Indigo Shire

FLOOD & STORM EMERGENCY PLAN

A Sub-Plan of the Municipal Emergency Management Plan

For Indigo Shire
and
VICSES Rutherglen, Chiltern, Beechworth & Yackandandah Units

Version 1.0, August 2023

INDIGO 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, DEECA, 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

Operations Officer – Emergency Management (North East)
Victoria State Emergency Service - Hume Region
64 Sydney Road, Benalla, Victoria 3672

Phone: (03) 9256 9650
Email: ust.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
V0.1	May 2023	C. Sexton	**Transfer of old MFEP into new MFSEP template**
V0.2	Aug 2023	C. Sexton	**Plan Re-write with updated Chiltern Flood Study information 2021, input of unit intelligence captured in recent events and input of VICSES unit, Indigo Shire and NECMA into Appendix C's.**
V1.0	Aug 2023	C Sexton	**MEMPC Approval and administrative changes**

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

List of Abbreviations & Acronyms

The following abbreviations and acronyms are used in the Plan			
AAR	After Action Review	**IC**	Incident Controller
ABC	Australian Broadcasting Commission	**ICC**	Incident Control Centre
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
AIIMS	Australasian Inter-service Incident Management System	**IWO**	Information & Warnings Officer
ARI	Average Recurrence Interval	**JSOP**	Joint Standard Operations Procedure
AV	Ambulance Victoria	**LSIO**	Land Subject to Inundation Overlay
BoM	Bureau of Meteorology	**MEMO**	Municipal Emergency Management Officer
CERA	Community Emergency Risk Assessment	**MEMP**	Municipal Emergency Management Plan
CFA	Country Fire Authority	**MEMPC**	Municipal Emergency Management Planning Committee
CMA	Catchment Management Authority	**MERC**	Municipal Emergency Response Coordinator
RERC	Regional Emergency Response Coordinator	**MFSEP**	Municipal Flood & Strom Emergency Plan
DFFH	Department of Families, Fairness and Housing	**MFSEPC**	Municipal Flood & Strom Emergency Planning Committee
DEDJTR	Department of Economic Development, Jobs, Transport, Resources	**MRM**	Municipal Recovery Manager
DEECA	Department of Energy, Environment and Climate Action	**PIO**	Public Information officer
DRA	Dynamic Risk Assessment	**PMF**	Probable Maximum Flood
EA	Emergency Alert	**PV**	Parks Victoria
EMCOP	Emergency Management Common Operating Picture	**RAC**	Regional Agency Commander
EMLO	Emergency Management Liaison Officer	**RCC**	Regional Control Centre
EMT	Emergency Management Team	**RDO**	Regional Duty Officer
EMV	Emergency management Victoria	**RFEP**	Regional Flood Emergency Plan
ERC	Emergency Relief Centre	**RRV**	Regional Roads Victoria
ESO	Emergency Service Organisations	**SAC**	State Agency Commander
FO	Floodway Overlay	**SBO**	Special Building Overlay
FRV	Fire Rescue Victoria	**SCC**	State Control Centre
IIA	Initial Impact Assessment	**SDO**	State Duty Officer
SEMP	State Emergency Management Plan	**VICPOL**	Victoria Police

SEWS	Standard Emergency Warning Signal	**VICSES**	Victoria State Emergency Service
SOP	Standard Operating Procedure		

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 Indigo Shire Municipal Emergency Planning Committee (MEMPC) –pursuant to Section 20 of the Emergency Management Act 1986 (as amended).

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

- *Indigo Shire MEMPC community representatives*

This MFSEP is a sub plan to the Indigo 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 Eastern Region Assistant Chief Officer - Unit Support, Emergency Management, Community Engagement

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

Approval

.....

Cameron Rothnie Date 13/9/2023

VICSES Eastern Region Assistant Chief Officer - Unit Support, Emergency Management, Community Engagement

Endorsement

Ian Ellett ... Date 1/9/2023.....

Chair – Municipal Emergency Management Planning Committee

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

- VICSES (i.e. Unit Controller & Operations Officer – Emergency Management) **(Chair)**,
- Indigo 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 Energy, Environment and Climate Action (DEECA) as required,
- 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 Storm engagement initiatives and websites (VICSES and the Municipality) upon formal adoption by VICSES and the Indigo Shire MEMPC.

VICSES with the support of Indigo 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 Flood Information.

2.2 Structural Flood Mitigation Measures

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

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

- Levees (location, owner, condition, and maintenance responsibility and protection levels).
- Retarding Basins (location, owner, condition, maintenance responsibility and protection levels) etc. 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 of meteorology issued Flood Watch, Flood Warning and Storm Warnings products are contained within the SEMP Sub Plan – Flood (www.ses.vic.gov.au/em-sector/vicses-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.

Specific details of arrangements to capture local knowledge are provided in **Appendix G**

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 under DATA-OBSERVATIONS-SNAP SEND SOLVE.

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 Hume 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/Storm.

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 Indigo 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 Indigo 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 Indigo Shire MEMP.

Incident Level	Location	ICC Location	Facility owner	Key contact
2 (Storm)	VICSES Hume Regional Office	64 Sydney Road, Benalla	VICSES	Benalla SES ICC 9256 7799 or RAC
2 & 3	CFA District 23 Headquarters	1 Ely Street, Wangaratta	CFA	Wangaratta ICC 5720 2300 or CFA duty officer
2 & 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
Yackandandah DCP – rear 5A High Street, Yackandandah, VIC 3749 (02) 6027 1911	Chiltern Unit LHQ - Anderson St, Chiltern VIC 3683 (03) 5726 1555
	Rutherglen Unit LHQ – Murphy St, Rutherglen VIC 3685 (02) 6032 9988
	Beechworth Unit LHQ – Radcliffe Rd, Beechworth, VIC 3747 (03) 5728 2283
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 Hume 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 Indigo 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 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 Indigo 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 Indigo Shire to assist with rescue operations:

Boat	**Location**
NIL Vessels in Indigo Shire	
Boat 574 – Achilles SG-140	VICSES Wangaratta Unit
Boat 507 – Stabicraft 1410 Frontier	VICSES Wodonga Unit
Boat 583 – Gemini A500	VICSES Wodonga Unit
Boat 521 – Savage 470 Jabiru	VICSES Yarrawonga Unit
Boat 595 – Polycraft 5.3	VICSES Yarrawonga 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 Indigo 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 Indigo 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, Indigo 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 Indigo Shire.

3.12 Road Closures

Indigo Shire Council 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. Indigo 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 Indigo 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 Indigo 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 Indigo 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 Indigo 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 Indigo Shire is detailed in the Indigo 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 Indigo 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 Indigo 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 Indigo Shire MEMP.

Appendix A: Overview of flood threats for Indigo Shire

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

- C1 – River Systems Overview & Schematics
- C2 – Chiltern Flood Emergency Plan
- C3 – Kiewa River Flood Emergency Plan Incl Mongans Bridge (Alpine Shire) & Bandiana (City of Wodonga)
- C4 – Murray River Flood Emergency Plan

General

Indigo Shire is 270 km north-east of Melbourne, bordering the Murray River and Lake Hume, Australian Alps and the municipalities of Wodonga, Wangaratta, Towong, Alpine and Moira. It is rural in nature with supporting services in small towns.

The shire's economy is based on value-adding to local primary produce of the region, especially milk, cereals and grapes, and providing services to people, including tourism.

Tourism is very important to the Shire, the Rutherglen wine producing area and the historic townships of Beechworth, Chiltern and Yackandandah attract thousands of visitors. The main industries include flour mill and cereal food manufacturing, agriculture, other food manufacturing, beverage and malt manufacturing. Residents also commute to Wodonga and Wangaratta for employment.

Significant bodies of water within or bordering the Shire are, the Murray River forming part of the northern boundary, the Hume Dam situated adjacent to Tangambalanga/ Huon areas to the east of the Shire, the Kiewa River passes through Kergunyah and Kiewa townships also to the east of the Shire.

RIVERINE FLOODING

Throughout the Kiewa and Murray Catchments there are a number of areas that receive rural flood risk during heavy rainfall events. These areas are not highly populated, but many rural properties are susceptible to isolation and or agricultural land inundation.

Low lying areas along the Kiewa River Valley in Indigo Shire which include the localities of , Kergunyah, Tangambalanga Kiewa, and Bandiana have small above floor flooding risk caused by riverine flooding.

FLASH FLOODING

Indigo Shire’s undulating, and hilly topography presents many small waterways in the Murray and Kiewa River catchments that are susceptible to flash flooding. The upper catchments of the Black Dog, Indigo and Yackandandah Creeks are prone to flash flooding events with rapid stream rises which can damage and close roads and bridges and isolate properties and small communities. In January 2022 a significant storm event slowed over northern Victoria with significant individual rainfall events at the border of NSW and Victoria near Wodonga, Rutherglen & Chiltern. Heavy rainfall with rates of 100mm+/hr occurred in the Rutherglen and Chiltern areas, which are within the Indigo Shire. During this event Rutherglen experienced anecdotal rainfall totals of 170mm + in the area and rain rates of 100mm+/hr with Chiltern 70-90mm+/hr rainfall rates. These events equate to approx. 0.05% Annual Exceedance Probability (AEP) or 1/2000 year event in Rutherglen with Chiltern receiving a

0.01-0.05% AEP or 1/1000-2000 year event. The storm resulted in a large volume of rainfall in a short period of time, causing unpredicted flash flooding. This flash flooding resulted in numerous homes becoming inundated with water and resulting in the self-evacuation of residents.

NON RIVERINE FLOODING (Overland)

Localised flooding does occur on a frequent basis, and appears to be an increasing phenomenon, such as experienced in the 2022 storm event in Chiltern and Rutherglen and 2018 flood event, north of Wangaratta and along Federation Way in an area roughly bounded by Boralma, Bowser and Boorhaman. The catchment for this area is in the Springhurst hills, form partlyt I Indigo Shire and Flow into Wangaratta Rural City east of the Hume Freeway. Whilst there is no major stream in the area the innumerable smaller valleys and relatively cleared country generate considerable runoff. Once west of the Melbourne - Sydney Railway track the extremely flat riverine plains slow the progression of runoff causing a number of small drains and depressions to rapidly fill causing overland floodwater to encroach onto properties and houses that very rarely see flooding.

Heavy Rainfall of 268mm in approx. 6 hours was recorded in Eldorado which created a flash flood event and subsequent over land flood to the Hume Freeway North of Wangaratta. Several rescues from vehicles were conducted and some over floor flooding of approx. 40 properties and damage to 4 bridges occurred. Access through Indigo Shire via the Hume Freeway and Federation way was cut in the South.

Description of Major Waterways and Drains

The Murray River

The Murray River forms the northern border of Indigo Shire and flows from east to west past a number of townships including Wodonga (upstream of Indigo Shire), Howlong and Corowa (NSW) and Wahgunyah (VIC) downstream to where the Ovens River joins the Murray River near Bundalong (Moira Shire).

The Murray River has large areas of floodplain within the municipality that are inundated on a regular basis. Inundation through this area can be influenced significantly by releases from Hume Dam.

Steam-flow gauges are located at Corowa (409002) and further upstream at Doctors Point (409017) near Wodonga. Hume Dam, located approximately 45 km upstream of Indigo Shire, also has gauges recording both storage level and flow data.

The Kiewa River

The mid and lower catchment of the Kiewa River is located within the Indigo Shire downstream of Gundowring while the upper catchments and headwaters are within Alpine Shire and the Alpine National Park. The small townships of Kiewa and Tangambalanga lie on the Kiewa River within the Indigo Shire area while the Kiewa River then flows through Bandiana in the City of Wodonga before it enters the Murray River between Wodonga and Hume Dam.

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.

Three fully telemetered stream-flow gauges are located on the Kiewa River at Mongan's Bridge, Kiewa and Bandiana. All three gauges have flood class levels and are utilised by the Bureau of Meteorology for flood forecasting. An additional telemetered gauge also exists on Yackandandah Creek at Yackandandah however it has no flood class levels

Yackandandah Creek

Yackandandah Creek is a major tributary of the Kiewa River and rises in the hills to the south-west of Yackandandah. It flows through Yackandandah township and then into the Kiewa River approximately 6 km downstream of Tangambalanga. A telemetered gauge also exists on Yackandandah Creek at Yackandandah however it has no flood class levels

Black Dog Creek

Black Dog Creek rises in the hills to the south of Chiltern in the Chiltern-Mt Pilot National Park. It flows from south to north through the western end of Chiltern township. To the south-west of Chiltern it flows under the Hume Freeway and then under the railway line and McKay street further to the north. The catchment area of Black Dog Creek upstream of Chiltern is approximately 179 km^2. Further downstream Black Dog Creek goes on to flow into the Murray River 14 km downstream of Corowa.

Several small tributaries flow from the hills to the east, north-east and north of Chiltern and then through the township. The largest of these is broadly referred to as the northern streamlines in this document and the Chiltern Flood Study. The northern streamline flows from east to west to the north of main street adjacent to High Street and Crawford Street.

No river gauges exist on Black Dog Creek or the smaller tributaries which flow through Chiltern. Due to the relatively small catchments involved, flooding in Chiltern typically occurs within 1 to 3 hours of the start of the rainfall event.

Indigo Creek

Indigo Creek rises in the hills to the north of Yackandandah, and flows to the north-west, through the township of Barnawartha. It goes on to flow into the Murray River 10 km upstream of Howlong.

A stream-flow gauge exists on Indigo Creek at Creamery Bridge (403248), located immediately upstream of its outlet into the Murray River

Historic Floods

Year	Waterway/ Location	Description
Oct/Nov 2022	Murray River	November 2022 observed the largest flood on the Murray River at Corowa since 1974/75. Inundation of the Murray River flood plain, reserves, camping and caravan areas was impacted for many months. With flooding and wet weather remaining over summer, the risk of mosquito born health concerns including Murray Valley encephalitis virus Japanese encephalitis virus (JEV) which was reported for the first time in our history in northern Victoria
Jan 2022	Rutherglen & Chiltern	A storm event slowed over northern Victoria with significant individual rainfall events at the border of NSW and Victoria near Rutherglen & Chiltern. Heavy rainfall with rates of 100mm+/hr occurred in the Rutherglen and Chiltern areas. Anecdotal rainfall totals of 170mm + were recorded also. These events equate to approx. 0.05% Annual Exceedance Probability (AEP) or 1/2000 year event, VICSES received 70 calls in 30 mins and there were many homes in Rutherglen and Chiltern that received over flood flooding with shire roads damaged including the Gooramadda road being washed away.
Feb 2012	Indigo Shire	Flooding across northern Victoria from heavy rainfall caused approx. $1.8M damage to infrastructure and roads in Indigo Shire with some roads and bridges destroyed during the event. Water was sthrough most streets in Chiltern including most of the Mian Street.
Dec 2010	Indigo Shire	Over 300 mm of rain across Northern Victoria resulted in wide spread flooding in Indigo Shire. Flooding caused damage to infrastructure and roads in Indigo Shire with some roads and bridges
Nov 2005	Indigo Shire Chiltern	Storms across Northern Victoria resulted in approx 2% AEP flood event in Chiltern township. Rain rates of 37mm/hr were recorded in Rutherglen and resulted in 50 flood related RFA's. 15 properties in Chiltern were threatened and resulted in sandbagging and the evacuation of several families. The Hume Freeway was cut and the Springhurst-Wahgunyah Rd was damaged. Other Indigo shire towns including Yackandandah received flash flooding

Dam Spilling/ Failure

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

DEECA 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 Indigo Shire.

The following Dam Safety supporting documentation is available from VICSES Hume Region Office, Benalla:

Murray River Catchment				
Location	**Owner**	**Dam Height**	**Dam Capacity**	**Comments**
Hume Dam	Goulburn Murray Water	51m	3,005,157mL	Hume Dam is located immediately downstream of the Murray River and Mitta Mitta River confluence, 16 kilometres east of Albury-Wodonga and is the major operating storage of the River Murray system
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
Kerferd Dam	NE Water	11m	900 mL	The Kerferd dam is the main water supply storage for nearby Beechworth and is fed by the unregulated Nine Mile and Frenchmans creeks. The Kerferd Dam is located approximately 5 kilometres upstream of Beechworth. There are no significant dams or reservoirs upstream of Lake Kerferd.
Lake Sambell	Indigo Shire	NK	NK	It was originally the site of the Rocky Mountain Mining Company, an open cut sluice operation during the mid 1800s and the early 1900s, during the town's gold rush era. In the 1920s the area was created into a recreational lake and reserve for the residents and visitors of Beechworth

Flood Mitigation

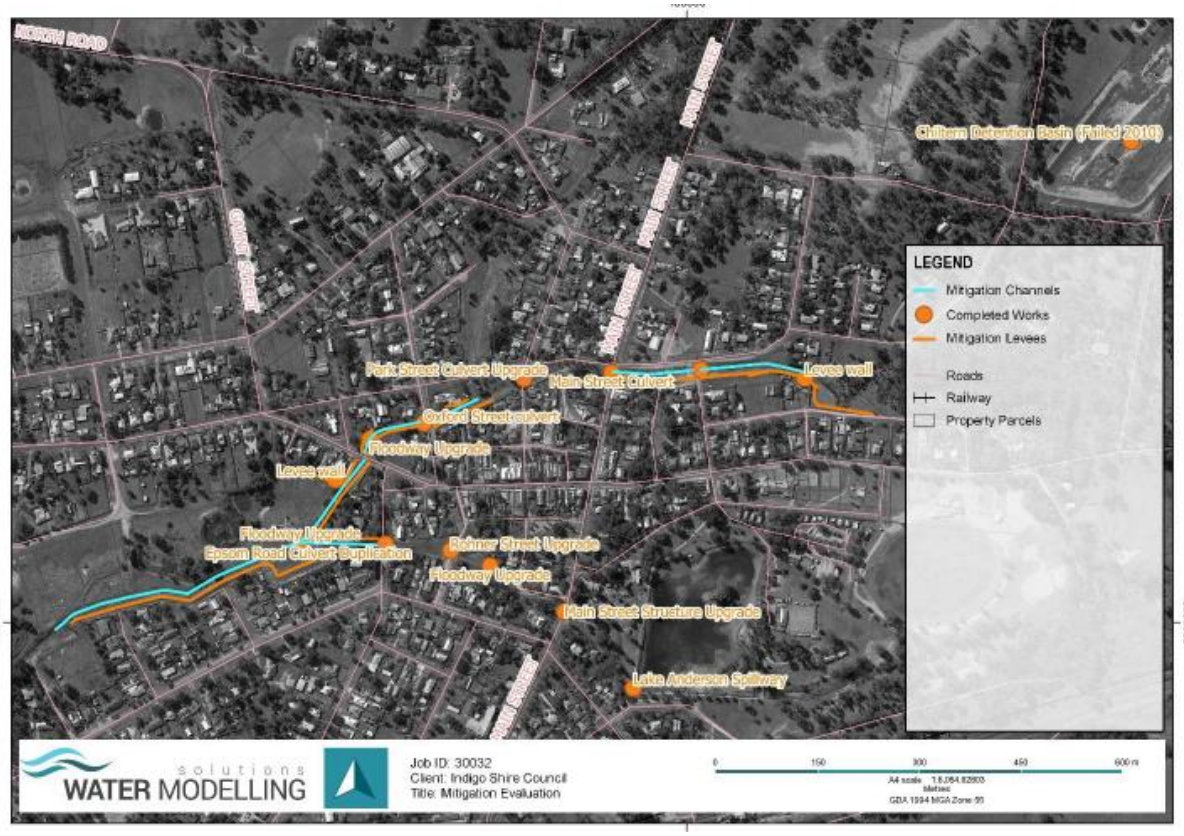
Mitigation	Description	Protection	Comments
Hume Dam			
Chiltern Township flood mitigation works	Upgraded culverts, levees, spillways etc	2% AEP rainfall event Approx 2005 Rainfall event	Details below and in Appendix C1 Concrete Levee System on northern branch through Chiltern into Black Dog Creek. Levee system runs parallel with High Steet
Lake Sambell			
Lake Kerford			

Chiltern Township flood mitigation works

The locations of these works are shown in image below.

The 2021 Chiltern Flood Mitigation Evaluation – Study Report sets out the summary of constructed mitigation works below.

- Construction of an online retention basin adjacent to Suffolk Street upstream of North Road to retard flows from the northern tributary and reduce breakout flows in the vicinity of Kilgour Street.
- Channel upgrade works and bund walls at Crawford Street upstream of Main Street to reduce flood extent and incidence of breakout flows.
- Channel upgrade works between Park Street / Martins Lane and Chiltern-Rutherglen Road to reduce flood extents.
- Channel upgrade works and bunding at Chiltern-Rutherglen Road to Dickson Court to reduce flood extents.
- Channel upgrade works at Epsom Road.
- Culvert upgrades at Kilgour Street and Park Street.
- Channel upgrade works at Epsom Road.
- Culvert upgrades at Kilgour Street and Park Street.



Appendix A1: Overview of storm threats for Indigo Shire

Overview

The Indigo 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 that all impact the neighbouring Indigo Shire.

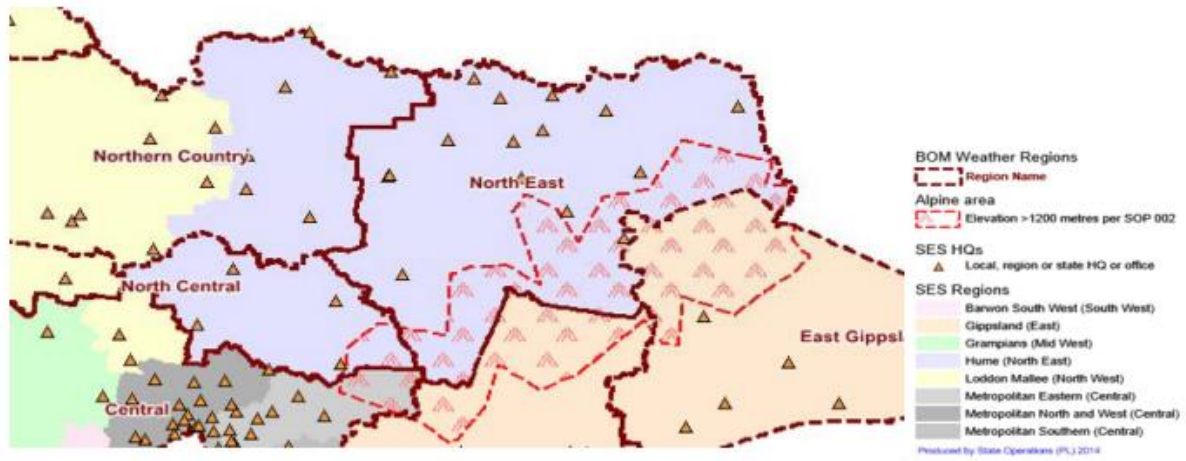
BoM's storm archive (www.bom.gov.au/australia/stormarchive/) and VICSES' records of recent events show the North East (Hume) Region to be very susceptible to severe storms, including tornadoes, large hail, flash flooding, severe winds and lightning. Though there are few dust storm events that have specifically 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
Jan 2022	Chiltern & Rutherglen	During a 3 year La Nina weather pattern a significant storm event slowed over northern Victoria with significant individual rainfall events at Benalla and at the border of NSW and Victoria near Wodonga, Rutherglen & Chiltern. Heavy rainfall with rates of 100mm+/hr occurred in the Rutherglen and Chiltern areas. During this event Rutherglen experienced anecdotal rainfall totals of 170mm + in the area. These events equate to approx. 0.05% Annual Exceedance Probability (AEP) or 1/2000-year event. 60 Flood entering Premises, building damage and Rescue Calls in Rutherglen and 14 Flood and Building damage call in Chiltern occurred in approx. 2 hrs. Significant flooding to homes, watercourses and significant damage to roads was experienced.
Dec 2018	Flash Flooding North of Wangaratta, Impacting the Hume Freeway and Federation Way	Heavy Rainfall of 268mm in approx. 6 hours was recorded in Eldorado which created a flash flood event and subsequent over land flood to the Hume Freeway North of Wangaratta. Several rescues from vehicles were conducted and some over floor flooding of approx. Estimated to be a 1/2000year rainfall event.
Nov 2005	Indigo Shire Chiltern	Storms across Northern Victoria resulted in approx 2% AEP flood event in Chiltern township. Rain rates of 37mm/hr were recorded in Rutherglen and resulted in 50 flood related RFA's. 15 properties in Chiltern were threatened and resulted in sandbagging and the evacuation of several families. The Hume Freeway was cut and the Springhurst-Wahgunyah Rd was damaged. Other Indigo shire towns including Yackandandah received flash flooding

VICSES Requests for Assistance – Severe Weather – Indigo 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 July 2013 and June 2023 in relation to severe weather and storm events across Indigo Shire.

VICSES Storm, Flood & Rescue Requests for Assistance July 2013 - June 2023 - Indigo Shire (All Units)											
RFA Group	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Grand total
Assist Agency	9	13	15	14	12	9	24	19	24	38	**221**
Building damage	12	13	11	19	10	16	8	13	25	16	**269**
Flood	1	1	3	26	17	35	8	8	84	121	**578**
Other	9	14	12	27	29	11	9	9	19	27	**276**
Rescue	8	28	24	18	19	15	22	11	20	28	**266**
Tree down	152	133	139	318	115	161	211	205	261	312	**2,349**
Grand total	**191**	**202**	**204**	**422**	**202**	**247**	**282**	**265**	**433**	**542**	**3,959**

The Table below is a breakdown of requests for assistance (RFA) by type during the period July 2013 and June 2023 in relation to severe weather and storm events across individual Units.

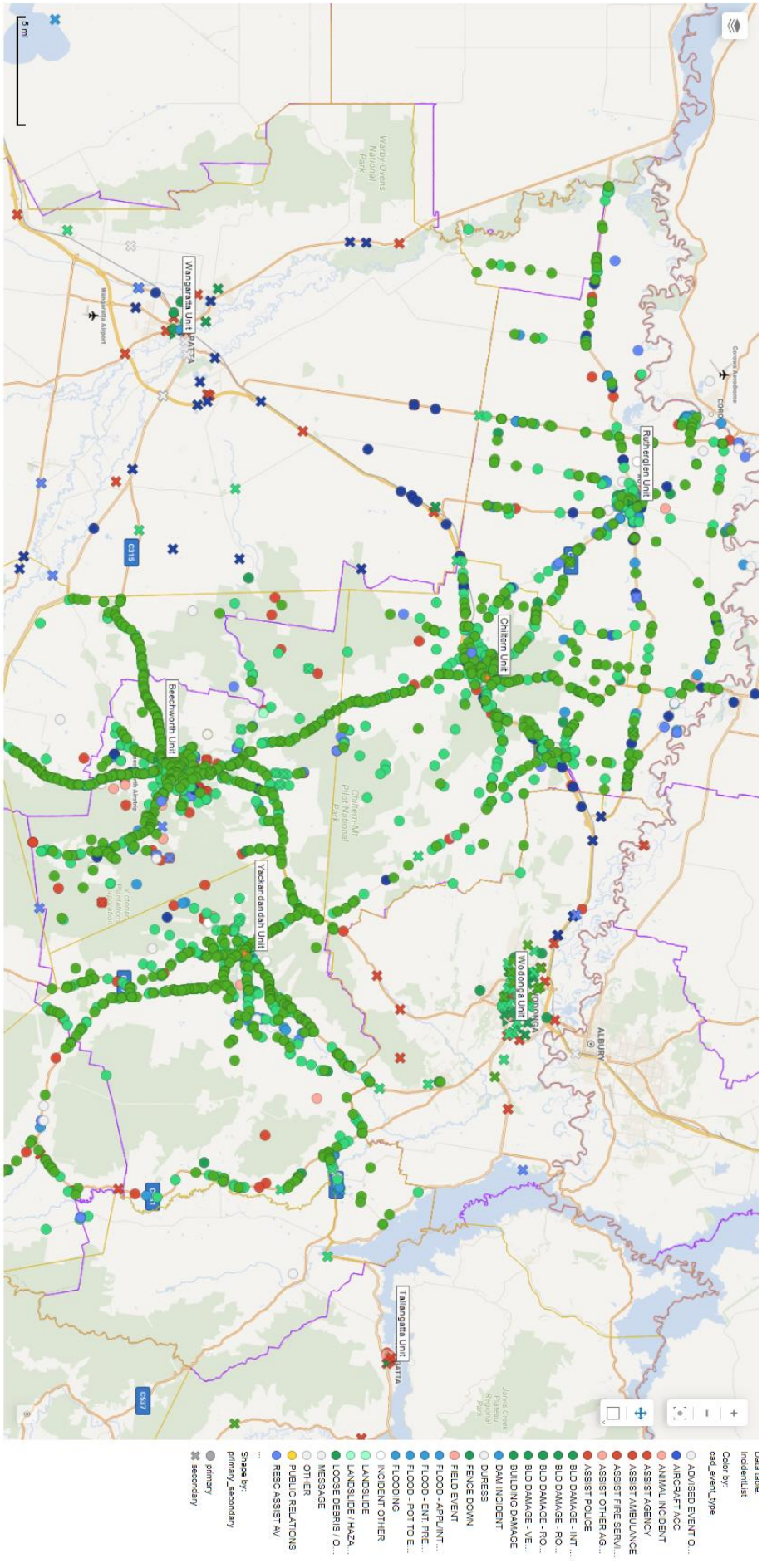
VICSES Storm, Flood & Rescue Requests for Assistance July 2013 - June 2023 - Chiltern Unit											
RFA Group	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Grand total
Assist Agency	3	2	9	1	3	2	6	7	2	4	**39**
Building damage	1	3	2	3	2	1	2		10	5	**29**
Flood		1	1	5	2	1	3	1	23	28	**65**
Other	2	2	9	9	8	3	3	4	5	4	**49**
Rescue		1		2	1	1	1			3	**9**
Tree down	36	32	27	38	21	28	60	39	81	74	**436**
Grand total	**42**	**41**	**48**	**58**	**37**	**36**	**75**	**51**	**121**	**118**	**627**

VICSES Storm, Flood & Rescue Requests for Assistance July 2013 - June 2023 - Rutherglen Unit											
RFA Group	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Grand total
Assist Agency		1	1	3	4	3	3	3	3	14	**35**
Building damage	3	4	2	2		3	1	9	7	5	**36**
Flood	1		1	7		1	1	3	52	40	**106**
Other	4	1	2	5	2	1	1	1	8	12	**37**
Rescue	4	17	17	9	13	9	16	7	9	17	**118**
Tree down	27	22	21	27	21	27	26	39	28	32	**270**
Grand total	**39**	**45**	**44**	**53**	**40**	**44**	**48**	**62**	**107**	**120**	**602**

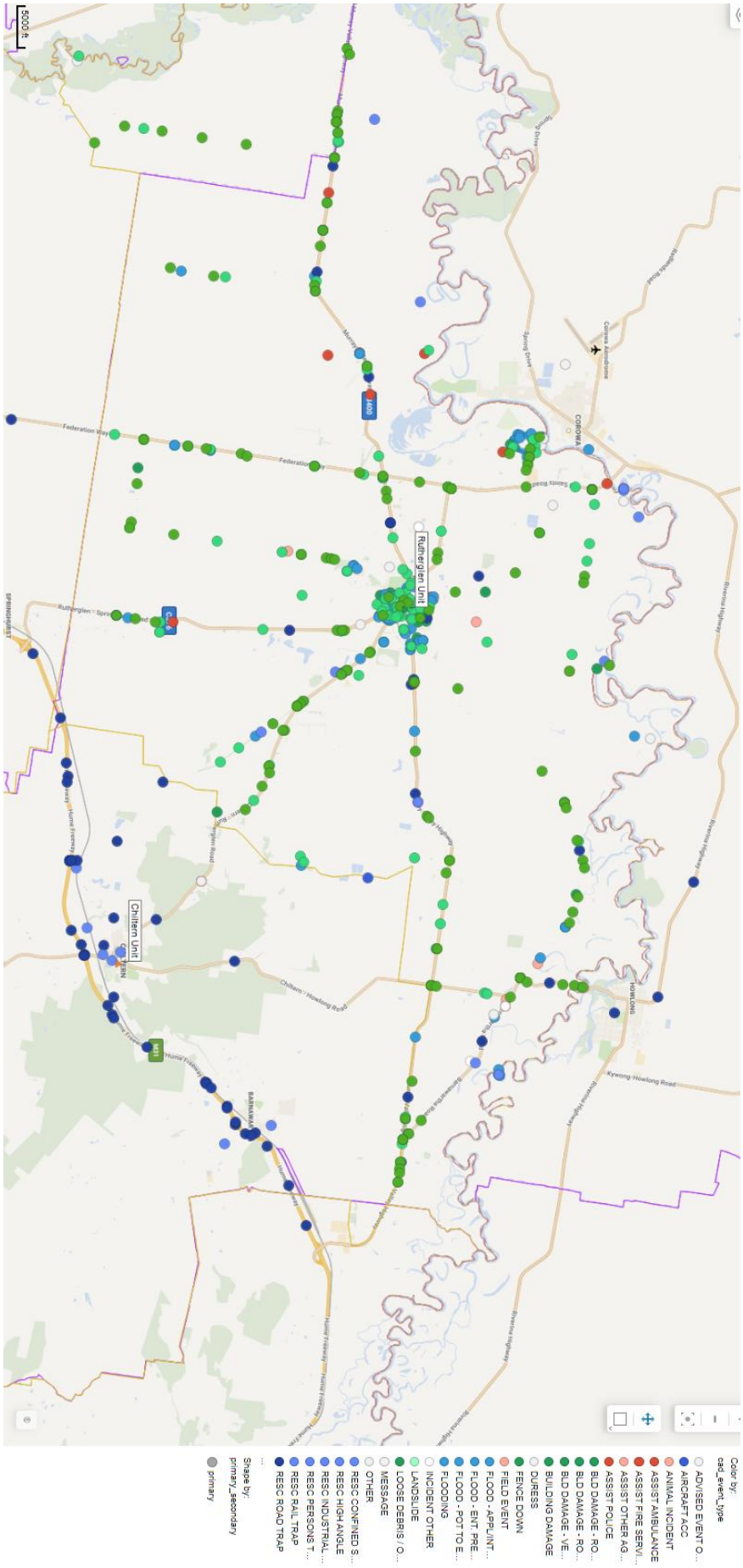
VICSES Storm, Flood & Rescue Requests for Assistance July 2013 - June 2023 - Beechworth Unit											
RFA Group	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Grand total
Assist Agency	3	8	4	9	3	2	10	6	11	14	**70**
Building damage	7	4	5	6	6	8	3	3	3	5	**50**
Flood			1	4	13	32	3	2	7	43	**105**
Other	2	6	1	7	12	3	5	3	3	6	**48**
Rescue	4	8	7	7	4	4	4	4	10	6	**58**
Tree down	40	38	40	133	37	50	49	85	84	116	**672**
Grand total	**56**	**64**	**58**	**166**	**75**	**99**	**74**	**103**	**118**	**190**	**1,003**

VICSES Storm, Flood & Rescue Requests for Assistance July 2013 - June 2023 - Yackandandah Unit											
RFA Group	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Grand total
Assist Agency	3	2	1	1	2	2	5	3	8	6	**33**
Building damage	1	2	2	8	2	4	2	1	5	1	**28**
Flood				10	2	1	1	2	2	10	**28**
Other	1	5		6	7	4		1	3	5	**32**
Rescue		2			1	1	1		1	2	**8**
Tree down	49	41	51	120	36	56	76	42	68	90	**629**
Grand total	**54**	**52**	**54**	**145**	**50**	**68**	**85**	**49**	**87**	**114**	**758**

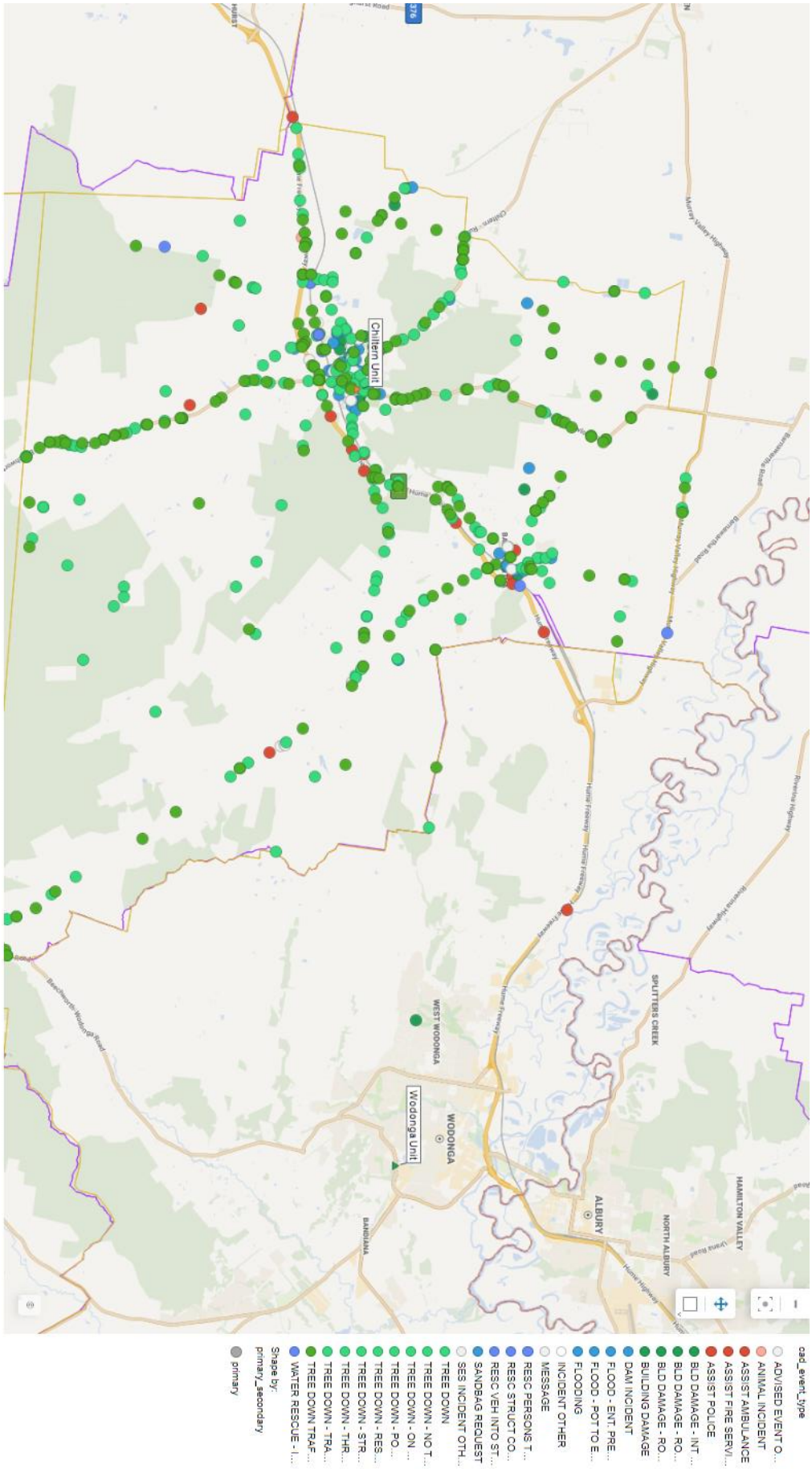
VICSES Severe Weather Primary Requests for Assistance Mapping – Indigo Shire – Jan 2009- Jun 2023



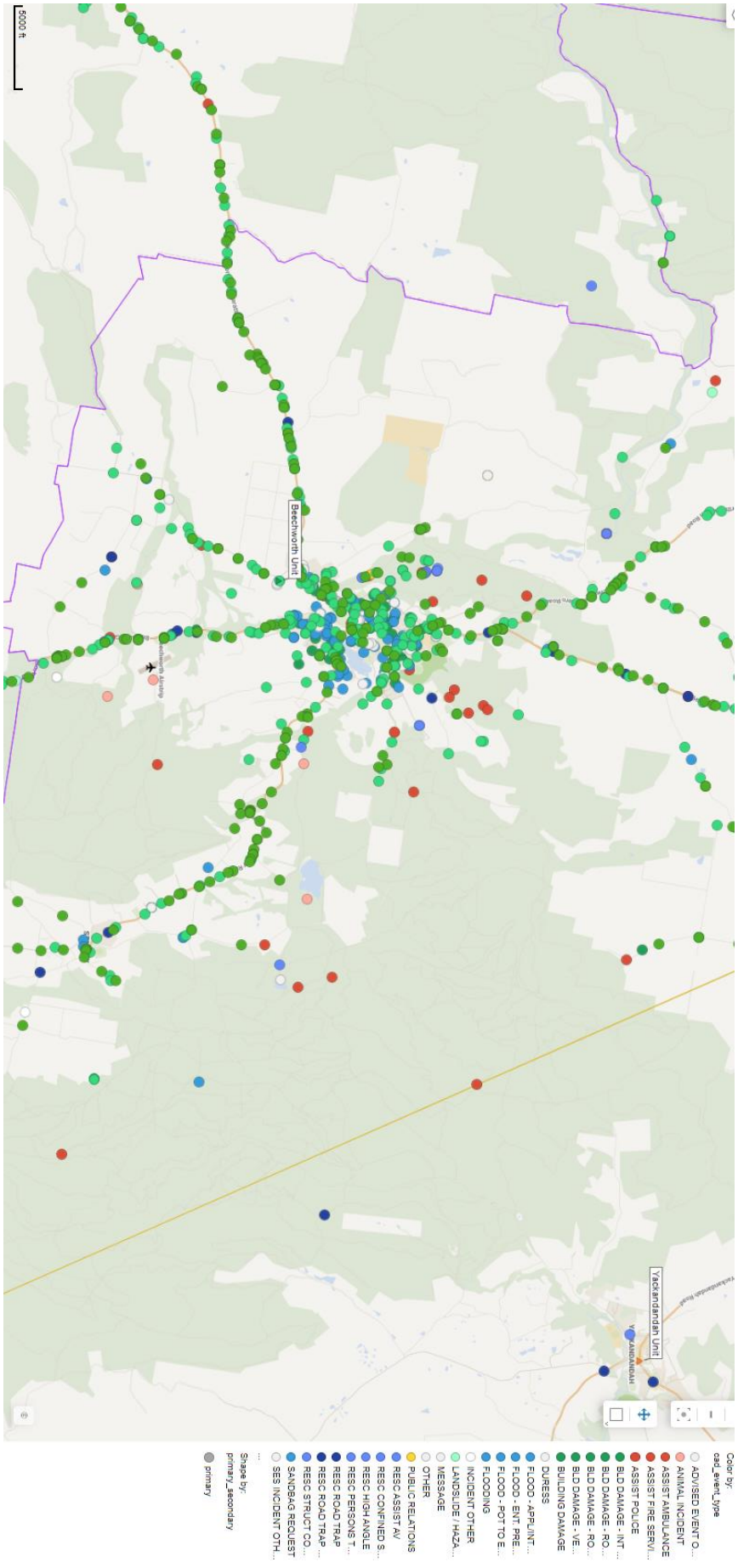
VICSES Severe Weather Primary Requests for Assistance Mapping – Rutherglen Unit – Jan 2009- Jun 2023



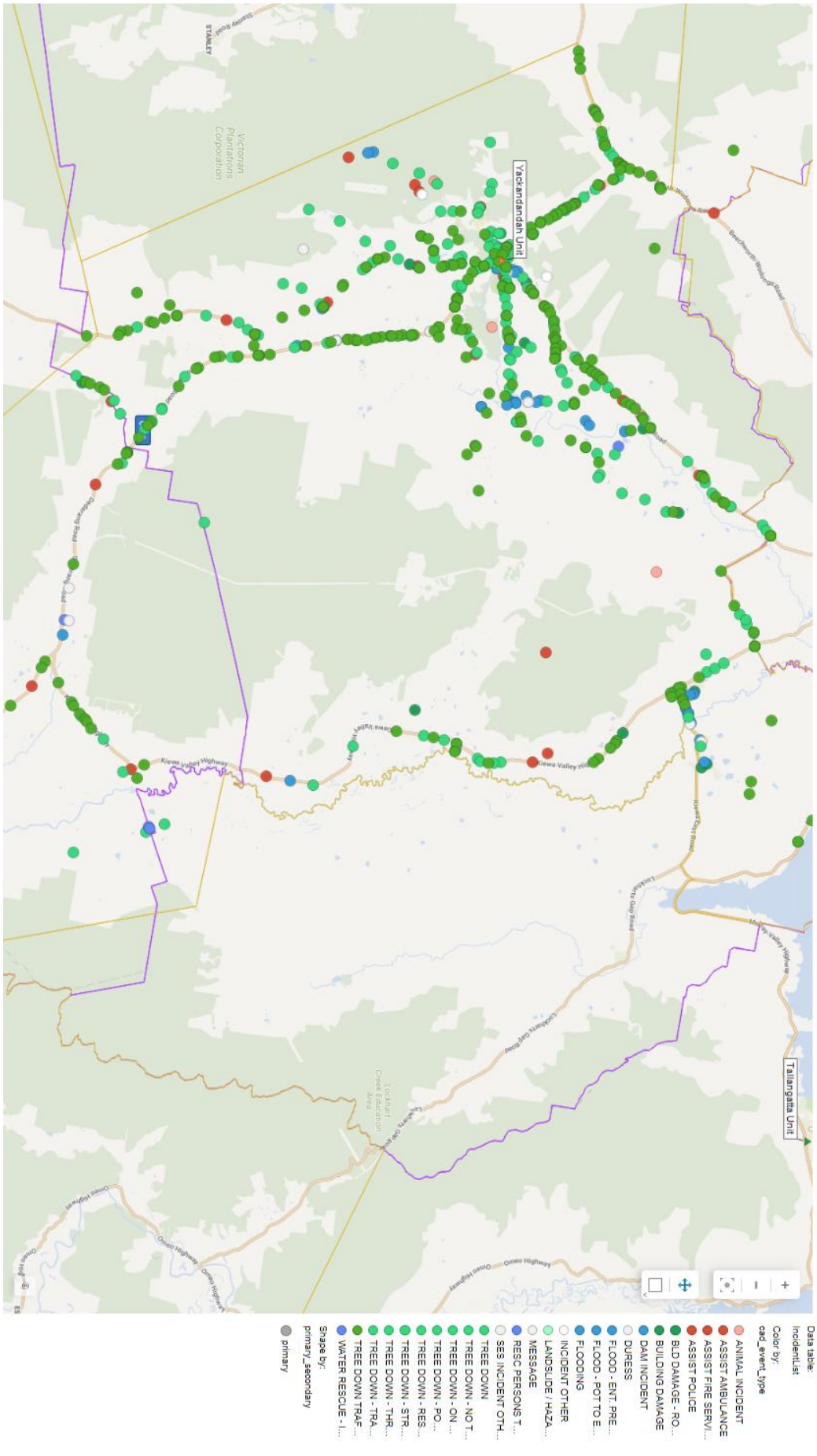
VICSES Severe Weather Primary Requests for Assistance Mapping – Chiltern Unit – Jan 2009- Jun 2023



VICSES Severe Weather Primary Requests for Assistance Mapping – Beechworth Unit – Jan 2009- Jun 2023



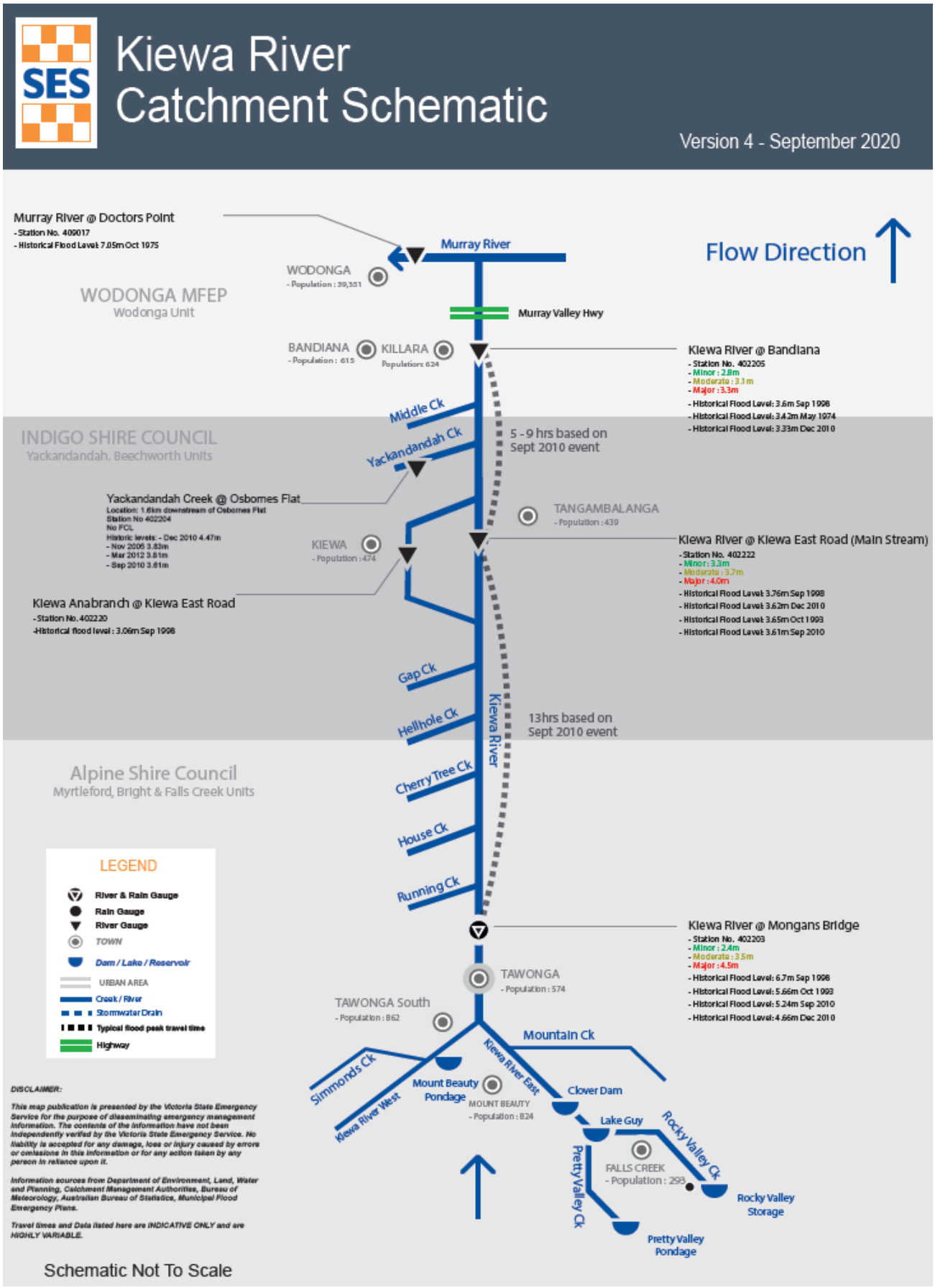
VICSES Severe Weather Primary Requests for Assistance Mapping – Yackandandah Unit – Jan 2009- Jun 2023

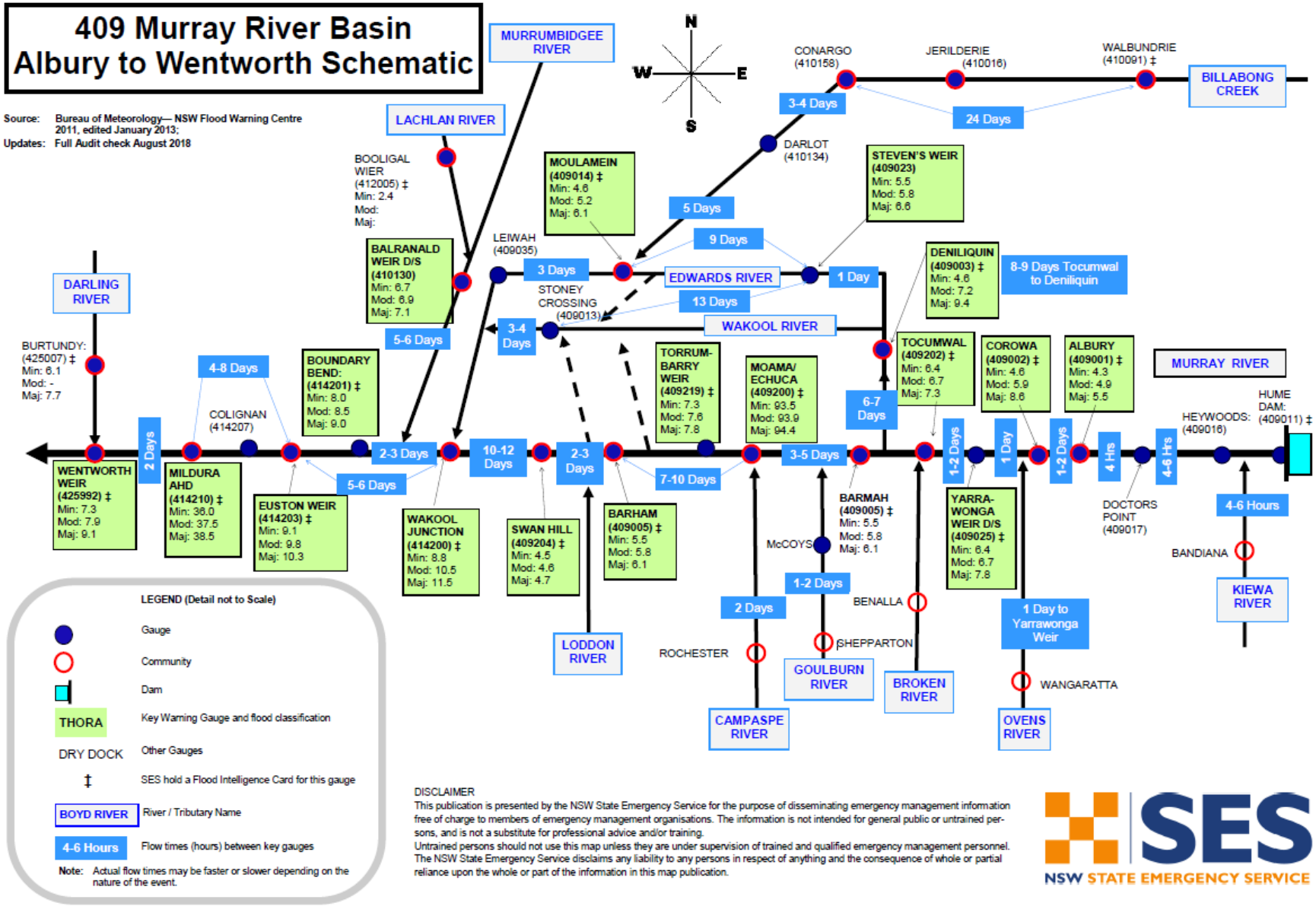


Appendix B: Typical flood peak travel times

Location From:	Location To:	Observed Travel Time (hrs)					Typical Travel Time	Comments
Kiewa River								
		September 2010	**September 1998**	**October 1993**				
		13hrs	11hrs	17.5hrs				
Kiewa River at (Main branch)	Kiewa River at Bandiana	21.5hrs	17.5hrs	26.5hrs				
Kiewa River at Bandiana	Murray River D/S Hume Dam						4-6 hrs	
Location From:	**Location To:**	**Observed Travel Time (hrs)**					**Typical Travel Time**	**Comments**
Murray River								
		October 2000	**October 1996**	**October 1992**				
Murray River at Heywoods	Murray River at Albury	11.5hrs	5hrs	7hrs			16 hrs	Heywoods to Doctors Point 12 Hrs Doctors Point to Albury 4 hrs Typical
Murray River at Albury	Murray River at Corowa						1-2 Days	
Murray River at Corowa	Murray River at Yarrawonga						1 Day	

Appendix C1: River Systems Overview & Schematics





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Untrained persons should not use this map unless they are under supervision of trained and qualified emergency management personnel. The NSW State Emergency Service disclaims any liability to any persons in respect of anything and the consequence of whole or partial reliance upon the whole or part of the information in this map publication.

NSW STATE EMERGENCY SERVICE

Appendix C2: Chiltern Flood Emergency Plan

Description of Major Waterways and Drains

The township of Chiltern lies adjacent to the Hume Freeway, 25 km west of Albury and 35 km north-east of Wangaratta. The primary flood risks to Chiltern are from the Black Dog Creek, which flows from south to north through the western end of Chiltern township, as well as its key tributaries which flow from east to west through the township. The catchment area of Black Dog Creek upstream of Chiltern is approximately 179 km2 and further downstream Black Dog Creek flows into the Murray River 14 kilometres downstream of Corowa. A number of small tributaries rise from the hills to the east and north of Chiltern and flow through the centre of the township.

Flooding patterns through the Chiltern Township are complex and are the result of flooding in three separate tributaries of Black Dog Creek. Over the previous decades works has been undertaken to divert water away from an old course of the creek that would naturally have crossed Conness St. These works provide a measure of protection; however beyond this level of protection flooding of various properties will occur in a flood event.

The community of Chiltern has experienced flooding several times in recent years including February 2012, November 2010 and September 2005. In the September 2005 event Conness Street was inundated up to depths of one metre and numerous properties were flooded. Following the 2005 event the Chiltern Flood Study was commissioned. The flood study considered a number of structural mitigation options including an upstream retarding basin. Local drainage and culvert upgrades were designed in 2012 and have been constructed.

Potential flood damage in Chiltern is exacerbated by the quick catchment response (~1 hour) meaning that there is little opportunity for flood warning which in other circumstances would enable property owners to take measures to avoid flood damage.

With little to no warning time for Chiltern and being susceptible to flash flood risk, rainfall rates can be applied and monitored for actions.

Rainfall Rate Data

60-65 mm within 2 hrs 95-100 mm within 12 hrs	1% AEP event (100 year ARI event) Significant breakout from northern streamline to Conness St occurs. Significant overland flow path through Chiltern. Isolated depths of greater than 1m through town centre. Approximately 71 properties at risk. A minor breakout from channel adjacent to Peake Court. Properties in Peake Court also subject to flooding from overland flow down Nickless St. Flooding depths between 0.25 m and 0.5 m in Peake Ct.
	November 2005 and February 2012 Flood Events
50-55 mm within 2 hrs 85-90 mm within 12 hrs	2% AEP event (50 year ARI event) Significant overland flow paths occur through Chiltern. Depths between 0.5 m and 1 m through town centre. Approximately 56 properties at risk. Significant breakout from channel adjacent to Peake Court. Flooding depths up to 0.25 m in Peake Court. Properties in Peake Court also subject to flooding from overland flow down Nickless St.
45 mm within 2 hrs 70-75 mm within 12 hrs	5% AEP event (20 year ARI event) Breakout from northern streamline adjacent to Conness St through remnant flow path. Significant overland flow path through Chiltern. Approximately 37 properties at risk. Breakout from channel adjacent to Peake Court occurs. Flooding of Peake Court properties of depths up to 0.25 m.
35-40 mm within 2 hrs 60-65 mm within 12 hrs	10% AEP event (10 year ARI event) Breakout from northern streamline adjacent to Conness St. Shallow depths, flowing slowly overland. Approximately 25 properties at risk.
30-35 mm within 2 hrs 55-60 mm within 12 hrs	20% AEP event (5 year ARI event) Very shallow, slow overland flow.

Overview of Flooding Consequences

Parameter	AEP %	20%	10%	5%	2%	1%	Total
	Rainfall (mm)	30-35 mm within 2 hrs 55-60 mm within 12 hrs	35-40 mm within 2 hrs 60-65 mm within 12 hrs	45 mm within 2 hrs 70-75 mm within 12 hrs	50-55 mm within 2 hrs 85-90 mm within 12 hrs	60-65 mm within 2 hrs 95-100 mm within 12 hrs	
Residential properties at Risk		0	4	10	2	1	**17**
Residential Properties at Risk (Above Floor)		0	0	0	0	19	**19**
Commercial Buildings at Risk		1	1	0	1	0	**3**
Commercial Properties at Risk (Above Floor)		0	1	0	0	0	**1**
Roads Impacted by water		9	9	1	1	19	**29**
Caravan/Tourist Parks at Risk		0	0	0	0	1	**1**

The main access roads for Chiltern are the:

- Hume Freeway via Main Street
- Beechworth to Chiltern Road via Main Street
- Chiltern - Howlong Road;
- Chiltern - Rutherglen Road.
- Chiltern Valley Road
- Chiltern – Barnawartha Road
- Other minor roads include Wenkes Road (south-west) and Back Springhurst Road (west).

Access to Chiltern Valley Road is likely to be lost in 10% AEP events and above due to Mackay St overtopping near Black Dog Creek.

Access to Chiltern-Howlong Road is likely lost in a 5% AEP due to the road overtopping near Albert Road. Pockets of central Chiltern may become isolated in 1% AEP events and greater, duration likely to be shorter due to the response time of the catchments.

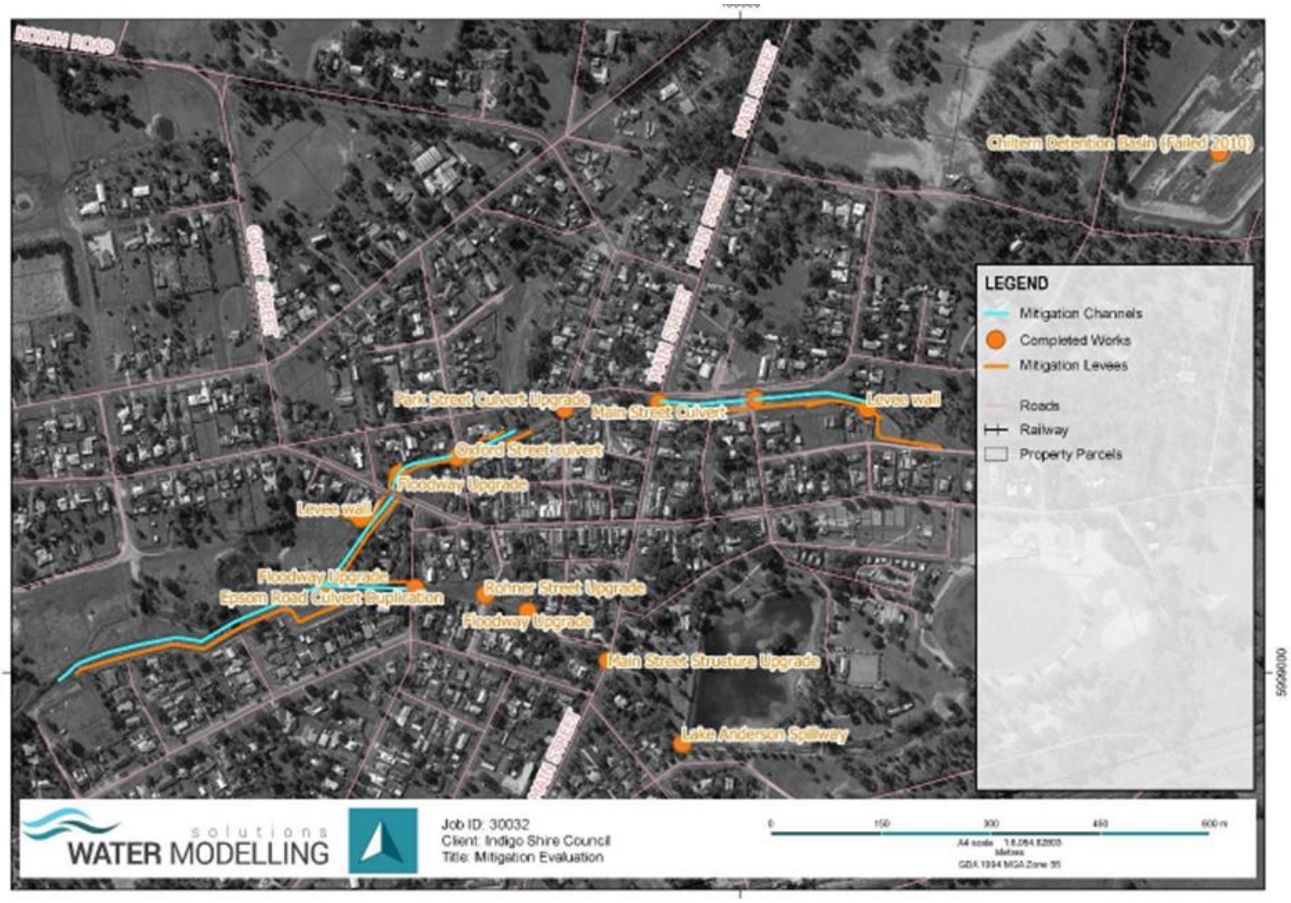
Flood Mitigation

Following the Chiltern Flood Study 2007, structural flood mitigation works were constructed in Chiltern, with the intention of managing flooding through the town along the key tributaries of Black Dog Creek. The flood mitigation works have been designed to reduce the incidence and magnitude of flooding within Chiltern.

The 2021 Chiltern Flood Mitigation Evaluation – Study Report sets out the summary of constructed mitigation works below.

- Construction of an online retention basin adjacent to Suffolk Street upstream of North Road to retard flows from the northern tributary and reduce breakout flows in the vicinity of Kilgour Street.
- Channel upgrade works and bund walls at Crawford Street upstream of Main Street to reduce flood extent and incidence of breakout flows.

- Channel upgrade works between Park Street / Martins Lane and Chiltern-Rutherglen Road to reduce flood extents.
- Channel upgrade works and bunding at Chiltern-Rutherglen Road to Dickson Court to reduce flood extents.
- Channel upgrade works at Epsom Road.
- Culvert upgrades at Kilgour Street and Park Street.
- Channel upgrade works at Epsom Road.
- Culvert upgrades at Kilgour Street and Park Street.



Ungauged Flood location Warnings

Where there are no set Flood Class Levels for a gauge, VICSES Hume RDO/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 – Chiltern Township and Surrounds (Ungauged Flood Location)

Gauge Location: Ungauged Location

As there are no set FCL for this gauge, VICSES Hume RDO/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.

Rainfall (mm)	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
30-35mm within 2 hours 55-60 mm within 12 hours	20% AEP	Very shallow, slow overland flows. **Water over Road** • Epsom Rd at train bridge, Chiltern • Chiltern-Rutherglen Road, Chiltern • Railway Access Rd, Chiltern • Wenkies Underpass, Chiltern • High Street/Gaunt Street, Chiltern near Flats (drainage) • Conness Street, Chiltern (Grantees area) • Chiltern-Beechworth Road , Chiltern • Skerry Street, Chiltern (Blackdog Creek) **Properties at Risk:** • Grantees Takeaway, 68-70 Conness St, Chiltern	VICSES Hume RDO/RAC to monitor the situation. If further rises are likely, consideration of a Flash Flood warning for residents and prepare for evacuations VICSES Unit to monitor known flood areas including the bridges over Black Dog Creek at Railway Access Rd, and the culverts in the central township and identified roads Consider activating Snap Send Solve Field Observers VicRoads/RRV/Indigo Shire Council to close roads identified VICSES Chiltern Unit to monitor Conness St (Grantees-business likely to flood)	2014 Flood Plan Chiltern Unit Observations/Response
35-40 mm within 2 hours 60-65 mm within 12 hours	10% AEP	Breakout from northern streamline adjacent to Conness St through remnant flow path. Shallow and slow overland flow. **Properties at Risk** • Chiltern Atheneum Museum, 57 Conness St, Chiltern (to top steps) • 4 x Flats at 41 High Street, Chiltern - water to steps	VICSES Hume RDO/IWO to consider issuing Flash Flood warning for residents and prepare for evacuations VICSES IC/RAC & VICPOL Evacuation Manager to consider Evacuation of properties threatened and notify Indigo Shire to consider relief Centre activation VICSES Chiltern Unit to open a sandbag collection point at unit	2014 Flood Plan Chiltern Unit Observations/Response

Rainfall (mm)	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
35-40 mm within 2 hours 60-65 mm within 12 hours	10% AEP	**Properties at Risk (Above Floor)** • Grantees Takeaway, 68-70 Conness St, Chiltern **Water over Road** • Mackay St, Chiltern (dependent Black Dog levels) • Chiltern Valley Road, Chiltern • Skerry St, Chiltern • Chiltern - Barnawartha Road, Chiltern • Chiltern – Yackandanda Road, Chiltern • Cnr Crawford St, Chiltern • Chiltern - Howlong Road, Chiltern (Mick and Helens place) • Chiltern - Beechworth Road/Bottom Toveys Road, Chiltern • Deep Creek Road/Black Dog Creek Road, Chiltern (isolates Black Dog Creek Road properties)	VICSES Unit to respond on a request by request basis and notify RDO of Flash Flood Impacts for warnings- VICSES Chiltern Unit clear gutters and pump water across road ay 41 High Street - sandbag as required VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering VicRoads/RRV/Indigo Shire Council to close roads identified VICSES Chiltern Unit to monitor impacts in town VICSES Chiltern Unit to observe impacts at new library from this level	2014 Flood Plan Chiltern Unit Observations/Response
45 mm within 2 hours 70-75 mm within 12 hours	5% AEP	Breakout from northern streamline adjacent to Conness St through remnant flow path. Significant overland flow path through Chiltern. Breakout from channel adjacent to Peake Court occurs. **Properties at Risk** • Flooding of Peake Court properties of depths up to 0.25m. • Park Street (property water from back culvert) • Conness Street/Epsom Road- water from culvert which can come into properties • Gibson Street (low lying area in properties) • Properties on Black Dog Creek (Snez's place) • Mayhew Lane (2 properties 1 main risk) • Stead Lane **Water over Road** • Albert Street, Chiltern	VICSES Hume RDO/IWO to consider issuing Flash Flood warning for residents and prepare for evacuations VICSES IC/RAC & VICPOL Evacuation Manager to consider Evacuation of properties threatened and notify Indigo Shire to consider relief Centre activation VICSES Unit to respond on a request by request basis and notify RDO of Flash Flood Impacts for warnings VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering VICSES Hume RDO/RAC and or ICC to consider the deployment of LBSWR teams into Chiltern VicRoads/RRV/Indigo Shire Council to close roads identified	2014 Flood Plan Chiltern Unit Observations/Response

Rainfall (mm)	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
50-55 mm within 2 hours 85-90 mm within 12 hours	2% AEP	November 2005 & Feb 2012 Flood events Significant overland flow paths occur through Chiltern. Depths between 0.5m and 1m through town centre. Significant breakout from channel adjacent to Peake Court. • Flooding depths up to 0.25m in Peake Crt. **Properties at Risk** • Properties in Peake Crt also subject to flooding from overland flow down Nickless St. • NERPSA Chiltern Kindergarten 55 Main Street Chiltern Cnr Pringle St **Water over Road** • Conness Street, Chiltern	VICSES Hume RDO/IWO to consider issuing Flash Flood warning for residents and prepare for evacuations VICSES IC/RAC & VICPOL Evacuation Manager to consider Evacuation of properties threatened and notify Indigo Shire to consider relief Centre activation VICSES Unit to respond on a request by request basis and notify RDO of Flash Flood Impacts for warnings VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering VicRoads/RRV/Indigo Shire Council to close roads identified Unit to consider sandbagging properties at risk	2014 Flood Plan Chiltern Unit Observations/Response
60-65 mm within 2 hours 95-100 mm within 12 hours	1% AEP	Significant breakout from northern streamline to Conness St along remnant flow path occurs. Significant overland flow path through Chiltern. Isolated depths of greater than 1m through town centre Significant breakout from channel adjacent to Peake Crt. Flooding depths between 0.25m and 0.5m in Peake Ct. Storm drains at full capacity Vehicles parked in streets during Jan 2022 event had 0.5M of water through them **In Jan 2022 event** Roads flooded to depths of 1m including Beechworth-Chiltern Rd/ Forrest Lane Chiltern-Howlong Rd/Post Office Road **Properties at Risk** • 58 Bill Tanners Road, Barnawartha • Lake Anderson Tourist Park	VICSES Hume RDO/IWO to consider issuing Flash Flood warning for residents and prepare for evacuations VICSES Unit to respond on a request by request basis and notify RDO of Flash Flood Impacts for warnings VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering Unit to consider sandbagging properties at risk VICSES Hume RDO/RAC and or ICC to consider the deployment of LBSWR teams into Chiltern	2014 Flood Plan Chiltern Unit Observations/Response Impacts from Jan 2022 Event

Rainfall (mm)	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
60-65 mm within 2 hours 95-100 mm within 12 hours	1% AEP Cont.	**Properties at Risk (Above Floor)** • Peake Court, Chiltern • 68 Conness Street, Chiltern • 42 Conness Street, Chiltern • 1 Park Street, Chiltern • 8 Park Street, Chiltern • 14 Park Street, Chiltern • 20 Park Street, Chiltern • 2 Gaunt Street, Chiltern • 66 High Street, Chiltern • Low lying sheds Gibson St, Gaunt St, Baker Rd, Bow St, & North Road, Chiltern **Water over Road** • Water over every road in Chiltern • Racecourse Rd, Chiltern • Soule St, Chiltern • Scott St, Chiltern • Nickless St, Chiltern • Epsom St, Chiltern • Main Street, Chiltern • Conness St, Chiltern • Alliance St, Chiltern • High Street Chiltern • Gordon St, Chiltern • North Rd, Chiltern • Reid St, Chiltern • Church St, Chiltern • Lake Anderson Drive, Chiltern • Brick Kiln Rd, Chiltern • Chiltern – Barnawartha Rd, Chiltern • Magenta Rd, Chiltern	VICSES Hume RDO/IWO to consider issuing Flash Flood warning for residents and prepare for evacuations VICSES IC/RAC & VICPOL Evacuation Manager to consider Evacuation of properties threatened and notify Indigo Shire to consider relief Centre activation VICSES Unit to respond on a request by request basis and notify RDO of Flash Flood Impacts for warnings VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering VicRoads/RRV/Indigo Shire Council to close roads identified Unit to consider sandbagging properties at risk VICSES Hume RDO/RAC and or ICC to consider the deployment of LBSWR teams into Chiltern	2014 Flood Plan Chiltern Unit Observations/Response Impacts from Jan 2022 Event Chiltern flood mitigation evaluation – Final study report June 2021
	PMF	• Widespread Inundation. Numerous properties at risk. Egress severely restricted.	Evacuations likely Widespread road closures. Closure of railway line possible.	2014 Flood Plan

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: Kiewa River Flood Emergency Plan Incl Mongans Bridge (Alpine Shire) & Bandiana (City of Wodonga)

General

The Kiewa River

The Kiewa catchment (approximately 1655km2) extends approximately 100km from the Great Dividing Range around Falls Creek to the Murray River. The Kiewa Hydroelectric Scheme is located in the upper part of the Kiewa catchment, but commands only a small part of the catchment above Indigo Shire and has little influence on flood magnitudes in the lower reaches of the Kiewa River around Kiewa and Tangambalanga.

The Kiewa River regularly splits into two streams during flood events upstream of Kiewa. The two streams stay within the Kiewa River Flood plain and effectively pass on the East & West side of the Kiewa River floodplain with the Kiewa Memorial Park and oval, playground and tennis courts, general store and few homes between the two streams.

Three fully telemetered stream-flow gauges are located on the Kiewa River at Mongan's Bridge, Kiewa River at Kiewa and Kiewa River at Bandiana. All three gauges have flood class levels and are utilised by the Bureau of Meteorology for flood forecasting. An additional telemetered gauge also exists on the Kiewa Reiver at Kiewa (Mainbranch) and another on Yackandandah Creek at Yackandandah however it has no flood class levels

Yackandandah Creek

Yackandandah Creek is a left bank tributary of the Kiewa River, entering the Kiewa River near the southern boundary of the City of Wodonga council area. The majority of the catchment and waterway length is located within the Indigo Shire with a length of only approximately 7km lying within the City of Wodonga. Flood impact from Yackandandah Creek within the Wodonga LGA is therefore restricted to a small length of rural floodplain upstream and downstream of the Kiewa Valley Highway.

Overview of Flooding Consequences

Kiewa River at Mongans Bridge

Parameter	Flood Class Level			
	Minor	Moderate	Major	Total
Roads Impacted by water	0	1	5	**6**
Caravan Parks Impacted by floodwater	0	0	1	**1**

Kiewa River at Kiewa (Mainbranch)

Parameter	Flood Class Level			
	Minor	Moderate	Major	Total
Buildings impacted	0	3	0	**3**
Roads Impacted by water	0	1	0	**1**
Caravan Parks Impacted by floodwater	0	0	0	**0**

Kiewa River at Bandiana

Parameter	Flood Class Level			
	Minor	Moderate	Major	Total
Buildings impacted	0	4 Roads with properties	0	**4 Roads to check**
Roads Impacted by water	0	4	0	**4**
Caravan Parks Impacted by floodwater	0	0	0	**0**

Flood Mitigation

There are no structural flood mitigation measures.

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 – Kiewa River at Mongans Bridge (Alpine Shire)

Gauge Location: Kiewa River at Mongans Bridge (FIC Included

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.

Flood Intelligence Card – Kiewa River at Kiewa (Mainbranch)

Gauge Location: Kiewa River at Kiewa (Mainbranch)

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 Kiewa (Mainbranch)	**3.30**		**Minor Flood Level**	• Low-lying areas next to watercourses are inundated which may require the removal of stock and equipment.	BOM will issue and VICSES to publish Minor flood warning to community with tailored information from this plan The Hume RDO in conjunction with the RAC will maintain operational awareness and form an appropriate response to suit the level of the incident	
	3.34	5,350	**20% AEP**			2014 Flood Plan
	3.54	6,650	**10% AEP**			2014 Flood Plan
	3.62	7,490		• October 1993 Flood Peak Height		2014 Flood Plan
	3.63	7,550		• December 2010 Flood Peak Height		2014 Flood Plan
	3.63	7,712	**5% AEP**			
	3.7		**Moderate Flood Level**	• Properties on the Kiewa River floodplain between Kiewa and Tangambalanga will be inundated including farmland **Water over Road** • **Kiewa East Road, Kiewa may begin to be impacted** **Properties at risk: (Below Floor)** • **Kiewa General Store, Kiewa East Rd** • **Residence next to Kiewa General Store**	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 deploy Snap, Send, Solve Field observers for Intelligence gathering and determine actions regarding properties identified	VICSES Tallangatta Unit

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 Kiewa (Mainbranch)	**3.7**			• **37 Kiewa East Road** • **Building opposite Kiewa General Store and the Kiewa Memorial Park and oval**		
	3.71	8,950		•		
	3.74	9,800		• Flood Peak Height May 1974		
	3.75	10,400	**1% AEP**	•		
	3.76	11,100		• September 1998 Flood Peak Height		
	4.0		**Major Flood Level**	**Extensive rural and urban areas inundated.** **Properties and towns are likely to be isolated and major traffic routes likely to be closed.** **Evacuation of people from flood-affected areas may be required.**	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	

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 – Kiewa River at Bandiana (City of Wodonga)

Gauge Location: Kiewa River at Bandiana

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 Bandiana	**2.80**		**Minor Flood Level**	No known impacts of significance – local flooding around gauge site and low lying farmland. A park bench at the Kiewa River Walking track and the Murray Valley Highway at Killara gets wet feet.	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	
	3.10		**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	
	3.15			• August 2016 – Shallow flooding over significant areas of low-lying farmland and local access routes.		
	3.2	27,500		• Access to 217 Conisbee Lane floods off Murray valley Hwy, isolating single dwelling at the end of the road. **Properties at risk: (Below Floor)** • Gullifer Lane • Smith Rd • Pollards Rd • McIntosh Rd	VICSES to respond on a request by request basis VICSES to Consider the use of Snap, Send, Solve Flood observers for Intelligence gathering VICSES Wodonga Unit to determine if risk to properties identified City of Wodonga/RRV to close roads identified	
	3.23			• October 2022 Flood Peak Height		
	3.24			• October 1993 Flood Peak Height		

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 Bandiana	**3.29**			• Oct 2016 and Sep 2010 Flood Peak Heights • Extensive floodplain inundation, • local road closures.	City of Wodonga/RRV to close any roads known to be impacted locally	
	3.30	37,000	**Major Flood Level** **10% AEP**	**Water over Road** • Murray Valley Highway, Between Killara and Bonegilla	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	
	3.32		**10 % AEP**	• July 1978 Flood Peak height		
	3.42			• May 1974 Flood Peak Height		
	3.5	46,400	**5% AEP** **4%**	•		
	3.58			• Sep 1998 Flood Peak Height • Extensive and deep flooding of farmland in the floodplain. **Water over Road** • Pollards Road • private access tracks within the floodplain • Kiewa Valley Highway	VICSES to deploy crew or Snap Send Solve Flood Observers to determine impacts VICSES to respond on a request by request basis City of Wodonga/RRV to close roads identified	
	3.6	62,600	**2% AEP**	• November 2022 Flood Peak Height		
	3.69	75,800	**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.

Flood Intelligence Card – Yackandandah Creek at Osbourne's Flat

Gauge Location: Yackandandah Creek at Osbourne's Flat

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
Yackandandah Creek at Osbourne's Flat	**3.14**	10,300	**20% AEP**		The VICSES Hume 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 Hume DO/IWO to consider issuing Advice Level Ungauged Flood warning with confirmed impacts at this level	
	3.34	12,000		Sept 1998 Flood Peak Height		
	3.4	12,500		Sept 1992 Flood Peak Height		
	3.46	13,150		May 1974 Flood Peak Height		
	3.5	13,700	**10% AEP**			
	3.83	17,100	**5% AEP**			

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
Yackandandah Creek **at Osbourne's Flat**	**4.26**	21,600	**2% AEP**	•		
	4.47	24,200		• December 2010 Flood Peak Height • Kiewa Valley Hwy Bridge damaged in this event	As there are no set FCL for this gauge, VICSES Hume DO/IWO to consider issuing a warning Level (watch & Act) Ungauged Flood warning with confirmed impacts at this level	
	4.5	25,000	**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 C4: Murray River Flood Emergency Plan

The Murray River floodplain down stream of Albury is predominately narrow and well contained within a clearly defined land incline. Existing data indicates that the 1% AEP flood is readily contained within the Murray River floodplain and that whilst minor to moderate flooding has occurred on a regular basis, major flooding is less frequent.

The consequences of flooding are related to heights of flood gauges at points along the Murray River system. The gauges used for the Indigo Shire are predominantly the Murray River at Albury and the Murray River at Corowa gauges with the Bureau of Meteorology provides predictions for the two gauges identified.

Consequences of flooding throughout the Murray River floodplain in Indigo Shire is predominantly of agricultural land, River Murray Reserve, riverside parks and crown land and rural access roads on the floodplain. There are no significant impacts to residences, businesses and caravan parks on this section of the river between Barnawartha and Brimin near the confluence of the Ovens & Murray Rivers.

Overview of Flooding Consequences

Parameter	Flood Class Level			
	Minor	Moderate	Major	Total
Roads Impacted by water		5	19	**24**
Caravan Parks Impacted by floodwater			2	**2**

Flood Mitigation

Lake Hume is the only Structural Flood mitigation between the stretch of Murray River that Indigo Shire is a located on.

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 – Murray River at Corowa (use for Wahgunyah)

Gauge Location: Murray River at Corowa

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
Murray River at Corowa	**3.8**		**Below Minor Flood level**	Reserves & Forests along river and low lying camp grounds and farmland begin to see floodwater		
	4.6		**Minor Flood Level**	Murray River Reserve Wahgunyah and Lake Moodemere Reserve, begin inundating with flood water Low Lying camping areas along Murray River and access tracks begin to inundate from this level	BOM will issue and VICSES publish Minor flood warning to community with tailored information from this plan The Hume 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	Flood Observation VICSES 2021/2022
	5.12			September 2021 Flood Peak Height		
	5.9		**Moderate Flood Level**	**Water over Road** • Albert Lane, Murray River Reserve, Wahgunyah • Reserve Road, Murray River Reserve, Wahgunyah • Grimmond Lane, Murray River Reserve, Wahgunyah • Hynes Road, Wahgunyah • Lake Road, Lake Moodemere, Wahgunyah	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 Indigo Shire/RRV to close roads identified	1% AEP flood Mapping
	6.1			Caravan Parks in Corowa inundated	VICSES to consider deployment of Snap Send Solve Flood Observers to determine impacts on Victorian side of the Murray River at Wahgunyah 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
Murray River at Corowa	**6.82**			October 1993 Flood Peak Height		Corowa Shire Local Flood Plan 2008
	7.75			October 2016 Flood Peak Height		
	8.1	13,478	**5% AEP**	November 2022 Flood Peak Height		
	8.2			October 1974 Flood Peak Height		
	8.54			October 1975 Flood Peak Height		
	8.6	18,144	**Major Flood Level** **2% AEP**	October 1975 Flood Peak Height	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	Corowa Shire Local Flood Plan 2008
	8.7	20,300	**1% AEP**	1917 Flood Peak Height, considered to be the 1% AEP Many major roads designed to be above this height The following bridges are designed to be trafficable up to a 1% AEP flood: Federation Bridge, Corowa , John Foord Bridge, Corowa, Howlong Bridge, Mulwala Bridge **Properties at risk: (TBC)** • Benson Lane, Brimin **Water over Road** • Fleggs Road, Barnawartha • private access tracks within the floodplain • Goormadda Road, Goormadda • Snarts & Weidners Road, Goormadda • Robbs Lane, Gooramadda, • McConnell Land, Gooramadda • Shaws Flat Road, Carlyle • Notts Road, Carlyle • John Street, Wahgunyah	VICSES Hume DO/IWO to add to Major Flood warning impacts at this level VICSES to deploy crew or Snap Send Solve Flood Observers to determine impacts IC & VICPOL Evacuation Manager to consider Evacuation of properties identified Indigo Shire to determine Relief centres VICSES to respond on a request by request basis Indigo Shire/RRV to close roads identified	Corowa Shire Local Flood Plan 2008 1% AEP flood Mapping

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
Murray River at Corowa	**8.7**	20,300	**1% AEP**	**Water over Road (cont)** • Sarah Street, Wahgunyah • Barkly Street, Wahgunyah • Cadel Terrace, Wahgunyah • Amderson Road, Wahgunyah • Williams Road & Williams Track, Brimin • Dugays Bridge Road (at Bridge on Black Dog Creek), Brimin Kellys Road, Clarke Lane & Benson Lane, Brimin	VICSES to respond on a request by request basis Indigo Shire/RRV to close roads identified	
	14.00		**PMF**	1000's of properties and businesses in the Corowa/Wahgunyah area flooded	VICSES Hume DO/IWO to add to Major Flood warning impacts at this level IC & VICPOL Evacuation Manager to consider Evacuation of properties identified Indigo Shire to determine Relief centres VICSES to respond on a request by request basis	Corowa Shire Local Flood Plan 2008

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
Chiltern	NIL	Observed rainfall rates of: 35-40 mm within 2 hours 60-65 mm within 12 hours	4 residential and 1 commercial property at risk of flooding, including the CBD, with 9 roads impacted If rainfall persists, most roads in and out of Chiltern are impacted. Recommend a Shelter in place warning for Chiltern Relief Centre may not be able to be opened quickly due to access and egress for staff. Rutherglen maybe an option. Events are generally short lived with runoff flowing downstream within 12 hours

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
Chiltern	Hume Freeway via Main Street Beechworth to Chiltern Road via Main Street Chiltern - Howlong Road; Chiltern - Rutherglen Road. Chiltern Valley Road Chiltern – Barnawartha Road Other minor roads include Wenkes Road (south-west) and Back Springhurst Road (west).	Depends on rainfall amount and location. Typical rates of 60-65 mm within 2 hours & 95-100 mm within 12 hours will close all routes

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

- DELWP Office at Ovens
- Albury Airport
- Wangaratta Airfield
- Corowa Airport
- Many sporting complexes within Indigo Shire

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 Indigo 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
Beechworth Memorial Hall, Ford Street, Beechworth	Refer to the Indigo Shire MEMP for Specific Facility Plans for each location. Also located in EMCOP Library - EM Partners - Indigo Shire. In flash flood events, it is recommended a Shelter in place warning be issued for Chiltern due to road closures/inundation Relief Centre may not be able to be opened quickly due to access and egress for staff also.
Beechworth Senior Citizens Hall, Harper Avenue, Beechworth	
Yackandandah Public Hall, High Street, Yackandandah	
Tangambalanga Community Centre, Kiewa East Road, Tangambalanga	
Chiltern Memorial Hall, Conness Street, Chiltern	
Rutherglen Memorial Hall, High Street, Rutherglen	

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 Indigo Shire Council or provide reference to MEMP.

Animal Shelter (include address)	Comments
Refer to Relief Centers information above	For specific animal shelter information – refer to Indigo Shire MEMO and Indigo Shire Emergency Animal Welfare Plan in EMCOP Library - EM Partners - Indigo Shire.

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
Lake Anderson Caravan Park	Recommend a Shelter in place warning for Chiltern	With access routes impacted quickly by flash flooding in Chiltern, Evacuation may not be an option.
Beechworth Lake Sambell Caravan Park	Beechworth Holiday Park	Lake Sambell can spill in heavy rainfall events. This occurred during 2016 and 2022 northern Victoria events. Significant rainfall events may need Snap Send Solve Flood observers to visit the park and consider caravaners move to higher ground

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

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

Indigo Shire will establish a sandbag collection point at

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

Rescue

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

Rutherglen SES Unit:

- Rutherglen Rescue – Medium Hino 816 Crew Cab
- Rutherglen Support 1 – Toyota Hilux 4x4 Crew Cab

Chiltern SES Unit:

- Chiltern Support 1 – Ford Ranger 4x4 Crew Cab
- Chiltern Support 2 – Ford Ranger 4x4 Crew Cab
- Chiltern Storm Trailer – Dual Axle Storm Trailer
- Chiltern Lighting Trailer - Ops Support 02-26 - Bliss Fox BFI-574
- Chiltern Flood Trailer – Box Trailer

Yackandandah SES Unit:

- Yackandandah Support 1 – Ford Ranger 4x4 Crew Cab
- North West Support 2 – Ford Ranger 4x4 Crew Cab
- Yackandandah storm Trailer – Dual Axle storm trailer

Beechworth SES Unit:

- Beechworth Rescue 1 - Medium Isuzu NPS 75 Dual Cab
- Beechworth Support 1 – Toyota Hilux 4x4 Crew Cab
- Beechworth Storm Trailer – Multidrive dual axle storm trailer
- North East Logistics Trailer – Cage Trailer

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:

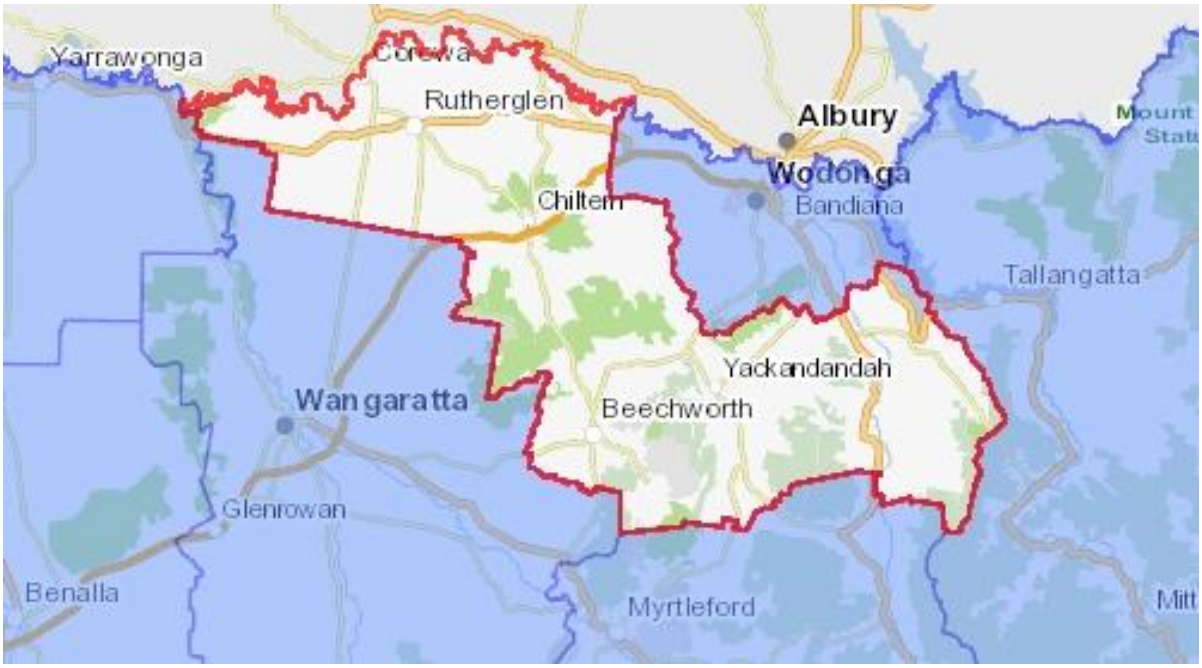
- Listen to emergency broadcasters and monitor warnings.
- Decide what you and your family will do if flooding impacts you.
- For information on how to prepare goto www.ses.vic.gov.au/get-ready/floodsafe (https://www.ses.vic.gov.au/get-ready/floodsafe).
- Review your emergency plan and check your emergency 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.

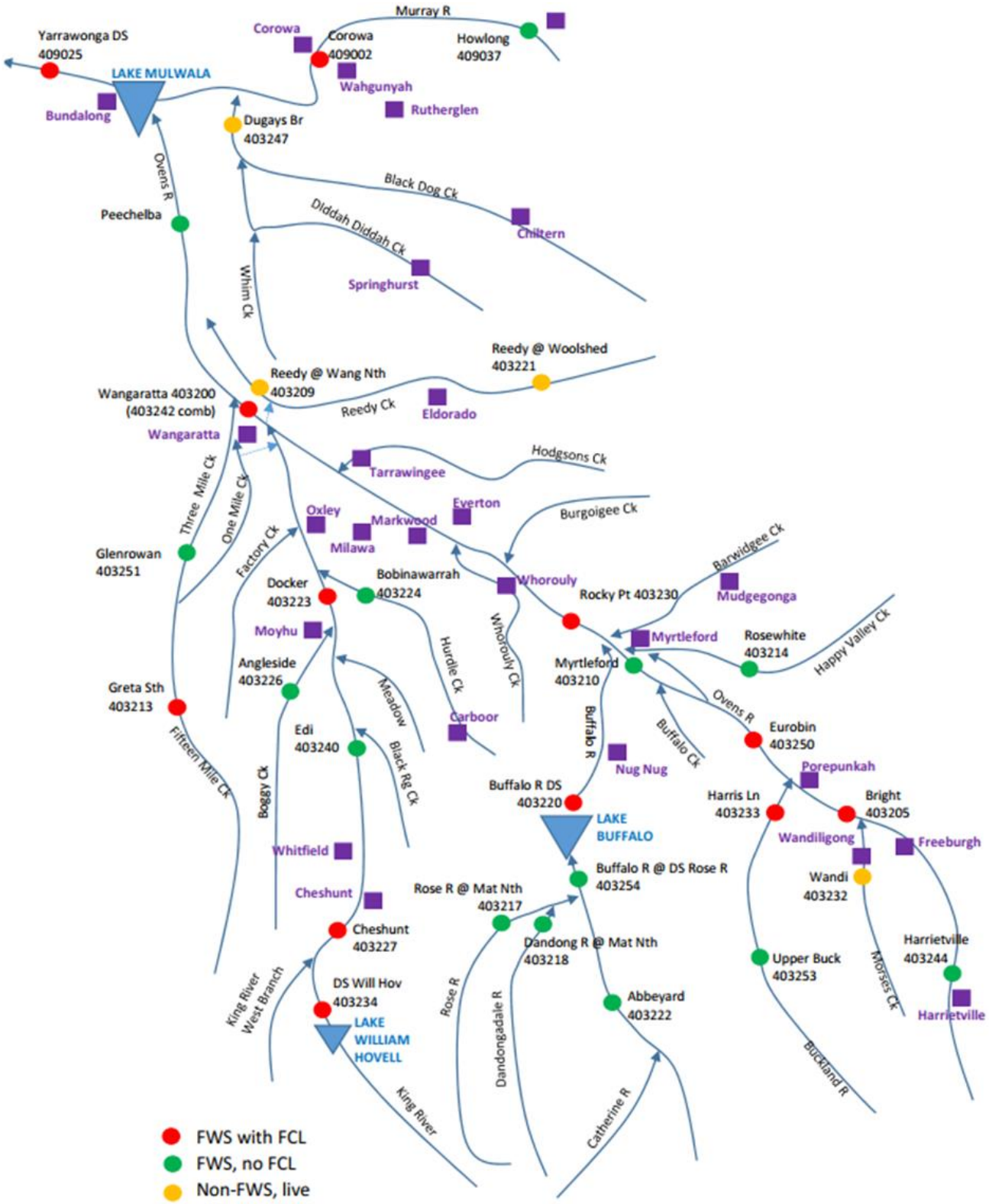
Appendix F - Maps

Council Area Maps;

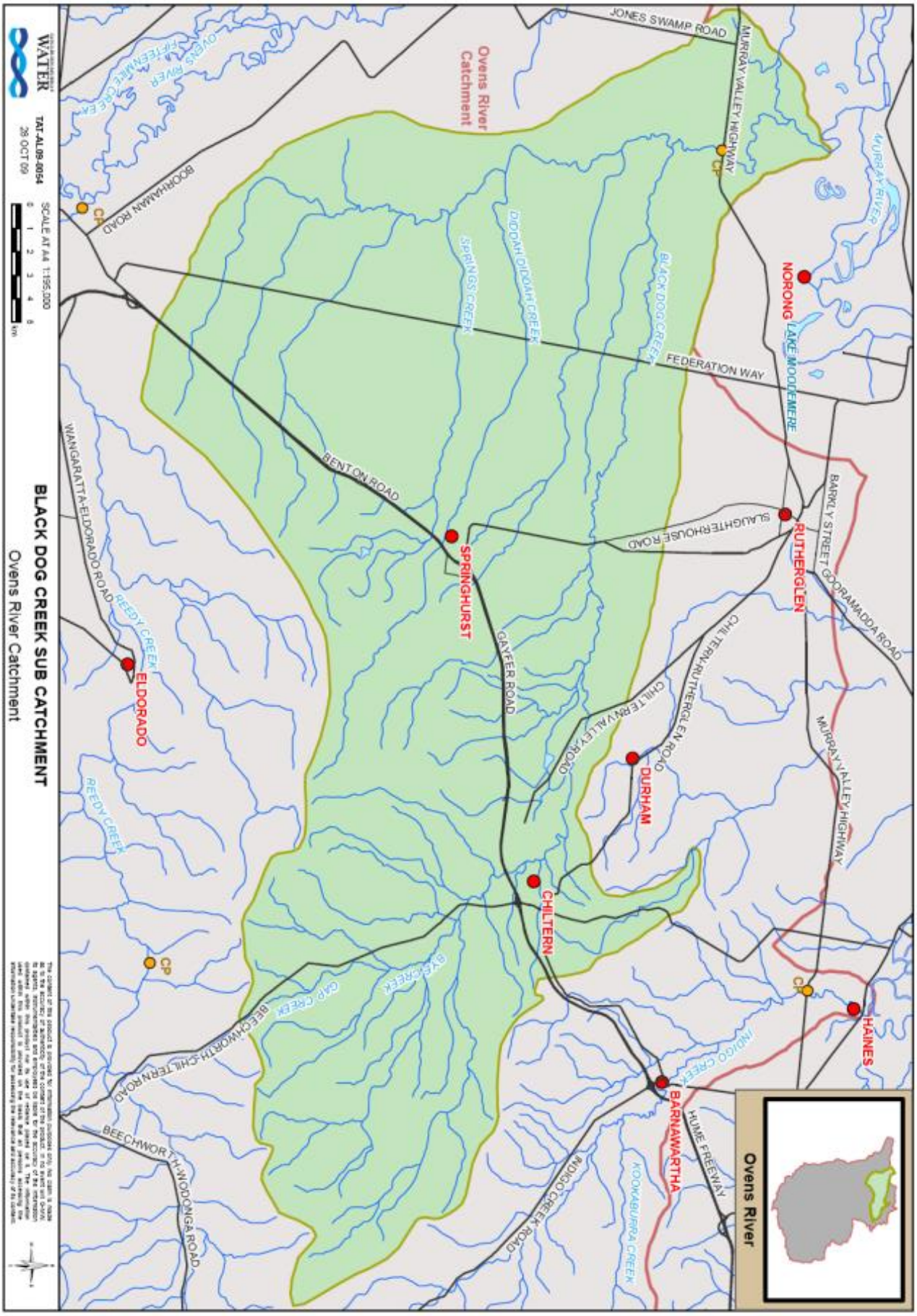


Catchment Maps

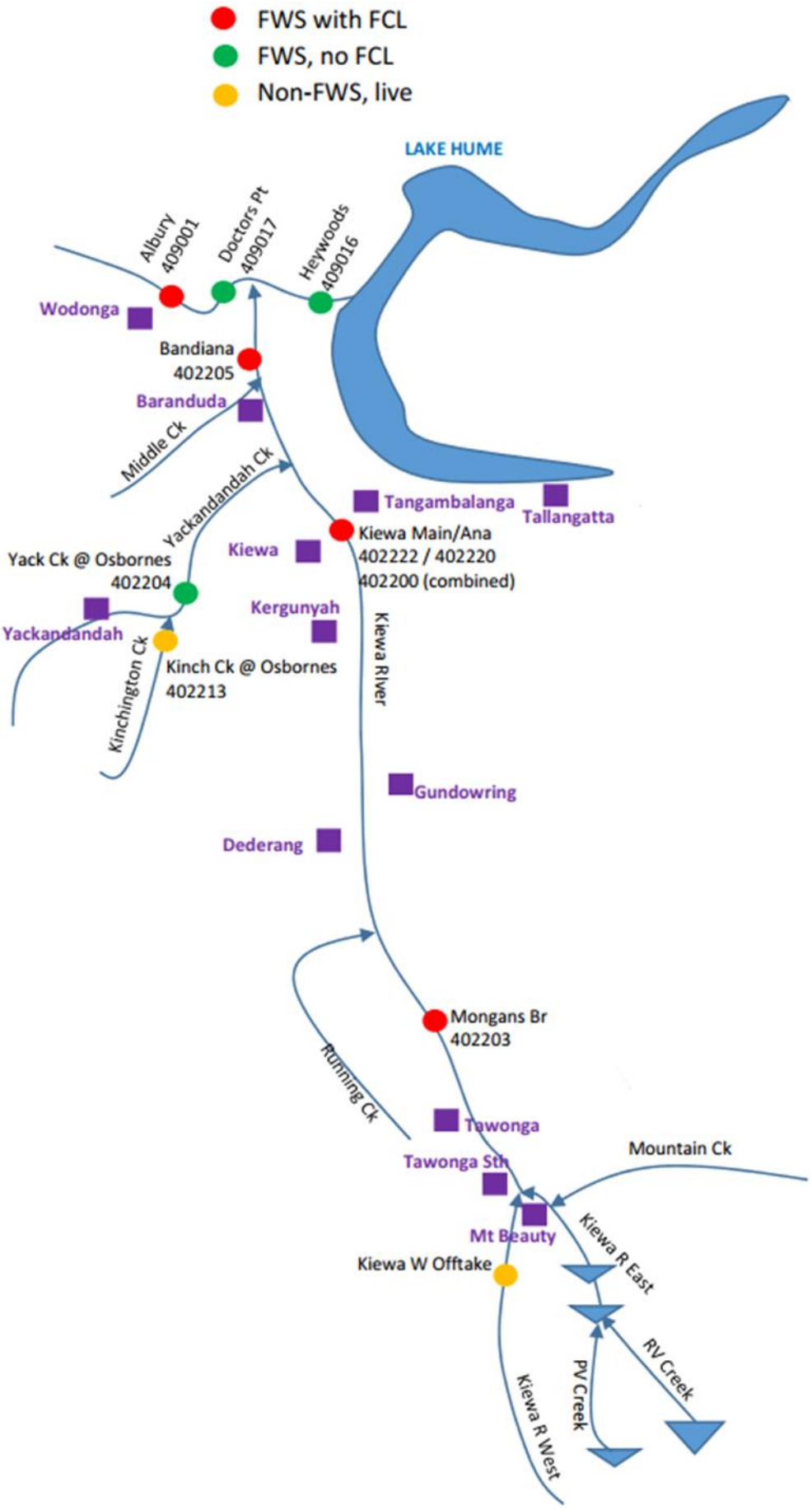
Ovens River Basin Map with River Gauges



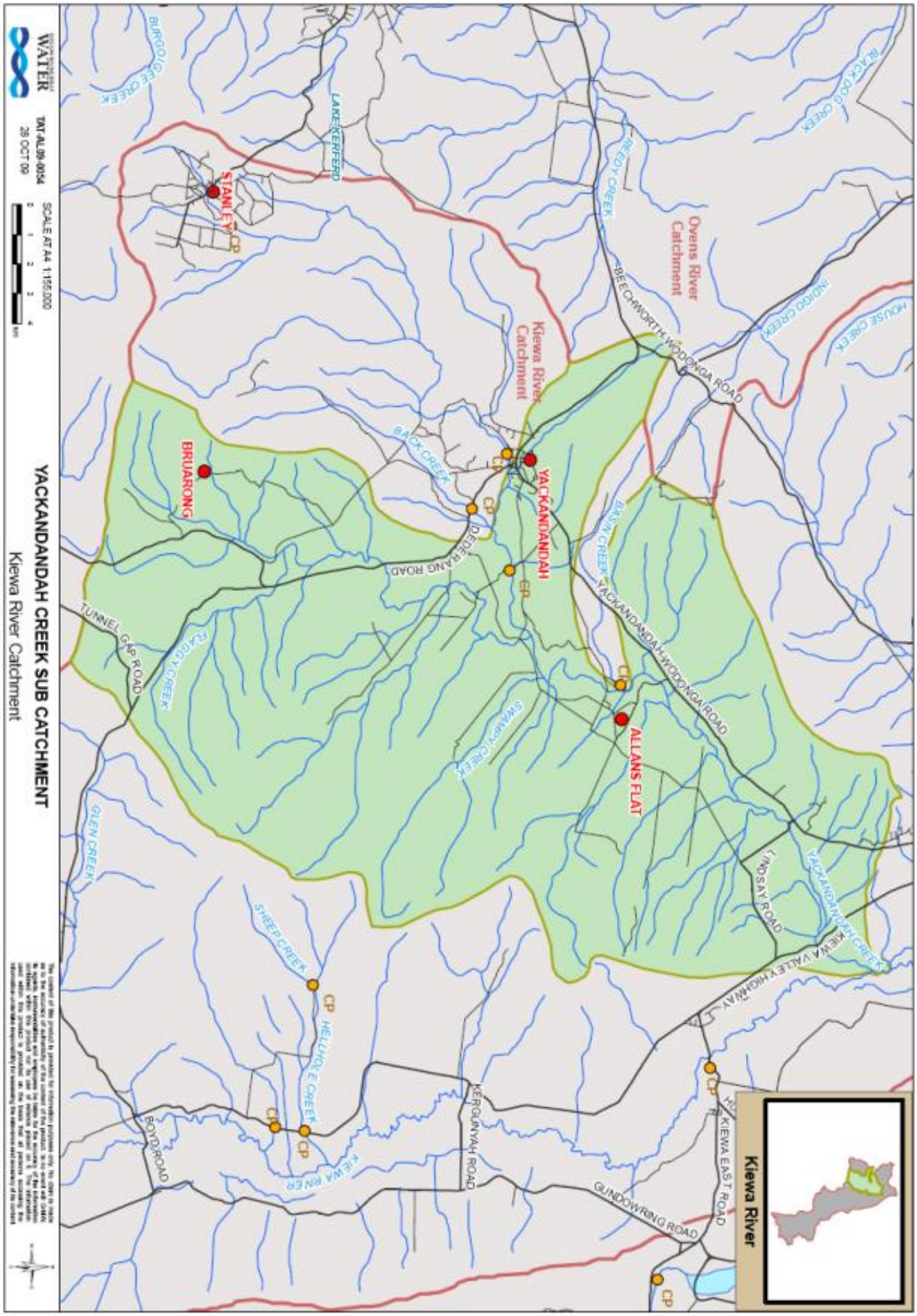
Black Dog Creek Sub Catchment Map



Kiewa River Basin Map with River Gauges

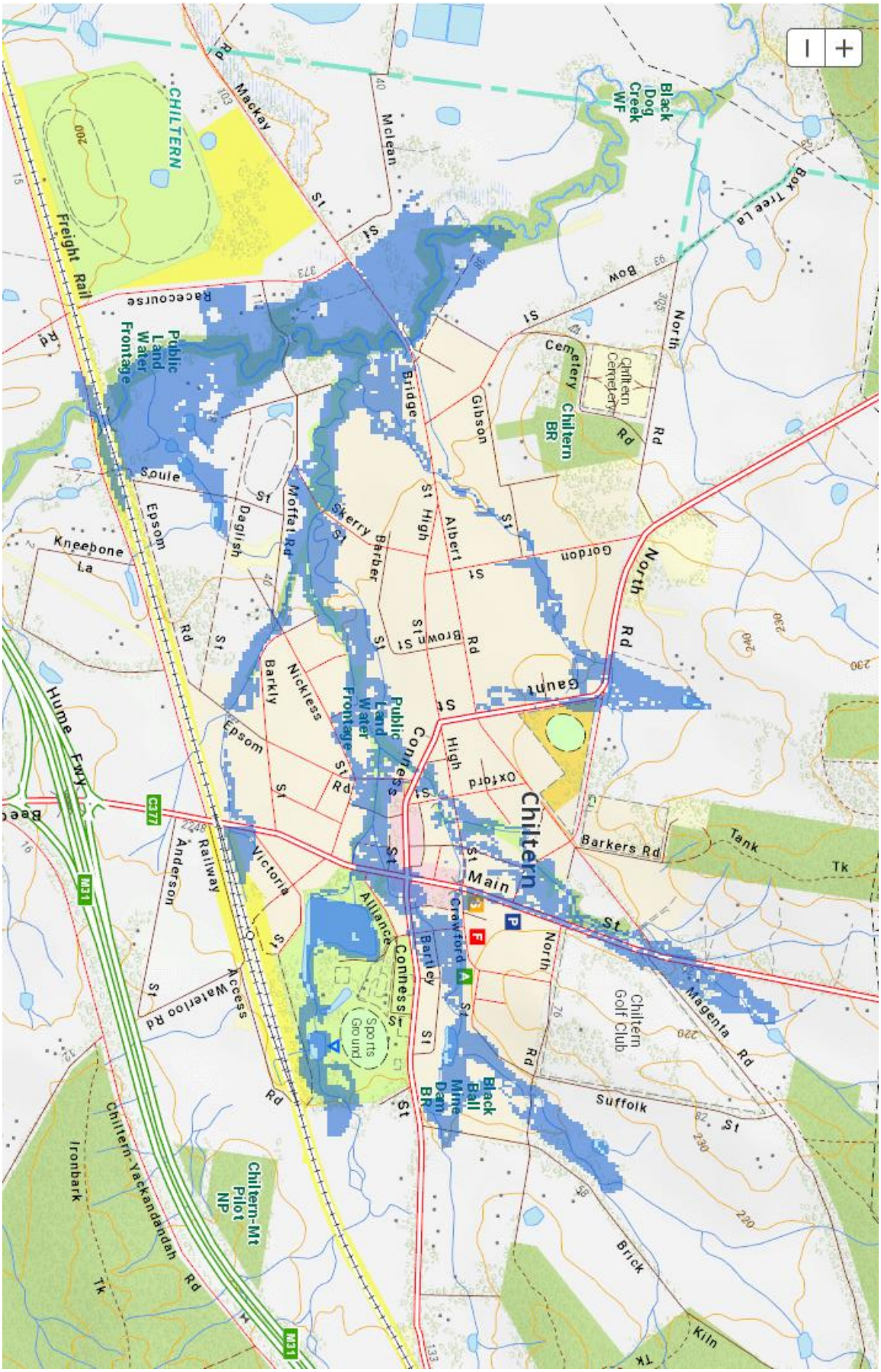


Yackandandah Creek Sub Catchment Map



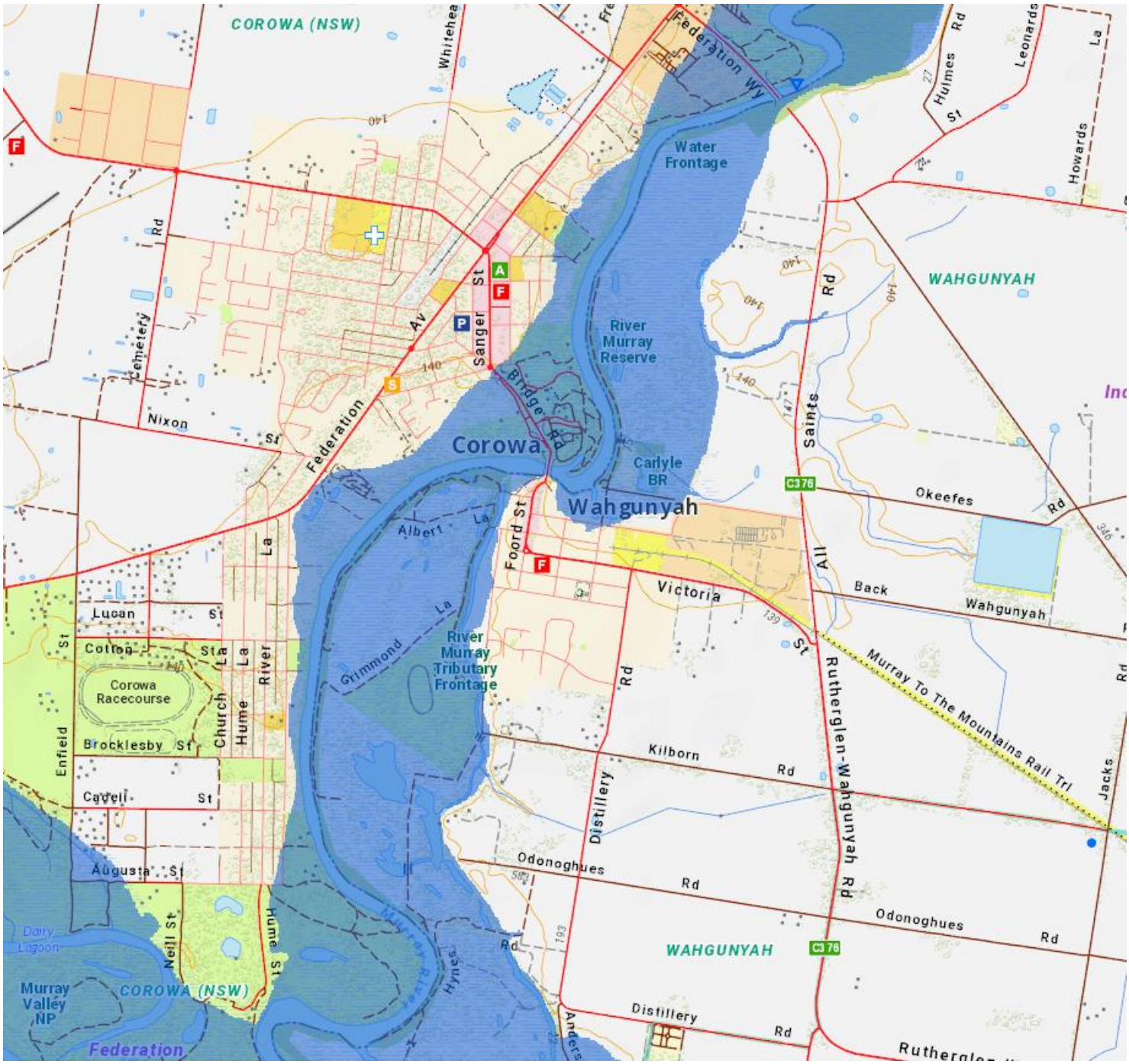
Inundation Maps.

1% AEP Flood Map Chiltern Township (Post mitigation works 2020?)

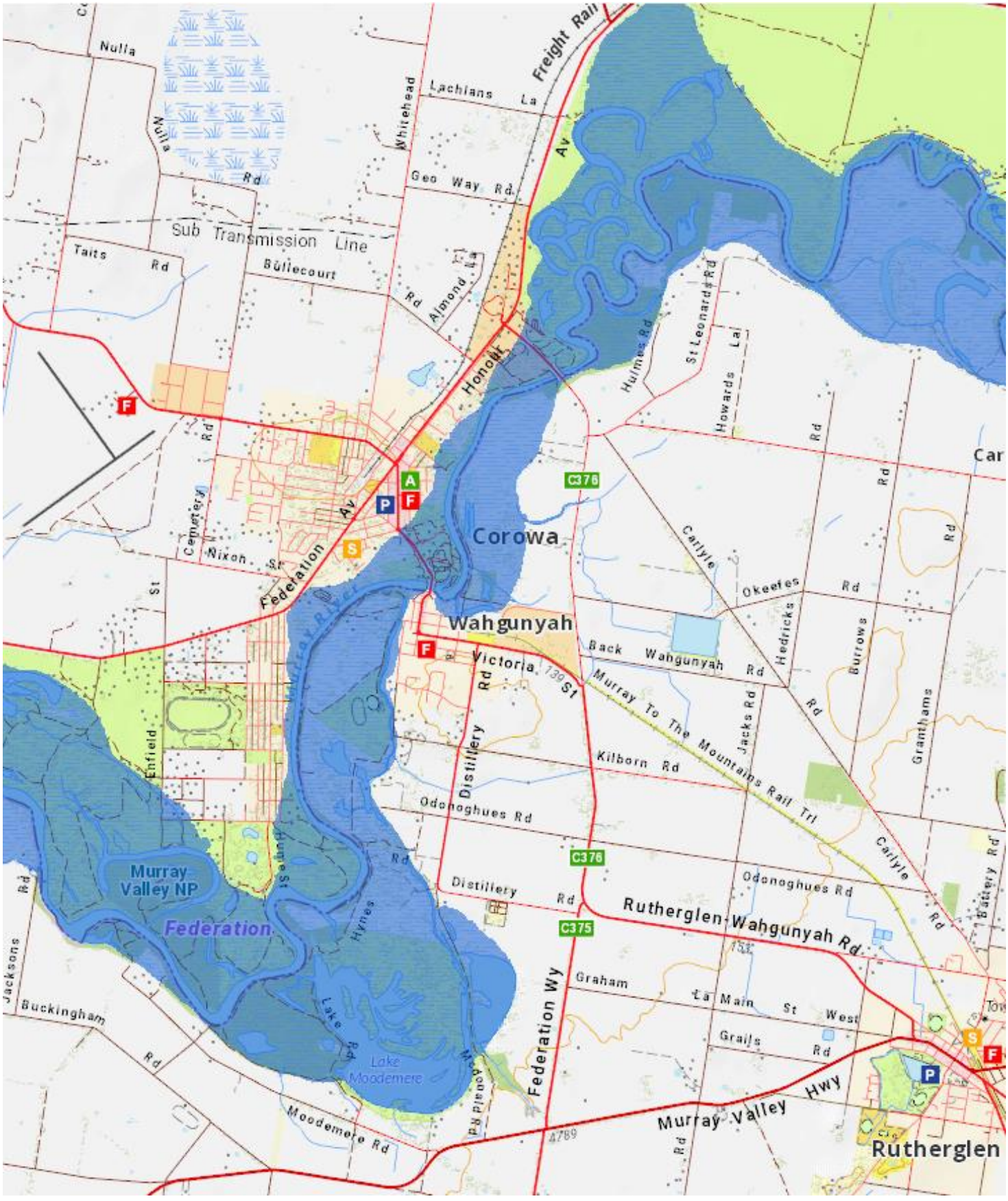


1% AEP Inundation Map – Wahgunyah Township

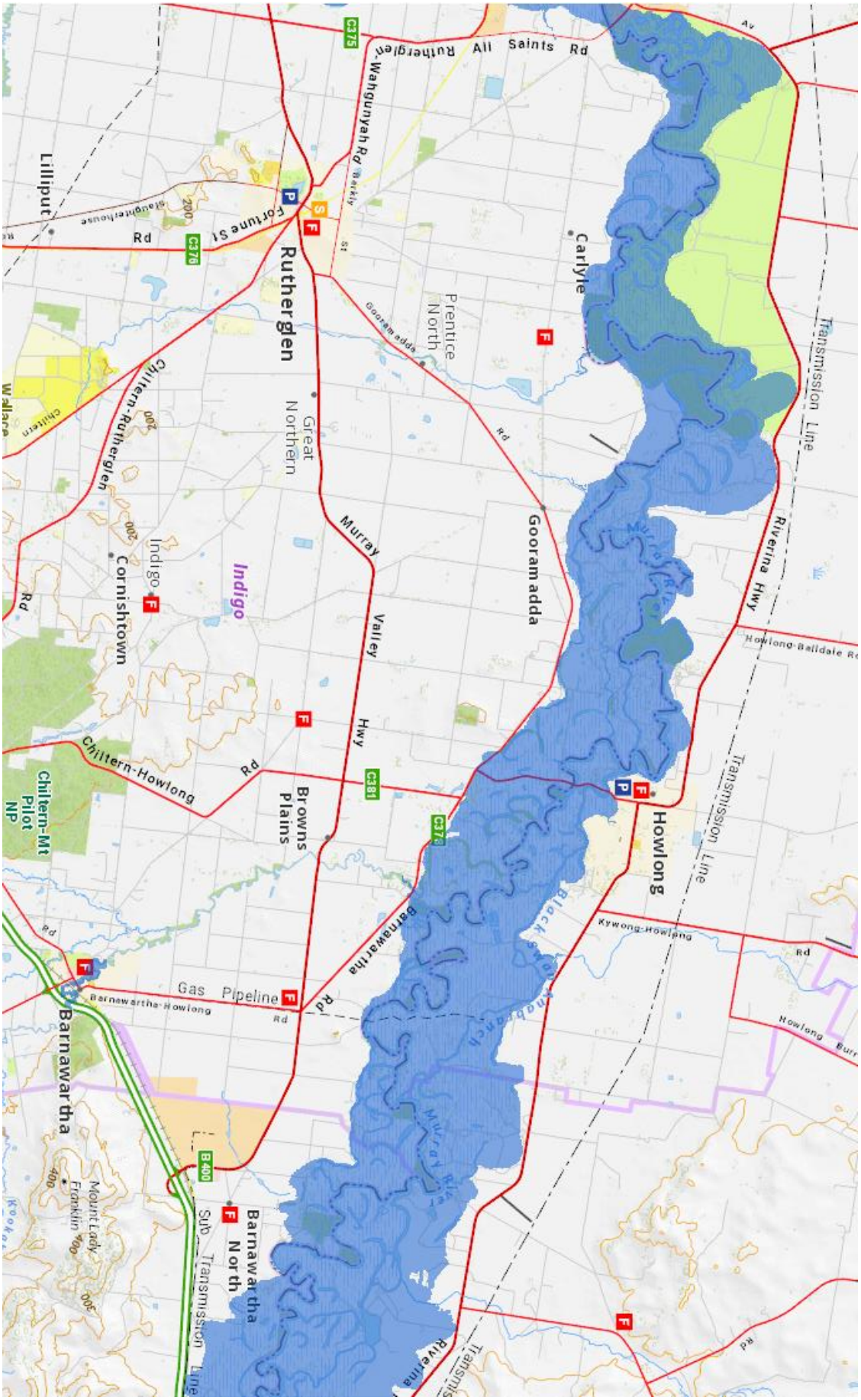
Murray River at Corowa at 1% AEP



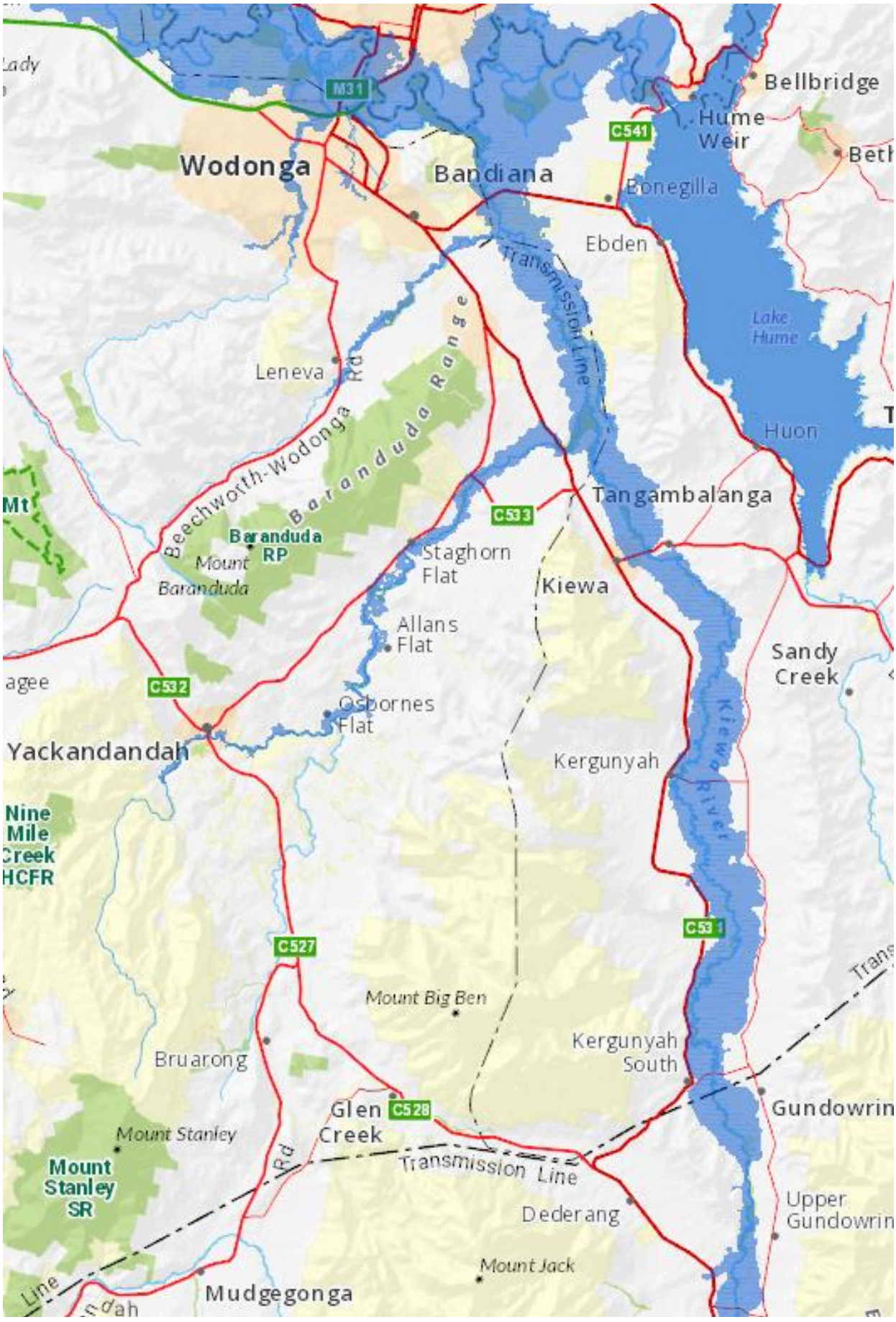
1% AEP Inundation Map – Wahgunyah Township larger scale



1% AEP Inundation Map – Murray River Wahgunyah to Barnawartha



1% AEP Inundation Map – Lower Kiewa River & Yackandandah Creek



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.

Two Local Flood Guides are for Indigo Shire are in development by VICSES, The Kiewa Valley Local Flood Guide (LFG) and the Chiltern Township LFG as at Aug 2023 are under development.

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