



Wimmera Floodplain Management Strategy

MIDTERM IMPLEMENTATION REPORT 2023



Water



Land



Biodiversity



Community



Wimmera CMA

Wimmera Catchment Management Authority (Wimmera CMA) has prepared this report in collaboration with Wimmera Strategic Water Management Working Group. The report aim is to review progress and update regional priority actions five years after Wimmera Floodplain Management Strategy (WFMS) inception.

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WIMMERA FLOODPLAIN MANAGEMENT STRATEGY MIDTERM REPORT 2023

Date of publication: April 2023

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Regional context



Western Victoria's Wimmera region is a quintessential example of Australian temperate 'boom and bust' environments.

The region's 30,000 square kilometres is subject to considerable climate and seasonal variability which means it is prone to the extremes of flood and drought.

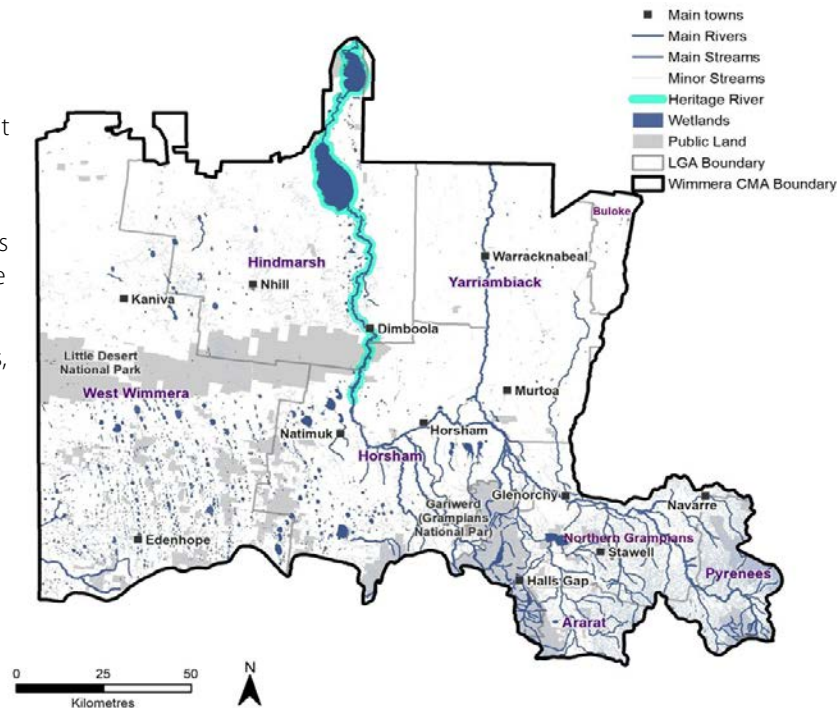
It is also home to an arterial Wimmera River system that unlike most major Victorian waterways, flows inland from its source in the Pyrenees ranges, to terminal Wimmera-Mallee lakes instead of emptying into the sea.

Most Wimmera settlements have evolved along waterways, which means there has always been a need to adapt and plan for, mitigate against and in some cases capitalise on flooding scenarios.

The Wimmera catchment includes or covers sections of eight Wimmera-Mallee local government municipalities – Horsham, Northern Grampians, Hindmarsh, Yarriambiack, West Wimmera, Buloke, Pyrenees and Ararat.

All these municipalities need to prepare for or respond to flood risks, illustrated when heavy and persistent rain throughout the Wimmera catchment generated major river flows in 2022.

Figure 1: Wimmera catchment



A snake searches for dry ground as floodwater spreads from the Wimmera River at Glenorchy in October, 2022. The spring flood posed a variety of risks. Picture: The Weekly Advertiser



Floodplain strategy implementation

The 10-year Wimmera Floodplain Management Strategy 2017 (WFMS) - is designed to guide regional flood-risk-mitigation efforts. It includes a work program featuring current and future priority investment projects.

The strategy, one of nine across the state, aligns with Victorian Floodplain Management Strategy (VFMS) policies and activities developed after a Victorian Floods Review and a parliamentary inquiry into flood-mitigation infrastructure. The inquiry was in response to 2010-11 floods.

The WFMS, is the foundation document guiding relevant agencies in implementing policies and developing projects as part of the overall Victorian strategy. The primary WFMS aim is for agencies with flood-emergency-management responsibilities to align priority projects within a regional work plan.

Horsham, Northern Grampians, Hindmarsh, Yarriambiack, West Wimmera, Ararat, Pyrenees and Buloke municipal councils, VicSES, GWMWater, Wimmera CMA, Barengi Gadjin Land Council and other partner agencies collaborated to develop the WFMS.

Water management group

Wimmera CMA co-ordinates floodplain-management-plan engagement through a Wimmera Strategic Water Management Working Group (WSWMWG). This group includes representatives from relevant Wimmera-Mallee agencies and municipal councils and is scheduled to meet twice a year, although as a broader water-management group can meet more frequently.

Group members work from a strategy workplan and priorities list, sharing development updates and where appropriate applying for funding and funding-application support through the group. Wimmera CMA keeps an active register of workplan project development with member input. This operates as an ongoing workplan monitoring program. Members also network to establish shared outcomes, which are often based on issues emerging from a regional context, for example, floodwater impacts across several municipal boundaries.

The group also considers synergies and opportunities that emerge between floodplain management and Victoria's Integrated Water Management program and waterway health programs.

Funding

Stakeholder agencies continue to see Victoria's Risk and Resilience Grants Program under the National Partnership Agreement on Natural Disaster Risk Reduction as the primary avenue to access state and federal government funding for flood-mitigation and flood-response projects. They are also tuned in to other funding opportunities.

Wimmera CMA provides project advice and endorsement where applicable.



Wimmera workplan stocktake 2022

Wimmera strategy vision has been to: 'Build a flood-resilient community, where Wimmera communities, businesses, government agencies and Traditional Owners are aware of flooding and taking measures to manage flood risks to minimise the consequences to life, property, community wellbeing and the economy'.

Wimmera agencies, guided by the shared vision, have built on five principal workplan areas.

These have been:

- Working towards primary understanding of floodplain risks
- Exploring installation of flood-warning systems
- Developing and implementing statutory land-use plans
- Pursuing community engagement and education
- Developing flood-management and flood-mitigation structures.

Wimmera CMA, in acknowledging a need to reassess workplan progress based on a range of circumstances, including the COVID-19 pandemic, organised a September 21, 2022, stocktake of 97 priority projects in the WFMS.

Wimmera CMA considered the September 2022 stocktake essential to reinvigorate momentum in delivering the plan and other regional water-based plans and projects across the Wimmera-Mallee.

Apart from the heavy impact the COVID-19 pandemic had on regional networking, there had also been several agency personnel and structural changes. This triggered a need to regroup and reassess.

Snapshot of completed projects

- ✓ Updates of various municipal flood-emergency plans and planning schemes to include mitigation, response and safety procedures based on latest flood-study and investigation findings.
- ✓ Exploration of regional cost-sharing schemes for flood-warning infrastructure and weather-prediction services.
- ✓ Investigations of flood mitigation and stormwater issues in built-up areas.
- ✓ Investigations of the impact of flood flows involving connected creeks and development of community information, awareness, and infrastructure programs.
- ✓ Pursuit of accreditation for flood specialists and analysts.
- ✓ Development and implementation of floodplain development guidelines.
- ✓ Updating of a Victorian flood database.
- ✓ Installation of gauge boards.
- ✓ Review of flood-response standards.
- ✓ Development of a community flood observers network website.
- ✓ Investigations into triggers for safe access into a town affected by flood.

A wet 2022 spring

Bureau of Meteorology (BOM) figures from spring 2022, ultimately showed some parts of the Wimmera catchment recording their highest spring rain levels on record. They showed other parts of the Wimmera experienced rain levels well above average. BOM data outlines the extent of spring rain across Australia.

The bureau, in late 2022, also predicted about a 60 percent chance of the Wimmera exceeding its median rain totals from December 2022 to the end of February 2023. This meant the threat of flooding remained throughout the 2022-23 summer. BOM maps, Fig 2 and 3, show Victorian rain totals between September 1 and November 30, 2022.

Figure 2: Australian Bureau of Meteorology - Victorian rainfall deciles 1 Sept - 30 Nov 2022

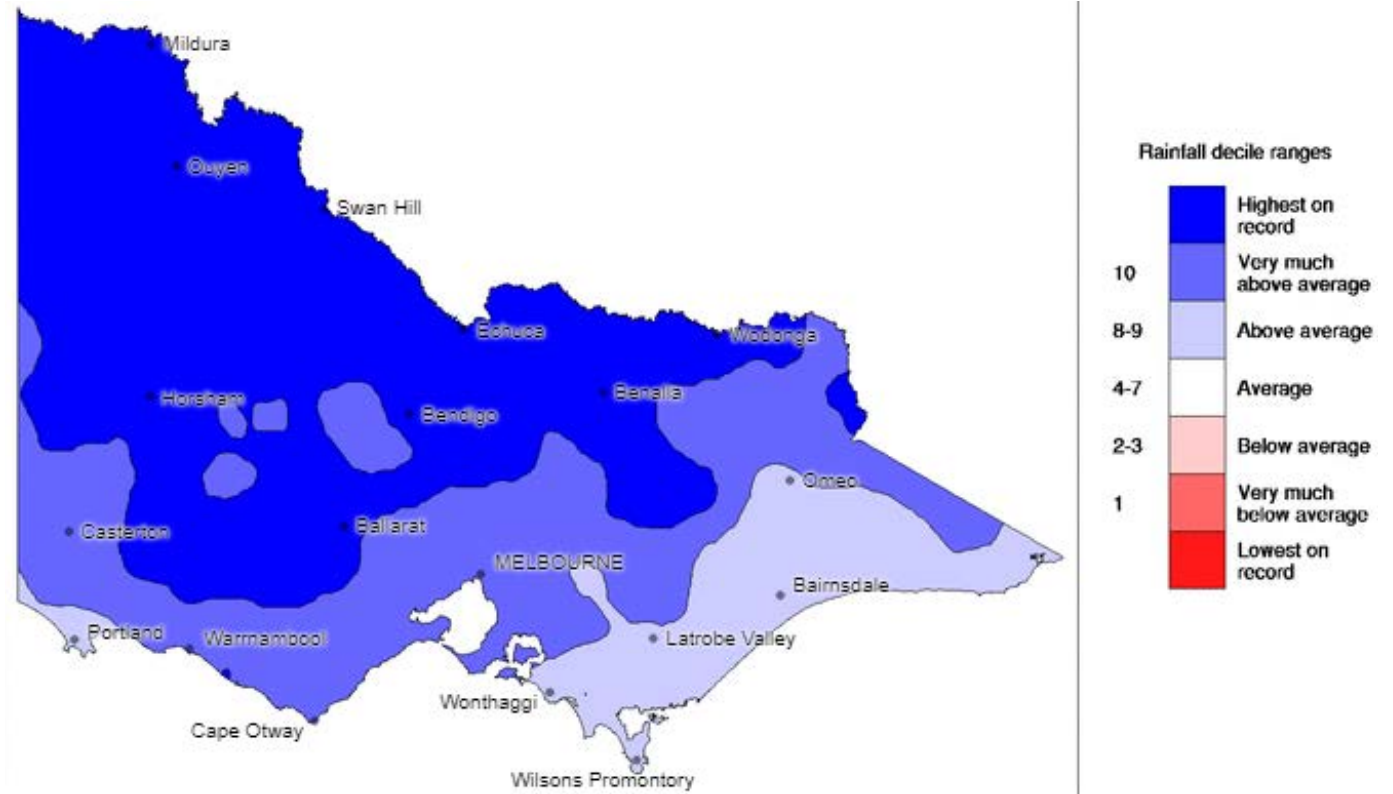
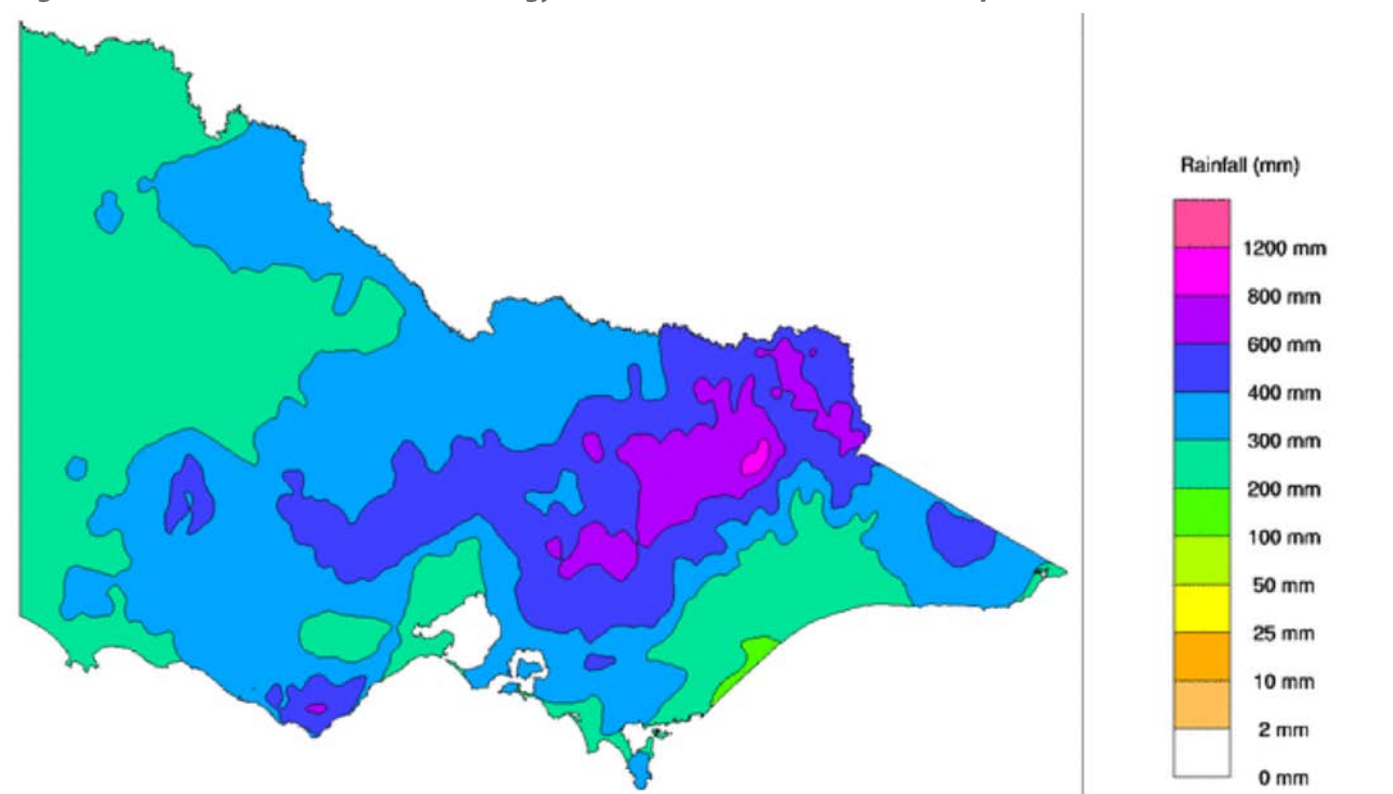


Figure 3: Australian Bureau of Meteorology - Victorian total rainfall (mm) 1 Sept - 30 Nov 2022



Wimmera catchment 2022 Spring Flood

Between 2019 and 2021 major floods influenced by a persisting Pacific Ocean La Nina weather pattern, impacted many areas of south-eastern Australia. But severe rain-producing systems in this period generally fell short of reaching the Wimmera catchment.

Much of the Wimmera, in fact, had been experiencing peaks and troughs of extended dry and occasional wet periods and drying-landscape patterns meant natural flows generated by run-off had been minimal. This in turn had led to relatively low water levels in Grampians headworks storages that supply water for a large part of western Victoria.

Extensive flooding experienced in NSW and Queensland however provided a stark reminder of potential devastation of flooding on rural and regional communities. It also acted as a precursor to circumstances that evolved across Victoria and the Wimmera in 2022.

In 2022 the region experienced a wet spring and unlike circumstances where the catchment had dried out after rain, a regional soaking or 'priming' occurred, generating flooding.

This change was influenced by a combination of La Nina off the northeast coast of Australia, a negative Indian Ocean Dipole off the Western Australian coast, and a predominantly positive Southern Annular Mode off the South Australian coast. All three climate-driving systems are traditionally associated with potentially above-average rain in the region.

Initial riverine flooding across the Wimmera was gradual, with most early saturating rain more evident across northern and western parts of the catchment.

At this early stage, inundation was occurring more across a vast broadacre cropping area, generating localised stormwater and a steady build up in waterway flows more than triggering a sudden large-scale flood in the Wimmera River system.

The continuation of spring rain in the region, and its expansion into high-capture catchment areas then generated expected greater run-off. This quickly increased storage levels and subsequent higher and quicker flows in the Wimmera River's arterial system, with water pushing through the heart of the region and flowing into the previously dry Lake Hindmarsh.

Flooding affected many landholders, placed the region on high alert and generated emergency procedures involving a multi-agency response and impact-mitigation efforts.

Flooding occurred at a time when many broadacre crops across the region were thick and heavy with growth and resulted in a loss of millions of dollars in agricultural production.

Crops directly in line of waterway breakouts influenced flood characteristics and flow across parts of the catchment. Isolated inundation on land without waterway connections also occurred across extensive areas of farmland.

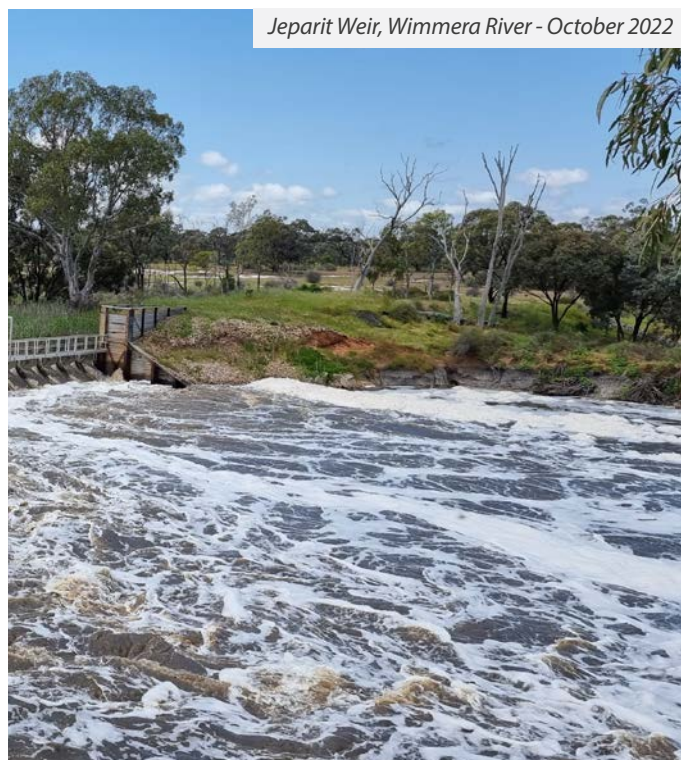
While much of the flooding was gradual, there were also reports of and a need to respond to the threat of rapid inundation of properties, especially in the south-eastern Wimmera settlement of Navarre on Wattle Creek.

The 2022 spring flood, considering how historically unusual weather circumstances had generated conditions, strengthened predictions surrounding climate change and the potential for more severe weather events in the future.

It also galvanised a need to continue to enhance regional adaptability in mitigation and response measures.



Burnt Creek - October 2022



Jeparit Weir, Wimmera River - October 2022

Observations since 2017, including the 2022 flood

Wimmera agencies responsible for emergency management continually worked to identify flood-mitigation projects to improve floodplain management, using the Wimmera Regional Floodplain Management Strategy workplan as a baseline document.

Observations revealed –

- The high value of regional flood studies and the ease of their accessibility to authorities and the public. These were essential in providing information about flood predictions and aided in municipal development planning. They also played a key role in inter-agency and community communication, preparations, and response. VicSES tools to summarise information from flood studies proved invaluable during the 2022 flood.
- There was and is a strong relationship and communication partnership between agencies such as Wimmera CMA, GWMWater, VicSES and municipal councils that must be maintained. All recognised a need for a collective response in sharing intelligence and working through water-engagement and other key issues and solutions before and during floods. The Wimmera Strategic Water Management Working Group and Municipal Emergency Management Planning Committees will be drivers for maintaining these relationships.
- Flood characteristics could vary considerably, based on circumstances such as where and when heavy rain falls in the Wimmera catchment. For example, flooding could occur from localised stormwater as well as riverine circumstances. This caused similar scenarios that accompanied waterway-based events, such as damage to roads and other infrastructure. This reflected a need for planners to be flexible in their approach and responders to be well informed of the potential vagaries of an event.
- A need to have a clear understanding of agency roles and how cross-regional management developments could evolve well before and during a flood emergency.
- The Wimmera waterway system, in crossing several municipal boundaries, had areas lacking flood-information infrastructure, for example, flood studies, flood or rain gauges and associated warning systems. Despite established gauges in key sites providing important information, 'gaps' had the potential to create flood-prediction challenges across the region. There was a for need for a regional instead of individual municipal approach to funding and further developing the region-wide gauge network.
- Local Government frustration in sensibilities surrounding the difference between flooding and urban stormwater management when seeking Risk and Resilience Grants Program funding for flood-mitigation projects. Urban or town stormwater and drainage infrastructure projects are ineligible for funding under the program.



Wimmera workplan priority reassessment

The continuation of wet weather throughout spring, 2022, and onset of flooding and need for a regional response after the WSWMWG September meeting, provided an opportunity for agencies to again reassess priorities.

Wimmera CMA reached out, when the primary threat of spring flooding had subsided, to relevant agencies in late November 2022. It asked them to draw on latest experiences and articulate any new immediate or long-term priorities they had identified during the flood emergency.

It asked for representatives to forward details for further discussion and assessment before a February 7, 2023, WSWMWG meeting.

Information leading up and from the February 7 meeting revealed that of the 97 original strategy actions, the number of completed projects had reached 46, 23 were in progress, 21 had yet to start, seven projects were no longer priorities and agencies had identified seven new priorities.

The strategy workplan includes three priority levels – high, medium, and low, based on time-frame and opportunity as well as relevance and need.

Of 44 high-priority projects, which had an initial WFMS aim to be undertaken within the first three years of the plan, agencies had completed 29, were progressing in completing seven more and had yet to start seven others.

Of 32 medium-priority projects, which had an initial WFMS aim to be undertaken between three and five years of the plan, agencies had completed 13, 10 were in progress, four were yet to start and five considered no longer priorities.

Of 22 low-priority projects, which had an initial WFMS aim to be undertaken between five and 10 years of the plan, four were completed, six were in progress, 10 were yet to start and two considered no longer priorities.

WSWMWG members agreed at the February 7 meeting to accept member recommendations to include new priorities in the plan. These included six as high priority and one for a medium priority.

They also agreed to re-prioritise some existing projects, which has led to redevelopment of an ongoing workplan.

NEW PRIORITIES

It is important to note that one of the seven new priority actions is directly connected to or covers off on nine existing workplan projects and embraces a series of new-priority suggestions.

This is, 'An over-arching priority is to explore further development and upgrading of the overall Wimmera waterway flood-warning system based on flood and/or rain gauges to improve the community flood-warning process'.

VicSES is leading this call, with the support of all other agencies, in an effort 'to fill information' gaps during flood emergencies.

Other new priorities include –

1. Statewide: **Explore streamlining a funding approach that also considers stormwater management as part of flood mitigation.** Explanation: This has been problematic at local government level considering local sensibilities around the causes of and mitigation against flood events. In many circumstances involving Wimmera cities and towns, there can be a direct relationship or connectivity between stormwater and riverine flooding. This in some cases is directly related to ageing or inappropriate infrastructure. Stormwater flooding in isolation can present flood risks to communities.
2. Glenorchy: **Review the community planning framework to include disaster resilience.** Explanation: Move onto the workplan as part of implementing a community plan.
3. Jeparit: **Undertake a detailed design and cost analysis to replace Jeparit Weir. The ageing weir might not be fit for purpose in flood management and/or mitigation considerations.** Explanation: A new Jeparit Weir might be able to play an important role in flood-mitigation outcomes involving the Wimmera River.
4. Warracknabeal: **Develop flood-mitigation and infrastructure plan for Whitton Swamp project at Warracknabeal.** Explanation: Flood mitigation is required for the project in relation to the impact on major roads.
5. Natimuk: **Finalise a flood-gauge-based system in the town of Natimuk to better inform about potential and severity of flooding of Natimuk Creek.** Explanation: The town has several residential properties at risk of flood circumstances. Work had previously been carried out to install a rainfall gauge, however this was never linked to a warning system. Extra notes: Connected to primary new priority. Infrastructure is also in place and needs to be activated.
6. Glenorchy: **Further Glenorchy flood-mitigation analysis:** Note: In progress.



Stakeholder snapshots and response to 2022 spring flood

Grampians VicSES

Recent flood events in the Grampians Region led to a busy time for VicSES volunteers and staff in responding to requests for assistance.

Flooding started in Halls Gap on October 6 and continued to escalate across the region throughout October and into November.

VicSES thanks all councils, CFA, FRV, DELWP, Parks Victoria, the Victoria Police and Wimmera CMA for their work. It also thanks Mike Shaw for his assistance in the Horsham ICC during the October flood. His assistance with collating on-the-ground impacts and feeding this information into the ICC to be used for community warnings was provided quickly and efficiently.

WIMMERA CATCHMENT FLOODING ON OCTOBER 6 AND 7, 2022.

The 90mm of rain that fell overnight in Halls Gap on October 6 impacted several buildings above floor. These included Brambuk and Parks Victoria buildings.

FLOODING ON OCTOBER 14

A significant rain band passed through the Grampians Region overnight on October 13, bringing heavy rain. This resulted in flash flooding in areas including the Grampians and MacKenzie River, Burnt Creek and Norton Creek.

Significant flooding impacted many towns across the Grampians Region. These included –

Halls Gap: Heavy overnight rain on October 13 caused flash flooding in areas surrounding Halls Gap and near roads adjacent to Lake Bellfield.

Glenorchy: Flooding in the Wimmera River reached a peak at the Glenorchy gauge of 5.01 metres – reflecting an approximate 1-in-100-year AEP flood. Seventeen properties were impacted by flooding, more than five buildings were flooded above floor. Flooding cut access to many houses for several days.

Great Western: On October 14, flooding from Concongella Creek partially cut access to the Western Highway with a flood depth up to 0.2m. Victoria Police and Vic Roads staff were present at the site overnight to slow down traffic and allow cars to pass through the floodwater slowly. It was thought that if cars were detoured, this might cause additional problems as most roads in the area were impacted by flooding. There were no houses reported to be impacted by flooding.

Wartook, Laharum area: There was significant flooding along the Norton Creek, MacKenzie River and Burnt Creek. Major flooding in this area mainly cut access to roads and caused significant crop damage. Flood warnings were issued.

Horsham: Horsham experienced a small flood event between a 1-in-5 and 10-year AEP event. The flood peak was 3.50m on October 19. This event caused minor impacts to low-lying land and roads along the Wimmera River. Flood warnings were issued.

Natimuk: Minor flooding occurred in Natimuk and along Natimuk Creek and Little Natimuk Creek.



Wimmera catchment community engagement

GLENORCHY COMMUNITY FLOOD MEETINGS

VicSES attended two Glenorchy community Flood Mitigation meetings in November to discuss proposed flood mitigation works to reduce flood impacts.

Thank you to Northern Grampians Shire council for taking the lead to facilitate these meetings.

SUMMARY OF VicSES FLOOD-STRATEGY ACTIONS DELIVERED IN WIMMERA CATCHMENT 2022

- Rupanyup Community Flood Information Session, April 1, 2022
- Rupanyup CFA flood Information Session, May 23, 2022
- Victoria Police in the Grampians Region, May 26, 2022
- Parks Victoria, Grampians National Park staff training session, August 17, 2022.
- Horsham Community Flood Information Session August 21, 2022.
- Horsham ICC, CFA, FRV and DELWP staff training session, August 31, 2022.

- Natimuk flood training session, Victoria Police, CFA, SES and community, September 12, 2022.
- New and updated local flood guides written for Dadswells Bridge, Horsham, Halls Gap, Natimuk, Rupanyup, Glenorchy, Great Western.

- Clare Minter, VicSES Community Resilience Coordinator, Western Region

Wimmera Emergency Management Team

As with all local emergency services, preparing for and responding to the rainfall/flood event kept the Wimmera Emergency Management Team and our partner councils busy throughout October 2022.

The Wimmera Emergency Management Team was represented at the Incident Control Centre each day during the flood event.

This enabled us to respond to requests from the ICC in a professional and timely manner.

We also worked closely with the ICC's Public Information Unit to ensure that timely, relevant, and concise messaging was provided to the community throughout this time.

- Mike Shaw, Co-ordinator, Wimmera Emergency Management Team

Wimmera Catchment Management Authority

Wimmera CMA Liaison Officers played an integral advisory role within an Incident Control Centre during 2022 spring flooding in the Wimmera catchment.

Working with VicSES, LGAs, flood analysts, other agencies and Wimmera communities, it took a leadership position in information dissemination as part of the emergency response.

It took on responsibilities to keep communities informed about flood behaviour, history and potential impacts in the region, using various media outlets and platforms to pass on important details.

Wimmera CMA also received multiple requests for flood information for individual properties throughout the spring flood.

People from across the catchment, particularly Horsham and Dimboola districts, requested the information. Each inquiry was based on what the flooding extent would be on their properties and most asked questions around flood-peak times.

Wimmera CMA also played an important role in the management of high flows through the catchment. The flows allowed water to access areas that had been dry for the previous few years.

Near Horsham, arrangements allowed for the diversion of flows to previously dry Dock Lake via Green Lake on October 1. These actions aimed to reduce water levels downstream in the catchment and reduced the flood risk in some stretches of the Wimmera River.

Flows entered Lake Hindmarsh from the Wimmera River and the lake, also previously dry, reached an estimated 60 percent of its capacity.

Wimmera CMA seized the opportunity to initiate a monitoring program to understand what the sudden arrival of water has meant for the lake district's birdlife. Monitoring will continue into 2023.

Wimmera CMA is also constantly monitoring water quality in catchment waterways to understand the risk the flood has placed on aquatic species. Important chemical changes have occurred in the flows, and water-quality monitoring at specific sites will continue in 2023 to ensure authorities can see any negative trends before they impact aquatic life.

– David Brennan, Chief Executive Officer, Wimmera Catchment Management Authority

Figure 4: A Wimmera CMA advertisement that appeared in Wimmera regional newspapers and on their digital platforms in spring, 2022

STAY INFORMED DURING FLOODS

Spring rain across the region has saturated parts of Wimmera catchment and run-off has led to the Wimmera River and associated creeks and streams filling and running strongly.

We recognise a need for communities to be as informed as possible about flooding in the Wimmera River system. As part of the flood-response effort, we encourage people to make the most of online flood-information maps.

Mapping information is reflective of 25 years of Wimmera data collection, which includes many flood investigations.

Wimmera CMA, while continually monitoring circumstances, has also been busy on flood recovery. We are seeking any information about flood-damage to waterway fencing and public infrastructure such as waterway crossings or bridges, as well as erosion issues.

Get in touch via –

- Email wcma@wcma.vic.gov.au
- Phone 03 5382 1544

User-friendly 'pozī' maps are readily accessible for the community on the **Wimmera Interactive Catchment Map** website via wcma.pози.com

- > Click on the menu bar on the top left of screen
- > Click on Flood Investigations
- > Based on latest emergency response information from VicSES and your local council, select the relevant map for your location.

For example, if you are in Horsham and the predicted flood size is 1-in-10 years, search for Horsham Wartook Flood Depths 10% (1 in 10yr)

COMMUNITY ENGAGEMENT

As part of Wimmera CMA's crucial role in keeping the community involved and aware, it established a 'pop-up' information site at Horsham Weir parkland on October 17, 2022.

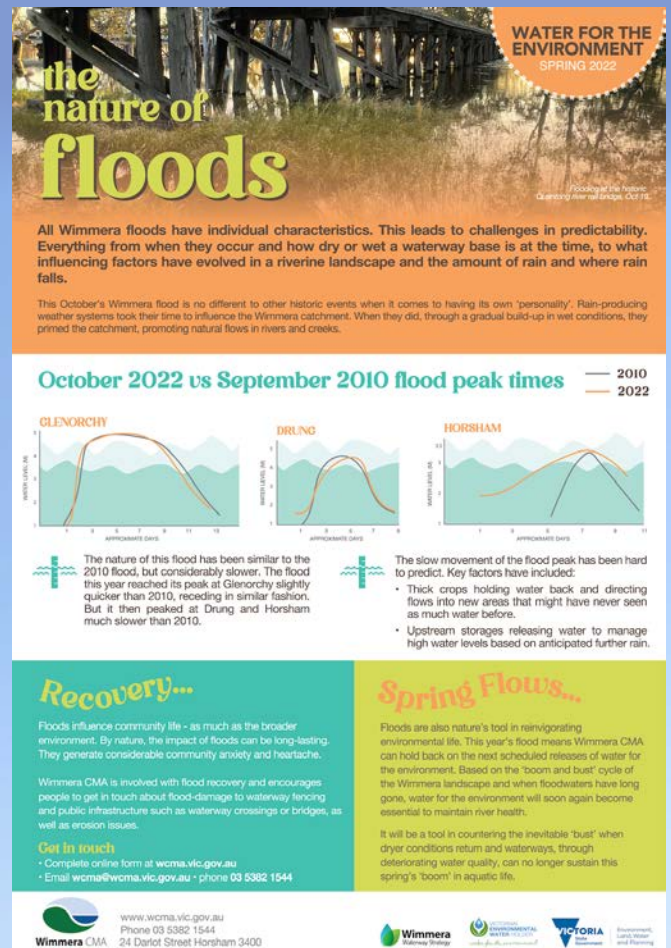
During this time, the Wimmera River was flowing strongly through Horsham Weir, with 7299.3 megalitres per day passing a nearby river Walmer site gauge and heading towards the lower reaches of the waterway.

At the time, many people were visiting the weir precinct to observe the river's high-water levels and Wimmera CMA took this as an opportunity to educate and inform the community about the flood and what could be expected.

Wimmera CMA projected information on a portable screen and several staff members walked among the crowd with laptop computers to show people the different flood depths of individual properties and to explain what they might see in the coming days.

This event also provided an opportunity for the community to ask any questions they had, and it gave the Wimmera CMA Pozi site a larger platform that received a record number of clicks during the flooding event.

Wimmera CMA also regularly used media networks and platforms to keep the catchment community informed.



A Wimmera CMA advertisement that appeared in Wimmera newspapers and on their digital platforms in spring, 2022

Wimmera CMA Project Manager Bryana Bisset shares flood-map information with Horsham residents who had gathered at Horsham's Weir Park during the 2022 spring flood



Wimmera CMA Water Officer Cobba Harrison operates a drone to capture aerial footage of a rapidly filling Dock Lake, southeast of Horsham in October 2022. Water diversion to previously dry Dock Lake from neighbouring Green Lake aimed to reduce water levels downstream in the catchment and reduce the flood risk in some stretches of the Wimmera River.

GWMWater

GWMWater initiated an internal Emergency Management Team to coordinate our response to the heavy rainfall events and subsequent flooding during spring, 2022.

Our response involved management of our headworks storages in Lake Wartook, Lake Lonsdale, Lake Fyans, Lake Bellfield, Taylors Lake and associated channels and diversion infrastructure.

GWMWater participated in the local Incident Control Centre and worked closely with the Wimmera CMA and VicSES to manage flows into the Wimmera River, particularly from Burnt Creek due to Lake Wartook spilling and large catchment flows.

GWMWater continued to work with VicSES, BOM and the WCMA post the Wimmera River peak, managing high flows in Mt William Creek as a result of both Lake Bellfield and Lake Lonsdale spilling. Lake Bellfield had not previously spilled since 1997.

There was no impact to customer services as a result of the floods from a drinking water and sewer services perspective.

GWMWater sandbagged low-lying infrastructure around the Wimmera River in Horsham but with the lower-than-forecast peak occurring there was no impact to our urban infrastructure.

High flows in the headworks channel system did result in a number of areas overtopping or blowing out, which required repair. We also had damage to the inlet structure at Taylors Lake, which required repair during the high-flow conditions. The Stawell diversion weir on Fyans Creek was also damaged as a result of high flows.

From a recovery perspective we are continuing repair mainly access tracks and channels on our headworks assets.

- Nick Mumford, GWMWater Executive Manager Service Delivery

Department of Transport

The Department of Transport's response to the spring flood for the start was all based on traffic management.

This involved closing roads as required and providing detours when requested through the Incident Control Centre, Police Victoria or our own surveillance team, or signing hazards, such as 'Water over road' if the roads are able to stay open.

We also attended ICC briefings or sent an Emergency Management Liaison Officer (EMLO) in if required. EMLOs were not required at Horsham but were at Ballarat for the first two days. Then, as water receded the roads were assessed for damage, repairs and maintenance patching completed by the contractors and the roads reopened.

All road-closure information is captured in VicTraffic website.

- Greg Deutscher, Emergency Management Lead / REMO, Department of Transport, Grampians Region

Parks Victoria - Wail, Wimmera

Regarding Parks Victoria's actions and response in the Wimmera (not the Grampians) to 2022 spring flooding in the region, the following is a summary of our response and works proposed or in process for flood-recovery funding with our organisation.

FLOOD RESPONSE

- Closures of Horseshoe and Ackle Bend camping areas in the Little Desert National Park occurred, which remained closed from mid-October until mid-December, with partial closures still in place at Horseshoe Bend in early January.
- Tracks to the south of Ackle Bend, upstream along the Wimmera River were closed due to heavy rain impacting the suitability of the tracks for visitors and remained closed until a week prior to Christmas.
- Tracks entering and through Kiata campground south of Nhill were impacted by large rainfall events and visitors relocating to the site who couldn't access Horseshoe and Ackle Bends. This resulted in damage to roads and visitors being bogged.
- An increase in water and flooding along the Wimmera River resulted in Lake Hindmarsh receiving large inflows, which increased demand and visitation to the Schulzes Beach site. This required works to remove wattle regeneration along the lake fringe to increase visitor safety and access.

RECOVERY WORKS

Bids are in place with funding to be allocated to conduct the below works within our footprint -

- Road repairs and replacement, including culverts, at Horseshoe Bend, Ackle Bend and Kiata campgrounds.
- Tree risk assessments and remediation at Kiata, Horseshoe, Ackle and Centenary Park campsites.
- Repairs to Wail office and bitumen RD following heavy rain and address drainage issues.
- Possible funding to be allocated to mitigate weed-spread impacts from flooding.

- Jeremy Downs, Area Chief Ranger, Wail, Wimmera.

Yarriambiack Shire Council

The 2022 October floods were expected to be Major with alerts for Yarriambiack and Dunmunkle Creeks issued.

The water flowed slowly and did not reach the major peak as per the SES Flood Management Plan for the municipality – the end result was a high flow for both creeks.

The Dunmunkle creek system flowed nicely from Glenorchy and through Rupanyup due to flood-mitigation works undertaken in 2020, in a combined stakeholder project through IWM. Pre-planning by the council also played a major role in the positive outcome.

As part of the channel decommissioning process, Dunmunkle Creek was meant to have had a 'channel' removed from the creek bed and reinstated back to its original form. Because the project has not been completed and there are still agreement issues with the stakeholders, the council has seen culvert and flow issues leading to more farmland inundation than should have occurred. This needs to be addressed as soon as possible.

Yarriambiack Creek flowed smoothly all the way through to Hopetoun. Past flood mitigation works, and pre-planning enabled this to occur. Weir gates were opened at the right time at Warracknabeal, Brim and Beulah with plenty of community consultation occurring.

Council enacted its levee plan for the first time, with some minor amendments needing to be made from an administrative perspective post event.

The levee was constructed in the required time frame and had the Warracknabeal town community feeling safe as a result.

The council closed all relevant roads on both creek systems, with a significant number of road hazard/water-over-roads signs deployed across the shire.

The council advised one resident to undertake sandbagging as per the SES flood management plan in Warracknabeal. Fortunately, the water level never reached predicted levels with no issues being the result.

The saturated catchment and continued heavy rain caused damage to significant sections of the council's road network. Infrastructure assessments of our road and drainage systems continue in consideration of a Natural Disaster claim.

During the event, the council lodged a request to the ICC for approval to allow water to be diverted into Whitton Swamp between the Henty Highway and Warracknabeal Stawell Road as part of proposed flood-mitigation works. This would have diverted water from Borung Highway in which there were flooding issues occurring at the time. Council was denied the request.

The council incurred a lot of rain-event issues in most of

its towns, due to the capacity of all the current drainage/ stormwater systems.

The council used the Glenorchy, Murtoa/Jung gauges, along with the new Warracknabeal gauge and the Ailsa mobile gauge (WCMA projects) during the event.

Council flood monitoring was a key process during the event and led to a more productive outcome with community and internal communications.

There was excellent communication between the ICC and relevant stakeholders within VicSES, WCMA, Yarriambiack and Horsham Rural City Council, which allowed for informed and prompt decision-making about any mitigation actions.

- Michael Evans, Director, Assets and Operations, Yarriambiack Shire Council

Pyrenees Shire Council

The impact of the October spring flood regarding the Wimmera catchment within Pyrenees Shire, which includes Glenpatrick and Nowhere Creek areas, involved reports of damage to road networks and infrastructure.

There were minimal residential impacts reported and agricultural losses in this area had yet to finalised in early December.

Assessments in the Pyrenees Shire continue to be evaluated for disaster claims going forward.

- Kathryn Doroshenko-Pempel, Pyrenees Shire Council Emergency Management Coordinator

Northern Grampians Shire Council

The recent October 2022 flood was expected to reach Major category with flood warnings issued for Glenorchy and Navarre.

The flood impacts were slow due to the moderate intensity rainfall over a long duration. Riverine flooding, in particular in the Wimmera River, responded largely as expected but slowed due to water flowing through mature crops in the farmed flood plains.

In accordance with the SES Flood Management Plans, sandbags were made available in Stawell, St Arnaud, Halls Gap, Great Western, Navarre and Glenorchy. Sandbags were well taken up by residents. Four residential properties were impacted by water above floor level and 26 residential properties impacted by flood water inundation.

Significant water in Navarre and Glenorchy filled the streets, bringing the communities to a halt. St Arnaud was impacted by road closures, cutting off access to and from town for 24 hours. Other major road closures impacted freight routes and communities' ability to move around the region.

Local roads have been impacted significantly across the region with 14 road closures implemented at the peak of the event. Emergency work progressed immediately, getting the road network operational in preparation for harvest activity. Further work is required to reinstate the network back to pre-flood condition. This being the second flooding event in two years within NGSC, infrastructure defects that were rectified have since been damaged again.

Advanced warnings and delayed impacts helped establish effective preparations including the establishment of a community hotline. Remote working arrangements were effective in delivering response and the Wimmera Emergency Management Cluster worked well and communicated effectively.

Communities in Glenorchy and Marnoo came together to share their experiences and support for one another. A town hall community meeting was in Glenorchy to discuss the recovery needs of the community. A second town hall meeting has since been held in Glenorchy looking at co-designing flood mitigation options.

**- Trenton Fithall, Acting Chief Executive Officer,
Northern Grampians Shire Council**









Horsham Rural City Council

Horsham municipality was impacted by a series of flood events throughout October-November 2022.

The main flood event on the Wimmera River in mid-October peaked at major flood level at Glenorchy and was initially also forecast to be a major flood event in Horsham. Extensive preparation for this occurred, including advance distribution of sandbags to houses identified as likely to be impacted by this event. Fortunately, and contrary to forecasts, the peak dissipated along the river, and flooding in Horsham was only between the minor and moderate flood level, with no houses ultimately being impacted.

Significant impacts on the floodplain included damage to extensive area of crops, and significant road impacts, with many closures.

The initial assessment of damage to roads was estimated at close to \$3-million with the detailed assessment not complete in January 2023.

Throughout October-November 2022, significant flow events close to minor flood level occurred on a near weekly basis. The ongoing rain impacted significantly on crops in non-riverine areas as well.

Significant flooding also impacted many other rural areas in the municipality, with streams on the flanks of the Grampians and Black Range mountains flooding significantly on several occasions, again with many road closures and subsequent damage to roads and crops.

Norton Creek, which joins the Wimmera River downstream of Horsham, flooded extensively on at least two occasions.

Communities were generally well-prepared for the flooding. The municipality has a detailed flood-response plan, which is well-informed by a series of studies of flooding in most of the catchments in the municipality. The mapping of this flooding is highly reliable for a range of flood levels and provides detailed reliable information on the extent of flooding on properties on the floodplains.

- John Martin, Horsham Rural City Council, Director, Infrastructure Services

Flood studies update Horsham council scheme

By Abby Walter

A collection of flood studies has prompted an update to Horsham's planning scheme with an amendment out for public response.

The flood amendment is an overlay that allows Horsham Rural City Council to regulate development of land to protect vegetation, heritage, and buildings subject to flood risk.

Six flood studies undertaken by Wimmera Catchment Management Authority, CMA, guided the amendment.

Horsham Rural City Council co-ordinator strategic planning and heritage Stephanie Harder said flood studies updated existing flood data and established a baseline understanding of flood risk.

"The studies inform planning controls to be introduced into the Horsham Planning Scheme to manage development and subdivision of flood-prone land," she said.

"This amendment to the Horsham Planning Scheme will introduce planning controls for developments, such as new or modified homes, businesses, and infrastructure on identified flood-prone land. It will not impact agricultural practices or current land uses."

Ms Harder said it was vital the most up to date flood information was reflected in planning controls.

"This ensures effective flood risk management," she said.

"Councils are responsible for the implementation of flood studies through a planning scheme amendment in accordance with the Victorian Floodplain Management Strategy 2016.

"The council has been working closely with the Wimmera CMA since the completion of the Horsham and Wartook Valley Flood Investigation in 2019, in transitioning the outputs of the six flood studies into flood mapping for the planning scheme.

"Council resolved on February 28 to request the Minister for Planning to authorise the council to prepare and exhibit a planning scheme amendment.

"Since then, the council's strategic planning team has been working with the Department of Environment, Land, Water and Planning to prepare and finalise the amendment for exhibition." The flood studies used to form the amendment were Horsham and Wartook Valley Flood Investigation 2019, Natimuk Flood Investigation 2013, Warracknabeal Brim Flood Study Investigation 2016, Mount William Creek Flood Investigation 2014, Wimmera River and Yarriambiack Creek Flow Investigation 2009-10 and Lower Wimmera Flood Investigation 2016-17.

Historic data

Wimmera CMA chief executive David Brennan said the new flood maps were developed through community consultation and historic flood data.

"Educating our community and making sure they are informed about this is important," he said.

"Homes are our biggest investments and when building on a flood plain there's a real risk you will be flooded out, so people need to be informed.

"Also, people who move to the Wimmera would have no historic knowledge of flooding, and when it does happen, how high the risk is or how deep the water gets.

"This is a pragmatic approach to making sure our community is safer and more protected from floods.

"Just because some land is marked with water over it does not mean something cannot be built there, it means there are conditions such as depth of septic tanks and where power points are."

The council conducted drop-in sessions last week and submissions to support or oppose the amendment are open until December 20.

Ms Harder said the council welcomed submissions to the amendment.

"Strategic planning officers are available to discuss any questions community members might have about the amendment and how it impacts their land," she said.

"Council will review all submissions received, discuss with submitters their concerns, meet with them where required and will aim to resolve those concerns and issues.

"A planning panel will be requested if there are objecting submissions the council is unable to resolve.

"If no objecting submissions are received or are all resolved, the process to adopt the amendment can start.

"If a planning panel is required, anyone who makes a submission will have the opportunity to be heard by the planning panel, which is appointed by the Minister for Planning.

"The panel will make recommendations to the council following the panel hearing."

Ms Harder said the council would then consider the recommendations of the panel and decide to adopt or abandon part or all of the flood amendment.

"If adopted by the council, the amendment will be submitted to the Minister for Planning to approve," she said.

"If no planning panel is required, the council will determine whether to adopt or abandon part or all of the amendment, which will then be submitted to the minister to approve."

A submission can be posted to 'Strategic Planning Team, Submission to Amendment C81hors, Horsham Rural City Council, PO Box 511, Horsham VIC 3400', emailed to strategic.planning@hrcc.vic.gov.au or filled out on the council's website, www.hrcc.vic.gov.au/c81-Flood-Amendment

West Wimmera Shire Council

West Wimmera Shire Council closely monitored conditions and circumstances as part of a broad planning process in response to Victoria's 2022 spring flood emergency.

While parts of the shire experienced periods of heavy rain throughout the second half of 2022, it escaped the serious flooding, infrastructure damage and inundation that affected other parts of the state. This prompted a council response appropriate to the circumstances.

The floods did, however, galvanise a need for further examination of circumstances surrounding the potential of flooding, especially for the towns of Edenhope and Apsley.

With heightened interest in land development identified during the review of the West Wimmera Planning Scheme, flood intelligence is essential for orderly planning for urban growth.

The council is keen to elevate projects to undertake flood investigations to determine flood risks to Apsley and Edenhope, listed on Wimmera Floodplain Management Plan's workplan as numbers 62 and 65 respectively, from medium to immediate priorities, with a Planning Scheme amendment to also proceed to bring existing flood investigation recommendations into the West Wimmera Planning Scheme.

It will start formalizing applications for funding for the next round of government Risk and Resilience grants to pursue these studies.

– Edwin Irvine, Senior Planning Officer, West Wimmera Shire Council

Hindmarsh Shire Council

The recent October floods were expected to be minor with alerts for Dimboola and Jeparit issued.

The water flowed slowly and did not reach the minor peak as per the SES Flood Management Plans for Dimboola and Jeparit – however high flows went through both weirs and mitigation efforts were undertaken including removal of all weir boards at both locations and minor works to drainage and culverts.

The movement of the floodwater along the Wimmera River caused a number of roads to be closed – including River Road which runs along the river from Dimboola to Antwerp and a significant number of road hazard/water over roads signage was deployed across the Shire.

Two properties in Dimboola had precautionary sandbagging undertaken, however no outbuildings or dwellings were impacted.

The saturated catchment and continued heavy rainfall events caused damage to a significant section of the road network.

Infrastructure assessments of our road and drainage systems continues to be undertaken in consideration of a Natural Disaster claim.

There was excellent communication between the CMA, Hindmarsh, and Horsham councils, which allowed for informed and prompt decision making about mitigation actions.

– Jessie Holmes, Hindmarsh Shire Council Infrastructure Services Director



The area around Dimboola Weir is awash as floodwater makes its way through the Wimmera River system on October 20, 2022. Water flowed into previously dry Lake Hindmarsh, more than half filling the large, natural waterbody, and had started to intrude into Outlet Creek towards Lake Albacutya when flows ceased.

What has worked?

Communication and teamwork

Efficient communication, having access to key information and teamwork are critical ingredients in efforts to manage any natural or large-scale emergency such as floods.

The value of event responders quickly and efficiently gathering intelligence while understanding the sensibilities and motivations of agency representatives can be profound.

Wimmera Strategic Water Management Working Group members, responsible for overseeing Wimmera Floodplain Management Strategy, reflected at a February 7, 2023, meeting on the worth of relationship development and community engagement.

They explained that regularly returning to the group discussion table had been invaluable and ensured members were informed, a step ahead in planning and 'held to account'.

VicSES representatives, heavily involved in Wimmera response and mitigation efforts during a 2022 spring flood, said strong community engagement and solid agency relationships had worked well during the event. They acknowledged the importance of the group's role in developing flood management and response.

When Wimmera CMA's Dean Lawson asked the meeting what had worked well during the 2022 flood, VicSES representatives quickly responded with, 'community engagement'.

'It was identified as part of this (WSWMWG) process. That engagement did happen, and it did help to a great extent, even with the relationships we had with agencies and communities prior to the floods - which was a big plus', they said.

'There's a lot better engagement here than some of the other areas we've been, and you could tell that when we set up the Incident Control Centre. It was very proactive from what we've seen. It was a really strong observation'.

VicSES also reported glowingly about the way agencies and communities could readily access flood-map and flood-guide information.

Representatives said ensuring people knew how to get to and use the information 'had all worked'.

'The way we've taken digital map versions and turned them into one map is 'gold'. All that has been stimulated by this process (WSWMWG) so that has worked pretty well, as well', they said.

'The community engagement and all the tools used were effective and we'll just keep building on that'.

During the Wimmera 2022 flood, agencies used various media platforms to direct people to maps and guides as well as provide general information about changing circumstances. Wimmera CMA strongly promoted the use of user-friendly Pozi maps on its Wimmera Interactive Catchment Map website.

VicSES representatives at the Horsham meeting were Wimmera Unit Support Team Operations Manager Ryan Leffler and Emergency Management Operations Officer Mal Gibson.

Local government representatives at the meeting also acknowledged the value of the WSWMWG in establishing an 'on the same page' in 'having a clear perspective of roles and responsibilities and being able to share information regarding overlaps'.

From the floor: 'That's really helpful and coming back here (WSWMWG) and rehashing this stuff is important. Holding us to account helps a lot because we do get distracted'.

Local government representatives at the meeting were Trenton Fithall, Northern Grampians Shire Council; Michael Evans, Yarriambiack Shire Council; John Martin, Mike Shaw, Horsham Rural City Council; Jessie Holmes, Hindmarsh Shire Council; Damith Yapa, Rob Fillisch, Ararat Rural City Council; Brad Smith, Buloke Shire Council.

CMA team's work cut out during crisis

By San Williams

IT was all hands on deck at Wimmera Catchment Management Authority (CMA) with team members having their work cut out over the course of Wimmera flood events.

Chief executive Dave Brennan said staff were "sweating bullets" and the pop-up information stall at Weir Park was an ideal way to get messages out to the public.

"When you're covering a flood event like this there's a lot of decisions being made, decisions that have a big impact on people's livelihoods, as well as their mental health and anxiety," he said.

"There are farmers suffering big losses, school days are being interrupted, businesses who are looking to scale up, so the experience for Wimmera CMA has been nothing short of like sweating bullets."

The flood event in the Wimmera was a big step up for Wimmera CMA catchment officer Amy Pilmore and project manager Bryana Bisset.

Ms Pilmore, who had just joined Wimmera CMA as a graduate, said she had dealt with a surge of information requests.

"It's been very busy and there's been a big increase in flood requests, particularly from prospective property buyers from Melbourne and accommodation developers in Halls Gap," she said.

"I've been doing a bit of everything, but at the moment I've had my hands full working on flood plain referrals which include requests linked to planned permits, flood advice, and working with councils."

Ms Bisset said she was heavily involved in the flood space and what it could mean for the surrounding environment.

"I've been looking after a lot of the groundwork in relation to the flood," she said.

"Right now, I've discovered there's been significant erosion from Dimboola to as far down as Stawell."

The public information day at Weir Park on October 17 offered flood information including flood mapping and advice.

With peak flood peak levels now passed, Mr Brennan said people should continue being vigilant and remain familiar with their local emergency warnings.

"The more information the community gets the better," he said.

"It improves people's decision making, it helps volunteers and the council, and that was the idea for the information day that was set up.

"People who had moved from the city, for example, would have had no idea about what this flood could mean, so we had a lot of engagement for something that was very impromptu.

"My advice for people in the meantime would be to follow the advice of the SES and Bureau of Meteorology, listen to the warnings, and get yourself familiar with your own flood plan."



Floodwater in the Wimmera River in Horsham builds in Horsham on October 18, 2022. The Wimmera River Bridge, pictured, is a primary connective point for the rural city's residents and part of Western Highway, the main road transport route between Victoria and South Australia. The crossing remained secure for the duration of the flood.

Wimmera River flood pressure rising

By Jessica Grimble

Stormwater from thunderstorms in coming days will put additional strain on an already swollen river system across the Wimmera.

Wimmera River levels at Horsham had reached 3.29-metres as *The Weekly Advertiser* went to press last night. The flood peak of 3.6-metres is predicted for this morning.

Water authorities, emergency services and councils are more than a week into flood preparedness, but this action will change as officials turn their attention from riverine flooding to the storms forecast until Sunday.

Wimmera Catchment Management Authority chief executive David Brennan said floodwaters at the Drung gauge had peaked yesterday morning and were 'slowly' beginning to drop away. The gauge gives officials an indication of the peak in Horsham.

About 10,000 megalitres of water was passing through Horsham weir yesterday, compared to 7500 megalitres on Monday. Water levels were rising about one centimetre an hour.

Mr Brennan urged people to prepare for thunderstorms through until the weekend – with streets likely to hold stormwater longer than usual, leading to flash-flooding.

"The capacity of our stormwater system will be heavily compromised by the full river levels in Horsham and also the near-full levels at Dimboola," he said. "People should be aware the stormwater might not leave their property, and will be unlikely to leave their property, in a manner that they are used to."

Mr Brennan said preparedness in towns such as Warracknabeal, which has a levy, would change to ensure stormwater could enter and release as required.

He said as much stormwater as possible would be pumped from Wotonga Basin into the river in Horsham.

He said Dimboola and Jeparit would not experience riverine flooding and Lake Hindmarsh would increase from 10 to 15 percent to about 30 percent of its capacity. The lake, at the end of the system, was at 75 percent capacity after the 2011 floods.

Horsham incident controller Mark Gunning said he was aware of some rural residents near Horsham whose properties had become isolated due to the flood. Quantong is likely to experience 'minor to moderate' flooding.

Flooding cut Glenorchy in two on Saturday as the town experienced a one-in-100-year flood. Navarre and St Arnaud were also 'heavily impacted' across the weekend.

Resident Alistair Fenton said floodwater levels were 'definitely' below that of the 2011 flood.

"People said it was only going to be a drop in the ocean and the river would swell and that's about it; that we wouldn't see any more than that," he said. "But the proof is in the pudding, and we've well and truly got a lot of water in town."

Meanwhile, residents in flood-affected towns might notice overflows in sewer gullies.

A GWMWater spokesperson said floods could cause 'significant' infiltration of floodwater into the sewer system, creating a backlog on the network.

The spokesperson said an overflow gully was a drain-like fitting located outside the home, that allowed sewage to overflow away from the interior of a home to an outside area of the property. The sewage will push out through the gully if there is a sewer blockage, or the network cannot cope during heavy rain, storms, or floods.

People should avoid contact with any wastewater and report overflows to GWMWater on 1800 188 586.

The floodwater, and threat of flood, has closed some schools, such as Horsham Primary School's 298 campus in Baillie Street and nearby Holy Trinity Lutheran College. It is also impacting some services across the region.

A Yarriambiack Shire Council spokesperson said Wimmera Mallee Waste trucks were advised not to travel through road closures due to floodwater. The spokesperson asked residents at risk of rising floodwater not to put bins out for collection in coming days.

"An additional collection will be co-ordinated for those who miss out when it is safe to do so," the spokesperson said.

The State Government has committed \$351-million to flood recovery – including \$165-million for emergency road and road infrastructure repairs; and up to \$15-million for housing, health and wellbeing, financial and legal counselling alongside practical assistance with accessing grants and completing paperwork, and advice for business owners whose livelihoods have been affected by the floods.

The State Government will provide \$6-million for community recovery officers and \$15-million to boost the capability of Emergency Management Victoria, the State Control Centre, and Emergency Response Victoria.

A Victorian Flood Recovery Management Plan will deliver \$150 million for an immediate state-coordinated clean-up.

Horsham Rural City and Yarriambiack shire residents can dispose of flood waste, free of charge, and the State Government will cover operator gate fees until the end of the year.

How to get help

The Wimmera 72 website via www.wimmera72.com.au contains information about flood preparedness and response. Residents can also access information via their local council.

People wanting up-to-date information about road closures can go to www.traffic.vicroads.vic.gov.au. People can contact the State Emergency Service for help on 132 500. People wanting mental health support can phone Lifeline on 13 11 14; in an emergency phone 000.



Water pours through open gates at Horsham Weir and spreads as it heads toward the Wimmera River's lower catchment. October 18, 2022.














Horsham Weir Park wetlands, downstream of Horsham Weir and which include popular walking tracks, were subject to significant inundation during Wimmera River flooding during spring, 2022. October 18, 2022.

Wimmera Floodplain Management Strategy Workplan








Priority Projects

The workplan below is continually in development. The items below are the High-priority list (to be implemented in the first 3 years of the plan). The strategy document itself will be kept online, referred to and amended by the implementation committee at its twice annual meetings so as to reflect the most up-to-date intention for floodplain effort in the Wimmera. Actions are subject to the availability of funding and resources for organisations





















1. HIGH PRIORITY

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
1	Halls Gap	Update MFEP to incorporate flood study review (2014)	VICSES	NGSC, WCMA	 COMPLETED	 COMPLETED		
2	Halls Gap	Incorporate existing warning gauge infrastructure to regular maintenance)	NGSC	WCMA	Gauges been removed. Needs further investigation	 NOT YET STARTED	NGSC: Further investigation on these will be a part of future consultation with the Wimmera CMA. There needs to be a holistic approach to rain-flood gauges. See NP1	1
3	Halls Gap	Update planning scheme to incorporate flood risk -(Review of Halls Gap flood Investigation 2017)	NGSC	WCMA	 COMPLETED	 COMPLETED		
4	Great Western	Undertake Flood Investigation - focus on community consultation, mitigation, MFEP, planning scheme amendment and warning systems	NGSC	WCMA	 NOT YET STARTED	 NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo. Update: Two to three years behind other studies.	3
5	Great Western	Update planning scheme to incorporate flood risk (Concongella Creek Regional Flood Mapping 2014)	NGSC	WCMA	 NOT YET STARTED	 COMPLETED	NGSC: Further advice needs to be sought from DELWP. How long is a Flood study relevant?	
6	Grampians National Park	Investigate the implement flash flood warning gauge infrastructure in Grampians National Park	NGSC	Parks Victoria	 NOT YET STARTED	 NOT YET STARTED	NGSC: The council is concerned with the risk to people. Can be explored as part of the Halls Gap flood analysis. See NP1	1

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
7	Mt William Creek	Update MFEP to incorporate Mt William study (2014)	VICSES	HRCC, WCMA, GWMWater, ARCC	COMPLETED	COMPLETED		
8	Upper Wimmera River	Update MFEP to incorporate Upper Wimmera flood investigation 2014	VICSES	WCMA, NGSC, PSC	COMPLETED	COMPLETED		
9	Dunmunkle Creek	Update MFEP to incorporate Dunmunkle Creek flood investigation 2017	VICSES	WCMA, NGSC, YSC	COMPLETED	COMPLETED		
10	Dunmunkle Creek	Update planning scheme to incorporate flood risk (Dunmunkle Creek Flood Investigation 2017)	YSC, NGSC	WCMA	IN PROGRESS	IN PROGRESS	NGSC: YSC is the lead; YSC: Still ongoing, our Planning officer is addressing this one	1
11	Upper Wimmera River	Update planning scheme to incorporate flood risk (Upper Wimmera Flood Investigation 2014)	NGSC	WCMA	NOT YET STARTED	COMPLETED	NGSC: Priority might need to be increased due to Navarre being susceptible to flooding. Update: change to completed.	
12	Mt William Creek	Update planning scheme to incorporate flood risk (Mt William Creek Flood Investigation 2014)	NGSC, ARCC, HRCC	WCMA	IN PROGRESS	IN PROGRESS	HRCC: Well advanced; NGSC: A need for increased collaboration between multiple Councils to achieve better outcomes.	1
13	WCMA area	Determine approach to manage changes to school bus runs brought about by flooding within updates to MFEP's. Incorporate roads inundated within MFEP.	VICSES	WCMA, all councils, DET	COMPLETED	COMPLETED		
14	WCMA area	Undertake discussions with neighbouring councils for cost sharing arrangements for flood warning infrastructure	GWM Water	All councils	COMPLETED	COMPLETED		
14.1	WCMA area	Create metric for determination cost distribution for Wimmera Flood gauge infrastructure ongoing costs.		All councils	COMPLETED	COMPLETED		
15	WCMA area	Improve weather prediction services including radar coverage	WDA	WCMA, VICSES and regional councils	COMPLETED	COMPLETED		
16	Horsham	Investigate opportunity for flood mitigation within township and surrounds	WCMA	HRCC, VICSES	COMPLETED	COMPLETED		
17	Horsham	Update MFEP to incorporate Horsham Wartook Flood Investigation results	VICSES	HRCC, WCMA	IN PROGRESS	IN PROGRESS	HRCC: We want to help ensure this happens.	1
18	Horsham	Investigate impacts of high rainfall on flooding river – stormwater impacts for town	WCMA	VICSES, HRCC	COMPLETED	COMPLETED		
19	Horsham	Investigate coincident flood flows in Burnt and Wimmera at Horsham	WCMA		COMPLETED	COMPLETED		

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
20	WCMA area	Incorporate levee and dam overtopping and failure scenarios in MFEP planning	VICSES	WCMA	 COMPLETED -check	 COMPLETED		
21	Dadswells Bridge	Develop & deliver community flood awareness and information programs relating to flood risk and warnings.	VICSES	WCMA, HRCC	 COMPLETED	 COMPLETED		
22	Natimuk	Complete works for flash flood warning disseminations from gauges	HRCC	WCMA	No update - meetings at state level with VICSES and BoM but nothing further. Follow up with HRCC		HRCC: John Martin has chased up with Steve Muncaster, awaiting reply.	2
23	Burnt Creek, Norton Creek and MacKenzie River	Improve flood intelligence relating to a range of flood flows	WCMA	HRCC	 COMPLETED	 COMPLETED		
24	Horsham	Formalise management arrangements / maintenance for levees and channel infrastructure with known flood benefits	HRCC		Follow up with HRCC	 IN PROGRESS	"HRCC: Completed (or near completed) Rokeskys Rd – road has been constructed to act as levee replicating de facto levee function that the channel bank provided. Hence road maintenance is under Council control. Former irrigation channel behind Haven Rec Reserve – now a walking path, under Council control. Peppertee Lane levee (Irwin property), now securely fenced under Council maintenance."	3

















Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
25	WCMA area	Lobby for changes to flood recovery funding criterion relating to updating and improving assets to latest design requirements	Councils	WCMA	 IN PROGRESS	 IN PROGRESS	HRC: Current advocacy priority of Rural Councils Victoria group. Ongoing; HSC: Still relevant. We have had a recent win around utilising our own staff for works carried out but the Build Back Better campaign is still a major priority for councils, including Hindmarsh. NGSC: A need for increased collaboration between multiple Councils to achieve better outcomes; YSC: Still ongoing. Assuming this is about culvert and bridge betterment	1
26	Warracknabeal	Construct designed levee	YSC	WCMA	 COMPLETED	 COMPLETED		
27	Warracknabeal	Request for forecast gauge in town.	YSC	WCMA	 COMPLETED	 COMPLETED		
28	Warracknabeal / Brim	Update planning scheme to incorporate flood risk (Warracknabeal / Brim Flood Investigation 2016)	YSC	WCMA	 IN PROGRESS	 IN PROGRESS	YSC: Our planning officer is addressing this	1
29	Warracknabeal / Brim	Update MFEP to incorporate Warracknabeal / Brim study	VICSES	YSC, WCMA	 COMPLETED	 COMPLETED		
30	Warracknabeal	Pilot project to measure the benefits of individual property awareness charts	VICSES	YSC, WCMA	 COMPLETED	 COMPLETED		
31	Dunmunkle Creek	Remove historic banks as per recommendation from Dunmunkle Creek flood investigation (2017)	GWMWater	WCMA, YSC	 COMPLETED	 COMPLETED		
32	Rupanyup	Decommission redundant storages in accordance with recommendation from Dunmunkle Creek flood investigation (2017)	GWMWater	WCMA, YSC	 COMPLETED	 COMPLETED		
33	Pyrenees Shire	Install dropdown road closed signs in-situ for those that regularly experience flooding	PSC		 NOT YET STARTED	 NOT YET STARTED	PSC: This action is yet to be funded, there are multiple sites that require this installation type across the high-risk areas of the shire. Plans are to seek funding 2023. Update: WCMA to follow up further with Pyrenees SC.	











Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
34	Pyrenees Shire	Investigate opportunities for additional rain gauges in the shire to assist with flash flood warning	PSC		 NOT YET STARTED	 NOT YET STARTED	PSC: This action is yet to be funded, The council is unable to allocate funds in the current budget so funds must be sought externally. Update: Wimmera CMA to follow up further with PSC. See NP1	1
35	Apsley	Develop Local Flood products for township & consider installation of awareness signs and gauge boards at key locations	VICSES	WCMA, WWSC	 NOT YET STARTED	 NOT YET STARTED	See NP1	
36	Edenhope	Develop Local Flood products for township & consider installation of awareness signs and gauge boards at key locations	VICSES	WCMA, WWSC	 COMPLETED	 COMPLETED		
37	WCMA area	Undertake operational readiness training that incorporates MFEP in operational response in ICC's	VICSES		 IN PROGRESS	 IN PROGRESS	Ongoing.	2
38	WCMA area	Develop accreditation process for flood specialist and analysts	DELWP		 COMPLETED	 COMPLETED		
39	MacKenzie River	Upgrade telemetry from existing gauges for remote communication from Lake Wartook and MacKenzie River gauges	GWMWater	HRCC	 COMPLETED	 COMPLETED	"GWM: Consider this to be COMPLETED. Telemetry has been installed at Lake Wartook allowing remote monitoring of the reservoir level, rainfall and discharge. Telemetry for downstream tail gauge was investigated, but not feasible due to absence of reliable communication options."	
40	WCMA area	Consideration for the inclusion of cultural significance sites within MFEP's	VICSES	Barengi Gadjin	 NOT YET STARTED	 NOT YET STARTED	Wimmera CMA to follow up. Which is appropriate lead agency? Not VicSES	
41	Statewide	Develop floodplain development guidelines	DELWP		 COMPLETED	 COMPLETED		
42	WCMA area	Update Victorian Flood Database within 6 months of Flood Investigation project completion	WCMA	DELWP	 COMPLETED	 COMPLETED		
43	Statewide	Improve process for the provision of flood information in non-emergency periods	DELWP		 IN PROGRESS	 COMPLETED		









NEW PRIORITIES DISCUSSED AND ADOPTED DURING WIMMERA STRATEGIC WATER MANAGEMENT WORKING GROUP 7/02/23 MEETING


















New Priority	Location	New priority project establish at meeting on 7/02/23	Discussion	Group decision from 7/02/23 meeting	Lead agency	Priority ranking
NP1	Western Victoria - Wimmera	An over-arching priority is to explore further development and upgrading of the overall Wimmera waterway flood-warning system based on flood and/or rain gauges to improve the community flood-warning process.	VicSES is leading this call in an effort 'to fill information' gaps during flood emergencies. At the same time, Wimmera LGAs, in acknowledging individual gauge-installation projects within their strategy workplans or information gaps based on flood experiences in 2022, have suggested a more collective regional approach between stakeholder agencies to further develop the design of the flood-warning system. Coupled with this, based on municipal boundaries meaning little during floods, is to consider a broad information-system upgrade as one over-arching regional project when pursuing state or federal funding. This new priority is directly connected to or covers off on workplan actions 2, 6, 35, 86, 87, 90, 91, 92 and 96. It also considers a series of new priorities.	 Add to list as primary priority	Determination between VicSES, Bureau of Meteorology, Wimmera councils, Wimmera CMA and GWMWater	1
NP2	Statewide	Explore streamlining a funding approach that also considers stormwater management as part of flood mitigation.	Been problematic at local government level considering local sensibilities around the causes of and mitigation against flood events	 Add to list	Councils, with support from Wimmera CMA	1
NP3	Glenorchy	Review the community planning framework to include disaster resilience	Move onto list as part of implementing a community plan	 Add to list	NGSC	1
NP4	Jeparit	Undertake a detailed design and costings to replace Jeparit Weir, which is no longer fit for purpose	Weir is linked to flood-mitigation outcomes involving the Wimmera River. An application for funding to scope this is due on June 14.	 Add to list	HSC	1
NP5	Warracknabeal	Develop flood-mitigation and infrastructure plan for Whitton Swamp project at Warracknabeal	Flood mitigation is required for this project in relation to the impact on major roads.	 Add to list	Lead agency YSC with WCMA, GWMWater and Regional Roads Victoria	1
NP6	Natimuk	Establish a flood-gauge-based warning system in the town of Natimuk to better inform about potential and severity of flooding of Natimuk Creek. The town has several residential properties at risk of flood circumstances.	Infrastructure is in place, needs to be activated	 Add to list		1

2. ACTIONS THAT ARE PRIORITISED AS A MEDIUM PRIORITY (TO BE UNDERTAKEN BETWEEN 3-5 YEARS FROM STRATEGY COMMENCEMENT)

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
44	Halls Gap	Develop & deliver community flood education programs using flood intelligence information	VICSES	NGSC, WCMA, Parks Victoria	 IN PROGRESS	 COMPLETED		
45	Great Western	Develop map of council drainage infrastructure for MFEP along with management arrangements during high intensity events	NGSC	VICSES	 NOT YET STARTED	 NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo. Update: Two to three years behind other studies.	3
46	Great Western	Understand impact of proposed bypass to flooding	VicRoads	WCMA	 IN PROGRESS	 IN PROGRESS	Major Road Projects Victoria, Senior Project Development Officer Joel Docker, 12-1-23: "We've been liaising with Tony Baker at WCMA as we undertake the flood-modelling work.	2
47	HRCC area	Undertake actions towards illegal floodplain development – enforcement	HRCC	WCMA	 IN PROGRESS Follow up with HRCC	 NOT A PRIORITY NOW	HRCC: New issues arise from time to time. Update: Remove from list - an operational issue	
48	Dadswells Bridge	Install gauge boards in town as per – Mt William Crk Flood Investigation 2014	HRCC		 COMPLETED	 COMPLETED		
49	Natimuk	Update planning scheme to incorporate flood risk identified in Natimuk Flood investigation 2012	HRCC	WCMA	 IN PROGRESS	 IN PROGRESS	HRCC: Well Advanced	2
50	Natimuk	Develop and deliver community flood risk education programs, consider installation of awareness signs.	VICSES	HRCC, WCMA	 COMPLETED	 COMPLETED		
51	Heritage River System – Wimmera River	Update planning scheme to incorporate flood risk identified in Lower Wimmera Flood Investigation 2016	HRCC, HSC	WCMA	 IN PROGRESS	 IN PROGRESS	"HRCC: Well advanced; HSC: Council is approaching the end of their Heritage Planning Scheme Amendment and then will undertake a Planning Scheme Review with financial and operational assistance from the Dept Transport & Planning which will determine the priority of future amendments including any floodway mapping implementation and the future applicability of environmental management overlays. Update: No change."	2

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
52	Mackenzie River	Determine visitor management responsibility within the Grampians National Park for high flows.	Parks Victoria		 COMPLETED	 COMPLETED		
53	Jeparit	Formalise management arrangements of Levee	HSC	VicSES, WCMA	Follow up with Hindmarsh SC	 NOT A PRIORITY NOW	HSC: The levees are on public land and erected under EM provisions when a flood warning is issued. Update: Agreed by group.	
54	Lower Wimmera River	Update MFEP to incorporate Lower Wimmera Flood Investigation results	VICSES	HRCC, HSC	 COMPLETED	 COMPLETED		
55	Tarranyurk	Develop rating table for gauge to aid with flood forecast	WCMA	BoM	 COMPLETED Now to be worked on by BoM	 COMPLETED		
56	Nhill	Investigate flood risks for Nhill	HSC	WCMA	Follow up with Hindmarsh SC	 COMPLETED	HSC: Flooding in Nhill occurs due to storm and significant rain events – not riverine flooding. Works are underway to consider the drainage requirements for the township - However significant investment would be required to mitigate damage and this will need to be externally funded. Update: Change to completed following GWMWater work.	
57	Yarriambiack Shire towns (originally only Rupanyup)	Undertake stormwater modelling for township to ascertain risk and propose mitigation solutions for the town	YSC	WCMA	 IN PROGRESS	 IN PROGRESS	YSC: Stormwater/ drainage system for Rupanyup followed by all other towns. The council has applied and been unsuccessful for two different sources of funding over the last 2 years. Update: Change from Rupanyup to all Yarriambiack towns.	1

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
58	Yarriambiack Shire	Develop process to combat / follow-up illegal works in/ on floodplains	YSC		 NOT YET STARTED	 NOT A PRIORITY NOW	YSC: Would need to discuss this one more. Not sure on the past history but will be definitely something dropping up for the creek flow in Oct 2022. Update: Change to no longer priority -operational.	
59	Ararat Rural City	Update planning scheme to incorporate flood risk - Mt William Wimmera Food Investigation 2014	ARCC	WCMA	Follow up with ARCC	 IN PROGRESS	ARCC: Can provide an update in March	2
60	Ararat Rural City	Update planning scheme to incorporate flood risk - Upper Wimmera Food Investigation 2014	ARCC	WCMA	Follow up with ARCC	 IN PROGRESS	ARCC: Can provide an update in March	2
61	Pyrenees Shire	Update planning scheme to incorporate flood risk - Upper Wimmera Food Investigation 2014	PSC	WCMA	 COMPLETED Need to check	 IN PROGRESS		
62	Apsley	Undertake flood investigation to determine flood risk	WWSC	WCMA	 NOT YET STARTED	 NOT YET STARTED	WWSC: Investigations underway to explore the best way of funding the study considering stormwater and drainage work, key elements in flood mitigation, doesn't qualify under Risk and Resilience Grant directions. Update: WCMA to follow up	3
63	Apsley	Develop formalised arrangement for management of drainage bores	WWSC	WCMA	 NOT YET STARTED	 NOT YET STARTED	Update: WCMA to follow up	3
64	Lillimur and Serviceton	Investigate sections of highway regularly impacted by stormwater for possible improvements	Vic Roads		 IN PROGRESS	 IN PROGRESS	Major Road Projects Victoria, Senior Project Development Officer Joel Docker, 12-1-23: "We've been liaising with Tony Baker at WCMA as we undertake the flood-modelling work." Update: WCMA to follow up with VicRoads	2




















Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
65	Edenhope	Undertake flood investigation to determine flood risk	WWSC	WCMA	 NOT YET STARTED	 NOT YET STARTED	WWSC: Investigations underway to explore the best way of funding the study considering stormwater and drainage work, key elements in flood mitigation, doesn't qualify under Risk and Resilience Grant directions.	3
66	Wimmera Water Headworks	Update control infrastructure for remote management and data during flood conditions	GMW Water		 COMPLETED	 COMPLETED	GWM: GWMWater has produced water education videos covering a range of topics, including the role and responsibilities of storage manager.	
67	Wimmera region	Develop education and awareness program regarding storage role and storage manager responsibilities during flooding	GWM Water		 COMPLETED	 COMPLETED		
68	Buloke Shire	Update findings of Dunmunkle flood investigation within MFEP	BSC		 IN PROGRESS Follow up with BSC and VicSES	 NOT A PRIORITY NOW		
69	Wimmera region	Investigate opportunities for Aboriginal people to be involved in floodplain management and flood response and recovery activities	BGLC		 IN PROGRESS Follow up with BGLC and explore opportunities	 IN PROGRESS	No change	
70	Wimmera region	Improve access to significant floodplains in the Wimmera region where there are recognised impediments.	BGLC		Follow up with BGLC	 IN PROGRESS	No change - First step is to identify the sites. Update: This might fit better in water strategy. Discuss further with BGLC	
71	Wimmera region	Obtain floor levels for all buildings within flooded areas in region – put into Floodzoom and MFEPs for emergency management	WCMA	VIC SES	 IN PROGRESS	 IN PROGRESS	Update: Not loaded in FloodZoom. WCMA to follow up with FloodZoom support Team	2
72	Wimmera region	Develop education program for gauge understanding	WCMA		 NOT YET STARTED	 COMPLETED	Update: Mark as completed. All agreed that it is done	
73	Wimmera region	Develop standard approach for overtopping scenario modelling of storage and levees	DELWP		 NOT A PRIORITY NOW	 NOT A PRIORITY NOW		
















Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
74	Wimmera region	Develop and review standards for floodstudy maps	DELWP		 COMPLETED	 COMPLETED		
75	Wimmera Region	Develop a Community Flood Observers Network Website to enhance the ability for the provision of local knowledge to and between agencies and the community during floods.	VICSES		 COMPLETED	 COMPLETED		





NEW PRIORITIES DISCUSSED AND ADOPTED DURING WIMMERA STRATEGIC WATER MANAGEMENT WORKING GROUP 7/02/23 MEETING

New Priority	Location	New priority project establish at meeting on 7/02/23	Discussion	Group decision from 7/02/23 meeting	Lead agency	Priority ranking
NP7	Glenorchy	Further Glenorchy flood mitigation analysis	In progress - move onto list	 Add to list	NGSC	2









3. ACTIONS THAT ARE PRIORITISED AS A LOW PRIORITY (TO BE UNDERTAKEN BETWEEN 5-10 YEARS FROM STRATEGY COMMENCEMENT)

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
76	Great Western	Investigate flood warning system for community and deliver community flood education programs, installing signs and stream gauge boards.	NGSC	WCMA	 NOT YET STARTED	 NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo	3
77	Great Western	Update planning scheme to incorporate flood risk	NGSC	WCMA	 NOT YET STARTED	 NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo	3
78	Stawell	Undertake Flood Investigation - focus on community consultation, mitigation, MFEP, planning scheme amendment and warning systems. Include stormwater modelling scenarios	NGSC	WCMA	 IN PROGRESS	 IN PROGRESS	Update: NGSC currently undertaking flood study.	1
79	Stawell	Update MFEP to incorporate changes to retardation basins and include reference to tailings dam emergency plan.	VICSES	NGSC	 COMPLETED	 COMPLETED		
80	Stawell	Develop and deliver community flood education programs	VICSES	NGSC	 IN PROGRESS	 IN PROGRESS		2
81	Stawell	Clarify management arrangements for tailings dam of Stawell Gold Mine.	VICSES	NGSC	 IN PROGRESS Follow up with Stawell Gold Mine	 IN PROGRESS	Update: VicSES: Follow up with DEECA. Dam failure falls under DEECA responsibility.	
82	Glenorchy	Incorporate triggers for safe access for return to township into MFEP.	VicSES	NGSC, WCMA	 COMPLETED	 COMPLETED		
83	Glenorchy	Prepare map of drainage infrastructure within MFEP along with details of operation intention	NGSC		Follow up with NGSC	 IN PROGRESS	Will need to be prioritised due to recent floods. Update: In progress.	1
84	Glenorchy	Undertake community flood education program	VICSES	NGSC	 COMPLETED	 COMPLETED		
85	WCMA region	Update historic flood mapping to incorporate bridge overtopping in outputs.	WCMA	Local Governments , VIC SES	 IN PROGRESS	 IN PROGRESS	Update: WCMA needs to follow up with consultant to work out scope.	3

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
86	Navarre	Install additional rain gauge – Upper Wimmera Flood Study 2014	NGSC	Other councils	 NOT YET STARTED	 NOT YET STARTED	NGSC: Broader regional approach to river and rain gauges considering rivers and streams cross municipal boundaries. A greater collective regional approach to fund advanced warning systems throughout a system where councils advocate for and help inform details with direction from BOM and Wimmera CMA would be beneficial. See NP 1.	1
87	Lower Mt William Creek	Investigate opportunities for stream gauge installations upstream of Lake Lonsdale – Mt William Creek Flood Investigation – 2014	NGSC	VicSES, WCMA	 NOT YET STARTED	 NOT YET STARTED	NGSC: A need for increased collaboration to achieve better outcomes. See NP 1.	1
88	Concongella Creek	Update planning scheme to incorporate flood risk	NGSC	WCMA	 NOT YET STARTED	 COMPLETED		
89	NGSC	Formalise management arrangements of existing levees	NGSC		 NOT YET STARTED	 NOT YET STARTED	NGSC: Council has limited knowledge in this area and would require information from agencies such as WCMA to proceed with a formalisation process	3
90	Dadswells Bridge	Install permanent telemetered stream gauge	HRCC		 NOT YET STARTED	 NOT YET STARTED	HRCC: Priority should be increased. See NP 1	1
91	Dadswells Bridge	Request flood warning forecast for township	HRCC	WCMA, VICSES	 NOT YET STARTED	 NOT YET STARTED	HRCC: Should follow after a few years of reliable data at new gauge – refer to project #90 See NP 1	1
92	HRCC	Further develop community led gauging infrastructure for provision of data during flood events	HRCC	WCMA	 NOT YET STARTED	 NOT YET STARTED	See NP1	1
93	WCMA	Investigate ministerial appointed planning scheme amendments following flood investigations	WCMA		 NOT A PRIORITY NOW	 NOT A PRIORITY NOW		
94	Dimboola	Formalise management arrangements of existing levees	HSC		Follow up with Hindmarsh SC	 NOT A PRIORITY NOW	HSC: The levees are on public land and erected under EM provisions when a flood warning is issued.	

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
95	Horsham	Investigate standing water scenario modelling for future planning, incorporate existing understanding into MFEP	HRCC	WCMA	Follow up with Hindmarsh SC. Break into two sections	 NOT YET STARTED	This has not progressed; Update, Lead agency confirmed as HRCC. WCMA to follow up.	3
96	Moyston	Install telemetered rain gauge in vicinity of Moyston- Mt William Food Investigation 2014	ARCC		Follow up with Ararat RCC	 NOT YET STARTED	See NP1	1
97	Wimmera region	Provide all storage rating tables, failure mapping and historical spill information to emergency management database (floodzoom)	GWM Water		 COMPLETED-check	 IN PROGRESS	Follow-up, 1-2-23: All failure mapping and historical spill information is not yet on FloodZoom. GWMWater is following up.	1

Additional projects relevant to the plan

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	New ranking from 7 Feb 23 meeting (timeliness and need)
98	Wimmera Region	Community Flood Education	VICSES	WCMA	 IN PROGRESS	 IN PROGRESS		
99	Wimmera Region	MFEP - include actions on levees (known points of failure - determined failure points etc), visitors (tourists), dam failure, dam spills, flash flooding with timing and impacts, cultural sites	VICSES		 COMPLETED	 COMPLETED		
100	Wimmera Region	Reassess ICC footprints to reflect catchments and shires	VICSES		 COMPLETED	 COMPLETED		
101	Wimmera Region	Create pre-populated community messaging templates related to triggers	VICSES	WCMA	 COMPLETED	 COMPLETED		
102	MackKenzie River	When available, incorporate dam failure and spill data into MFEP	VICSES		 COMPLETED	 COMPLETED		
103	Jeparit	When available, update MFEP to include levee overtopping and failure scenarios	VICSES		 COMPLETED	 COMPLETED		
104	Warracknabeal	When available, update MFEP to include levee overtopping and failure scenarios	VICSES		 COMPLETED	 COMPLETED		
105	Rupanyup	Incorporate stormwater modelling into planning and operational readiness plans	VICSES		 COMPLETED	 COMPLETED		
106	Taylor's Lake	Incorporate dam failure mapping and intelligence into MFEP	VICSES		 COMPLETED	 COMPLETED		

New priorities identified after 2022 spring flood and presented to Wimmera Strategic Water Management Working Group 7/02/23 meeting. See above for listing

Location	Proposed new priority project presented at meeting	Additional comments	Key notes	Proposed ranking
VicSES				
Natimuk	Establish a flood-gauge-based warning system in the town of Natimuk to better inform about potential and severity of flooding of Natimuk Creek. The town has several residential properties at risk of flood circumstances.		See NP1	1
Great Western and Halls Gap	Establish flood-gauge-based warning systems at Concongella Creek at Great Western and Stoney Creek at Halls Gap to provide better information on flood-severity potential. Concongella Creek flooding poses a major risk to Western Highway traffic and Stoney Risk flooding is a risk to business and residential properties.		See NP1	1
Warracknabeal	Establish a flood-gauge warning system for Yarriambiack Creek at Warracknabeal to provide better information on flood-severity potential. Flooding in the creek poses a threat to several residential properties.		See NP1	1
Horsham, Dimboola, Jeparit	Establish flood-gauge-based warning systems for Horsham, Dimboola and Jeparit – also perhaps St Arnaud and Stawell to provide better information on flood-severity potential. These centres are primary population areas with several areas at risk.		See NP1	1
Burnt Creek	Establish more flood-gauge warning sites on Burnt Creek and/or relocate a flood gauge at Wonwondah to further downstream. Latest flooding provided an example of the impact of the creek during floods and the Wonwondah gauge information is proving irrelevant.		See NP1	1
Western Victoria	An over-arching priority is to develop the Bureau of Meteorology's flood-warning system into the west of the state. In the Wimmera and South West there is a need to improve and develop the community flood-warning process, based on stream-gauge and flood-study information.		See NP1	1
Northern Grampians SC				
Wimmera catchment	Explore greater collective regional approach to fund advanced warning systems throughout the catchment.		See NP1	1
Glenorchy	Further Glenorchy flood mitigation analysis	In progress - move onto list		2
Glenorchy	Review the community planning framework to include disaster resilience	Not yet started, move onto list. To implement a community plan		1
West Wimmera SC				
Statewide	Explore streamlining a funding approach that also considers stormwater management as part of flood mitigation.	Led by LGAs, Wimmera CMA will support it. All agreed to include it.		1

Location	Proposed new priority project presented at meeting	Additional comments	Key notes	Proposed ranking
Yarriambiack SC				
Warracknabeal	Develop flood-mitigation and infrastructure plan for Whitton Swamp project at Warracknabeal	Include. Led by YSC, WCMA, GWMWater, Regional Roads		1
Rupanyup	Further explore flood-mitigation funding options for Rupanyup stormwater project - see project 57	YSC aiming to do all towns, change from Rup to Yarriambiack towns		2
Hindmarsh SC				
Tarranyurk	Ensure the gauge on the Wimmera River at Tarranyurk is working and providing appropriate information to effectively manage flooding modelling. See project 55		See NP1	1
Norton Creek, MacKenzie River	Investigate establishing a gauge south of Norton Creek and MacKenzie River to better monitor flooding.		See NP1	1
Jeparit	Undertake a detailed design and costings to replace the Jeparit Weir which is no longer fit for purpose	Weir is linked to flood-mitigation outcomes involving the Wimmera River. An application for funding to scope this is due on June 14.		1

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	Further comments	Updated ranking (timeline & need) from 7 Feb 23 meeting
6	Lower Mt William Creek	Investigate opportunities for stream gauge installations upstream of Lake Lonsdale – Mt William Creek Flood Investigation – 2014	NGSC	VicSES, WCMA	NOT YET STARTED	NOT YET STARTED	NGSC: A need for increased collaboration to achieve better outcomes.	See priority 1	1
7	Dadswells Bridge	Install permanent telemetered stream gauge	HRCC		NOT YET STARTED	NOT YET STARTED	HRCC: Priority should be increased	See priority 1	1
8	Dadswells Bridge	Request flood warning forecast for township	HRCC	WCMA, VICSES	NOT YET STARTED	NOT YET STARTED	HRCC: Should follow after a few years of reliable data at new gauge – refer to project #7	See priority 1	1
9	Moyston	Install telemetered rain gauge in vicinity of Moyston-Mt William Flood Investigation 2014	ARCC		Follow up with Ararat RCC	NOT YET STARTED		See priority 1	1
10	Grampians National Park	Investigate the implement flash flood warning gauge infrastructure in Grampians National Park	NGSC	Parks Victoria	NOT YET STARTED	NOT YET STARTED	NGSC: The council is concerned with the risk to people. Can be explored as part of the Halls Gap flood analysis	See priority 1	1
11	Tarranyurk	Ensure the gauge on the Wimmera River at Tarranyurk is working and providing appropriate information to effectively manage flooding modelling. See project 55				IN PROGRESS		See priority 1	1
12	Norton Creek, MacKenzie River	Investigate establishing a gauge south of Norton Creek and MacKenzie River to better monitor flooding.				NOT YET STARTED		See priority 1	1
13	Mt William Creek	Update planning scheme to incorporate flood risk (Mt William Creek Flood Investigation 2014)	NGSC, ARCC, HRCC	WCMA	IN PROGRESS	IN PROGRESS	HRCC: Well advanced; NGSC: A need for increased collaboration between multiple Councils to achieve better outcomes		1
14	Horsham	Update MFEP to incorporate Horsham Wartook Flood Investigation results	VICSES	HRCC, WCMA	IN PROGRESS	IN PROGRESS	HRCC: We want to help ensure this happens.		1
15	WCMA area	Lobby for changes to flood recovery funding criterion relating to updating and improving assets to latest design requirements	Councils	WCMA	IN PROGRESS	IN PROGRESS	HRCC: Current advocacy priority of Rural Councils Victoria group. Ongoing; HSC: Still relevant. We have had a recent win around utilising our own staff for works carried out but the Build Back Better campaign is still a major priority for councils, including Hindmarsh; NGSC: A need for increased collaboration between multiple Councils to achieve better outcomes; YSC: Assuming this is about culvert and bridge betterment Ongoing.		1
16	Warracknabeal / Brim	Update planning scheme to incorporate flood risk (Warracknabeal / Brim Flood Investigation 2016)	YSC	WCMA	IN PROGRESS	IN PROGRESS	YSC: Our planning officer is addressing this		1
17	Pyrenees Shire	Install dropdown road closed signs in-situ for those that regularly experience flooding	PSC		NOT YET STARTED	NOT YET STARTED	PSC: This action is yet to be funded, there are multiple sites that require this installation type across the high-risk areas of the shire. Plans are to seek funding 2023. Update: WCMA to follow up further with Pyrenees SC.		

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	Further comments	Updated ranking (timeline & need) from 7 Feb 23 meeting
18	WCMA area	Consideration for the inclusion of cultural significance sites within MFEP's	VICSES or ?	Barengi Gadjin	NOT YET STARTED	NOT YET STARTED	Update: Wimmera cma to follow up. Which is appropriate lead agency? Not VICSES		
19	Statewide	Explore streamlining a funding approach that also considers stormwater management as part of flood mitigation. Been problematic at local government level considering local sensibilities around the causes of and mitigation against flood events	Wimmera Councils	WCMA	NOT YET STARTED	NOT YET STARTED	Add to list		1
21	Glenorchy	Review the community planning framework to include disaster resilience	NGSC		NOT YET STARTED	NOT YET STARTED	Move onto list as part of implementing a community plan		
22	Jeparit	Undertake a detailed design and costings to replace Jeparit Weir, which is no longer fit for purpose. The weir is linked to flood-mitigation outcomes involving the Wimmera River	HSC		NOT YET STARTED	NOT YET STARTED	An application for funding to scope this is due on June 14.		
23	Warracknabeal	Develop flood-mitigation and infrastructure plan for Whitton Swamp project at Warracknabeal	YSC		NOT YET STARTED	NOT YET STARTED	Add to list. Flood-mitigation is required for this project in relation to the impact on major roads.		
22	Natimuk	Update planning scheme to incorporate flood risk identified in Natimuk Flood investigation 2012	HRCC	WCMA	IN PROGRESS	IN PROGRESS	HRCC: Well Advanced		1
24	Yarriambiack Shire towns (originally only Rupanyup)	Undertake stormwater modelling for township to ascertain risk and propose mitigation solutions for the town	YSC	WCMA	IN PROGRESS	IN PROGRESS	YSC: Stormwater/drainage system for Rupanyup followed by all other towns. The council has applied and been unsuccessful for two different sources of funding over the last 2 years. Update: Change from Rupanyup to all Yarriambiack towns.		1
25	Stawell	Undertake Flood Investigation - focus on community consultation, mitigation, MFEP, planning scheme amendment and warning systems. Include stormwater modelling scenarios	NGSC	WCMA	IN PROGRESS	IN PROGRESS	Update: NGSC currently undertaking flood study.		1
26	Glenorchy	Prepare map of drainage infrastructure within MFEP along with details of operation intention	NGSC		Follow up with NGSC	IN PROGRESS	Will need to be prioritised due to recent floods. Update: In progress.		1
27	Wimmera region	Provide all storage rating tables, failure mapping and historical spill information to emergency management database (floodzoom)	GWMWater		IN PROGRESS	IN PROGRESS	Follow-up, 1-2-23: All failure mapping and historical spill information is not yet on FloodZoom. GWMWater is following up.		1

2. BELOW ARE MEDIUM-PRIORITY WORKPLAN PROJECTS

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	Further comments	Updated ranking (timeline & need) from 7 Feb 23 meeting
28	Great Western	Understand impact of proposed bypass to flooding	VicRoads	WCMA	IN PROGRESS	IN PROGRESS	Major Road Projects Victoria, Senior Project Development Officer Joel Docker, 12-1-23: "We've been liaising with Tony Baker at WCMA as we undertake the flood-modelling work."		2
29	Heritage River System – Wimmera River	Update planning scheme to incorporate flood risk identified in Lower Wimmera Flood Investigation 2016	HRCC, HSC	WCMA	IN PROGRESS	IN PROGRESS	"HRCC: Well advanced; HSC: Council is approaching the end of their Heritage Planning Scheme Amendment and then will undertake a Planning Scheme Review with financial and operational assistance from the Dept Transport & Planning which will determine the priority of future amendments including any floodway mapping implementation and the future applicability of environmental management overlays. Update: No change."		2
30	Ararat Rural City	Update planning scheme to incorporate flood risk - Mt William Wimmera Flood Investigation 2014	ARCC	WCMA	Follow up with ARCC	IN PROGRESS	ARCC can give an update in March 2023		2
31	Ararat Rural City	Update planning scheme to incorporate flood risk - Upper Wimmera Flood Investigation 2014	ARCC	WCMA	Follow up with ARCC	IN PROGRESS	ARCC can give an update in March 2023		2
32	Lillimur and Serviceton	Investigate sections of highway regularly impacted by stormwater for possible improvements	VicRoads		IN PROGRESS	IN PROGRESS	Major Road Projects Victoria, Senior Project Development Officer Joel Docker, 12-1-23: "We've been liaising with Tony Baker at WCMA as we undertake the flood-modelling work." Update: WCMA to follow up with VicRoads		2
33	Wimmera region	Investigate opportunities for Aboriginal people to be involved in floodplain management and flood response and recovery activities	BGLC		IN PROGRESS. Follow up with BGLC and explore opportunities	IN PROGRESS	No change		
34	Wimmera region	Improve access to significant floodplains in the Wimmera region where there are recognised impediments.	BGLC		Follow up with BGLC	IN PROGRESS	No change - First step is to identify the sites. Update: This might fit better in water strategy. Discuss further with BGLC		
35	Wimmera region	Obtain floor levels for all buildings within flooded areas in region – put into FloodZoom and MFEP's for emergency management	WCMA	VIC SES	IN PROGRESS	IN PROGRESS	Not loaded in FloodZoom. WCMA to follow up with FloodZoom support Team		2

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	Further comments	Updated ranking (timeline & need) from 7 Feb 23 meeting
36	WCMA area	Undertake operational readiness training that incorporates MFEP in operational response in ICCs	VICSES		IN PROGRESS	IN PROGRESS	Ongoing		2
37	Natimuk	Complete works for flash flood warning disseminations from gauges	HRCC	WCMA	No update - meetings at state level with VICSES and BoM but nothing further. Follow up with HRCC	IN PROGRESS	HRC: John Martin has chased up with Steve Muncaster, awaiting reply.		2
38	Glenorchy	Further Glenorchy flood mitigation analysis	NGSC			NOT YET STARTED	Add to list	NGSC	2
39	Stawell	Develop and deliver community flood education programs	VICSES	NGSC	IN PROGRESS	IN PROGRESS			2

3. BELOW ARE LOW-PRIORITY ACTIONS

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	Further comments	Updated ranking (timeline & need) from 7 Feb 23 meeting
40	Apsley	Develop Local Flood products for township & consider installation of awareness signs and gauge boards at key locations	VICSES	WCMA, WWSC	NOT YET STARTED	NOT YET STARTED		See priority 1	3
41	Great Western	Investigate flood warning system for community and deliver community flood education programs, installing signs and stream gauge boards.	NGSC	WCMA	NOT YET STARTED	NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo.		3
42	Great Western	Update planning scheme to incorporate flood risk	NGSC	WCMA	NOT YET STARTED	NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo		3
43	Edenhope	Undertake flood investigation to determine flood risk	WWSC	WCMA	NOT YET STARTED.	NOT YET STARTED.	WWSC: Investigations underway to explore the best way of funding the study considering stormwater and drainage work, key elements in flood mitigation, doesn't qualify under Risk and Resilience Grant directions.		3
44	Stawell	Clarify management arrangements for tailings dam of Stawell Gold Mine.	VICSES	NGSC	IN PROGRESS. Follow up with Stawell Gold Mine	IN PROGRESS	Update: VicSES: Follow up with DEECA. Dam failure falls under DEECA responsibility.		
45	Horsham	Formalise management arrangements / maintenance for levees and channel infrastructure with known flood benefits	HRCC		Follow up with HRCC	IN PROGRESS	"HRCC: Completed (or near completed) Rokeskys Rd – road has been constructed to act as levee replicating de facto levee function that the channel bank provided. Hence road maintenance is under Council control. Former irrigation channel behind Haven Rec Reserve – now a walking path, under Council control. Peppertree Lane levee (Irwin property), now securely fenced under Council maintenance."		3
46	WCMA region	Update historic flood mapping to incorporate bridge overtopping in outputs.	WCMA	Local Governments, VIC SES	IN PROGRESS	IN PROGRESS	Update: WCMA needs to follow up with consultant to work out scope.		3
47	Great Western	Develop map of council drainage infrastructure for MFEF along with management arrangements during high intensity events	NGSC	VICSES	NOT YET STARTED	NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo. Update: Two to three years behind other studies.		3
48	Apsley	Undertake flood investigation to determine flood risk	WWSC	WCMA	NOT YET STARTED	NOT YET STARTED	WWSC: Investigations underway to explore the best way of funding the study considering stormwater and drainage work, key elements in flood mitigation, doesn't qualify under Risk and Resilience Grant directions. Update: WCMA to follow up		3

High

Medium

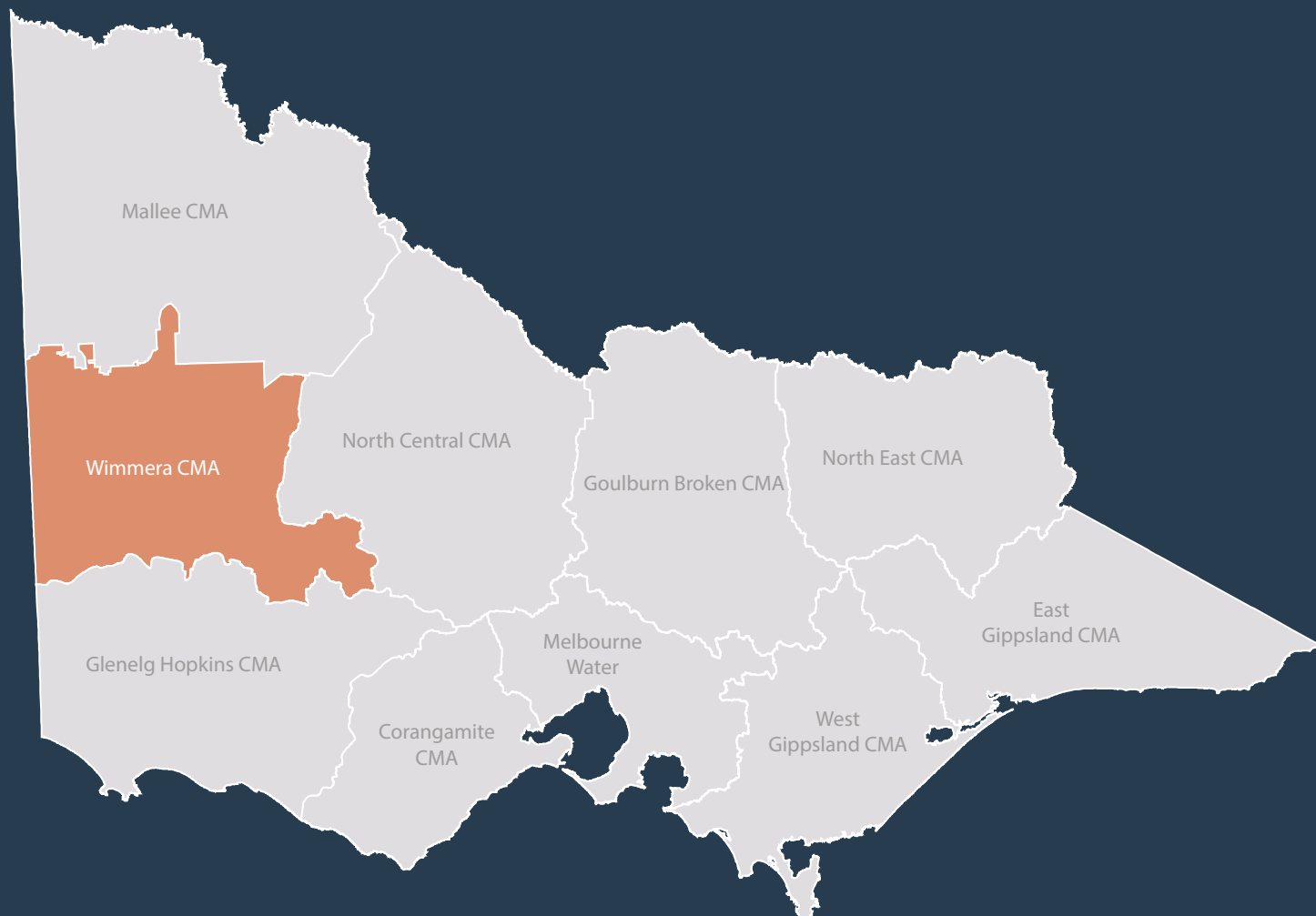
Low

New

Action #	Location	Description	Lead	Partners	21 Sep 2022	7 Feb 2023	Agency comments leading up to and including 7 Feb 23 meeting	Further comments	Updated ranking (timeline & need) from 7 Feb 23 meeting
49	NGSC	Formalise management arrangements of existing levees	NGSC		NOT YET STARTED	NOT YET STARTED	NGSC: Council has limited knowledge in this area and would require information from agencies such as WCMA to proceed with a formalisation process		3
50	Apsley	Develop formalised arrangement for management of drainage bores	WWSC	WCMA	NOT YET STARTED	NOT YET STARTED	Update: WCMA to follow up		3
51	Great Western	Undertake Flood Investigation - focus on community consultation, mitigation, MFEP, planning scheme amendment and warning systems	NGSC	WCMA	NOT YET STARTED	NOT YET STARTED	NGSC: Lower priority compared to Stawell, St Arnaud and Marnoo. Update: Two to three years behind other studies.		3
52	Horsham	Investigate standing water scenario modelling for future planning, incorporate existing understanding into MFEP	HRCC	WCMA	Follow up with Hindmarsh SC. Break into two sections	NOT YET STARTED	This has not progressed; Update, Lead agency confirmed as HRCC. WCMA to follow up.		3

*Wimmera CMA is one of 10 CMAs working in Victoria under
an integrated catchment management approach to achieve
sustainability across the state.*

*Each CMA supports the role that communities and government play
in protecting and enhancing local natural environments.*



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