporary levees

4. Partnership arrangements

The success of this guideline is dependent on establishing strong partnerships at the regional and local level between local councils, CFA, FRV and DELWP to support the sandbag management arrangements. Local councils have a key role to assist VICSES through the flood emergency planning process and their ability to support operations.

Operational arrangements for the procurement, storage and distribution of sandbags at the local and regional level will be included as an appendix in the MFSEP, VICSES is responsible for leading the development of the MFSEP.

Responsibilities

VICSES responsibilities include:

- The management of the state-wide procurement and storage of sandbags for flood emergencies
- Providing sandbags to local areas for distribution based on requirements identified in the MFSEP
- Identifying distribution arrangements in the MFSEP
- Community Engagement and awareness on sandbag management and safe use
- Identifying Critical Infrastructure and Community Critical Facilities in the MFSEP
- Providing a support role in flood relief and recovery.

Council responsibilities include:

- Supporting VICSES in developing the MFSEP
- Providing a support role during flood response
- Identifying Community Critical Facilities at a municipal level
- Procuring sandbags to protect council owned facilities including Community Critical Facilities managed by council
- Providing locations, plant and equipment, where available and capable, to support sandbagging operations as agreed in the MFSEP
- Coordinating the clean-up and community recovery arrangements (refer to Section 9).

Community Critical Facility owners' responsibilities include:

- Working with VICSES to develop an effective flood mitigation plan for their property as part of the MFSEP with a priority for permanent structures.

Other 'Response' agencies responsibilities include:

- Supporting VICSES in their response role.

Residential and commercial property owners' responsibilities include:

- Understanding their own flood risk

- Preparing an emergency plan for their home or business, including tourism.
- Procurement and storage of sandbags to protect their own property
- Filling and movement of sandbags for to protect their property
- Following advice from their local council regarding the removal of sandbags from their property, as part of the community recovery.

5. Community and business Engagement about sandbags

VICSES has an established community Engagement program to support community and business in responding to flood emergencies (see www.ses.vic.gov.au/prepare/floodsafe).

VICSES will use the existing community Engagement tools and programs (such as the Local Flood Guides and the FloodSafe program) to promote:

- Practical information on:
    - The purpose, use and disposal of sandbags www.ses.vic.gov.au/prepare/floodsafe/floodsafe-resources/sandbag-reference-guide
    - Obtaining sandbags
    - Safety considerations e.g. OHS, manual handling, safe use and disposal
    - Alternative flood mitigation strategies to sandbagging
    - Where to get information – Phone 1300 842 737 for the VICSES Information Line.
- The responsibilities of critical infrastructure owners, businesses and private indiviuals to understand their flood risk and develop a flood plan
- Key messages:
    - Emergency response agencies will not always have the capacity to provide sandbags due to other competing priorities
    - Businesses and individuals need to understand the flood risk to their property and, where appropriate, develop a Flood Emergency Plan
    - Sandbagging is only one way of protecting properties against floodwater and not always the most effective option. Sandbagging should be considered in the context of a Flood Emergency Plan which considers alternatives for managing flood risk.

6. Procurement of sandbags

VICSES will maintain a supply of sandbags to support the effective readiness and response to flood emergencies as identified in MFSEPs.

The number of sandbags required at a State and regional level will be determined from information provided through the MFSEP planning process. There may be occasions where the supply of sandbags is limited and priorities for distribution will need to be determined through local emergency management arrangements.

VICSES will maintain the current cross-border and mutual aid arrangements for flood emergencies. VICSES will also work with local councils to access the resource sharing arrangements established between councils during emergencies

7. Storage of sandbags

Sandbags will be stored by VICSES in appropriate locations across Victoria. Through the application of risk based assessments, VICSES will work with councils to identify the quantities of sandbags required. This process will be aligned to the MFSEP review cycle.

Sandbags will normally be located in a VICSES facility. Arrangements to store sandbags in other facilities will be identified as part of the local MFSEP planning process.

VICSES will monitor the condition of all its sandbags for deterioration.

8. Distribution of sandbags

Priorities for sandbags during flood emergencies

The Incident Controller may make sandbags and sand available for flood mitigation activities during declared flood emergencies.

Sandbags will be issued consistent with the Strategic Control Priorities within the State Flood Emergency Plan, in the following order of priority to protect:

1. Critical Infrastructure and Community Critical facilities identified: (a) in the MFSEP or (b) by the Incident Management Team
2. Residential properties identified in the potential flood area
3. Commercial properties identified in the potential flood area
4. Environmental and conservation areas identified in the potential flood area.

Properties identified as being outside the potential flood area, will be referred to an alternative source of sandbags (e.g. local hardware store or sandbag supplier) by VICSES.

Distribution points

In preparation for a significant flood emergency, VICSES will work with local councils and other agencies to identify appropriate locations for sandbag collection points. Location considerations will include access, safety, human resources and machinery requirements. These locations and local arrangements will be identified in the MFSEP.

The Floodsafe Sandbag Quick Reference Guide www.ses.vic.gov.au/prepare/sandbag-reference-guide provides details to community members about the indicative number of sandbags required for residential property protection and guidance on the safe use, for the filling and laying of sandbags.

As part of the response arrangements, the Incident Controller will track the distribution of sandbags through the Incident Management Team (IMT). This information will be provided to the recovery team as part of the transition from response to recovery.

Provision of sand

VICSES will have plans in place to acquire sand through its own supply arrangements and where necessary through the emergency management arrangements. These arrangements will be identified in the MFSEP. Sand suppliers may be identified in the MFSEP or MEMP.

9. Disposal and relocation of used sandbags

Sandbags may be contaminated after use and local councils should ensure that clean up and disposal is considered as part of recovery. Removal and disposal of sandbags used for flood mitigation shall be dealt with under the clean up and community recovery arrangements as outlined in the Emergency Management Manual Victoria. The disposal of sandbags is a shared responsibility between different agencies.

Incident Controllers will provide information on sandbag locations to councils, to assist with clean-up. VICSES will continue to work with relevant agencies to develop protocols for the safe and environmentally responsible disposal of sandbags.

10. Transitioning to this guideline

Successful implementation of this guideline may take several years and progress will be reviewed periodically. VICSES will introduce a process for including the local area arrangements for sandbag management in the MFSEP. This process will then be rolled out as each MFSEP is reviewed.

11. Flood Education and Engagement weblinks

- Flood Get Ready homepage: https://www.ses.vic.gov.au/plan-and-stay-safe/at-home

VICSES guidelines on the safe use, for filling and laying of sandbags:
www.ses.vic.gov.au/prepare/sandbag-reference-guide

12. Further information

Contact:
Victoria State Emergency Service
Victorian Head Office
168 Sturt Street, Southbank, Victoria 3006

Telephone: **(03) 9256 9000**
Email: vicses@ses.vic.gov.au

SES Regional Sandbag Resource

The region also holds strategic reserves of sandbags at the following locations. In addition, VICSES maintains small community sandbag caches listed in the relevant MFSEPs. The figures below refer to nominal amounts stored subject to refurbishment after an event.

Unit name	Primary contact person	Quantities (refers to individual sandbags)
Alexandra	VICSES Regional Duty Officer	2,500
Beechworth	VICSES Regional Duty Officer	3,000
Benalla	VICSES Regional Duty Officer	9,000
Bright	VICSES Regional Duty Officer	5,000
Chiltern	VICSES Regional Duty Officer	350
Cobram	VICSES Regional Duty Officer	1,500
Corryong	VICSES Regional Duty Officer	100
Euroa	VICSES Regional Duty Officer	8,000
Falls Creek	VICSES Regional Duty Officer	100
Kilmore	VICSES Regional Duty Officer	2,000
Kinglake	VICSES Regional Duty Officer	500
Mansfield	VICSES Regional Duty Officer	1,000
Marysville	VICSES Regional Duty Officer	500
Mitta Mitta	VICSES Regional Duty Officer	50
Murchison	VICSES Regional Duty Officer	2,000
Myrtleford	VICSES Regional Duty Officer	10,000
Numurkah	VICSES Regional Duty Officer	10,000
Rutherglen	VICSES Regional Duty Officer	3,000
Seymour	VICSES Regional Duty Officer	15,000
Shepp SAR	VICSES Regional Duty Officer	5,000
Tallangatta	VICSES Regional Duty Officer	2,500
Tatura	VICSES Regional Duty Officer	2,500
Wangaratta	VICSES Regional Duty Officer	6,000
Wodonga	VICSES Regional Duty Officer	8,000
Yackandandah	VICSES Regional Duty Officer	2,000
Yarrawonga	VICSES Regional Duty Officer	8,000
Wodonga CFA ICC	CFA Duty Officer	32,000
Nathalia Council Works Depot	Moira Shire MERO	10,000
NE RHQ	VICSES Regional Duty Officer	80,000

Appendix J: Specific Myrtleford Property flood listings

Myrtleford Property Listings

Tabulations in this appendix were developed by the Myrtleford Floodplain Management Study (SKM, 2000) and provide an indication of flood exposure of individual properties for a range of flood magnitudes. As noted in Appendix C5, the flood study related Myrtleford impacts to the Eurobin gauge level however the gauge was only installed in July 2000 and hence the correlations were approximate only. Based on a recent review correlating the Eurobin, Myrtleford and Rocky Point gauges a revised relationship between the Eurobin gauge and the mapped impacts at Myrtleford has been developed (as tabulated below). While this must be treated with caution in the absence of detailed hydraulic assessment, it has been observed to provide a good match to observed impacts in events between 2010 and 2021.

AEP (%)	Ovens River @ Eurobin gauge level identified in Myrtleford Floodplain Management Study 2000	Revised Ovens River @ Eurobin gauge level based on recent correlation
10%	5.3	6.2
5%	5.9	6.7
2%	6.2	7.0
1%	6.6	7.5
0.5%	7	8.0
0.2%	7.5	8.7

Note: The address details and the respective flood inundation data in the following tables is correct. It is however noted that current tenant data will need to be updated in the future to better represent the current tenants particularly when facilities become vacant.

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Estimated ARI: 200 years (0.5% AEP)

Harrietville Gauge Level

Bright Gauge Level

Above Floor Affected Properties: 194

Above Flood Affected Properties: 174

Total Food Affected Properties: 368

Above Floor Listing

Street No.	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above ground	Flood Depth Above floor
2	Clyde St.	Commercial		209.11	209.21	209.26	0.15	0.05
10	Clyde St.	Commercial		209.14	209.25	209.28	0.14	0.03
11	Clyde St.	Commercial		208.94	209.11	209.21	0.27	0.10
12	Clyde St.	Commercial		209.18	209.26	209.30	0.12	0.04
13	Clyde St.	Commercial		209.01	209.16	209.22	0.21	0.06
15	Clyde St.	Commercial		209.01	209.18	209.22	0.21	0.04
17	Clyde St.	Commercial		209.02	209.17	209.25	0.23	0.08
19	Clyde St.	Commercial		209.03	209.07	209.27	0.24	0.20
21	Clyde St.	Commercial		209.04	209.08	209.27	0.23	0.19
25	Clyde St.	Commercial		209.10	209.17	209.30	0.20	0.13
27	Clyde St.	Commercial		209.14	209.29	209.36	0.22	0.07
29	Clyde St.	Commercial		209.35	209.38	209.43	0.08	0.05
37	Clyde St.	Commercial		209.60	209.69	209.75	0.15	0.06

43	Clyde St.	Commercial		209.65	209.65	209.80	0.15	0.15
47	Clyde St.	Commercial		209.70	209.73	209.84	0.14	0.11
49	Clyde St.	Commercial		209.76	209.65	209.90	0.14	0.05
57	Clyde St.	Commercial		209.81	209.88	209.92	0.11	0.04
59	Clyde St.	Commercial		209.84	209.94	209.97	0.13	0.03
61	Clyde St.	Commercial		209.83	209.88	209.97	0.14	0.09
63	Clyde St.	Commercial		209.83	209.86	209.99	0.16	0.13
69	Clyde St.	Commercial		209.91	210.04	210.06	0.15	0.02
57/A	Clyde St.	Commercial		209.81	209.88	209.92	0.11	0.04
59/A	Clyde St.	Commercial		209.84	209.93	209.97	0.13	0.04
65/A	Clyde St.	Commercial		209.85	209.89	210.00	0.15	0.11
65/B	Clyde St.	Commercial		209.85	209.89	210.00	0.15	0.11

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Above Floor Listing

Street No.	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
6	Geoffrey	Commercial		207.46	207.48	207.58	0.12	0.12
4	King St.	Commercial		208.65	208.75	208.97	0.34	0.22
	Lewis Ave	Commercial		208.95	209.50	210.02	1.07	0.52
	Lewis Ave	Commercial		209.54	209.87	210.10	0.56	0.23
17	Myrtle St.	Commercial		211.12	211.20	211.53	0.41	0.33
21	Myrtle St.	Commercial		210.89	210.89	211.51	0.62	0.62
41	Myrtle St.	Commercial		210.73	210.73	211.06	0.33	0.33
52	Myrtle St.	Commercial		210.83	210.89	211.07	0.24	0.18
62	Myrtle St.	Commercial		210.66	210.72	210.74	0.08	0.02
73	Myrtle St.	Commercial		210.35	210.39	210.43	0.08	0.04
91	Myrtle St.	Commercial		209.78	209.78	210.27	0.49	0.49
93	Myrtle St.	Commercial		210.04	210.04	210.15	0.11	0.11
99	Myrtle St.	Commercial		209.95	210.08	210.09	0.14	0.01
105	Myrtle St.	Commercial		209.93	209.94	210.09	0.16	0.15
107	Myrtle St.	Commercial		209.88	209.96	210.04	0.16	0.08
109	Myrtle St.	Commercial		209.86	209.96	210.04	0.18	0.08
111	Myrtle St.	Commercial		209.82	209.94	210.02	0.20	0.08
113	Myrtle St.	Commercial		209.81	209.86	210.00	0.19	0.14
143	Myrtle St.	Commercial		209.05	209.39	209.44	0.39	0.05

145	Myrtle St.	Commercial		209.18	209.18	209.45	0.27	0.27
146	Myrtle St.	Commercial		208.99	209.15	209.34	0.35	0.19
148	Myrtle St.	Commercial		208.99	209.15	209.34	0.35	0.19
151	Myrtle St.	Commercial		209.07	209.24	209.37	0.30	0.13
165	Myrtle St.	Commercial		208.30	208.62	208.77	0.47	0.15
166	Myrtle St.	Commercial		208.38	208.50	208.67	0.29	0.17
188	Myrtle St.	Commercial		207.96	208.10	208.12	0.16	0.02
190	Myrtle St.	Commercial		207.50	207.61	208.10	0.60	0.49
218	Myrtle St.	Commercial		205.71	205.71	206.41	0.70	0.70
235	Myrtle St.	Commercial		205.92	206.11	206.21	0.29	0.10
264	Myrtle St.	Commercial		205.62	205.92	205.97	0.35	0.05
155/A	Myrtle St.	Commercial		209.80	209.88	209.98	0.18	0.10
155/B	Myrtle St.	Commercial		209.80	209.88	209.98	0.18	0.10
243/3	Myrtle St.	Commercial		205.91	205.97	206.06	0.15	0.09
41A	Myrtle St.	Commercial		210.38	210.68	210.87	0.49	0.19
	Ovens Hwy	Commercial		204.83	204.85	204.86	0.03	0.01

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Street No.	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
37	Smith St	Commercial		208.76	208.76	209.07	0.31	0.31
51	Standish St	Commercial		208.94	208.94	209.10	0.16	0.16
54	Standish St	Commercial		208.97	209.24	209.30	0.33	0.06
56	Standish St	Commercial		208.91	209.01	209.21	0.30	0.20
57	Standish St	Commercial		208.88	209.05	209.12	0.24	0.07
58	Standish St	Commercial		208.91	209.00	209.19	0.28	0.19
60	Standish St	Commercial		208.90	209.11	209.19	0.29	0.08
70	Standish St	Commercial		208.98	209.15	209.17	0.19	0.02
49/C	Standish St	Commercial		209.03	209.08	209.36	0.33	0.28
51/A	Standish St	Commercial		208.94	208.94	209.10	0.16	0.16
54A	Standish St	Commercial		208.97	209.15	209.22	0.25	0.07
62-64	Standish St	Commercial		208.93	209.13	209.18	0.25	0.05
1	Willow Gv	Commercial		210.46	211.08	211.54	1.08	0.46
31	King St	Industrial		208.01	208.08	208.20	0.19	0.12
35	King St	Industrial		207.80	207.82	207.91	0.11	0.09
39	King St	Industrial		207.54	207.61	207.97	0.25	0.18
21	Maude St	Industrial		209.38	209.66	210.12	0.74	0.46
35	Myrtle St	Industrial		210.63	210.63	211.29	0.66	0.66
4	Ovens Hwy	Industrial		211.75	211.78	213.53	1.78	1.75
46	Standish St	Industrial		209.14	209.19	209.39	0.25	0.20
48	Standish St	Industrial		209.11	209.19	209.40	0.29	0.21

36742	Standish St	Industrial		208.96	208.96	209.10	0.14	0.14
21A	Standish St	Industrial		208.40	208.40	209.07	0.67	0.67
14	Clyde St	Public		209.19	209.32	209.33	0.14	0.01
	Lewis Ave	Public		210.24	210.24	210.61	0.37	0.37
	Lewis Ave	Public		209.78	210.04	210.32	0.54	0.28
	Lewis Ave	Public		209.13	209.62	209.80	0.67	0.18
	Myrtle St	Public		204.26	204.26	204.94	0.68	0.68
	Smith St	Public		207.96	208.12	208.22	0.26	0.10
	Standish St	Public		209.13	209.57	209.67	0.54	0.10
	Clancy Ln	Rural		208.25	208.43	208.83	0.58	0.40
	Clancy Ln	Rural		206.40	206.73	206.78	0.38	0.05
420	Gerraty's	Rural		210.85	210.86	211.43	0.58	0.57
421	Gerraty's	Rural		210.86	211.35	211.42	0.56	0.07
423	Gerraty's	Rural		210.90	211.14	211.21	0.31	0.07

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Above Floor Listing

Street No.	Street Name	Type	Description	Ground Level	Floor Level	Flood Elevation (m AHD)	Flood Depth (m AHD)	Flood Depth (m AHD)
7	Lewis Ave	Rural Residential		209.74	210.34	0.76	0.76	0.16
88	Ovens Hwy	Rural Residential		212.70	213.61	213.99	1.29	0.38
120	Ovens Hwy	Rural Residential		214.81	215.23	215.29	0.48	0.06
126	Ovens Hwy	Rural Residential		214.37	214.44	215.55	1.18	1.11
134	Ovens Hwy	Rural Residential		215.10	215.35	215.76	0.66	0.41
134/B	Ovens Hwy	Rural Residential		215.14	215.42	215.94	0.80	0.52
140-142	Ovens Hwy	Rural Residential		215.32	215.66	216.00	0.68	0.34
13	Standish St	Rural Residential		208.78	208.95	209.21	0.43	0.26
16	Standish St	Rural Residential		208.14	208.58	208.76	0.62	0.18
18	Standish St	Rural Residential		208.07	208.46	208.50	0.43	0.04
	Toniazzo Lne	Rural Residential		204.10	204.21	204.77	0.67	0.56
	Toniazzo Lne	Rural Residential		204.29	204.68	204.80	0.51	0.12
	Toniazzo Lne	Rural Residential		204.37	204.74	204.80	0.43	0.06
Lot 10	Whalleys Lne	Rural Residential		210.02	210.55	210.95	0.93	0.40
RMB 400	Whalleys Lne	Rural Residential		209.54	210.08	210.56	1.02	0.48
RMB 401	Whalleys Lne	Rural Residential		210.15	210.20	210.48	0.33	0.28
RMB 405	Whalleys Lne	Rural Residential		209.93	210.35	210.66	0.73	0.31

RMB 425	Whalleys Lne	Rural Residential		211.01	211.41	212.05	1.04	0.64
RMB 430	Whalleys Lne	Rural Residential		211.30	211.95	212.42	1.12	0.47
RMB 435	Whalleys Lne	Rural Residential		211.95	212.50	212.80	0.85	0.30
RMB 437	Whalleys Lne	Rural Residential		211.69	212.40	213.04	1.35	0.64
RMB	Whalleys Lne	Rural Residential		212.49	212.76	213.36	0.87	0.60
RMB	Whalleys Lne	Rural Residential		212.60	213.04	213.24	0.64	0.20
RMB 450	Whalleys Lne	Rural Residential		212.58	213.01	213.51	0.93	0.50
RMB 455	Whalleys Lne	Rural Residential		212.99	213.29	213.58	0.59	0.29
RMB 457	Whalleys Lne	Rural Residential		213.09	213.42	213.68	0.59	0.26
RMB	Whalleys Lne	Rural Residential		213.14	213.78	213.88	0.74	0.10
RMB	Whalleys Lne	Rural Residential		213.27	213.82	213.85	0.58	0.03
RMB 467	Whalleys Lne	Rural Residential		213.43	213.94	214.12	0.69	0.18
RMB 490	Whalleys Lne	Rural Residential		215.08	215.61	216.20	1.12	0.59
	Blewett Lne	Urban Residential		204.38	204.46	204.85	0.47	0.39
	Blewett Lne	Urban Residential		204.45	204.79	204.84	0.39	0.05
3	Jones St	Urban Residential		208.17	208.39	208.44	0.27	0.05
4	Jones St	Urban Residential		208.19	208.34	208.49	0.30	0.15

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Above Floor Listing

Street No.	Street Nate	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
11	King St	Urban		208.73	209.10	209.12	0.39	0.02
13	King St	Urban		208.62	208.89	208.93	0.31	0.04
28	King St	Urban		208.11	208.29	208.30	0.19	0.01
18	Lewis Ave	Urban		210.99	210.27	210.35	0.26	0.08
29	Lewis Ave	Urban		209.44	210.15	210.22	0.78	0.07
31	Lewis Ave	Urban		209.40	210.02	210.09	0.79	0.17
41	Lewis Ave	Urban		209.37	209.73	209.80	0.43	0.07
42	Lewis Ave	Urban		209.34	209.50	209.71	0.37	0.21
49	Lewis Ave	Urban		209.03	209.21	209.41	0.38	0.20
52	Lewis Ave	Urban		208.50	208.87	209.32	0.82	0.45
69	Lewis Ave	Urban		208.73	209.18	209.30	0.57	0.12
4	Maude St	Urban		208.82	209.00	209.55	0.73	0.55
5	Maude St	Urban		208.55	209.20	209.57	1.02	0.37
14	Maude St	Urban		208.89	209.20	209.63	0.74	0.43
15	Maude St	Urban		209.51	209.62	209.94	0.43	0.32
16	Maude St	Urban		208.98	209.29	209.80	0.82	0.51
17	Maude St	Urban		209.21	209.80	210.03	0.82	0.23

19	Maude St	Urban	209.42	209.70	210.06	0.64	0.36
9	Myrtle St	Urban	211.53	211.97	211.98	0.45	0.01
13	Myrtle St	Urban	211.22	211.60	211.82	0.60	0.22
31	Myrtle St	Urban	210.63	210.98	211.34	0.71	0.36
37	Myrtle St	Urban	210.62	210.79	211.23	0.61	0.44
39	Myrtle St	Urban	210.37	210.80	211.19	0.82	0.39
57	Myrtle St	Urban	210.38	210.46	210.77	0.39	0.31
69	Myrtle St	Urban	210.23	210.46	210.50	0.27	0.04
71	Myrtle St	Urban	210.25	210.35	210.49	0.24	0.14
139	Myrtle St	Urban	209.19	209.39	209.52	0.33	0.13
141	Myrtle St	Urban	209.06	209.35	209.50	0.44	0.15
174	Myrtle St	Urban	208.24	208.49	208.50	0.26	0.01
177	Myrtle St	Urban	208.02	208.32	208.33	0.31	0.01
220	Myrtle St	Urban	206.23	206.23	206.39	0.16	0.16
21A	Myrtle St	Urban	210.66	210.99	211.44	0.78	0.45
2	Ovens Hwy	Urban	212.47	213.27	213.50	1.03	0.23
10	Ovens Hwy	Urban	212.53	212.53	213.54	1.01	1.01
42	Ovens Hwy	Urban	212.93	213.47	213.61	0.68	0.14

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Above Floor Listing

Street No.	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
44	Ovens Hwy	Urban		212.93	213.52	213.62	0.69	0.10
46	Ovens Hwy	Urban		212.84	213.35	213.63	0.79	0.28
48	Ovens Hwy	Urban		213.03	213.14	213.66	0.63	0.52
50	Ovens Hwy	Urban		213.13	213.23	213.68	0.55	0.45
52	Ovens Hwy	Urban		212.88	213.50	213.69	0.81	0.19
56	Ovens Hwy	Urban		212.88	213.20	213.70	0.82	0.50
62	Ovens Hwy	Urban		213.50	213.75	213.78	0.28	0.03
64	Ovens Hwy	Urban		213.34	213.66	213.83	0.49	0.17
68	Ovens Hwy	Urban		213.33	213.86	213.89	0.56	0.03
72	Ovens Hwy	Urban		213.49	213.86	213.95	0.46	0.09
96	Ovens Hwy	Urban		213.97	214.24	214.50	0.53	0.26
81	Prince St	Urban		207.68	207.85	208.13	0.45	0.28
6	Smith St	Urban		207.76	207.89	208.19	0.42	0.29
8	Smith St	Urban		207.76	208.14	208.19	0.42	0.04
10	Smith St	Urban		207.92	208.15	208.19	0.27	0.04
24	Smith St	Urban		208.23	208.44	208.53	0.30	0.09
23	Standish St	Urban		208.23	208.86	209.10	0.87	0.24

25	Standish St	Urban		208.24	208.95	209.10	0.86	0.15
26	Standish St	Urban		208.30	209.04	209.23	0.93	0.19
30	Standish St	Urban		208.38	209.18	209.29	0.91	0.11
31	Standish St	Urban		208.40	208.85	209.13	0.73	0.28
36	Standish St	Urban		208.52	208.90	209.29	0.77	0.39
38	Standish St	Urban		208.53	209.01	209.30	0.77	0.29
39	Standish St	Urban		208.54	208.98	209.19	0.65	0.21
43	Standish St	Urban		208.57	209.18	209.21	0.64	0.03
45	Standish St	Urban		208.75	209.14	209.25	0.50	0.11
27-29	Standish St	Urban		208.67	208.87	209.10	0.43	0.23
35/1	Standish St	Urban		208.39	208.48	209.17	0.78	0.69
35/2	Standish St	Urban		208.40	208.46	209.06	0.66	0.60

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
3	Clyde St	Commercial		208.96	209.21	209.19	0.23	-0.02
5	Clyde St	Commercial		208.95	209.20	209.19	0.24	-0.01
23	Clyde St	Commercial		209.12	209.49	209.28	0.16	-0.21
33	Clyde St	Commercial		209.35	209.50	209.43	0.08	-0.07
45	Clyde St	Commercial		209.70	209.93	209.82	0.12	-0.11
51	Clyde St	Commercial		209.82	209.92	209.91	0.09	-0.01
67	Clyde St	Commercial		209.87	210.03	210.03	0.16	0.00
36776	Clyde St	Commercial		208.93	209.30	209.19	0.26	-0.11
1/A	Clyde St	Commercial		208.96	209.20	209.18	0.22	-0.02
1/B	Clyde St	Commercial		208.96	209.20	209.18	0.22	-0.02
58	Myrtle St	Commercial		210.62	211.19	211.01	0.39	-0.18
77	Myrtle St	Commercial		210.29	210.61	210.43	0.14	-0.18
79	Myrtle St	Commercial		210.34	210.38	210.38	0.04	0.00
153	Myrtle St	Commercial		208.95	209.39	209.22	0.27	-0.17
155	Myrtle St	Commercial		208.89	209.41	209.09	0.20	-0.32
157	Myrtle St	Commercial		209.14	209.23	209.20	0.06	-0.03
161	Myrtle St	Commercial		208.54	209.15	208.90	0.36	-0.25
164	Myrtle St	Commercial		208.49	208.92	208.72	0.23	-0.20
213	Myrtle St	Commercial		206.86	207.00	206.91	0.05	-0.09
215	Myrtle St	Commercial		206.46	206.83	206.67	0.21	-0.16

215	Myrtle St	Commercial		206.46	206.83	206.67	0.21	-0.16
233	Myrtle St	Commercial		206.21	206.33	206.27	0.06	-0.06
243/2	Myrtle St	Commercial		205.83	206.22	206.02	0.19	-0.02
97/A	Myrtle St	Commercial		209.97	210.18	210.10	0.13	-0.08
97/B	Myrtle St	Commercial		209.98	210.18	210.09	0.11	-0.09
33	Smith St	Commercial		208.70	209.32	208.92	0.22	-0.40
53	Standish St	Commercial		208.90	209.11	209.10	0.20	-0.01
55	Standish St	Commercial		208.90	209.11	209.11	0.21	0.00
59	Standish St	Commercial		208.89	209.23	209.13	0.24	-0.10
61	Standish St	Commercial		208.90	209.24	209.13	0.23	-0.11
63	Standish St	Commercial		208.71	209.15	209.12	0.41	-0.03
68	Standish St	Commercial		208.97	209.18	209.17	0.20	-0.01
76	Standish St	Commercial		209.18	209.44	209.29	0.11	-0.15
49/D	Standish St	Commercial		209.16	209.45	209.35	0.19	-0.10
15	Myrtle St	Commercial		211.60	213.32	211.78	0.18	-0.54

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Below Floor Listing

Street No.	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
20	Clyde St	Public		209.35	209.52	209.37	0.02	-0.15
26-28	Clyde St	Public		209.47	209.93	209.56	0.09	-0.37
30-32	Clyde St	Public		209.61	209.93	209.63	0.02	-0.30
	Clyde St	Public		209.60	209.99	209.72	0.12	-0.27
	Myrtle St	Public		208.95	209.07	209.02	0.07	-0.05
	Myrtle St	Public		210.05	210.49	210.22	0.17	-0.27
	Myrtle St	Public		208.88	209.22	208.92	0.04	-0.30
32	Smith St	Public		208.56	209.02	208.73	0.17	-0.29
32A	Smith St	Public		208.70	209.05			
	Clancy Ln	Rural		206.40	206.75	206.72	0.32	-0.03
	Clancy Ln	Rural		206.67	206.94	206.91	0.24	-0.03
	Clancy Ln	Rural		208.31	208.91	208.84	0.53	-0.07
	Clancy Ln	Rural		206.07	206.46	206.32	0.25	-0.14
	Clancy Ln	Rural		208.51	208.93	208.78	0.27	-0.15
	Clancy Ln	Rural		208.29	208.75	208.56	0.27	-0.19
	Clancy Ln	Rural		206.49	207.12	206.89	0.40	-0.23
	Clancy Ln	Rural		208.35	208.82	208.56	0.21	-0.26

	Clancy Ln	Rural		206.94	207.64	207.36	0.42	-0.28
	Clancy Ln	Rural		208.55	209.16	208.79	0.24	-0.37
	Clancy Ln	Rural		206.10	207.24	206.82	0.72	-0.42
422	Gerratys Ln	Rural		211.10	211.50	211.32	0.22	-0.18
	Merriang Rd	Rural		204.04	204.87	204.84	0.80	-0.03
	Merriang Rd	Rural		204.64	204.99	204.88	0.24	-0.11
	Merriang Rd	Rural		203.93	204.29	204.14	0.21	-0.15
	Merriang Rd	Rural		204.02	204.29	204.12	0.10	-0.17
	Merriang Rd	Rural		204.31	204.72	204.49	0.18	-0.23
	Merriang Rd	Rural		204.76	205.11	204.88	0.12	-0.23
	Merriang Rd	Rural		204.60	205.22	204.88	0.28	-0.34
	Merriang Rd	Rural		206.19	206.59	206.22	0.03	-0.37
	Merriang Rd	Rural		203.96	204.47	204.09	0.13	-0.38
	Merriang Rd	Rural		206.22	206.64	206.24	0.02	-0.40
	Merriang Rd	Rural		204.78	205.56	204.88	0.10	-0.68
268	Myrtle St	Rural		205.95	206.35	205.96	0.01	-0.39
270	Myrtle St	Rural		205.84	206.21	205.94	0.10	-0.27

Myrtleford Property Listings

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Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
10	Standish St	Rural		208.80	209.28	209.09	0.29	-0.19
17	Standish St	Rural		208.89	209.44	209.20	0.31	-0.24
21	Standish St	Rural		208.97	209.65	209.04	0.07	-0.61
	Toniazzo Ln	Rural		204.30	205.04	204.83	0.53	-0.21
	Toniazzo Ln	Rural		204.58	205.05	204.82	0.24	-0.23
RMB 480	Whalleys Ln	Rural		215.16	215.58	215.45	0.29	-0.13
RMB	Whalleys Ln	Rural		215.58	216.51	216.34	0.76	-0.17
RMB	Whalleys Ln	Rural		215.58	216.51	216.34	0.76	-0.17
RMB	Whalleys Ln	Rural		216.19	216.62	216.31	0.12	-0.31
6	Albert St	Urban		210.12	210.52	210.23	0.11	-0.29
74	Elgin St	Urban		210.93	211.82	211.31	0.38	-0.51
4	Geoffrey St	Urban		207.55	207.94	207.59	0.04	-0.35
5	Geoffrey St	Urban		207.20	207.53	207.45	0.25	-0.08
8	Geoffrey St	Urban		207.53	207.99	207.58	0.05	-0.41
2	Jones St	Urban		208.55	208.72	208.56	0.01	-0.16
7	Jones St	Urban		208.20	208.52	208.48	0.28	-0.04
7	King St	Urban		208.90	209.46	208.18	0.28	-0.28

9	King St	Urban		208.76	209.34	209.18	0.42	-0.16
15	King St	Urban		208.55	209.11	208.74	0.19	-0.37
17	King St	Urban		208.51	208.82	208.64	0.13	-0.18
19	King St	Urban		208.40	208.69	208.54	0.14	-0.15
21	King St	Urban		208.33	208.74	208.38	0.05	-0.36
23	King St	Urban		208.32	208.71	208.36	0.04	-0.35
25	King St	Urban		208.25	208.48	208.34	0.09	-0.14
30	King St	Urban		207.90	208.25	208.13	0.23	-0.12
32	King St	Urban		207.68	208.15	208.07	0.39	-0.08
39	Lewis Ave	Urban		209.47	210.04	209.99	0.52	-0.05
40	Lewis Ave	Urban		209.11	209.86	209.81	0.70	-0.05
44	Lewis Ave	Urban		209.37	209.68	209.66	0.29	-0.02
46	Lewis Ave	Urban		209.16	209.58	209.53	0.37	-0.05
47	Lewis Ave	Urban		209.04	209.62	209.50	0.46	-0.12
48	Lewis Ave	Urban		209.38	209.85	209.40	0.02	-0.45
50	Lewis Ave	Urban		209.10	209.88	209.36	0.26	-0.52
1	Myrtle St	Urban		212.13	212.83	212.61	0.48	-0.22
5	Myrtle St	Urban		212.22	212.50	212.23	0.01	-0.37

Myrtleford Property Listings

Gauge Height at Eurobin: 8.0 m (revised from Myrtleford Floodplain Management Study estimate of 7.0m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Flood Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
7	Myrtle St	Urban Residential		211.91	212.46	212.11	0.20	-0.35
11	Myrtle St	Urban Residential		211.47	211.96	211.88	0.41	-0.08
74	Myrtle St	Urban Residential		210.36	210.82	210.39	0.03	-0.43
80	Myrtle St	Urban Residential		210.22	210.59	210.39	0.13	-0.24
163	Myrtle St	Urban Residential		208.63	208.89	208.86	0.23	-0.13
167	Myrtle St	Urban Residential		208.43	208.90	208.70	0.27	-0.20
168	Myrtle St	Urban Residential		208.44	208.87	208.62	0.18	-0.25
169	Myrtle St	Urban Residential		208.35	208.79	208.65	0.30	-0.14
170	Myrtle St	Urban Residential		208.34	208.75	208.57	0.23	-0.18
171	Myrtle St	Urban Residential		208.33	208.92	208.59	0.26	-0.33
172	Myrtle St	Urban Residential		208.30	208.62	208.52	0.22	-0.10
173	Myrtle St	Urban Residential		208.40	208.79	208.48	0.08	-0.31
175	Myrtle St	Urban Residential		208.27	208.69	208.39	0.12	-0.30
176	Myrtle St	Urban Residential		208.05	208.49	208.38	0.33	-0.11
178	Myrtle St	Urban Residential		208.23	208.58	208.28	0.05	-0.30
179	Myrtle St	Urban Residential		208.10	208.75	208.27	0.17	-0.48
180	Myrtle St	Urban Residential		208.09	208.43	208.21	0.12	-0.22

181	Myrtle St	Urban Residential		207.88	208.50	208.22	0.34	-0.28
182	Myrtle St	Urban Residential		207.76	208.23	208.18	0.42	-0.05
183	Myrtle St	Urban Residential		207.92	208.35	208.17	0.25	-0.18
184	Myrtle St	Urban Residential		207.66	208.34	208.17	0.51	-0.17
185	Myrtle St	Urban Residential		207.98	208.62	208.11	.013	-0.15
189	Myrtle St	Urban Residential		207.84	208.27	208.05	0.21	-0.22
192	Myrtle St	Urban Residential		207.35	207.57	207.55	0.20	-0.06
193	Myrtle St	Urban Residential		207.50	207.79	207.73	0.23	-0.06
195	Myrtle St	Urban Residential		207.44	207.92	207.59	0.15	-0.33
197	Myrtle St	Urban Residential		207.35	207.83	207.50	0.15	-0.33
198	Myrtle St	Urban Residential		207.14	207.64	207.38	0.24	-0.26
199	Myrtle St	Urban Residential		207.27	207.78	207.41	0.15	-0.36
200	Myrtle St	Urban Residential		207.16	207.75	207.32	0.16	-0.43
201	Myrtle St	Urban Residential		207.25	207.66	207.38	0.13	-0.28
202	Myrtle St	Urban Residential		207.19	207.49	207.27	0.08	-0.22
203	Myrtle St	Urban Residential		206.91	207.53	207.23	0.32	-0.30
212	Myrtle St	Urban Residential		206.46	208.81	206.54	0.08	-0.27
214	Myrtle St	Urban Residential		206.28	206.58	206.41	0.13	-0.17

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth above Floor
222	Myrtle St	Urban Residential		206.35	207.06	206.38	0.03	-0.68
226	Myrtle St	Urban Residential		206.00	206.37	206.21	0.21	-0.16
230	Myrtle St	Urban Residential		206.09	206.51	206.15	0.06	-0.36
236	Myrtle St	Urban Residential		205.97	206.55	206.10	0.13	-0.45
238	Myrtle St	Urban Residential		206.02	206.21	206.09	0.07	-0.12
267	Myrtle St	Urban Residential		204.86	205.45	205.05	0.19	-0.40
187/1	Myrtle St	Urban Residential		207.93	208.11	208.08	0.15	-0.03
187/3	Myrtle St	Urban Residential		207.77	208.06	207.97	0.20	-0.09
58	Ovens Hwy	Urban Residential		213.11	213.78	207.97	0.20	-0.09
70	Ovens Hwy	Urban Residential		213.50	214.08	213.92	0.42	-0.16
116	Ovens Hwy	Urban Residential		215.08	215.32	215.19	0.11	-0.15
118	Ovens Hwy	Urban Residential		215.07	215.34	215.22	0.15	-0.12
62/A	Ovens Hwy	Urban Residential		213.61	213.82	213.81	0.20	-0.01
80	Prince St	Urban Residential		207.54	207.97	207.59	0.05	-0.38
84	Prince St	Urban Residential		207.53	207.89	207.73	0.20	-0.16
2	Smith St	Urban Residential		207.78	208.19	208.17	0.39	-0.02
4	Smith St	Urban Residential		207.86	208.27	208.17	0.31	-0.10
12	Smith St	Urban Residential		208.02	208.47	208.21	0.19	-0.26
14	Smith St	Urban Residential		208.02	208.31	208.24	0.22	-0.07
16	Smith St	Urban Residential		208.17	208.49	208.31	0.14	-0.18
20	Smith St	Urban Residential		208.10	208.30	208.46	0.36	-0.14
22	Smith St	Urban Residential		208.30	208.57	208.50	0.20	-0.07

26	Smith St	Urban Residential		208.39	208.80	208.54	0.15	-0.26
27	Smith St	Urban Residential		208.51	209.09	208.65	0.11	-0.44
28	Smith St	Urban Residential		208.41	209.07	208.58	0.17	-0.49
30	Smith St	Urban Residential		208.43	208.98	208.69	0.26	-0.29
35	Smith St	Urban Residential		208.95	209.38	209.01	0.06	-0.37
2	Standish St	Urban Residential		208.60	209.60	209.00	0.40	-0.60
33	Standish St	Urban Residential		208.83	209.54	209.14	0.31	-0.40
34	Standish St	Urban Residential		208.46	209.36	209.27	0.81	-0.09
37	Standish St	Urban Residential		208.60	209.35	209.18	0.58	-0.17
40	Standish St	Urban Residential		208.61	209.44	209.30	0.69	-0.14
36544	Standish St	Urban Residential		208.75	209.13	209.10	0.35	-0.03
36575	Standish St	Urban Residential		208.85	209.363	209.18	0.33	-0.15

Myrtleford Property Listings

Gauge Height at Eurobin 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Estimated ARI 50 years (2% AEP)

Harrietville Gauge Level

Bright Gauge Level

Above Floor Affected Properties 63

Below Floor Affected Properties 158

Total Floor Affected Properties 221

Above Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
47	Clyde St	Commercial		209.70	209.73	209.78	0.08	0.05
6	Geoffrey St	Commercial		207.46	207.46	207.48	0.02	0.02
4	King St	Commercial		208.65	208.85	208.85	0.20	0.10
	Lewis Ave	Commercial		208.95	209.50	209.75	0.80	0.25
	Lewis Ave	Commercial		209.54	209.87	209.89	0.35	0.02
17	Myrtle St	Commercial		211.12	211.20	211.22	0.10	0.02
21	Myrtle St	Commercial		210.89	210.89	211.19	0.30	0.30
41	Myrtle St	Commercial		210.73	210.73	210.84	0.11	0.11
91	Myrtle St	Commercial		209.78	209.78	210.08	0.30	0.30
145	Myrtle St	Commercial		209.18	209.32	209.32	0.14	0.14
151	Myrtle St	Commercial		209.07	209.24	209.26	0.19	0.02

190	Myrtle St	Commercial		207.50	207.61	207.89	0.39	0.28
218	Myrtle St	Commercial		205.71	205.71	206.21	0.50	0.50
49/C	Standish St	Commercial		209.03	209.08	209.24	0.21	0.16
1	Willow Gv.	Commercial		210.46	211.08	211.21	0.75	0.13
31	King St	Industrial		208.01	208.08	208.12	0.11	0.04
35	King St	Industrial		207.80	207.82	207.86	0.06	0.04
39	King St	Industrial		207.54	207.61	207.65	0.11	0.04
21	Maude St	Industrial		209.38	209.66	209.86	0.48	0.20
35	Myrtle St	Industrial		210.63	210.63	210.97	0.34	0.34
4	Ovens Hwy	Industrial		211.75	211.78	212.77	1.02	0.99
46	Standish St	Industrial		209.14	209.19	209.26	0.12	0.07
48	Standish St	Industrial		209.11	209.19	209.27	0.16	0.08
36742	Standish St	Industrial		208.96	208.96	208.99	0.03	0.03
21A	Standish St	Industrial		208.40	208.40	208.80	0.40	0.40

Myrtleford Property Listings

Gauge Height at Eurobin: 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Above Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth above Floor
	Lewis Ave	Public		210.24	210.24	210.38	0.12	0.12
	Lewis Ave	Public		209.78	210.04	210.09	0.31	0.05
	Myrtle St	Public		204.26	204.26	204.56	0.30	0.30
	Clancy Ln	Rural Residential		208.25	208.43	208.61	0.36	0.18
420	Gerraty's Ln	Rural Residential		210.85	210.86	211.03	0.18	0.17
126	Ovens Hwy	Rural Residential		214.37	214.44	215.04	0.67	0.60
13	Standish St	Rural Residential		208.78	208.95	209.09	0.31	0.14
16	Standish St	Rural Residential		208.14	208.58	208.70	0.56	0.12
Lot 10	Whalleys Ln	Rural Residential		210.02	210.55	210.71	0.69	0.16
RMB 400	Whalleys Ln	Rural Residential		209.54	210.08	210.28	0.74	0.20
RMB 425	Whalleys Ln	Rural Residential		211.01	211.41	211.65	0.64	0.24
RMB 437	Whalleys Ln	Rural Residential		211.69	212.40	212.54	0.85	0.14
RMB	Whalleys Ln	Rural Residential		212.49	212.76	212.97	0.48	0.21
RMB 450	Whalleys Ln	Rural Residential		212.58	213.01	213.09	0.51	0.08
RMB 490	Whalleys Ln	Rural Residential		215.08	215.61	215.65	0.57	0.04
0	Blewett Ln	Urban Residential		204.38	204.46	204.49	0.11	0.03
42	Lewis Ave	Urban Residential		209.34	209.50	209.53	0.19	0.03

52	Lewis Ave	Urban Residential		208.50	208.87	209.02	0.52	0.15
4	Maude St	Urban Residential		208.82	209.00	209.27	0.45	0.27
5	Maude St	Urban Residential		208.55	209.20	209.31	0.76	0.11
14	Maude St	Urban Residential		208.89	209.20	209.38	0.49	0.18
15	Maude St	Urban Residential		209.51	209.62	209.70	0.19	0.08
16	Maude St	Urban Residential		208.89	209.29	209.57	0.59	0.28
19	Maude St	Urban Residential		209.42	209.70	209.80	0.38	0.10
31	Myrtle St	Urban Residential		210.63	210.98	211.03	0.40	0.05
37	Myrtle St	Urban Residential		210.62	210.79	210.92	0.30	0.13
39	Myrtle St	Urban Residential		210.37	210.80	210.88	0.51	0.08
57	Myrtle St	Urban Residential		210.38	210.48	210.48	0.10	0.02
141	Myrtle St	Urban Residential		209.06	209.35	209.36	0.30	0.01
21A	Myrtle St	Urban Residential		210.66	210.99	211.11	0.45	0.12
10	Ovens Hwy	Urban Residential		212.53	212.53	212.77	0.24	0.24
81	Prince St	Urban Residential		207.68	207.85	207.89	0.21	0.04
6	Smith St	Urban Residential		207.76	207.89	207.92	0.16	0.03
31	Standish St	Urban Residential		208.40	208.85	208.87	0.47	0.02
36	Standish St	Urban Residential		208.52	208.90	209.03	0.51	0.13

Myrtleford Property Listings

Gauge Height at Eurobin 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
38	Standish St	Urban		208.53	209.01	209.04	0.51	0.03
35/1	Standish St	Urban		208.39	208.49	208.91	0.52	0.43
35/2	Standish St	Urban		208.40	208.46	208.81	0.41	0.35

Myrtleford Property Listings

Gauge Height at Eurobin 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
3	Clyde St	Commercial		208.96	209.21	209.07	0.11	-0.14
5	Clyde St	Commercial		208.95	209.20	209.07	0.12	-0.13
11	Clyde St	Commercial		208.94	209.11	209.07	0.13	-0.04
13	Clyde St	Commercial		209.01	209.16	209.07	0.06	-0.09
15	Clyde St	Commercial		209.01	209.18	209.07	0.06	-0.11
17	Clyde St	Commercial		209.02	209.17	209.07	0.05	-0.10
19	Clyde St	Commercial		209.03	209.07	209.07	0.04	0.00
21	Clyde St	Commercial		209.04	209.08	209.07	0.03	-0.01
45	Clyde St	Commercial		209.70	209.93	209.78	0.08	-0.15
49	Clyde St	Commercial		209.76	209.85	209.78	0.02	-0.07
36776	Clyde St	Commercial		208.93	209.30	209.07	0.14	-0.23
1/A	Clyde St	Commercial		208.96	209.20	209.07	0.11	-0.13
1/B	Clyde St	Commercial		208.96	209.20	209.07	0.11	-0.13
111	Myrtle St	Commercial		209.82	209.94	209.84	0.02	-0.10
113	Myrtle St	Commercial		209.81	209.86	209.84	0.03	-0.02
143	Myrtle St	Commercial		209.05	209.39	209.31	0.26	-0.08
146	Myrtle St	Commercial		208.99	209.15	209.12	0.13	-0.03

148	Myrtle St	Commercial		208.99	209.15	209.12	0.13	-0.03
153	Myrtle St	Commercial		208.95	209.39	209.13	0.18	-0.26
155	Myrtle St	Commercial		208.89	209.41	208.98	0.09	-0.43
157	Myrtle St	Commercial		209.14	209.23	209.16	0.02	-0.07
161	Myrtle St	Commercial		208.54	209.15	208.74	0.20	-0.41
165	Myrtle St	Commercial		208.30	208.62	208.59	0.29	-0.03
166	Myrtle St	Commercial		208.38	208.50	208.46	0.08	-0.04
215	Myrtle St	Commercial		206.46	206.83	206.50	0.04	-0.33
235	Myrtle St	Commercial		205.92	206.11	206.10	0.18	-0.01
264	Myrtle St	Commercial		205.62	205.92	205.90	0.28	-0.02
115/A	Myrtle St	Commercial		209.80	209.88	209.84	0.04	-0.04
115/B	Myrtle St	Commercial		209.80	209.88	209.84	0.04	-0.04
243/2	Myrtle St	Commercial		205.83	206.22	205.88	0.05	-0.34
41A	Myrtle St	Commercial		210.38	210.68	210.64	0.26	-0.04
54	Standish St	Commercial		208.97	209.24	209.09	0.12	-0.15
56	Standish St	Commercial		208.91	209.01	209.01	0.10	0.00
58	Standish St	Commercial		208.91	209.00	208.98	0.07	-0.02
60	Standish St	Commercial		208.90	209.11	208.98	0.08	-0.13

Myrtleford Property Listings

Gauge Height at Eurobin: 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
63	Standish St	Commercial		208.71	209.15	208.89	0.18	-0.26
49/D	Standish St	Commercial		209.16	209.45	209.24	0.08	-0.21
54A	Standish St	Commercial		208.97	209.15	209.04	0.07	-0.11
62-64	Standish St	Commercial		208.93	209.13	208.97	0.04	-0.16
	Lewis Ave	Public		209.13	209.62	209.61	0.48	-0.01
	Myrtle St	Public		209.13	209.78	209.53	0.40	-0.25
	Myrtle St	Public		209.13	209.91	209.55	0.42	-0.36
	Standish St	Public		209.13	209.57	209.46	0.33	-0.11
	Clancy Ln	Rural Residential		206.40	206.73	206.44	0.04	-0.29
	Clancy Ln	Rural Residential		208.31	208.91	208.61	0.30	-0.30
	Clancy Ln	Rural Residential		206.07	206.46	206.16	0.09	-0.30
	Clancy Ln	Rural Residential		208.29	208.75	208.42	0.13	-0.33
	Clancy Ln	Rural Residential		206.40	206.75	206.42	0.02	-0.33
	Clancy Ln	Rural Residential		208.51	208.93	208.58	0.07	-0.35
	Clancy Ln	Rural Residential		208.35	208.82	208.40	0.05	-0.42
	Clancy Ln	Rural Residential		206.94	207.64	207.17	0.23	-0.47
	Clancy Ln	Rural Residential		208.55	209.16	208.59	0.04	-0.57

	Clancy Ln	Rural Residential		206.10	207.24	206.54	0.44	-0.70
421	Gerraty's Ln	Rural Residential		210.86	211.35	211.16	0.30	-0.19
7	Lewis Ave	Rural Residential		209.74	210.34	210.39	0.49	-0.11
	Merriang Rd	Rural Residential		204.04	204.87	204.43	0.39	-0.44
270	Myrtle St	Rural Residential		205.84	206.21	205.88	0.04	-0.33
88	Ovens Hwy	Rural Residential		212.70	213.61	213.32	0.62	-0.29
134	Ovens Hwy	Rural Residential		215.10	215.35	215.21	0.14	-0.11
134/B	Ovens Hwy	Rural Residential		215.14	215.42	215.41	0.27	-0.01
140-142	Ovens Hwy	Rural Residential		215.32	215.66	215.46	0.14	-0.20
10	Standish St	Rural Residential		208.80	209.28	208.97	0.17	-0.31
17	Standish St	Rural Residential		208.89	209.44	209.09	0.20	-0.35
21	Standish St	Rural Residential		208.97	209.65	208.99	0.02	-0.66
	Toniazzo Ln	Rural Residential		204.10	204.21	204.21	0.11	0.00
	Toniazzo Ln	Rural Residential		204.34	204.80	204.49	0.15	-0.31
	Toniazzo Ln	Rural Residential		204.30	205.04	204.35	0.05	-0.69
RMB 401	Whalleys Ln	Rural Residential		210.15	210.20	210.20	0.05	0.00
RMB 405	Whalleys Ln	Rural Residential		209.93	210.35	210.35	0.42	0.00
RMB 430	Whalleys Ln	Rural Residential		211.30	211.95	211.95	0.65	0.00

Myrtleford Property Listings

Gauge Height at Eurobin: 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
RMB 435	Whalleys	Rural		211.95	212.50	212.30	0.35	-0.20
RMB	Whalleys	Rural		212.60	213.04	212.88	0.28	-0.16
RMB 445	Whalleys	Rural		212.99	213.29	213.11	0.12	-0.18
RMB 457	Whalleys	Rural		213.09	213.42	213.30	0.21	-0.12
RMB	Whalleys	Rural		213.14	213.78	213.44	0.30	-0.34
RMB	Whalleys	Rural		213.27	213.82	213.51	0.24	-0.13
RMB 467	Whalleys	Rural		213.43	213.94	213.77	0.34	-0.17
RMB	Whalleys	Rural		215.58	216.51	215.78	0.20	-0.73
RMB	Whalleys	Rural		215.58	216.51	215.78	0.20	-0.73
	Blewett Ln	Rural		204.45	204.79	204.49	0.04	-0.30
5	Geoffrey St	Urban		207.20	207.53	207.24	0.04	-0.29
3	Jones St	Urban		208.17	208.39	208.23	0.06	-0.16
4	Jones St	Urban		208.19	208.34	208.27	0.08	-0.07
7	Jones St	Urban		208.20	208.52	208.27	0.07	-0.25
7	King St	Urban		208.90	209.46	209.10	0.20	-0.36
9	King St	Urban		208.76	209.34	209.10	0.34	-0.24
11	King St	Urban		208.73	209.10	209.01	0.28	-0.09

13	King St	Urban	208.62	208.89	208.83	0.21	-0.06
15	King St	Urban	208.55	209.11	208.69	0.14	-0.42
17	King St	Urban	208.51	208.82	208.60	0.09	-0.22
19	King St	Urban	208.40	208.69	208.51	0.11	-0.18
21	King St	Urban	208.33	208.74	208.35	0.02	-0.22
32	King St	Urban	207.68	208.15	207.75	0.07	-0.40
29	Lewis Ave	Urban	209.44	210.15	209.97	0.53	-0.18
31	Lewis Ave	Urban	209.40	210.02	209.95	0.55	-0.07
39	Lewis Ave	Urban	209.47	210.04	209.77	0.30	-0.27
40	Lewis Ave	Urban	209.11	209.86	209.61	0.50	-0.25
41	Lewis Ave	Urban	209.37	209.73	209.59	0.22	-0.14
44	Lewis Ave	Urban	209.37	209.68	209.48	0.11	-0.20
46	Lewis Ave	Urban	209.16	209.58	209.36	0.20	-0.22
47	Lewis Ave	Urban	209.04	209.62	209.27	0.23	-0.35
49	Lewis Ave	Urban	209.03	209.21	209.18	0.15	-0.03
69	Lewis Ave	Urban	208.73	209.18	209.15	0.42	-0.03
17	Maude St	Urban	209.21	209.80	209.78	0.57	-0.02
9	Myrtle St	Urban	211.53	211.97	211.61	0.08	-0.36

Myrtleford Property Listings

Gauge Height at Eurobin: 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD	Flood Depth Above Ground	Flood Depth Above Floor
11	Myrtle St	Urban Residential		211.47	211.96	211.60	0.13	-0.36
13	Myrtle St	Urban Residential		211.22	211.60	211.52	0.30	-0.08
69	Myrtle St	Urban Residential		210.23	210.46	210.28	0.05	-0.18
71	Myrtle St	Urban Residential		210.25	210.35	210.28	0.03	-0.07
139	Myrtle St	Urban Residential		209.19	209.39	209.38	0.19	-0.01
163	Myrtle St	Urban Residential		208.63	208.99	208.71	0.08	-0.28
167	Myrtle St	Urban Residential		208.43	208.90	208.55	0.12	-0.35
169	Myrtle St	Urban Residential		208.35	208.79	208.47	0.12	-0.32
170	Myrtle St	Urban Residential		208.34	208.75	208.38	0.04	-0.37
171	Myrtle St	Urban Residential		208.33	208.92	208.39	0.06	-0.53
174	Myrtle St	Urban Residential		208.24	208.49	208.29	0.05	-0.20
176	Myrtle St	Urban Residential		208.05	208.49	208.20	0.15	-0.29
177	Myrtle St	Urban Residential		208.02	208.32	208.12	0.10	-0.20
181	Myrtle St	Urban Residential		207.88	208.50	208.03	0.15	-0.47
182	Myrtle St	Urban Residential		207.87	208.23	207.94	0.18	-0.29
183	Myrtle St	Urban Residential		207.92	208.35	207.99	0.07	-0.36
184	Myrtle St	Urban Residential		207.66	208.34	207.92	0.26	-0.42

192	Myrtle St	Urban Residential		207.35	207.57	207.37	0.02	-0.20
193	Myrtle St	Urban Residential		207.50	207.79	207.58	0.08	-0.21
195	Myrtle St	Urban Residential		207.44	207.92	207.47	0.03	-0.45
197	Myrtle St	Urban Residential		207.35	207.83	207.38	0.03	-0.45
198	Myrtle St	Urban Residential		207.14	207.64	207.15	0.01	-0.49
199	Myrtle St	Urban Residential		207.27	207.78	207.30	0.03	-0.48
203	Myrtle St	Urban Residential		206.91	207.53	207.09	0.18	-0.44
226	Myrtle St	Urban Residential		206.00	206.37	206.04	0.04	-0.33
2	Ovens	Urban Residential		212.47	213.27	212.77	0.30	-0.50
96	Ovens	Urban Residential		213.97	214.24	214.06	0.09	-0.18
84	Prince St	Urban Residential		207.53	207.89	207.60	0.07	-0.29
2	Smith St	Urban Residential		207.78	208.19	207.91	0.13	-0.28
4	Smith St	Urban Residential		207.86	208.27	207.92	0.06	-0.35
8	Smith St	Urban Residential		207.76	208.14	207.93	0.17	-0.21
10	Smith St	Urban Residential		207.92	208.15	207.93	0.01	-0.22
12	Smith St	Urban Residential		208.02	208.47	208.06	0.04	-0.41
14	Smith St	Urban Residential		208.02	208.31	208.09	0.07	-0.22
22	Smith St	Urban Residential		208.10	208.60	208.27	0.17	-0.33

Myrtleford Property Listings

Gauge Height at Eurobin: 7.0 m (revised from Myrtleford Floodplain Management Study estimate of 6.2m)

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
24	Smith St	Urban Residential		208.23	208.44	208.29	0.06	-0.15
28	Smith St	Urban Residential		208.41	209.07	208.50	0.09	-0.57
30	Smith St	Urban Residential		208.43	208.98	208.52	0.09	-0.46
2	Standish St	Urban Residential		208.60	209.60	208.94	0.34	-0.68
23	Standish St	Urban Residential		208.23	208.86	208.83	0.60	-0.03
25	Standish St	Urban Residential		208.24	208.95	208.84	0.60	-0.11
26	Standish St	Urban Residential		208.30	209.04	208.95	0.65	-0.09
30	Standish St	Urban Residential		208.38	209.18	209.02	0.64	-0.16
33	Standish St	Urban Residential		208.83	209.54	208.89	0.06	-0.65
34	Standish St	Urban Residential		208.46	209.36	209.00	0.54	-0.36
37	Standish St	Urban Residential		208.60	209.35	208.93	0.33	-0.42
39	Standish St	Urban Residential		208.54	208.98	208.94	0.40	-0.04
40	Standish St	Urban Residential		208.61	209.44	209.05	0.44	-0.39
43	Standish St	Urban Residential		208.57	209.18	208.96	0.39	-0.22
45	Standish St	Urban Residential		208.75	209.14	208.99	0.24	-0.15
36544	Standish St	Urban Residential		208.75	209.13	209.03	0.28	-0.10
36575	Standish St	Urban Residential		208.85	209.33	209.07	0.22	-0.26
27-29	Standish St	Urban Residential		208.67	208.87	208.82	0.15	-0.05

Myrtleford Property Listings

Gauge Height at Eurobin: 6.7 m (revised from Myrtleford Floodplain Management Study estimate of 5.9m)

Estimated ARI: 20 Years (5% AEP)

Harrietville Gauge Level

Bright Gauge Level

Above Floor Affected Properties: 27

Below Floor Affected Properties: 111

Total Flood Affected Properties: 138

Above Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
4	King St	Commercial		208.65	208.75	208.78	0.13	0.03
	Lewis Ave	Commercial		208.95	209.50	209.62	0.67	0.12
21	Myrtle St	Commercial		210.89	210.89	211.05	0.16	0.16
91	Myrtle St	Commercial		209.78	209.78	209.99	0.21	0.21
145	Myrtle St	Commercial		209.18	209.18	209.28	0.10	0.10
190	Myrtle St	Commercial		207.50	207.61	207.80	0.30	0.19
218	Myrtle St	Commercial		205.71	205.71	206.14	0.43	0.43
49/C	Standish St	Commercial		209.03	209.08	209.20	0.17	0.12
21	Maude St	Industrial		209.38	209.66	209.73	0.35	0.07
35	Myrtle St	Industrial		210.63	210.63	210.83	0.20	0.20

4	Ovens Hwy	Industrial		211.75	211.78	212.25	0.50	0.47
46	Standish St	Industrial		209.14	209.19	209.21	0.07	0.02
48	Standish St	Industrial		209.11	209.19	209.23	0.12	0.04
21A	Standish St	Industrial		208.40	208.40	208.68	0.28	0.28
	Myrtle St	Public		204.26	204.26	204.45	0.19	0.19
	Clancy Ln	Rural		208.25	208.43	208.51	0.26	0.08
126	Ovens Hwy	Rural		214.37	214.44	214.81	0.44	0.37
13	Standish St	Rural		208.78	208.95	209.05	0.27	0.10
16	Standish St	Rural		208.14	208.58	208.59	0.45	0.01
Lot 10	Whalleys	Rural		210.02	210.55	210.59	0.57	0.04
RMB 44	Whalleys	Rural		209.54	210.08	210.14	0.60	0.06
RMB 425	Whalleys	Rural		211.01	211.41	211.44	0.43	0.03
4	Maude St	Urban		208.82	209.00	209.11	0.29	0.11
14	Maude St	Urban		208.89	209.20	209.28	0.39	0.08
16	Maude St	Urban		208.98	209.29	209.47	0.49	0.18
35/1	Standish St	Urban		208.39	208.48	208.80	0.41	0.32
35/2	Standish St	Urban		208.40	208.46	208.69	0.29	0.23

Myrtleford Property Listings

Gauge Height at Eurobin: 6.7 m (revised from Myrtleford Floodplain Management Study estimate of 5.9m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
0	Lewis Ave	Commercial		209.54	209.87	209.83	0.29	-0.04
143	Myrtle St	Commercial		209.05	209.39	209.27	0.22	-0.12
151	Myrtle St	Commercial		209.07	209.24	209.23	0.16	-0.01
153	Myrtle St	Commercial		208.95	209.39	209.05	0.10	-0.34
155	Myrtle St	Commercial		208.89	209.41	208.93	0.04	-0.48
161	Myrtle St	Commercial		208.54	209.15	208.59	0.05	-0.56
165	Myrtle St	Commercial		208.30	208.62	208.52	0.22	-0.10
235	Myrtle St	Commercial		205.92	206.11	206.06	0.14	-0.05
264	Myrtle St	Commercial		205.62	205.92	205.84	0.22	-0.08
243/2	Myrtle St	Commercial		205.83	206.22	205.84	0.01	-0.38
41A	Myrtle St	Commercial		210.38	210.68	210.55	0.17	-0.13
54	Standish St	Commercial		208.97	209.24	208.98	0.01	-0.26
63	Standish St	Commercial		208.71	209.15	208.79	0.08	-0.36
49/D	Standish St	Commercial		209.16	209.45	209.20	0.04	-0.25
1	Willow Gv	Commercial		210.46	211.08	211.06	0.60	-0.02
39	King St	Industrial		207.54	207.61	207.59	0.05	-0.02
	Lewis Ave	Public		209.78	210.04	210.02	0.24	-0.02

	Lewis Ave	Public		209.13	209.62	209.54	0.41	-0.08
	Myrtle St	Public		209.13	209.78	209.46	0.33	-0.32
	Myrtle St	Public	Ladies Toilet	209.13	209.91	209.46	0.33	-0.45
	Standish St	Public		209.13	209.57	209.38	0.25	-0.19
	Clancy Ln	Rural		208.29	208.75	208.39	0.10	-0.36
	Clancy Ln	Rural		206.94	207.64	207.05	0.11	-0.59
	Clancy Ln	Rural		206.10	207.24	206.37	.027	-0.87
420	Gerratys Ln	Rural		210.85	210.86	210.86	0.01	0.00
421	Gerratys Ln	Rural		210.86	211.35	211.06	0.20	-0.29
7	Lewis Ave	Rural		209.74	210.34	210.10	0.36	-0.24
	Merriang	Rural		204.04	204.87	204.32	0.28	-0.55
88	Ovens Hwy	Rural		212.70	213.61	212.83	0.13	-0.78
134/B	Ovens Hwy	Rural		215.14	215.42	215.17	0.03	-0.25
10	Standish St	Rural		208.80	209.28	208.93	0.13	-0.35
17	Standish St	Rural		208.89	209.44	209.04	0.15	-0.40
	Toniazzo Ln	Rural		204.34	204.80	204.38	0.04	-0.42
RMB	Whalleys	Rural		209.93	210.35	210.20	0.27	-0.15

Myrtleford Property Listings

Gauge Height at Eurobin: 6.7 m (revised from Myrtleford Floodplain Management Study estimate of 5.9m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
RMB	Whalleys Ln	Rural		211.30	211.95	211.71	0.41	-0.24
RMB	Whalleys Ln	Rural		211.95	212.50	212.04	0.09	-0.46
RMB	Whalleys Ln	Rural		211.69	212.40	212.28	0.59	-0.12
RMB	Whalleys Ln	Rural		212.49	212.76	212.72	0.23	-0.04
RMB	Whalleys Ln	Rural		212.60	213.04	212.66	0.06	-0.38
RMB	Whalleys Ln	Rural		212.58	213.01	212.85	0.27	-0.16
RMB	Whalleys Ln	Rural		213.09	213.42	213.11	0.02	-0.31
RMB	Whalleys Ln	Rural		213.14	213.78	213.22	0.08	-056
RMB	Whalleys Ln	Rural		213.27	213.82	213.29	0.02	-0.53
RMB	Whalleys Ln	Rural		213.43	213.94	213.64	0.21	-0.30
RMB	Whalleys Ln	Rural		215.08	215.61	215.41	0.33	-0.20
0	Blewett Ln	Rural		204.38	204.46	204.39	0.01	-0.07
5	Geoffrey St	Urban		207.20	207.53	207.21	0.01	-0.32
7	King St	Urban		208.90	209.46	209.07	0.17	-0.39
9	King St	Urban		208.76	209.34	209.07	0.31	-0.27
11	King St	Urban		208.73	209.10	208.98	0.25	-0.12
13	King St	Urban		208.62	208.89	208.83	0.21	-0.06

15	King St	Urban		208.55	209.11	208.69	0.14	-042
17	King St	Urban		208.51	208.82	208.60	0.09	-0.22
19	King St	Urban		208.40	208.69	208.49	0.09	-0.20
29	Lewis Ave	Urban		209.44	210.15	209.84	0.40	-0.13
31	Lewis Ave	Urban		209.40	210.02	209.83	0.43	-019
39	Lewis Ave	Urban		209.47	210.04	209.69	0.22	-0.35
40	Lewis Ave	Urban		209.11	209.86	209.51	0.40	-0.35
41	Lewis Ave	Urban		209.37	209.73	209.51	0.14	-0.22
42	Lewis Ave	Urban		209.34	209.50	209.43	0.09	-0.07
44	Lewis Ave	Urban		209.37	209.68	209.38	0.01	-0.30
46	Lewis Ave	Urban		209.16	209.58	209.29	0.13	-0.29
47	Lewis Ave	Urban		209.04	209.62	209.19	0.15	-0.09
49	Lewis Ave	Urban		209.03	209.21	209.12	0.09	-0.09
52	Lewis Ave	Urban		208.50	208.87	208.85	0.35	-0.02
69	Lewis Ave	Urban		208.73	209.18	209.09	0.36	-0.09
5	Maude St	Urban		208.55	209.20	209.17	0.62	-0.03
15	Maude St	Urban		209.51	209.62	209.58	0.07	-0.04
17	Maude St	Urban		209.21	209.80	209.65	0.44	-015

Myrtleford Property Listings

Gauge Height at Eurobin: 6.7 m (revised from Myrtleford Floodplain Management Study estimate of 5.9m)

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
19	Maude St	Urban		209.42	209.70	209.67	0.25	-0.03
31	Myrtle St	Urban		210.63	210.98	210.88	0.25	-0.10
37	Myrtle St	Urban		210.62	210.79	210.78	0.16	-0.01
39	Myrtle St	Urban		210.37	210.80	210.74	0.37	-0.06
139	Myrtle St	Urban		209.19	209.39	209.32	0.13	-0.07
141	Myrtle St	Urban		209.06	209.35	209.31	0.25	-0.04
163	Myrtle St	Urban		208.63	208.99	208.65	0.02	-0.34
167	Myrtle St	Urban		208.43	208.90	208.50	0.07	-0.40
169	Myrtle St	Urban		208.35	208.92	208.34	0.04	-0.40
171	Myrtle St	Urban		208.33	208.92	208.34	0.01	-0.58
176	Myrtle St	Urban		208.05	208.49	208.04	0.07	-037
177	Myrtle St	Urban		208.02	208.32	208.04	0.02	-0.28
181	Myrtle St	Urban		207.88	208.50	207.94	0.06	-0.56
182	Myrtle St	Urban		207.66	208.23	207.84	0.08	-0.39
184	Myrtle St	Urban		207.66	208.34	207.82	0.16	-0.52
193	Myrtle St	Urban		207.50	207.79	207.51	0.01	-0.28
203	Myrtle St	Urban		206.91	207.53	206.99	0.08	-0.54

226	Myrtle St	Urban		206.00	206.37	206.05	0.05	-0.32
21A	Myrtle St	Urban		210.66	210.99	210.94	0.28	-0.05
81	Prince St	Urban		207.68	207.85	207.80	0.12	-0.05
2	Smith St	Urban		207.78	208.19	207.80	0.02	-0.39
6	Smith St	Urban		207.76	207.89	207.81	0.02	-0.08
8	Smith St	Urban		207.76	208.14	207.81	0.05	-0.33
20	Smith St	Urban		208.10	208.60	208.17	0.07	-0.43
2	Standish St	Urban		208.60	209.60	208.93	0.33	-0.67
23	Standish St	Urban		208.23	208.86	208.71	0.48	-0.15
25	Standish St	Urban		208.24	208.95	208.71	0.47	-0.24
26	Standish St	Urban		208.30	209.04	208.82	0.52	-022
30	Standish St	Urban		208.38	209.18	208.89	0.51	-0.29
31	Standish St	Urban		208.40	208.85	208.75	0.35	-0.10
34	Standish St	Urban		208.46	209.36	208.87	0.41	-0.49
36	Standish St	Urban		208.52	208.90	208.90	0.38	0.00
37	Standish St	Urban		208.60	209.35	208.81	0.21	-0.54
38	Standish St	Urban		208.53	209.01	208.91	0.38	-0.10
39	Standish St	Urban		208.54	208.98	208.82	0.28	-0.16

Myrtleford Property Listings

Gauge Height at Eurobin: 6.7 m (revised from Myrtleford Floodplain Management Study estimate of 5.9m)

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
40	Standish St	Urban Residential		208.61	209.44	208.92	0.31	-0.52
43	Standish St	Urban Residential		208.57	209.18	208.83	0.26	-0.35
45	Standish St	Urban Residential		208.75	209.14	208.86	0.11	-0.28
36544	Standish St	Urban Residential		208.75	209.13	209.00	0.25	-0.13
36575	Standish St	Urban Residential		208.85	209.33	209.03	0.18	-0.30
27-29	Standish St	Urban Residential		208.67	208.87	208.70	0.03	-0.17

Myrtleford Property Listings

Gauge Height at Eurobin: 6.2 m (revised from Myrtleford Floodplain Management Study estimate of 5.3m)

Estimated ARI: 10 Years (10% AEP)

Harrietville Gauge Level

Bright Gauge Level

Above Floor Affected Properties: 10

Below Floor Affected Properties: 71

Total Flood Affected Properties: 81

Above Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
4	King St	Commercial		208.65	208.75	208.77	0.12	0.02
91	Myrtle St	Commercial		209.78	209.78	209.85	0.07	0.07
145	Myrtle St	Commercial		209.18	209.18	209.23	0.05	0.05
190	Myrtle St	Commercial		207.50	207.61	207.78	0.28	0.17
218	Myrtle St	Commercial		205.71	205.71	206.12	0.41	0.41
49/C	Standish St	Commercial		209.03	209.08	209.18	0.15	0.10
21A	Standish St	Industrial		208.40	208.40	208.50	0.10	0.10
	Myrtle St	Public		204.26	204.26	204.27	0.01	0.01
35/1	Standish St	Urban		208.39	208.48	208.59	0.20	0.11
35/2	Standish St	Urban		208.40	208.46	208.51	0.11	0.05

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
	Lewis Ave	Commercial		209.54	209.87	209.76	0.22	-0.11
	Lewis Ave	Commercial		208.95	209.50	209.32	0.37	-0.18
143	Myrtle St	Commercial		209.05	209.39	209.21	0.16	-0.18
151	Myrtle St	Commercial		209.07	209.24	209.18	0.11	-0.06
155	Myrtle St	Commercial		208.89	209.41	208.93	0.04	-0.48
165	Myrtle St	Commercial		208.30	208.62	208.49	0.19	-0.13
235	Myrtle St	Commercial		205.92	206.11	206.05	0.13	-0.06
264	Myrtle St	Commercial		205.62	205.92	205.84	0.22	-0.08
63	Standish St	Commercial		208.71	209.15	208.74	0.03	-0.41
1	Willow Gv	Commercial		210.46	211.08	210.76	0.30	-0.32
21	Maude St	Industrial		209.38	209.66	209.42	0.04	-0.24
46	Standish St	Industrial		209.14	209.19	209.19	0.05	0.00
48	Standish St	Industrial		209.11	209.19	209.19	0.08	0.00
	Lewis Ave	Public		209.78	210.04	209.91	0.13	-0.13
	Lewis Ave	Public		209.13	209.62	209.45	0.32	-0.17
	Clancy Ln	Rural		208.25	208.43	208.41	0.16	-0.02
	Clancy Ln	Rural		208.31	208.91	208.41	0.10	-0.50
	Clancy Ln	Rural		206.94	207.64	206.97	0.03	-0.67
7	Lewis Ave	Rural		209.74	210.34	209.92	0.18	-0.42
	Merriang	Rural		204.04	204.87	204.15	0.11	-0.72
88	Ovens Hwy	Rural		212.70	213.61	213.38	0.68	-0.23
126	Ovens Hwy	Rural		214.37	214.44	214.41	0.04	-0.03

13	Standish St	Rural		208.78	208.95	208.94	0.16	-0.01
16	Standish St	Rural		208.17	208.58	208.41	0.27	-0.17
17	Standish St	Rural		208.89	209.44	208.93	0.04	-0.51
Lot 10	Whalleys	Rural		210.02	210.55	210.31	0.29	-0.24
RMB	Whalleys	Rural		209.54	210.08	209.83	0.29	-0.25
RMB	Whalleys	Rural		213.43	213.94	213.50	0.07	-0.44
7	King St	Urban		208.90	209.46	209.06	0.16	-0.40
9	King St	Urban		208.76	209.34	209.06	0.30	-0.28
13	King St	Urban		208.62	208.89	208.82	0.20	-0.07
15	King St	Urban		208.55	209.11	208.69	0.14	-0.42
17	King St	Urban		208.51	208.82	208.59	0.08	-0.23
19	King St	Urban		208.40	208.69	208.49	0.09	-0.20
29	Lewis Ave	Urban Residential		209.44	210.15	209.63	0.19	-052

Below Floor Listing

Street No	Street Name	Type	Description	Ground Level (m AHD)	Floor Level (m AHD)	Flood Elevation (m AHD)	Flood Depth Above Ground	Flood Depth Above Floor
31	Lewis Ave	Urban		209.40	210.02	209.67	0.27	-0.35
40	Lewis Ave	Urban		209.11	209.86	209.35	0.24	-0.51
47	Lewis Ave	Urban		209.04	209.62	209.05	0.01	-0.57
52	Lewis Ave	Urban		208.50	208.87	208.59	0.09	-0.28
69	Lewis Ave	Urban		208.73	209.18	208.94	0.21	-0.24
5	Maude St	Urban		208.55	209.20	208.87	0.32	-0.33
14	Maude St	Urban		208.89	209.20	209.14	0.25	-0.06
16	Maude St	Urban		208.98	209.29	209.24	0.26	-0.05
17	Maude St	Urban		209.21	209.80	209.36	0.15	-0.44
139	Myrtle St	Urban		209.19	209.39	209.27	0.08	-0.12
141	Myrtle St	Urban		209.06	209.35	209.26	0.20	-0.09
163	Myrtle St	Urban		208.63	208.99	208.64	0.01	-0.35
167	Myrtle St	Urban		208.43	208.90	208.49	0.06	-0.41
169	Myrtle St	Urban		208.35	208.79	208.38	0.03	-0.41
181	Myrtle St	Urban		207.88	208.50	207.89	0.01	-0.61
182	Myrtle St	Urban		207.76	208.23	207.80	0.04	-0.43
184	Myrtle St	Urban		207.66	208.34	207.79	0.13	-0.55
203	Myrtle St	Urban		206.91	207.53	206.96	0.05	-0.57
226	Myrtle St	Urban		206.00	206.37	206.04	0.04	-0.33
81	Prince St	Urban		207.68	207.85	207.78	0.10	-0.07
6	Smith St	Urban		207.76	207.89	207.78	0.02	-0.11
8	Smith St	Urban		207.76	208.14	207.78	0.02	-0.36

20	Smith St	Urban		208.10	208.60	208.13	0.03	-0.47
23	Standish St	Urban		208.23	208.86	208.52	0.29	-0.34
25	Standish St	Urban		208.24	208.95	208.52	0.28	-0.43
26	Standish St	Urban		208.30	209.04	208.58	0.28	-0.46
30	Standish St	Urban		208.38	209.18	208.63	0.25	-055
31	Standish St	Urban		208.40	208.85	208.55	0.15	-0.30
34	Standish St	Urban		208.46	209.36	208.62	0.16	-0.74
36	Standish St	Urban		208.52	208.90	208.66	0.14	-0.24
38	Standish St	Urban		208.53	209.01	208.68	0.15	-0.33
39	Standish St	Urban		208.54	208.98	208.61	0.07	-0.37
40	Standish St	Urban		208.61	209.44	208.69	0.08	-0.75
43	Standish St	Urban		208.57	209.18	208.62	0.05	-0.22
36544	Standish St	Urban		208.75	209.13	208.91	0.16	-022
36575	Standish St	Urban		208.85	209.33	208.91	0.06	-0.42