



Flood investment analysis

Stage 2 report

A confidential Report prepared for DEECA

10 March 2023

Contents

1. Background	4
1.1. Purpose	4
1.2. Background	4
1.3. Scope	5
2. Methodology for identifying progress against flood management actions	6
2.1. Initial data gathering and identification of actions	6
2.2. Developing the dataset for mapping	7
2.3. Consultation with CMAs to refine data and collect qualitative insights	8
3. Flood management actions by CMA	10
4. Flood management actions – delivery challenges and successes	20
4.1. Key challenges within flood project implementation	20
4.2. Key successes within flood project implementation	22
5. Future areas of focus	23

Tables

Table 1 Information available from respective CMA Regional Floodplain Management Strategies	6
Table 2 Information used to refine action list for mapping	8

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We pay our respect to Elders past and present, whose knowledge and leadership has protected Country and allowed First Nations spirituality, culture and kinship to endure through the ages.

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- We believe we can make a difference through great work.

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- We do our best work when we leverage diverse skills and backgrounds.
- This only works if everyone feels they belong.

We learn through challenge.

- We believe that the best opportunities to learn are through doing.
- We create opportunities to grow and to learn from mistakes.
- Feedback isn't put on the back burner. It's given and received with respect and intent.

We care for one another.

- We invest the time and energy to understand one another.
- We care about our lives outside of work.
- We support each other in the way each person needs.

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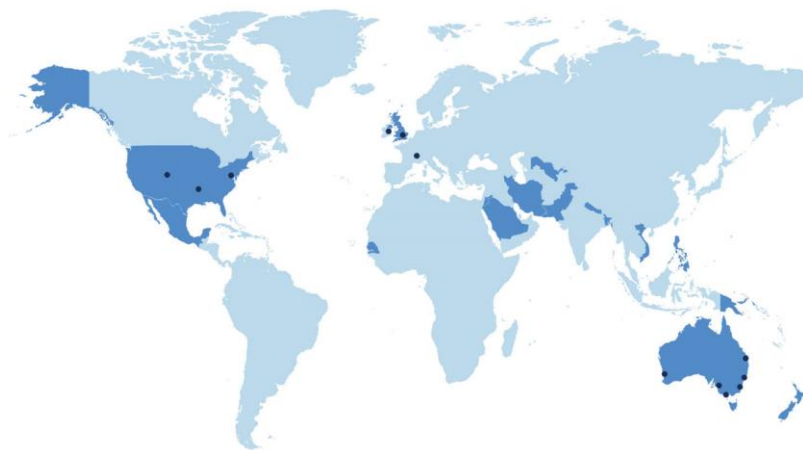
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1. Background

1.1. Purpose

This project is being undertaken at the midway point of the Victorian Floodplain Management Strategy (VFMS) and provides an opportunity to analyse the investment in state wide flood mitigation actions as outlined in each Regional Floodplain Management Strategy (RFMS). This will help to demonstrate progress to date and enable DEECA to identify opportunities for improved progress over the final five years of the VFMS. The project is being completed in two stages. Stage 1 summarised and mapped progress against the priority actions identified in each RFMS. Stage 2 (this report) included consultation with each of the CMAs to test and refine the data and mapping of progress. The consultation also sought to better understand CMA experiences with implementation of actions to date, and to identify challenges and successes over the previous five years.

1.2. Background

Significant flooding in 2010, 2011, and 2012 resulted in a review into the effectiveness of flood warning and response systems, and inquiry into flood mitigation infrastructure. In response to the review and inquiry, DEECA released the Victorian Flood Management Strategy (VFMS) in 2016 to provide a consistent state wide framework for the management of flood related issues and inform actions for the next 10 years. The VFMS is a key state wide framework for the management of flood related issues to inform consistent decisions and actions. Since the release of the VFMS, significant progress has been made, including the delivery of Regional Floodplain Management Strategies (RFMS), local flood studies and the planning and construction of mitigation works and early warning systems.

The RFMS apply the policies, actions and accountabilities of the VFMS at a regional and local level. The purpose of the strategies is to provide a single regional planning document for floodplain management and to guide future investment priorities. The CMAs led the development of Regional Floodplain Management Strategies in collaboration with their local communities, LGAs, VICSES and other partner agencies. This collaboration is important as stakeholders and local communities incorporate local knowledge and help to decide the level of flood risk they are prepared to live with and how much they are willing to invest to improve flood risks in their area.

The regional strategies allow agencies with flood emergency management functions to align their priorities and align their potential to source and allocate funds towards priority actions through an implementation plan. The agency responsible for priority actions varies in alignment with roles, responsibilities and accountabilities outlined in the VFMS. For example, LGAs are responsible for ensuring that their Planning Schemes identify areas at risk of a 1% AEP flood and usually lead the preparation of flood studies with CMAs providing technical support.

Each Catchment Management Authority is funded \$150,000 per year to implement the lower cost actions and to bid for and manage actions that are higher cost and require more significant funding. Funding is available via the Risk and Resilience Grants Scheme on a shared basis between Federal, State and Local Government. This scheme is well subscribed but generally not oversubscribed. Historically compliant applications have been supported. Opportunistic funding is also available, such

as recent funding provided for major levee works in Wangaratta, Castlemaine, Numurkah, Carisbrook and Seaspray.

1.3. Scope

This project is not an assessment of the progress against all actions from each RFMS. It is a stocktake of State and broader government investment in those RFMS actions requiring significant financial investment i.e., greater than \$20,000. The report seeks to identify successes and challenges in accessing funds and implementing on-ground actions.

This report provides a set of maps that identify progress against actions within each Regional Floodplain Management Strategy. The report includes an overview of the data and approach to developing the maps, including the criteria used to identify and map a subsection of the total actions. The actions mapped are intended to be location-dependent and focused on those most likely to require funding by DEECA. Maps are provided for each CMA, excluding the Melbourne Water region.

The report also provides information on the barriers and opportunities faced by CMAs in delivering on the strategies and key areas of focus for delivering successful flood management actions over the next 5 years of the VFMS.

2. Methodology for identifying progress against flood management actions

2.1. Initial data gathering and identification of actions

In 2018 each CMA developed and published a Regional Floodplain Management Strategy (RFMS), working with local councils, SES, and other agencies to identify and prioritise floodplain management actions. The RFMS identifies priority actions for the period 2018-2028 and assigns a lead agency to each action.

As part of the Stage 1 assessment, the actions from each RFMS were consolidated and categorised. The information provided alongside each action varies across the CMA, but broadly each RFMS has information on individual action:

- **Lead agency and supporting agency.** This specifies the agencies that are responsible for implementing the actions. The lead agency isn't necessarily responsible for funding the actions; the funding sources for actions vary between Commonwealth, State and Local Governments.
- **Timeframes.** Information in each RFMS varied and efforts were made to categorise them based on a time range (1-3 years, 3-5 years, 5+ years) or by criteria (short, medium, long).
- **Type.** There were seven different types of actions identified within each RFMS including:
 - Mitigation infrastructure/works
 - Flood intelligence and mapping (including flood studies)
 - Flood warning systems
 - Emergency management (i.e. Municipal Flood Emergency Plans)
 - Land use planning/Planning scheme amendments
 - Education programs
 - Aboriginal cultural values
- **Location.** Locations were either identified as a specific location or as region-wide
- **LGA/Municipality.** The region within which the action would occur.
- **Cost.** The expected cost for delivering on the action, either an estimated number or a low/medium/high estimate.
- **Priority.** Some identified actions as low/medium/high priority.

Table 1 outlines the information available within each regional floodplain management strategy.

Table 1 Information available from respective CMA Regional Floodplain Management Strategies

Region/Criteria	Timeframe	Lead agency	Type	Cost	Priority	Location
Corangamite	×	✓	✓	×	✓	✓

Region/Criteria	Timeframe	Lead agency	Type	Cost	Priority	Location
East Gippsland	×	✓	✓	×	✓	✓
Glenelg Hopkins	✓	✓	✓	✓	×	✓
Goulburn Broken	×	×	✓	✓	✓	✓
Mallee	✓	✓	✓	×	×	✓
North Central	✓	✓	✓	✓	✓	×
North East	✓	✓	✓	✓	×	✓
West Gippsland	✓	✓	✓	×	×	✓
Wimmera	✓	✓	✓	×	✓	✓

As well as the publicly available data on RFMS actions, a dataset of investments in flood projects since 2016-17 was provided by DEECA. This included the following data for each investment:

- Financial Year
- Project Manager
- Project Name
- Project Type
- Total value of investment (split across Commonwealth, State and Local funding sources)
- Percent complete

It should be noted that investment data runs from 2016-17, while the actions identified in each RFMS were published in 2018 and designed as a part of a 10-year strategy from 2018 to 2028.

2.2. Developing the dataset for mapping

Investments were matched against RFMS actions using the consolidated RFMS actions register and investment in flood projects dataset. The level of detail provided within each action description, and investment project name varied. Therefore, the confidence level when attributing investments to actions varied. Where projects were of similar or identical location and description, the investment was matched against its equivalent RFMS action. This approach was used to rapidly assess the allocation of investments to date, and draw insights about how investment has aligned with RFMS actions.

The full list of actions identified within each RFMS could not be mapped due to the large number of actions identified across each CMA. In addition, the focus of this project is on reviewing actions that require significant funding (over \$20,000). The RFMS actions were therefore refined based on assumptions developed collaboratively with DEECA. The criteria used to create a subset of actions to be mapped are outlined in Table 2.

Table 2 Information used to refine action list for mapping

Category	Included in mapping	Not included
Type of action (based on expected funding level required)	Mitigation infrastructure/works Flood intelligence and mapping (including flood studies) Flood warning systems	Emergency management (i.e. Municipal Flood Emergency Plans) Land use planning/Planning scheme amendments Education programs Aboriginal cultural values
Prioritisation by CMAs	High and Medium priority actions as identified in RFMS	Low priority actions as identified in RFMS
Timeframes for action	1-6 years or Short and Medium timeframes as identified by CMAs	> 6 years or Long timeframes as identified by CMAs
Location	Actions identified by a specific location not by CMA or LGA	Actions identified at the CMA or LGA level were not mapped but have been included in the visuals produced

An initial set of maps were developed that used the information from the RFMS and from the investment dataset. These maps identified investments in flood projects since 2016-17 against actions within Regional Floodplain Management Strategies. These maps were published in the Stage 1 report for this project. The report includes an overview of the data and approach to developing the maps, including the criteria used to identify and map a subsection of the total actions. The actions mapped were intended to be location-dependent and focused on those most likely to require funding by DEECA. Maps were provided for each CMA, excluding the Melbourne Water region.

2.3. Consultation with CMAs to refine data and collect qualitative insights

The data collection and mapping from Stage 1 was then used to develop an approach to engagement with the CMAs. This engagement approach focused on refining the dataset underpinning the maps, and gathering information on the barriers and opportunities faced by CMAs in delivering on the strategies.

Aither, alongside a representative from DEECA, conducted meetings with nine CMAs from December 2022 to January 2023. Ahead of the consultations, the CMAs were provided with the stage 1 report, the maps and the underlying dataset of actions and investments.

The consultation with the CMAs was used to elicit views on the key challenges, successes and any barriers to implementation of flood projects within each CMA. The outcomes of these discussions are summarised in Section 4.

Following the consultations, each CMA provided an updated dataset showing progress against actions to date, including any new actions for inclusion. The maps were updated to reflect the new data provided by the CMAs and are included in the next section of this report.

3. Flood management actions by CMA

The approach set out above has been used to identify and map progress against actions for each CMA in Victoria. The maps show:

- Location specific actions identified in the RFMS classified by one of three types:
 - Flood intelligence and mapping
 - Mitigation works
 - Flood warning systems
- Progress against each mapped action using the following classification:
 - Green: action completed
 - Yellow: action in progress
 - Amber: action in planning stages
 - Red: no progress or action deprioritised.
- The ten urban areas at highest risk from flooding within each CMA, identified in the 2016 Regional Floodplain Risk Assessments which fed into the development of the RFMS.

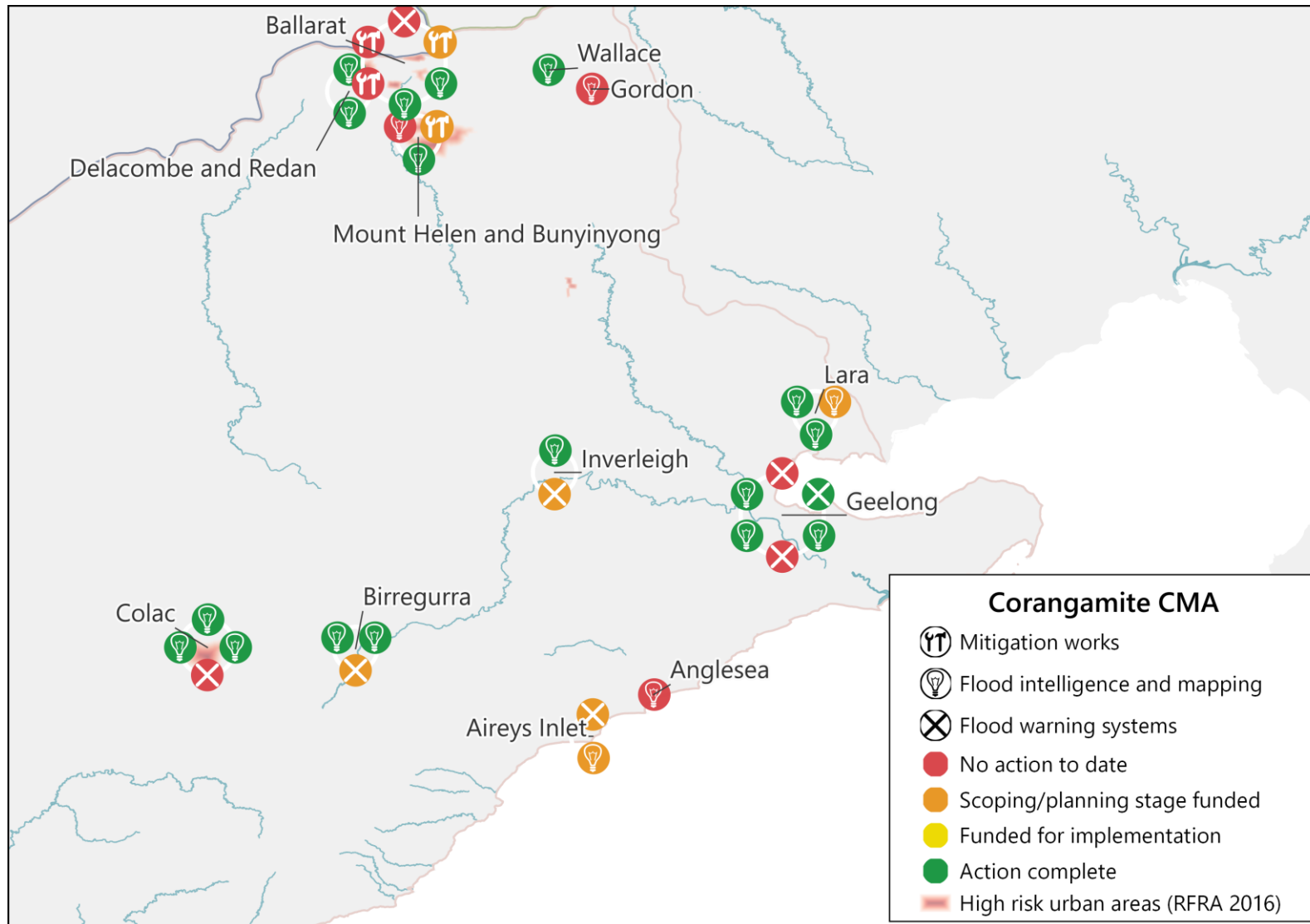
The maps are intended to provide a visual illustration of progress against the actions in the RFMS that have required significant funding from DEECA. They are not intended to be a highly accurate representation of all flood management activities in Victoria.

It should be noted that throughout the first five years of implementation, there has been an ongoing process of reprioritisation of actions for a range of reasons, including insights from recent flood events, further engagement with community/council, and through respective mid-term reviews. Some of the actions represented here may not be identified in the original RFMS.

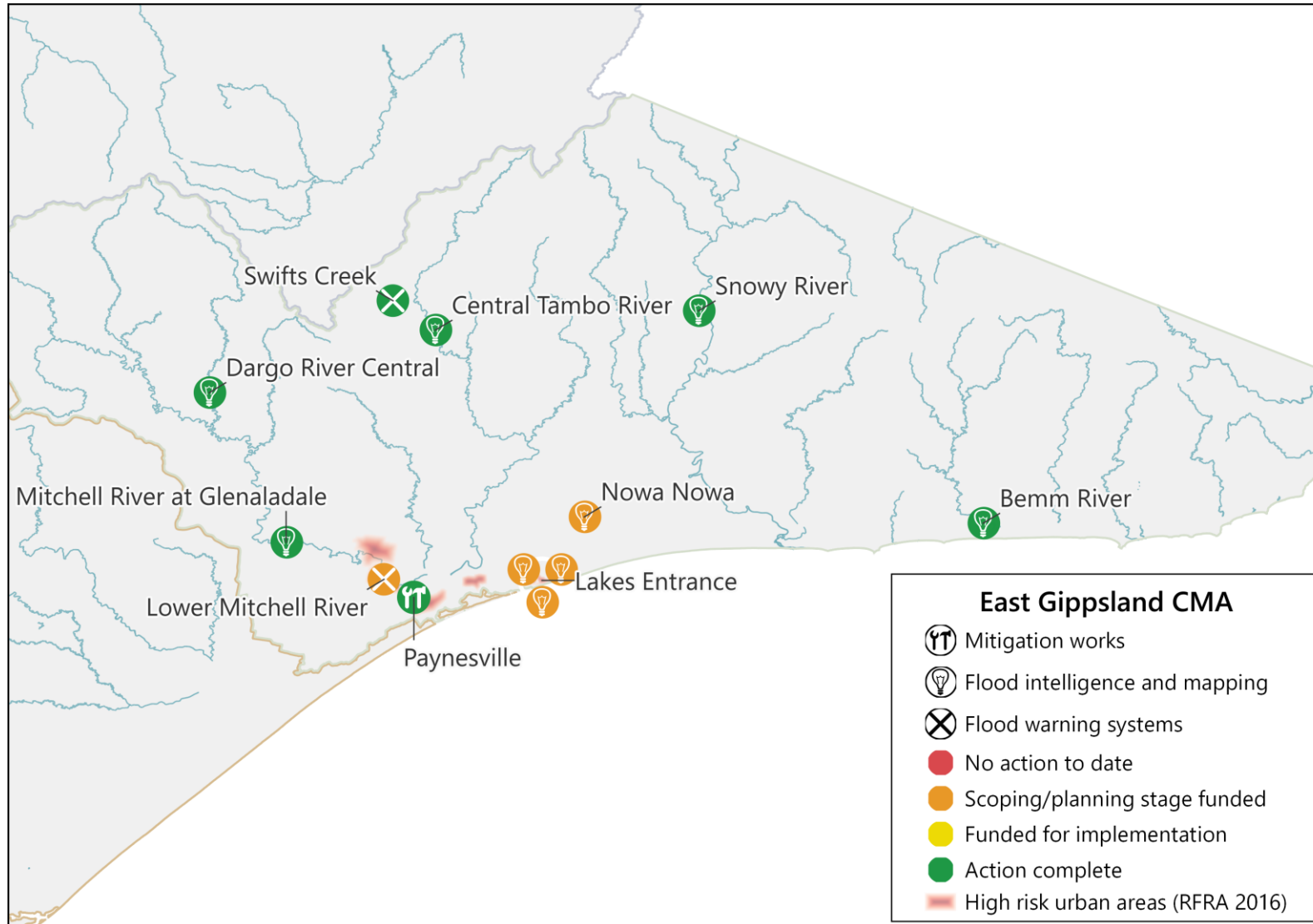
The maps are presented for each CMA which includes:

- Corangamite CMA
- East Gippsland CMA
- Glenelg Hopkins CMA
- Goulburn Broken CMA
- Mallee CMA
- North Central CMA
- North East CMA
- West Gippsland CMA
- Wimmera CMA

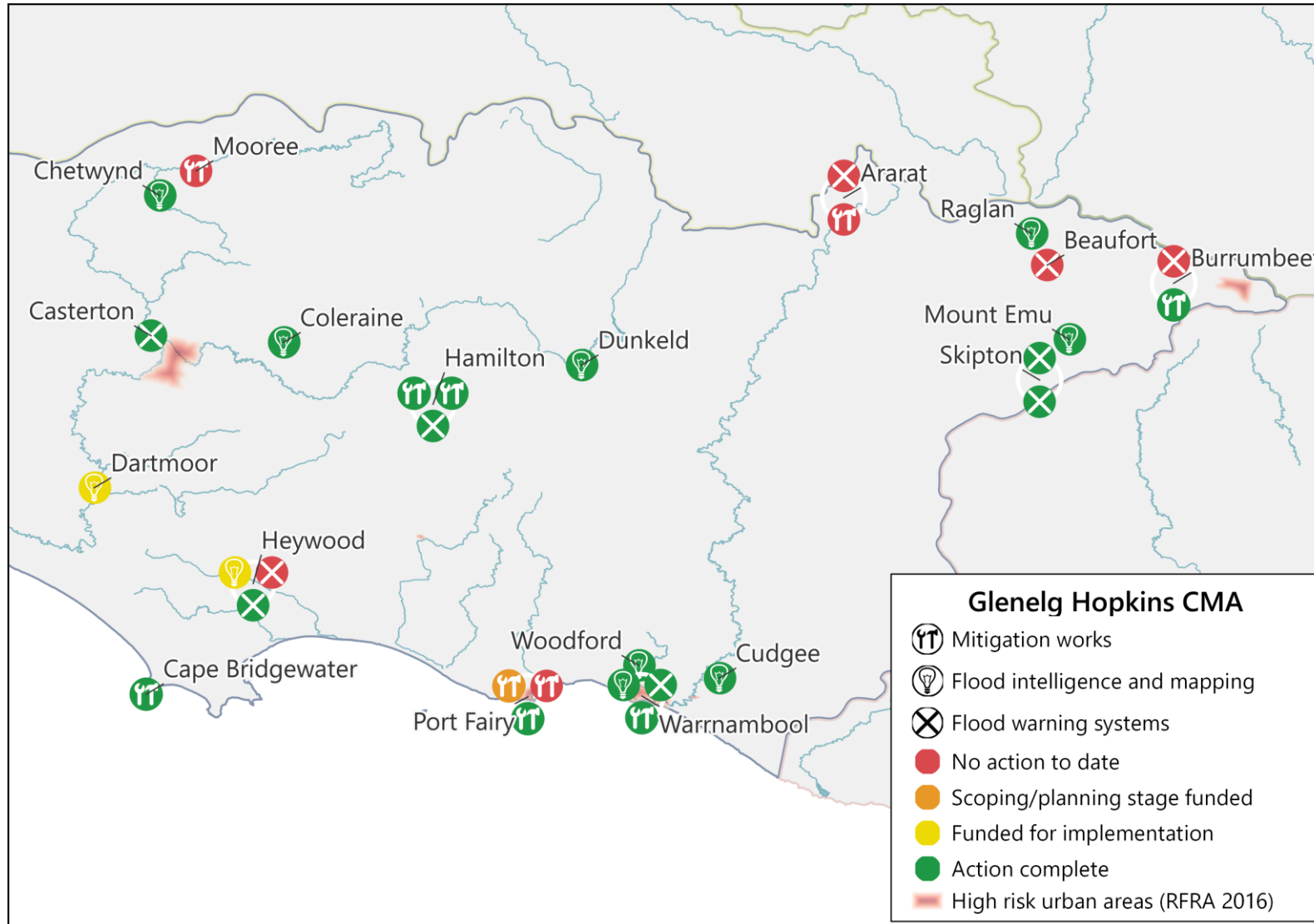
3.1.1. Corangamite CMA



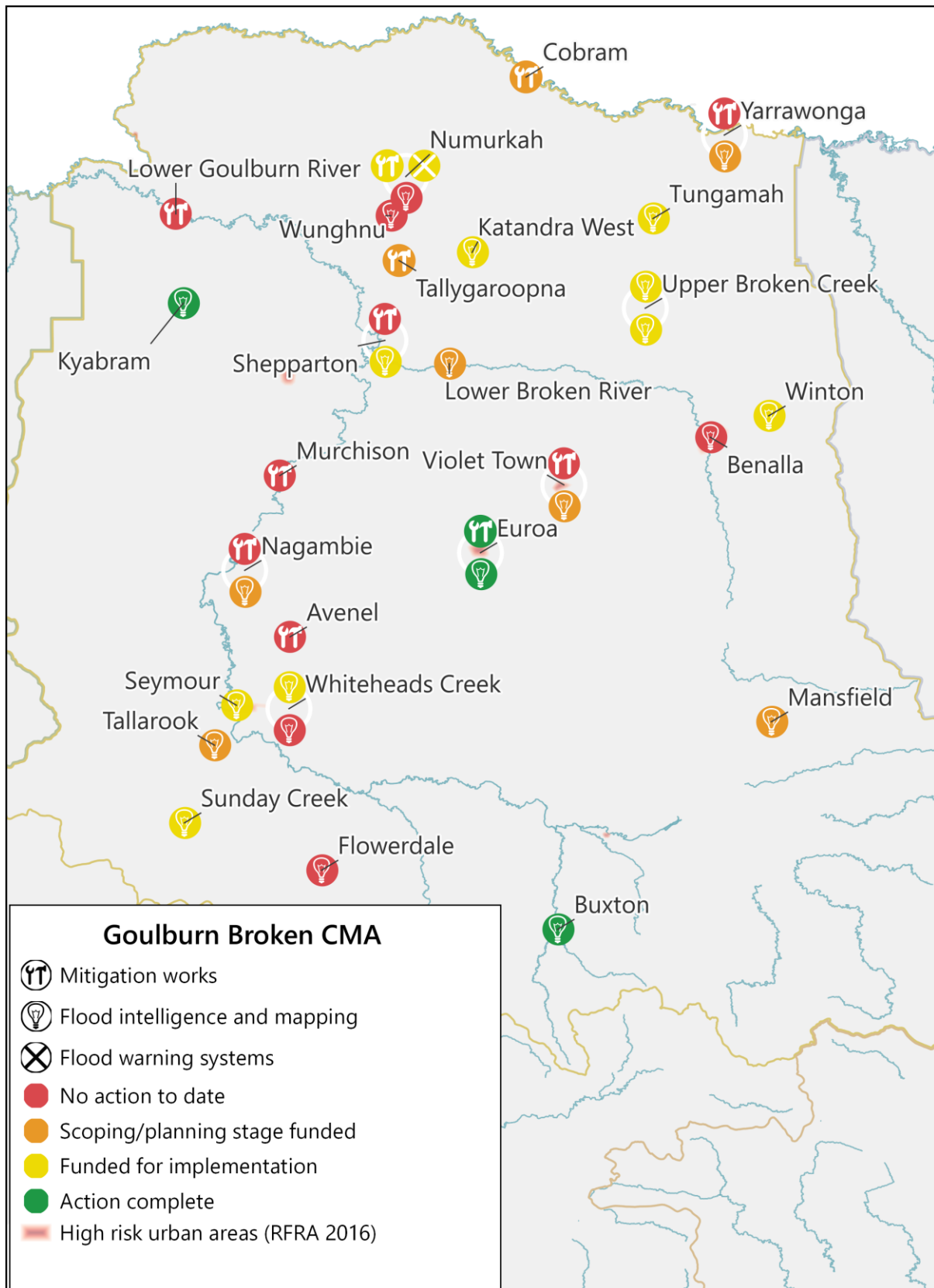
3.1.2. East Gippsland CMA



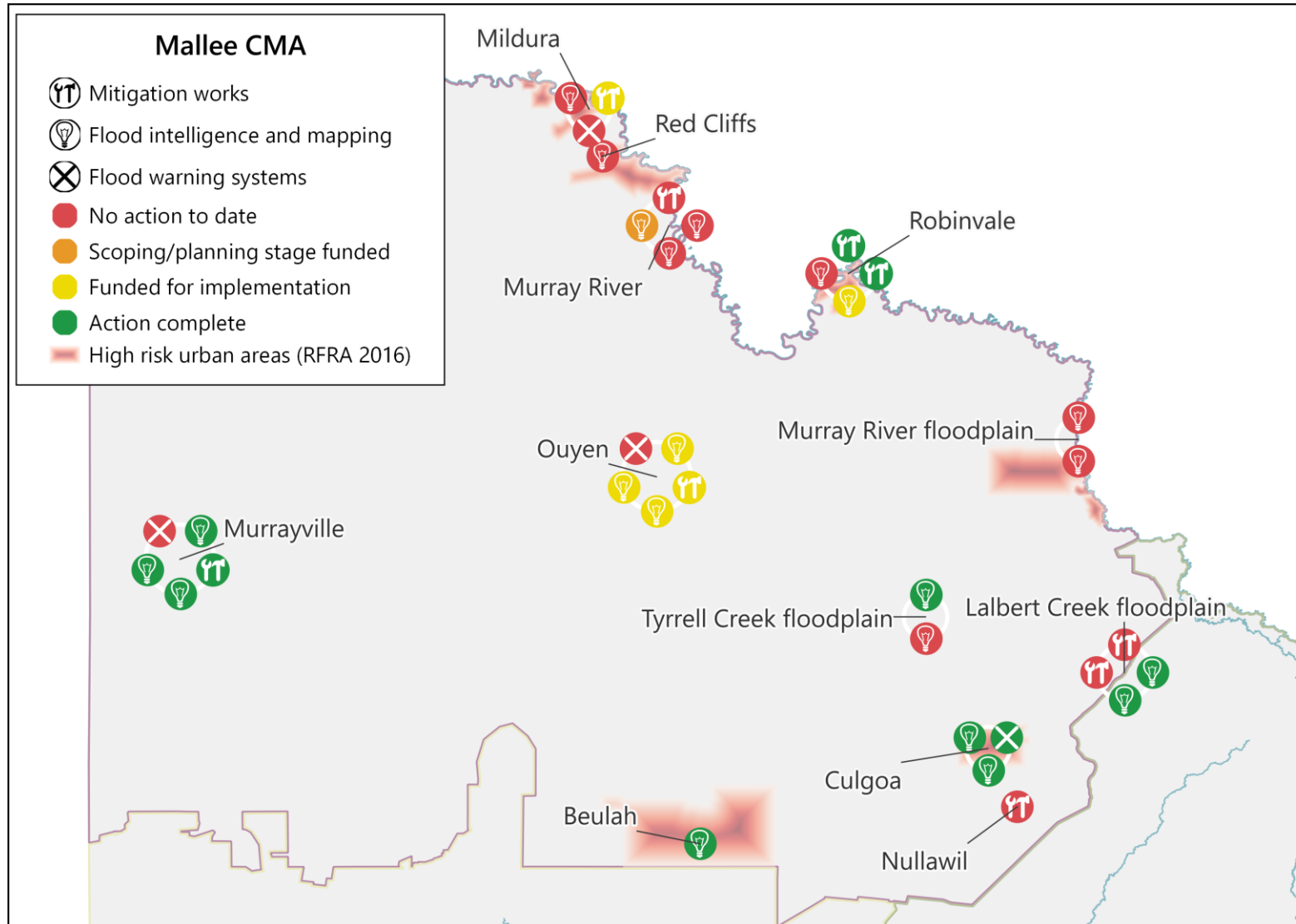
3.1.3. Glenelg Hopkins CMA



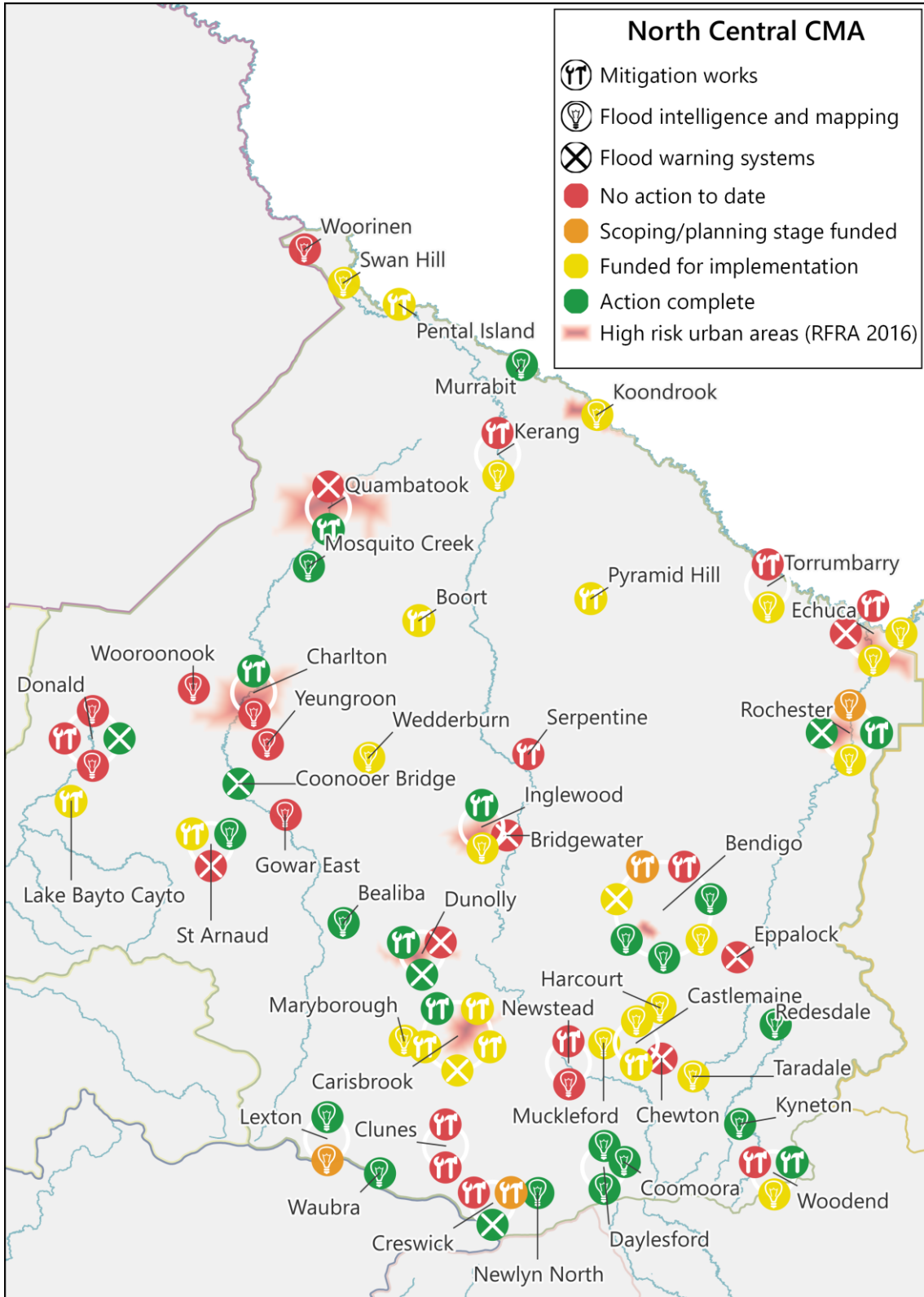
3.1.4. Goulburn Broken CMA



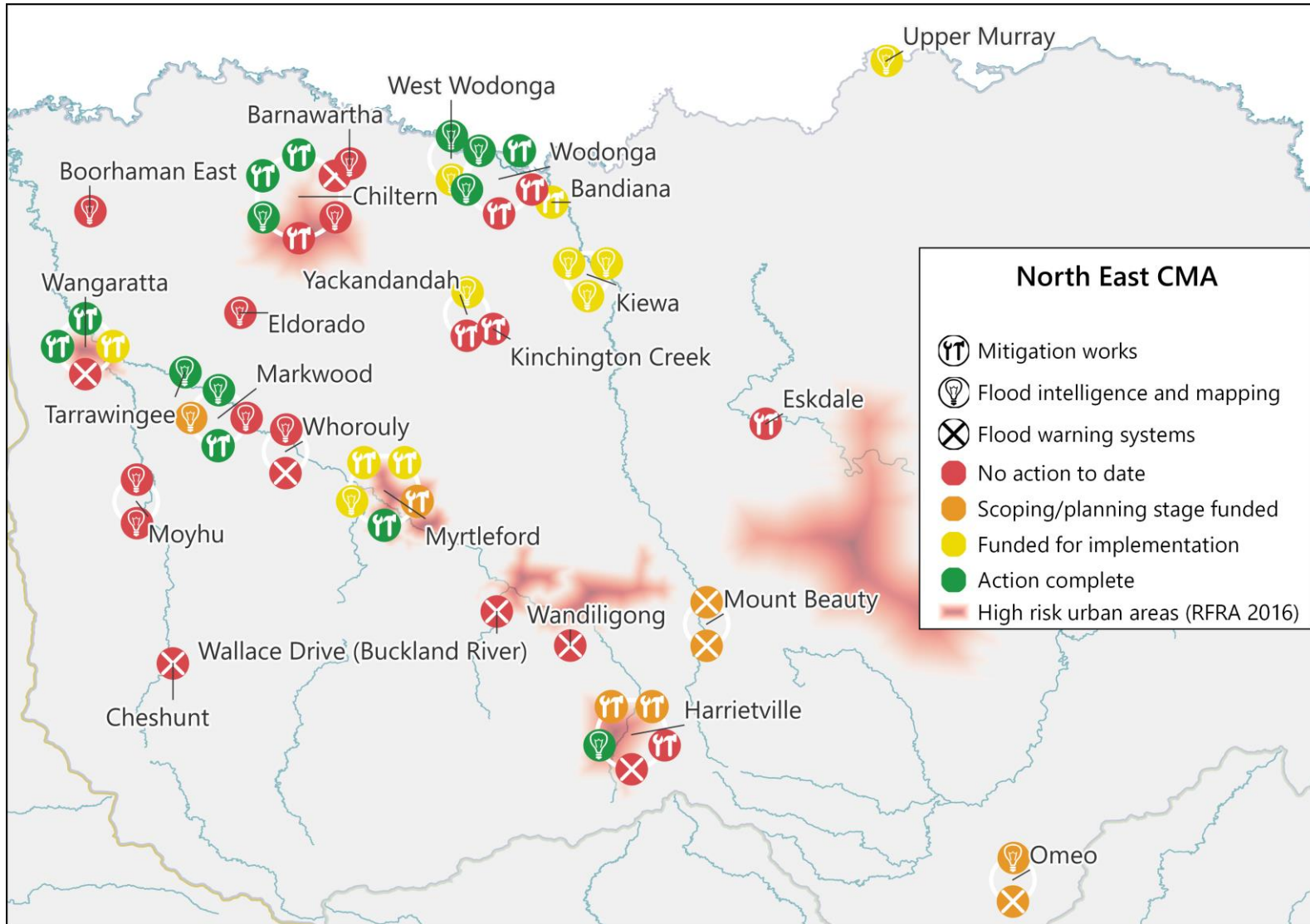
3.1.5. Mallee CMA



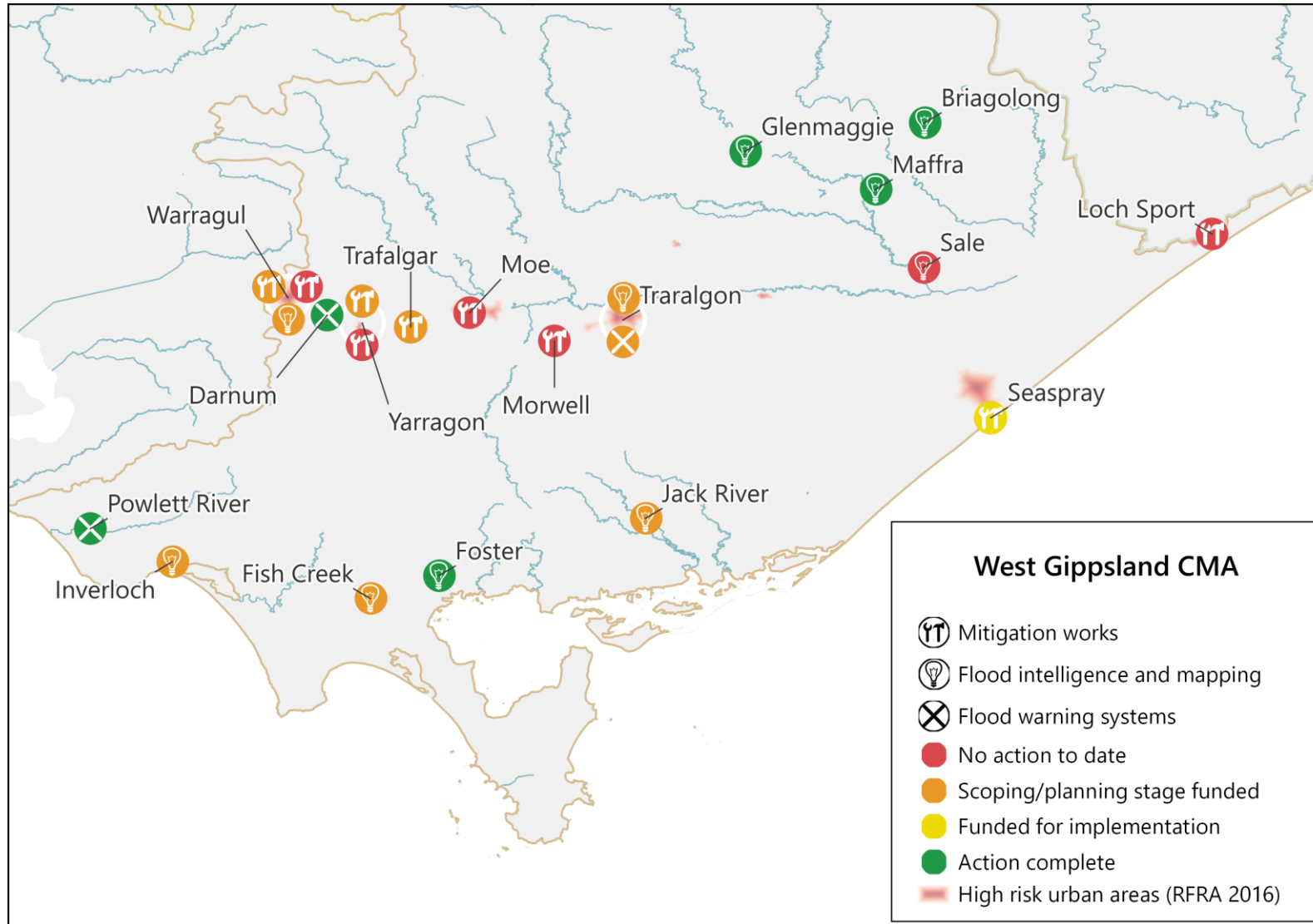
3.1.6. North Central CMA



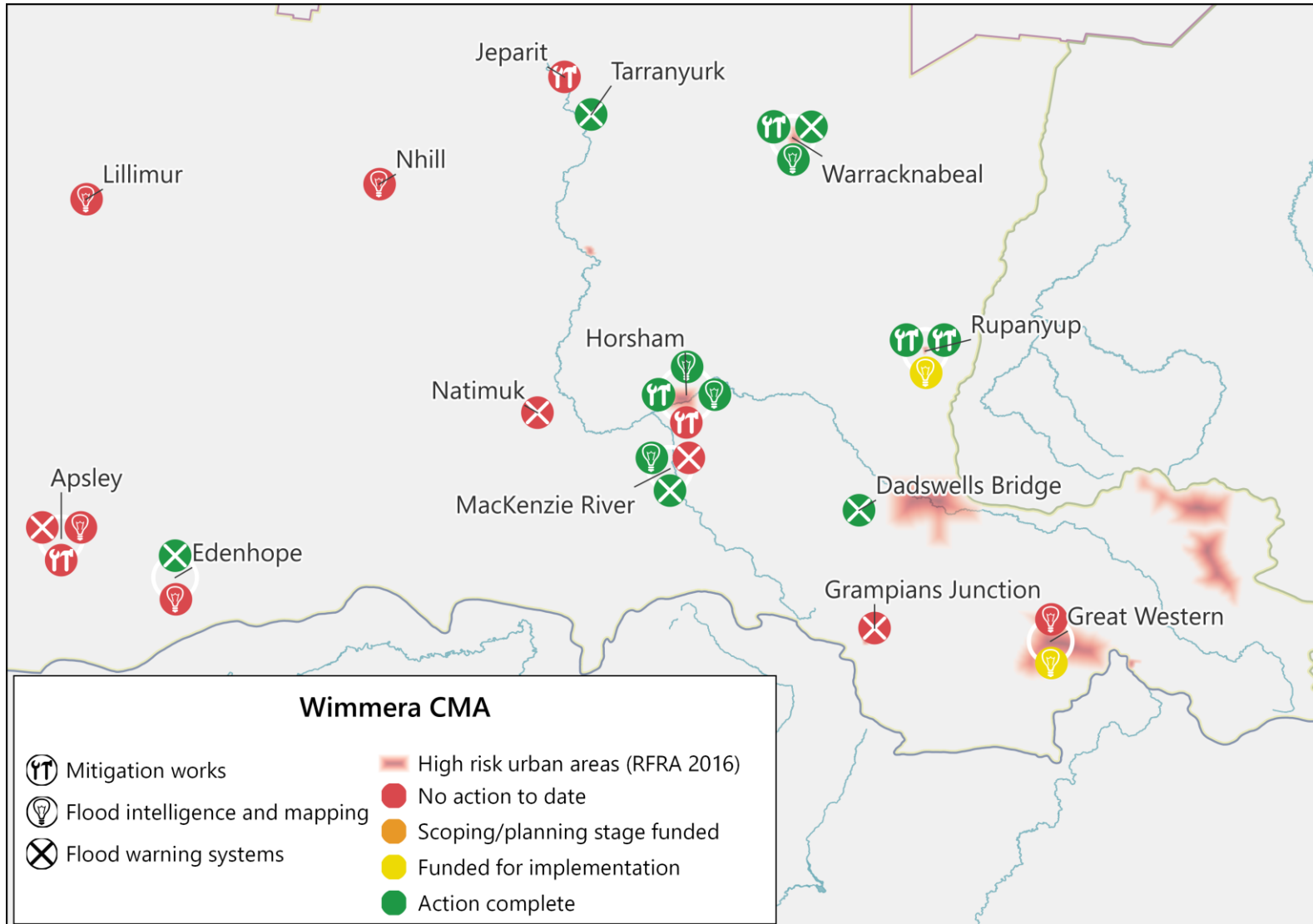
3.1.7. North East CMA



3.1.8. West Gippsland CMA



3.1.9. Wimmera CMA



4. Flood management actions – delivery challenges and successes

The consultation with each CMA identified progress against the mapped actions as shown in the previous section and was also used to identify key challenges and successes in the delivery of the RFMS over the last five years. Overall, the consultation and mapping exercise demonstrated that there has been significant progress to date in delivering actions set out in the RFMS. However, some consistent challenges have emerged across multiple CMAs that slowed delivery of specific priority actions.

4.1. Key challenges within flood project implementation

CMAs consistently raised specific challenges in implementing the RFMS and executing their prioritised actions. These have been summarised in the following themes.

Staff turnover and resourcing challenges

Most CMAs identified clear resourcing challenges relating to both staff turnover and limited ongoing capacity. These resourcing challenges were raised as an issue both within the CMAs and within the local councils and other agencies including SES. Four main issues were identified in relation to staff turnover and resourcing challenges:

- Staff turnover leading to loss of institutional knowledge of the actions and priorities outlined in the RFMS, loss of networks and connections between CMAs, local councils and community, reduced knowledge and understanding of the grant and funding application process.
- Challenges in finding adequate resourcing for positions when staff leave, further exacerbating the issues described above where roles are remaining vacant and limiting the ability to handover knowledge to new staff.
- Minimal dedicated resourcing for delivering RFMS actions, with the majority of staff at CMAs and local council undertaking these roles as a small component of their job, with the majority of their time dedicated to other activities.
- Challenges in procuring and managing delivery and review of flood modelling projects leading to delays and complications in project delivery.

It was noted that these resourcing issues particularly affected councils' ability to successfully complete funding proposals. Resourcing challenges also affected the delivery of projects and the ongoing ability to understand and deliver on the priorities outlined in the RFMS.

Accountability in delivering on the actions of the RFMS

A key component of the RFMS was identifying lead agencies for each of the prioritised actions. This has generally been seen as a successful approach that has enabled councils and SES to take greater ownership of actions. However, some councils have not accepted the proposed roles and responsibilities outlined in the RFMS. In some cases, this has been driven by a lack of engagement from councils in the original identification of actions in the RFMS, which has led to a reduced sense of

ownership of these actions. Some CMAs have been taking on a much greater role in coordinating or writing grant funding applications for the councils, to overcome both this issue and challenges relating to capacity and resourcing. This approach is unlikely to be sustainable for the CMAs on an ongoing basis. It can also exacerbate problems in future by again leading to reduced ownership and accountability for actions by councils.

CMAs also noted challenges due to councils' failure to update planning scheme amendments. Planning scheme amendment actions are not directly funded by DEECA and so were not within the scope of this review. However, they are a key outcome of many flood studies and intelligence actions, which are funded by DEECA. Many of the CMAs noted that councils have abandoned and/or disregarded planning scheme amendments based on flood studies for various reasons. Failure to amend planning schemes to account for new information reduces the value of undertaking flood studies and may require additional future work and investment if the flood study becomes outdated before the amendments are finalised.

Dependency on individual staff interest and engagement with flood management

Related to the first two challenges, CMAs also identified that the level of engagement and ownership of actions by councils was highly varied. Engagement was mostly dependent on the level of personal interest in flood management by individual staff members at the council. This leads to significant variability in the delivery of actions across regions. This is also often affected by previous experience with flood events. Regions that have recently been affected by flooding are more likely to have staff members who are more willing to engage meaningfully in the process. This also relates to the issue of capacity – nearly all of the councils are under-resourced to deliver against these actions and are therefore reliant on the good will of staff to get things done with limited time and capacity.

Funding issues including in-kind contributions, and data and information costs

It was noted by several CMAs that some of the smaller councils struggled to meet the in-kind contribution requirements for larger or more costly projects. This was also driven in some instances by high data costs, for example, for purchasing LIDAR data. It was particularly hard for small councils to provide matching in-kind contributions for high cost projects to be delivered within a short time period, as in-kind staff time contributions would be much lower. Some CMAs noted that this is further affected by different guidance provided from departments about requirements for in-kind contributions. An example was cited where a funding proposal was rejected by the Department of Justice and Community Safety for proposing in-kind contributions rather than matched funding from the council.

Overall, there were mixed views about the ease of funding applications, and the ability to acquire funding. Some CMAs found it straightforward and some raised concerns about the ambiguity of process and timeframes. This was sometimes dependent on the tenure of the staff members within the role.

Unique challenges based on the geography of the CMA

Some CMAs also faced specific challenges due to the unique issues or differences in the local landscape and associated flooding issues. For some, this led to higher costs or delays in the delivery of flood intelligence and mapping actions due to additional complexity in the landscape. For others, there are specific issues in accessing funding. For these CMAs flood issues identified in the RFMS are largely driven by, for example, stormwater and drainage issues, rather than riverine flooding which is

the focus of the grant funding currently provided. This has also caused some confusion for CMAs and councils when developing applications and navigating the funding process.

4.2. Key successes within flood project implementation

CMAs identified a range of factors that had driven the successful implementation of the RFMS and executing their prioritised actions. These factors have been summarised in the following themes.

The process of undertaking the RFMS and the prioritisation of actions

The CMAs reported that the RFMS process itself had been useful, including identifying a list of prioritised actions and nominating lead agencies. Having an agreed set of prioritised actions enabled easier access to funding. Different agencies, including the funding agency, had a shared understanding of the priority actions, which increased confidence and clarity when submitting funding applications. When it worked well, it also gave ownership of actions to local councils, achieving more engagement within the local council and the community.

Collaboration with other CMAs and among project partners

Nearly all the CMAs identified that collaboration, both among CMAs, and between CMAs and the local councils, was highly valued and seen as a critical driver for achieving progress. Opportunities for engagement, such as the flood managers forum, were valued for knowledge sharing and as a way of building networks and connecting with others facing similar challenges.

Positive working relationships, engagement, and collaboration between the CMA and councils or other agencies were essential for achieving progress on priority actions. CMAs also reported positive outcomes from community engagement, despite some challenges during the COVID-19 pandemic. One CMA overcame these challenges by identifying key community members as the point of connection between the CMA and the wider community, to share information more broadly and increase engagement.

Additional oversight or direct support from CMAs

Some CMAs reported taking a much more active role in delivering actions, including writing grant applications for local councils or project-managing specific actions. These CMAs saw this role as highly successful and a key driver for progress. However, this approach does require significant resourcing to take over these partner agency responsibilities. This CMA-led approach may also lead to future challenges if resources or priorities change within the CMA. Councils in the region may be unable to take back responsibility for implementation, as they may have limited ownership or understanding of the actions.

Whole of region flood studies that can inform future work

The process of undertaking larger regional flood studies has been valuable for many CMAs, enabling them to reassess and reprioritise actions based on more up-to-date and accurate information. The flood studies also enable progress on flood warning, mitigation, and infrastructure actions. These studies have also proved to be valuable throughout recent flooding events. Some CMAs did note that while regional scale studies have been useful, they have also sometimes held up progress due to their expansive scopes and associated risks to delivery timeframes.

5. Future areas of focus

Overall, the CMAs have stated that the Regional Floodplain Management Strategies (RFMS) have been valuable in achieving progress on flood management activities across Victoria. The mapping and consultation process consistently showed that, across the regions, RFMS implementation has successfully led to:

- prioritised actions at a regional and local level, enabling targeted funding applications and providing a clear process for CMAs, local government and other agencies
- defined roles and responsibilities for delivering flood management activities, ensuring that there is ownership of actions across multiple agencies
- significant progress against high-priority actions, in particular flood intelligence and mapping actions.

The consultation process also identified ongoing and consistent challenges across multiple CMAs. Improvements in the following focus areas are recommended to address these challenges and support effective delivery against priority actions in the remaining five years of the VFMS.

Improved communication about the funding and grant application processes

Improved communication regarding grant applications and funding information, which provides clarity about requirements and timelines, will enable CMAs and local government to better prepare and plan for the funding process. This will be particularly important for regions with new staff who have not been involved in previous funding rounds.

Although the funding and grant application process is managed by third parties in State and Federal Government, the expected timing is generally the first quarter of each year. Reminders and variations are raised at the quarterly Floodplain Managers' Forums. Ideally, CMAs and councils should therefore be prioritising applications in the last quarter of each year in preparation.

Opportunities to improve guidance on the funding process, both between and within agencies, will help improve the quality of funding applications and minimise risks due to limited capacity within councils. This should increase the number of projects receiving funding and enable faster implementation of the remaining priority actions.

Support for collaboration among CMAs, councils and other stakeholders

Increased use of communication channels and established networks would enable councils to share learnings and experiences across the State. There may be opportunities to increase collaboration or share lessons from specific projects as more actions are completed. Increased collaboration could be supported through better networks or new channels for communication between the CMAs and across different councils.

Collaboration was already seen as a highly valued aspect of the current process and enabled effective knowledge sharing. However, there are opportunities to further improve and expand this collaboration, including providing support networks for individual staff members. Most people working in this area are time-poor and work on challenging projects. Increased engagement with

others facing the same challenges can be valuable for individual well-being and may help reduce staff turnover issues.

Capability and capacity building within CMAs and local government

Identifying additional ways to maintain and build capability and capacity within the CMAs and local government may also be beneficial. This should extend beyond funding additional staff positions, which may be challenging to fill or ineffective without the right capabilities. As noted, many CMAs identified resourcing constraints as a major issue, preventing councils from applying for funding or achieving progress on actions. While DEECA provides access to additional resourcing for this work, it still appears that there are challenges in meeting the resourcing requirements across CMAs and local government. Resourcing issues are also affected by high staff turnover, loss of institutional knowledge, and the prioritisation of different work areas.

Conclusion

During the first five years of the VFMS and RFMS, the CMAs and other agencies have delivered significant progress on the priority actions identified in each region. However, there are still opportunities to further improve the process, especially as the regions move beyond a focus on flood studies and mapping into delivering more significant mitigation activities. Opportunities for improvement should be sought in ensuring clear communication of funding and grants application processes, supporting collaboration and learnings across Victoria, and building and supporting capacity and capability across the regions.

Document History

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