

Dam Safety Response Plan



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Hume Dam – Murray River, DEECA

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it.

We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

DEECA is committed to genuinely partnering with Victorian Traditional Owners and Victoria's Aboriginal community to progress their aspirations.



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Revision History

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4.0	February 2025	Resilience and Emergency Branch	Rob Considine, Director Resilience and Emergency Branch	Significant revision based on findings from review. Some content transferred to new Dam Safety Operations Plan which has a targeted audience involving the Department, partner agency emergency management personnel and other bodies assisting in the management of the potential consequences of dam safety incidents.

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Abbreviations

AIIMS	Australasian Inter-service Incident Management System
ANCOLD	Australian National Committee on Large Dams
BoM	Bureau of Meteorology
DEECA	Department of Environment, Energy and Climate Action
DSEP	Dam Safety Emergency Plan
EMLO	Emergency Management Liaison Officer
EMV	Emergency Management Victoria
IC	Incident Controller
IMT	Incident Management Team
JSOP	Joint Standard Operating Procedure
MEMPC	Municipal Emergency Management Planning Committee
MS&FEP	Municipal Storm and Flood Emergency Plan
SAC	State Agency Commander
SCC	State Control Centre
SCoT	State Coordination Team
SCRC	State Crisis and Resilience Council
SCT	State Control Team
SC-W	State Controller Class 2 (Water)
SDO - Water	State Duty Officer - Water
SEMC	Security and Emergency Management Committee of Cabinet
SEMP	State Emergency Management Plan
SEMT	State Emergency Management Team
SitRep	Situation Report
VICPOL	Victoria Police
VICSES	Victoria State Emergency Service
WSS	Water Services Specialist

1. Introduction

1.1 Purpose

The Dam Safety Response Plan (Response Plan) has been developed to assist the Victorian Department of Energy, Environment and Climate Action (DEECA or the Department) in managing its obligations associated with dam safety incidents. The State Emergency Management Plan (SEMP) names the Department as the Control Agency for response to dam safety incidents. Additionally, the Department has obligations under the SEMP for the mitigation of dam safety risks including formulating policy and regulation for dam safety and administering dam safety provisions in the *Water Act 1989* and water corporation obligations in the Statement of Obligations. Therefore, the Department has overall responsibility for ensuring that plans and processes are in place for managing these incidents.

Under the *Water Act 1989* and common law, dam owners are legally responsible for the safety of their dams and accountable for the damage that the escape of water from a dam causes if it fails. Therefore, dam owners play a key role in responding to and managing dam safety emergencies where they have the capability and capacity to do so. This includes water corporations, councils, public land managers, and private dam owners. All dams require ongoing monitoring and management to reduce the risk of failure over their life. This includes surveillance procedures, properly operating and maintaining the dam, and having an emergency plan.

The Dam Safety Response Plan outlines the Victorian arrangements, where applicable, to deliver a coordinated response to dam safety incidents. The Department, partner agency emergency management personnel and other bodies assisting in the management of the potential consequences of dam safety incidents and responding to a dam safety emergency, should read this plan in conjunction with the Dam Safety Operations Plan which details the activities for responding to dam safety related incidents.

1.2 Objectives

The objectives of this Response Plan are to:

- Provide direction with respect to governance arrangements, role clarity and responsibilities, response arrangements and consequence management for different levels of dam safety incidents.
- Ensure an integrated, coordinated, consistent and scalable response.
- Guidance on arrangements for flooding downstream of dams under different scenarios.

1.3 Scope

The *Water Act 1989* defines dams as follows:

“dam means anything in which by means of an excavation, a bank, a barrier or other works water is collected, stored or concentrated.”

This Response Plan applies to dam safety incidents during normal and event operations, including floods and earthquakes, for all Victorian dams including those owned or operated by:

- Private land owners including agriculture, mining and energy companies
- Water corporations
- Councils
- Parks Victoria
- The Department

The SEMP also states that all dam owners are responsible for mitigating risks from potential dam failure. Water corporations and Parks Victoria are included as support agencies for dam safety incident response and can provide resources to the Department during emergencies.

This Response Plan includes:

- A description of potential risks and consequences of a dam safety incident to the physical, social, economic and natural environments

- The positions with accountability and the agencies responsible for managing mitigation and response
- Links to sources of information for further detail
- Guidance on responding to flooding downstream of dams.

1.3.1 Out of Scope

This plan does not apply to controlled water releases from dams – whether as part of a flood or in anticipation of flood waters. Similarly, this plan does not apply to the regulated and controlled release of water from sewage treatment or storage lagoons.

Levees are not included in the definition of “dam” so are out of scope for this Response Plan.

1.4 Audience

This Response Plan is targeted at all dam owners - both public dams (including water corporation, DEECA, Parks Victoria and Council dams) and private licensed and unlicensed dams. Other primary audiences include those assisting in the management of the consequences of dam safety incidents such as the Department, Victoria State Emergency Service (VICSES), Victoria Police (VICPOL) water corporations, delegated land managers and councils.

The wider community is not the primary audience. However, community members may find the contents of this plan informative.

1.5 Authorising Environment

The *Emergency Management Act 2013* is the authorising legislation for the management of emergencies in Victoria.

The SEMP is prepared under Section 53 of the *Emergency Management Act 2013*. The SEMP outlines arrangements for the coordinated response to emergencies by all agencies. It also details the roles that different organisations play in Victoria’s emergency management arrangements. The Department is nominated as the Control Agency for dam safety. The SEMP also has a Flood Sub-Plan (VICSES, 2025) which outlines the Victorian arrangements for managing different types of flooding across all emergency phases.

The mitigation and response activities listed in the DEECA role statement in the SEMP that Department is responsible for as the Control Agency for dam safety incidents includes:

- *“formulate policy and regulation for dam safety”*
- *“administer dam safety provision in the Water Act 1989 and water corporation obligations in the Statement of Obligations”*
- *“participating agency for the following flood mitigation activities: Dam safety management to mitigate risks from potential dam failure (as a dam owner and/or operator)”*
- *“manage escalated response activities to minimise the impact on the community and the environment from dam safety incidents”*
- *“manage local dam safety incidents for dams owned or operated by DEECA”*
- *“manage escalated response activities for mining and quarrying tailings and slimes dams.”*

The *Water Act 1989* applies to water in Victoria and includes powers, functions and duties of the Minister for Water and water corporations. Section 41 of the *Water Industry Act 1994* provides the Minister with the power to issue a Statement of Obligations (SoO) specifying water corporations’ obligations, including in relation to dam safety and managing incidents and emergencies.

The Minister for Energy and Resources is responsible for the administration of the *Mineral Resources (Sustainable Development) Act 1990*. As part of this responsibility, the Earth Resources Regulator manages approvals for the design, construction, operation and decommissioning of these dams, monitors compliance with work plans and licence conditions and undertakes enforcement activity as necessary. Earth Resources’ Regulator policies for the management of tailings storage facilities are set out in the *Technical Guideline for Design and Management of Tailings Storage Facilities* and *Environmental Guidelines for the Management of Small Tailings Storage Facilities*.

The Australasian Inter-Service Incident Management System (AIIMS) doctrine is the foundation of incident management in Australia. It provides for a scalable response and functional management of an incident through key roles performed by an Incident Management Team (IMT).

1.6 Activation of the Plan

The arrangements in this plan apply on a continuing basis and do not require activation. The response level will be escalated and de-escalated based on the incident.

1.7 Linkages

This plan reflects legislation, the arrangements in the SEMP, the strategic direction for emergency management in Victoria and the accepted State practice for managing emergencies. The arrangements in the SEMP have not been repeated unless necessary to ensure context and readability.

For general users, this plan should be read in conjunction with:

- The *State Emergency Management Plan (SEMP)*
- The *SEMP Flood Sub-Plan*
- *Strategic Framework for Dam Safety Regulation (DEECA, 2024)*
- *Your Dam Your Responsibility (DSE, 2007)*
- Any *Dam Safety Emergency Plan (DSEP)* or other relevant documentation prepared by the dam owner

For Department, partner agency emergency management personnel and other bodies assisting in the management of the potential consequences of dam safety incidents the following additional internal documents should be read as well:

- The Department's *Dam Safety Operations Plan*
- The Department's *Incident Notification Protocol for water corporations*

1.8 Exercising and Evaluation

Water corporations and the Department undertake annual exercises to test readiness and response arrangements across the Water and Catchments Group's portfolio Control Agency responsibilities. Exercises are evaluated and, where improvements to the emergency management arrangements in this plan are required, the plan will be amended, and a revised version issued. Exercises are conducted in accordance with the Australian Institute for Disaster Resilience *Managing Exercises Handbook*, the SoO and Part 7A of the *Emergency Management Act 2013* for structures that have been classified as vital critical infrastructure.

Water corporations and the Department's emergency management plans, supporting policies and procedures will be reflected in this Response Plan. Water corporations and other dam operating agencies should update their emergency documents within a reasonable timeframe following the publication of any updates to this Response Plan.

1.9 Review

This Response Plan is current at the time of publication and remains in effect until modified, superseded or withdrawn.

This Response Plan will be reviewed and updated not less than every three years. Consideration will be given to an earlier revision:

- If the plan has been applied in a major emergency or exercise;
- Following a substantial change to the relevant legislation or arrangements; or
- If important changes or corrections have been identified outside the three-year cycle.

2. The Emergency Context

There are over 455,000 dams throughout Victoria (SKM, 2012), the vast majority of which are small. Victoria's dam safety regulatory framework ensures that dams are managed in accordance with good dam safety management practices (in particular having regard to current Australian National Committee on Large Dams (ANCOLD) guidelines where consistent with the framework). Dam safety incidents with potential consequences will require mitigating any risks, regardless of their size and ownership.

2.1 Dams

Section 67(1) of the *Water Act 1989* requires that a licence be obtained by an authority or any other person to construct, alter, operate, remove or decommission any works (including dams) on a waterway. Section 67(1A) requires any person to obtain licence to construct, alter, operate, remove or decommission private dams, as defined below, if they are not located on a waterway:

- Has a wall that is 5 metres or higher and a capacity of 50 megalitres or more; or
- Has a wall that is 10 metres or higher and a capacity of 20 megalitres or more; or
- Has a wall that is 15 metres or higher, regardless of the capacity.

For the purposes of dam safety incident response, the dams have been grouped into four classifications:

1. Large or Monitored dams (generally owned and operated by water corporations or Parks Victoria)
2. Hazardous category dams (generally licensed and privately owned, with some on crown land)
3. Small dams (generally unlicensed and privately owned)
4. Mining and tailings dams (covered under regulatory requirements)

2.1.1 Large (or Monitored) Dams

Most large dams in Victoria are owned and operated by water corporations with all their dams regulated through a SoO. This includes requirements for operations and maintenance, surveillance and emergency management based on the Victorian Dam Safety Regulatory Framework and the current ANCOLD guidelines. For the purposes of this response plan, these dams are classed as "monitored" dams as dam owners conduct regular monitoring and surveillance on these dams and have resources and knowledge available to support the emergency response. Dams operated by Parks Victoria also fall into this category of monitored dams.

The Flood Intelligence Platform (FloodZoom) is a web-based platform developed by the Department to act as a repository for operational data related to flooding. This system has restricted access for authorised users only [Flood Intelligence Platform - FloodZoom](#)

The Dam Safety Portal module, part of the FloodZoom platform, is used by water corporations and the Department to obtain a state-wide perspective of risk and dam safety management. It provides water corporations a simple uniform format for submitting their annual Dam Safety Report to the Department as required under the SoO.

Parks Victoria also uses the Dam Safety Portal to report on dam safety obligations for several dams that are regulated through an exchange of letters with the Department. Selected private hydropower dams are also being included in the Dam Safety Portal under agreement with the dam owner.

There is a section in the portal focussing on emergency management. This allows dam owners to report the status of their dam safety emergency planning and exercises conducted. In some cases, copies of these documents have been loaded to the Documents tab of the portal and can be accessed by the Department in an emergency if the dam owner is not able to be contacted.

2.1.2 Hazardous Category Dams

Any dam on a waterway¹ or a dam not on a waterway as described in Section 67(1A) of the *Water Act 1989* that is classified as Significant, High (C, B or A) or Extreme Consequence Category² based on the current *ANCOLD Guidelines on Consequence Categories for Dams* is regarded as a hazardous category dam. Historically, failure of this category of dam with significant consequences is rare.

The safety of these dams is regulated through a licensing process. Administration of these licences is delegated by the Minister for Water to five water corporations: Goulburn-Murray Water, Grampians Wimmera Mallee Water, Lower Murray Water, Southern Rural Water and Melbourne Water. If these dams are private, or operated by a council, they should be licensed by the relevant licensing authority as shown in Appendix A.

Hazardous dams are required to have a Dam Safety Emergency Plan (DSEP)³ as part of the licensing conditions. Copies of these plans can be requested from the dam owner if required for an emergency response.

2.1.3 Other Small Dams

Most small sized, privately owned farm dams are used for stock and/or domestic purposes and are not on a waterway. They are therefore unlikely to be hazardous and unlikely to have a DSEP. These dams do not require a licence and impacts of failure are generally localised and do not require emergency response, although some initial incident assessment and triage and subsequent follow up dam safety management may be required. Further, the surveillance and maintenance regimes implemented by the owner will be highly variable. Water corporations or councils may hold useful information on some of these dams. Refer to Appendix A for information on licensing authorities who may hold this information.

2.1.4 Mining and Tailings Dams

Mining activities in Victoria generate waste products including tailings. These waste products can be hazardous and are usually stored in Tailings Storage Facilities (TSFs). License and work authority controls for the management of all TSFs in Victoria are set out in the *Guidelines for Design and Management of Tailings Storage Facilities* (DEDJTR, 2017). These guidelines aim to prevent dam failures, minimize environmental contamination, and ensure public safety. Regular inspections, monitoring, and mandatory reporting are essential components of the regulatory framework, ensuring that mining operations adhere to best practices and safeguard the environment and nearby communities.

2.2 Dam Failure

A dam failure is an uncontrolled release of water from a reservoir either the result of a structural failure or deficiency in the dam including its operation. Dams can fail during normal operations or in response to external events, such as flooding or an earthquake, and the consequences range from minor to catastrophic. The “failure” of a dam does not necessarily mean the same as “collapse” of the dam. Any damage to a dam (such as development of cracks, localised slumps or erosion) or any failure to retain water as outlined under the operational standards and regulations required of the dam (such as excessive leakage through, under or around the dam) or any inability to pass incoming flood waters via the spillway, should be regarded as a failure of the dam.

¹ Waterway as defined in Section 3 of the *Water Act 1989*

² At least one person likely to be exposed to any flood water or likely major damage or loss in the event of a dam failure.

³ An example of the format of a Dam Safety Emergency Plan is available on the Department Website: https://www.water.vic.gov.au/__data/assets/pdf_file/0033/671388/dam-safety-emergency-plan-template-for-local-government-authorities.pdf

The following definitions relating to dam safety incidents and dam failure apply throughout this Dam Safety Response Plan. Further dam safety terms are defined in Section 9 glossary. It is recommended that these terms are reviewed by readers who are not familiar with this area.

Term	Definition
Dam safety incident	A situation that has not yet threatened/affected the operation or structural integrity of the dam although it could if left unchecked or has affected the safety of the dam. Management intervention is required to assess the dam and take any action required to make it safe as well as to manage consequences downstream of the dam.
Dam safety emergency	A situation that either is expected to or has threatened the operation or structural integrity of the dam to the extent that lives, property and/or the environment are at risk. Immediate action is required to assess the dam and take any action required to make it safe, as well as to manage or minimise consequences downstream of the dam.
Potential dam failure	There is a likelihood that dam may fail, lose its primary function and/or cause flooding with downstream consequences.
Dam failure	An uncontrolled release of water from a reservoir either the result of a structural failure or deficiency in the dam (including its operation) i.e. when the dam has lost its primary function to harvest or store water.
Sunny day failure	Dam failure that occurs on a “sunny” day, i.e. a day without significant rainfall or high inflows with water in the storage or pool at or below full supply level.
Flood failure	A flood-induced dam failure occurring during or soon after a period of high rainfall and/or inflows.
Dam Owner	Person or legal entity, including a company, organisation or corporation, which either holds a licence to operate a dam or retains the legal property title on the dam site, dam and/or reservoir, and is responsible for the safety of the dam.
Dam Operator	The individual/s and/or entity that has primary ownership and/or management responsibility for a dam. Dam operators of public dams in Victoria include the following State entities/agencies - water corporations, councils, Parks Victoria and the Department of Energy, Environment and Climate Action. For private dams included in a works licence, the dam operator is the holder of the licence. For other private dams, the dam operator is the dam owner.
Occupier	The person or persons who have control of land.

2.3 Powers under the Victorian Legislation

Dam owners are responsible for any damage resulting from their asset failing and are generally cooperative with licensing authorities, the Department and incident management agencies if an incident occurs. The Victorian legislation includes provision to support the Department to manage escalated dam safety emergencies.

The *Water Act 1989* in Victoria include powers of entry, powers to direct dam owners to undertake works and powers to carry out works.

Under the *Emergency Management Act 2013* and *Victoria State Emergency Service Act 2005*, there are broader powers of entry for operational personnel. In situations where the operational member of the response agency reasonably believes that entry to the land is urgently required to protect life or property, the operational member may enter private land with or without consent when responding to a flood or storm. This could include dam incidents where there is flooding downstream of the dam. More information on this is included in the SEMP Flood Sub-plan (VICSES, 2025).

Under the *Mineral Resources (Sustainable Development) Act 1990* Inspectors from Earth Resources Regulator can enter mine sites with ERR licences or works authorities to inspect TSFs and slimes dams.

For the Department, partner agency emergency management personnel and other bodies assisting in the management of the potential consequences of dam safety incidents more information about how these powers are applied under operational conditions is included in the Dam Safety Operations Plan.

2.4 Critical Infrastructure

In line with Part 7A of the *Emergency Management Act 2013*, infrastructure within the water sector undergoes a criticality assessment process and ratings of Vital (highest), Major, Significant or Local are determined. Infrastructure assets with higher ratings are more critical for water sector service continuity. Information on criticality ratings may be useful in determining emergency response priorities and approaches. This information is available from the owner/operator of assets in the first instance or from the Department's Water and Catchments Group or Emergency Management Victoria.

2.5 Implications of Climate Change for Dam Safety Emergency Response

Victoria is already experiencing the impacts of climate change and it can be expected that the climate will continue to change in the future with implications for emergency management.

Climate change is considered a risk multiplier for emergency management that may increase frequency and amplify risks posed by an emergency incident. Climate change may also amplify the risks to dam safety. For example, prolonged exposure to dry weather associated with droughts can cause ground shrinkage and movement in dam foundation. Movement and cracking at the embankment can induce movement in concrete structures attached to the embankment, causing cracking and even structural failure (Perera & Karunaratne, 2022). When such a drought is followed by widespread flooding, as was experienced during the 2010-11 La Nina event, this can result in increased seepage through cracks, joints and other defects that may have developed during periods of drought, increasing the potential for failure.

During emergencies, response teams may experience unprecedented conditions both in the scale and intensity of events. To manage this, response and incident management teams should be ready to rapidly scale-up in resources and sustain this over longer periods of time. In addition, response planning should incorporate an assessment of multiple contingencies, scenarios with consequences potentially beyond the norm in terms of spatial and temporal scale, and a broad range of response options for consequence management.

The most effective way for water sector organisations to account for the impacts of climate change on emergency management is to build their capability and capacity to respond to emergency events occurring more often, and with greater intensity.

3. Flooding Downstream of Dams

This section clarifies the roles, responsibilities and associated arrangements relating to controlled and uncontrolled releases from a dam in Victoria.

The arrangements apply to all types and sizes of dams in Victoria owned or operated by private landowners (principally farmers and energy companies), water corporations, councils, Parks Victoria and the Department, including weirs and flood retarding basins. While the latter are also sometimes referred to as stormwater retention basins, retention basins or retarding basins, the term “flood retarding basin” is used throughout this section.

Most large dams in Victoria were built to provide water security for communities. These dams are not designed or operated for flood mitigation, although some flood mitigation can occur as a result of the flow being attenuated by a dam (DEECA, 2024). There are several smaller flood retarding basins in urban areas in Victoria that have been built specifically to attenuate flooding associated with higher frequency rainfall events.

Only a small number of large dams in Victoria have spillway gates, providing the capability to make flow releases prior to or during a flooding event. Such dams are operated by water corporations. The primary objective of the flood operating procedure for these dams is to safely route the flood through the dam’s spillway to safeguard the structural integrity of the dam.

Dam operators provide flow data and other operational information to assist VICSES and the Bureau of Meteorology (BoM) to identify downstream consequences and inform and protect downstream communities during flooding events.

3.1 Types of flooding downstream of dams

Flooding events downstream from dams can be the result of any one of the three scenarios described below. Further technical information on each of these potential scenarios is set out in Appendix B.

As noted in Section 1.3.1, natural flooding and controlled releases of water by dam operators in response to a broader flood event are outside the scope of this Response Plan. Such flows will be managed in consultation with VICSES as the Control Agency for flooding (Class 1 emergency). These arrangements are outlined in the SEMP and the Flood Sub-plan.

A potential dam failure is a Class 2 emergency. The initial response for this type of incident will be coordinated by the dam owner/operator. Should the situation escalate beyond the point where the dam owner/operator can respond, the Department as the Control Agency will intervene where there is potential for downstream consequences (refer Section 6.1). VICSES should be notified of any Class 2 dam safety incident where there is potential for uncontrolled release of water downstream of the dam with risk to community safety, property or infrastructure assets. This notification will usually be through the SDO-Water as per the process in the Dam Safety Operations Plan. Once a dam fails and causes downstream flooding, it then becomes a Class 1 flood emergency, with VICSES as the Control Agency, refer Section 6.3.2.

3.1.1 Natural Flooding

Natural floods occur when there is significant rainfall in the catchment upstream of the dam, weir or flood retarding basin causing large inflows to the storage. Depending on the water level in the storage prior to the rain event, the dam, weir or flood retarding basin may provide some flood mitigation to the downstream floodplain. Most floods that are passed through dams, weirs and flood retarding basins are natural floods. These floods do not generally threaten the safety of a dam, weir or flood retarding basin as they are usually within the design capacity of these structures.

The primary objective of dam and weir operating procedures is to always ensure the safety of the dam or weir. During a natural flood, operating procedures aim to route the flood through the storage and past the dam or weir as safely as possible (i.e. with minimal risk to the structure). While the storage’s ability to naturally delay and attenuate flows may mitigate the flood to some extent as it passes through, there may still be a need for flood warnings and/or emergency response downstream from the dam. This should be considered if flood flows are likely to exceed the minor flood level where this is defined or are otherwise assessed to have the potential to cause risk to public safety, property or the environment.

3.1.2 Controlled Flooding

Large flows downstream of a dam or weir may occur if the water level in a storage needs to be lowered rapidly to create additional airspace to absorb a forecast high inflow peak or for dam safety reasons. Large environmental and related operational flow releases can also create downstream overbank flows that spill into natural wetlands and across Crown land floodplains. Controlled inundation of private land is not conducted without prior endorsement by the landowner.

In both these instances, the release of water would be controlled by the dam or weir operator and time would be available to inform downstream communities.

Another scenario for controlled flooding is through a flood retarding basin. The aim of a flood retarding basin is to restrict the outflow from the basin to a predetermined maximum so that the flow from the upstream catchment does not create or add to flooding downstream. Flows higher than the predetermined maximum may occur when the basin fills and excess water flows over the spillway or if the basin's embankment fails.

In cases where airspace is being created, the dam or weir operator would be aiming to ensure that downstream flooding is less severe than would otherwise occur naturally.

3.1.3 Dam Failure Flooding

A dam failure flood is an uncontrolled release of water from a reservoir because of a structural or other deficiency in the dam. The failure of a dam, weir or flood retarding basin can cause flooding of downstream areas. Dams can fail during normal operations or in response to external events including, for example:

- An extreme upstream flood overtopping the dam wall causing erosion or movement of the structure.
- Seepage and possible piping of water through the dam wall or foundations causing erosion.
- Earthquakes, which can cause damage to the dam wall, spillway structure or outlet infrastructure.
- Outlet works failures.
- Human factors relating to the operation of the dam or due to intentional damage.

Dams and weirs can fail during or soon after a flood event (i.e. a flood-induced failure) as well as under "sunny day conditions" (i.e. with water in the storage or pool at full supply level or lower and no rainfall). Typically, flood retarding basins are not subject to sunny day failures but can fail during or soon after a flood event.

4. Consequences

Flooding caused by a dam failure can occur in a relatively short period. The warning lead time for downstream communities in a dam failure situation can be relatively short. Therefore, it is important that notification to DEECA and VICSES occurs as soon as possible where there is a potential risk to community safety, property or infrastructure assets. Sunny day failures can be especially serious as there is generally a very low expectation of flooding downstream from a dam. A failing, or potentially failing dam may require evacuation of homes, buildings, and businesses as well as road and rail closures, movement of stock and mobile property, resulting in considerable disruption to the community.

The sudden release of water and debris, from even a modest sized dam has the potential to result in loss of life or injury and cause damage downstream. Damage may include impacting other dams downstream, homes, other buildings, livestock, roads, railways or interruption to public utilities such as electricity, communications, water and sewerage services. Environmental impacts may include erosion of waterways or gullies and the loss of flora and fauna. Recovery from such events may take a considerable amount of time.

The roles of agencies assisting in the management of consequences, leading or supporting response, relief and recovery for emergencies in Victoria are detailed in the SEMP (EMV, 2024).

4.1 Dam Consequence Classifications

Dams, weirs and flood retarding basins are classified based on the potential downstream consequences of their failure. ANCOLD provides guidance on such classifications. The consequence categories provide a useful basis for identifying dam safety management requirements, including planning for emergencies.

These structures can have a consequence category based on two scenarios. These are for a 'sunny day' failure condition with the reservoir full or a 'flood failure' condition which occurs during a flood event.

ANCOLD provides seven consequence categories:

- **Very Low** - This category would apply to those dams where the consequences of a failure would be insignificant (for example, small farm dams in remote or undeveloped regions).
- **Low, Significant, High A, High B and High C** - Provide a graded range between the Very Low Category and Extreme Category.
- **Extreme** - This category includes those dams where the effects of a failure would have immense consequences in terms of damage to property and infrastructure and could put many lives at risk with the potential for large loss of life (for example, large dams with major population centres downstream).

4.2 Dam Failure Emergency Planning for Downstream Consequences

In the SEMP, dam owners/operators, Parks Victoria, the Department, water corporations, councils and VICSES all have a role to mitigate the flood risks from potential dam failure (VicGov, 2023).

Operators of all large dams (Section 2.1.1) and hazardous category dams (Section 2.1.2) are required to have appropriate operating and dam safety emergency plans (DSEPs) in place. The scope of the DSEP will depend on the size and failure consequences associated with the dam. DSEPs aim to minimise the consequences in the unlikely event of a dam failure. The procedures laid down are based on guidelines that are considered to best fit the situations likely to be encountered. When unusual conditions are encountered (e.g. during works being conducted on a dam and associated infrastructure or following the identification of any structural deficiencies), the owner is required to produce an addendum to the DSEP specific to the new or unusual risks.

Where dams are identified with high potential downstream consequences, particularly those with ANCOLD classifications of High C, High B, High A or Extreme, VICSES, in partnership with the dam operator and in consultation with VICPOL and the Municipal Emergency Management Planning Committee (MEMPC) should ensure that arrangements are developed to manage the downstream consequences of such dam failure. Planning for such emergencies should focus on arrangements for the warning and evacuation of the downstream community.

The dam owner/operator and the Department will assist VICSES undertake emergency planning for response to downstream flooding consequences. To confirm planning assumptions, dam owners/operators

shall supply VICSES, where available, with the following information. Such information should be included in the DSEP:

- ANCOLD consequence category of the dam;
- Key details of the dam and its spillway and outlet structures, including drawings
- Inundation plans with details such as peak water levels, flow velocities and depths, potential inundation duration and flood wave travel time for critical downstream locations (including both the front of the wave and its crest where possible),
- Potential consequences;
- Notification protocols and warning times for downstream locations
- Emergency contact information
- Inspection regimes along with guidance on usual performance data and characteristics.

Dam owners/operators should align the response actions and communication procedures documented in their DSEPs with those of VICSES where possible.

As per the SEMP (EMV, 2024) and State Flood sub-plan (VICSES, 2025), VICPOL is a Support Agency and contributes to planning for evacuation as well as coordinating evacuations based on recommendations provided by VICSES.

It would be prudent for dam operators to consult with and, where possible, seek involvement from all relevant stakeholders when DSEPs are exercised.

5. Emergency Information and Warnings

Emergency Management Victoria's policy on community resilience, the *Community Resilience Framework for Emergency Management (2017)*⁴ is published by the Victorian Government. It states that the responsibility for emergency management is shared, and that everyone has a role, individually and collectively to improve resilience. On this basis, the emergency management arrangements for response should look to the community to step up and participate by taking responsibility for their property and assets. Liaison between dam owners and emergency services is crucial, as is clear communications and warnings to the community in achieving this.

5.1 Surveillance

Surveillance regime requirements for dams across Victoria varies with ownership and size. Water corporation owned dams are required to have a DSEP in place that is exercised regularly. They are also required to have safety surveillance plans. Some licensed dams will also have surveillance requirements as part of their licence conditions, particularly hazardous category dams.

For dams that have a known deficiency or have a high level of uncertainty about their condition or performance, additional surveillance may be required. In some instances, additional assessment and emergency planning and exercising may also be required.

The aim of surveillance is early detection of potential dam safety incidents to allow repairs and/or early incident notifications or warnings if required.

5.2 Public Information and Warnings for dam safety incidents

A critical task of any response to a dam safety incident is providing appropriate warnings and advice to the community. Appendix C defines the triggers for defining the scale and consequences of an incident or emergency. They should also be used to trigger decision making regarding appropriate warnings to the public. These warnings are the responsibility of the Department as the Control Agency and not the dam owner/operator.

Joint Standard Operating Procedure (JSOP) *J04.02 –Public Information and Warnings for Class 2 Emergencies*⁵ (EMV, 2022), is available on the EMV website. This document provides detailed guidance in relation to the provision of timely, relevant and tailored community information and warnings before, during and after emergencies.

There is also a specific process for issuing public warnings for dam safety incidents. Warnings will be prepared and published through the State Control Centre based on the Victorian Warning Arrangements⁶ using the VicEmergency platform.

5.3 Public Information and Warnings for flooding

As described in Section 3, flood consequences can arise from either natural or controlled flooding or from a dam failure.

As the Control Agency for flood, VICSES is responsible for the management of emergency response flood consequences downstream from dams, weirs and flood retarding basins. This includes warnings and information to the community and recommending evacuation for floods under natural and controlled flooding conditions as well as under potential or actual dam failure situations. Effective communication between the dam operator, the Department and VICSES and the timely sharing of best available information by the dam owner/operator and the Department is a critical and essential element of the communication.

5.3.1 Informing Communities of Natural Flooding

Arrangements for flood warnings resulting from natural flooding are detailed in the State Flood sub-plan (VICSES, 2025). Not included however, are details of locally agreed arrangements in place for a small

⁴ <https://www.emv.vic.gov.au/how-we-help/resilience/community-resilience-framework-for-emergency-management>

⁵ <https://files-em.em.vic.gov.au/public/JSOP/SOP-J04.02.pdf>

⁶ [Victorian Warning Arrangements | Emergency Management Victoria \(emv.vic.gov.au\)](https://www.emv.vic.gov.au/victorian-warning-arrangements)

number of large dams wherein the dam owner/operator provides warnings and information to occupants of dwellings immediately downstream from the dam.

River level or flow predictions for locations immediately downstream of dams affected by storage operations is the responsibility of the dam operators. This information is communicated to BoM and incorporated into flood warnings. A list of these locations is included in the Service Level Specification for Flood Forecasting and Warning Services for Victoria (BoM, 2020) Schedule 2c⁷.

5.3.2 Informing Communities of Controlled Flooding

In the event of a dam owner/operator realising that a volume of water needs to be released from the dam sufficient to potentially cause flooding downstream, information needs to be provided to VICSES, BoM (in situations where there are flood warning gauges immediately downstream) and other relevant entities (e.g. Catchment Management Authorities (CMAs)). Information provided should include storage levels, actual and prospective water releases, timing and, where known, their likely impacts on downstream flooding. Similar and fully consistent information needs to be provided to the local community for dams where locally agreed arrangements are in place.

Controlled flooding events are generally infrequent and are mostly planned in advance (although emergency releases may be planned on a very short timeframe). As there is normally time available to warn downstream communities with sufficient lead time, a communications plan should be developed and implemented in consultation with VICSES, BoM, CMAs and other relevant entities.

Arrangements for issuing flood warnings are outlined in Section 5.3.1 being the same as for natural flooding.

5.3.3 Informing Communities of Dam Failure Flooding

Information about potential or actual dam failure flooding is a joint responsibility between the dam owner/operator, the Department and VICSES.

This is likely to be uncontrolled flooding and not all dams are located on a waterway within the Service Level Specification for Flood Forecasting and Warning Services for Victoria (BoM). Any warnings for these incidents will need to be issued through VicEmergency by the State Control Centre by the IMT.

5.3.4 Communities Immediately Downstream from a Dam

There are instances where dwellings (e.g. houses, caravan parks as such) are located immediately below dam, weir or flood retarding basin. Warning time and flood travel time to these dwellings can be short. For some dams with gated spillways, communication with the occupants of these dwellings regarding flooding may be initiated by the dam, weir, or flood retarding basin owner/operator⁸.

In the absence of locally agreed arrangements (i.e. in all other cases warning is required, VICSES will remain fully responsible for warning and informing downstream communities. Consistent with the precautionary principle, VICSES will also provide information and warnings to communities subject to locally agreed arrangements.

Regardless of any locally agreed arrangements, the Department and, in the case of a water corporation, the dam operator, will continue to provide technical expertise and advice to VICSES to inform the preparation and distribution, by VICSES, of warnings and updates to downstream communities.

The context at each dam, weir and flood retarding basin site will vary and the notification arrangements will need to be developed by agreement with relevant stakeholders on a case-by-case basis. All such locally agreed arrangements should be documented in the relevant Municipal Storm and Flood Emergency Plans as well as in the Flood Operations Plan and DSEP for the dam.

⁷ http://www.bom.gov.au/vic/flood/brochures/VIC_SLS_current.pdf

⁸ Examples of locally agreed arrangements are the well-established community driven flood warden system that operates across the Macalister River floodplain downstream from Lake Glenmaggie and the opt-in SMS system that operates downstream from Cairn Curran. For the former, Southern Rural Water (SRW) provides key information to nominated contacts at predetermined triggering outflows. That information is then promulgated to opted-in stakeholders via a local community-maintained telephone tree system. At Cairn Curran, Goulburn-Murray Water (GMW) provides an SMS message to opted-in mobile phones when established triggering outflows are being (or about to be) passed.

6. Incident Management Responsibilities and Collaboration

6.1 Incident Levels

An early and realistic understanding of the scale or level of incident will guide initial decision making regarding the issuing and extent of public warnings and advice, together with other consequence management actions.

This assessment process has three steps as described in the Dam Safety Operations Plan:

1. Rapid Incident Assessment Tool
2. Formal Technical Assessment
3. Incident De-escalation

For some dams, including those owned by water corporations, it is likely that technical expertise will be mobilised on site quickly to assess the dam and provide advice to incident management personnel regarding the condition of the dam as well as the likelihood and consequences of failure. For other dams, such as remote privately-owned dams, it may take many hours before a suitably qualified professional is available and on-site.

AIIMS provides for a scalable response and outlines the key roles to be filled and functions performed by the IMT.

Figure 1 and Table 1 summarise incident management and communication for Level 1, Level 1 (Reportable) Level 2 and Level 3 (Class 2 Emergencies) dam safety incidents and Dam Failure Floods. The following sections describe the four levels of incidents including response obligations.

Table 1. Emergency management arrangements for dam safety incidents

Incident Level	Definition	Responsibility for Response	Arrangements
Level 1	Incident can be resolved readily through local local/initial response/business as usual resources. .	Dam owner	Dam owners to activate emergency plans if available.
Level 1 (Reportable)	Level 1 incidents that may not be resolved readily, have the possibility of escalation or attracting attention by third parties.	Dam owner	Dam owners to activate emergency plans if available or support Department if taken control.
Level 2	Credible threat or external impact, with multi-agency response beyond business as usual response	The Department is the Control Agency responsible for coordinating incident response and for working with dam owners at the regional level.	The Department to ensure that regional incident management arrangements are in place. The Department Water and Catchments Group to offer Water Services Specialists to the regional or state response teams.

Incident Level	Definition	Responsibility for Response	Arrangements
Level 3 (Class 2 emergency)	Potential or actual impact to public safety, property or the environment.	<p>The Department is the Control Agency responsible for coordinating emergency response.</p> <p>Control may be transferred to VICSES if required to manage the flood response.</p>	<p>The Department Secretary may appoint a Class 2 State Controller.</p> <p>The Department, supported by emergency services, establish response arrangements at the local, regional and state level.</p> <p>Dam owner to provide an Emergency Management Liaison Officer where appropriate</p>
Dam Failure Flood (Class 1 emergency)	Flooding downstream of a dam caused by uncontrolled release of water impacting to public safety, property or the environment.	Incident control will transfer to VICSES (Control Agency for flood response) as per SEMP Flood Sub-plan.	<p>Class 1 State Response Controller.</p> <p>The Department is a support agency for the dam incident.</p> <p>Dam owner to provide an Emergency Management Liaison Officer where appropriate.</p>

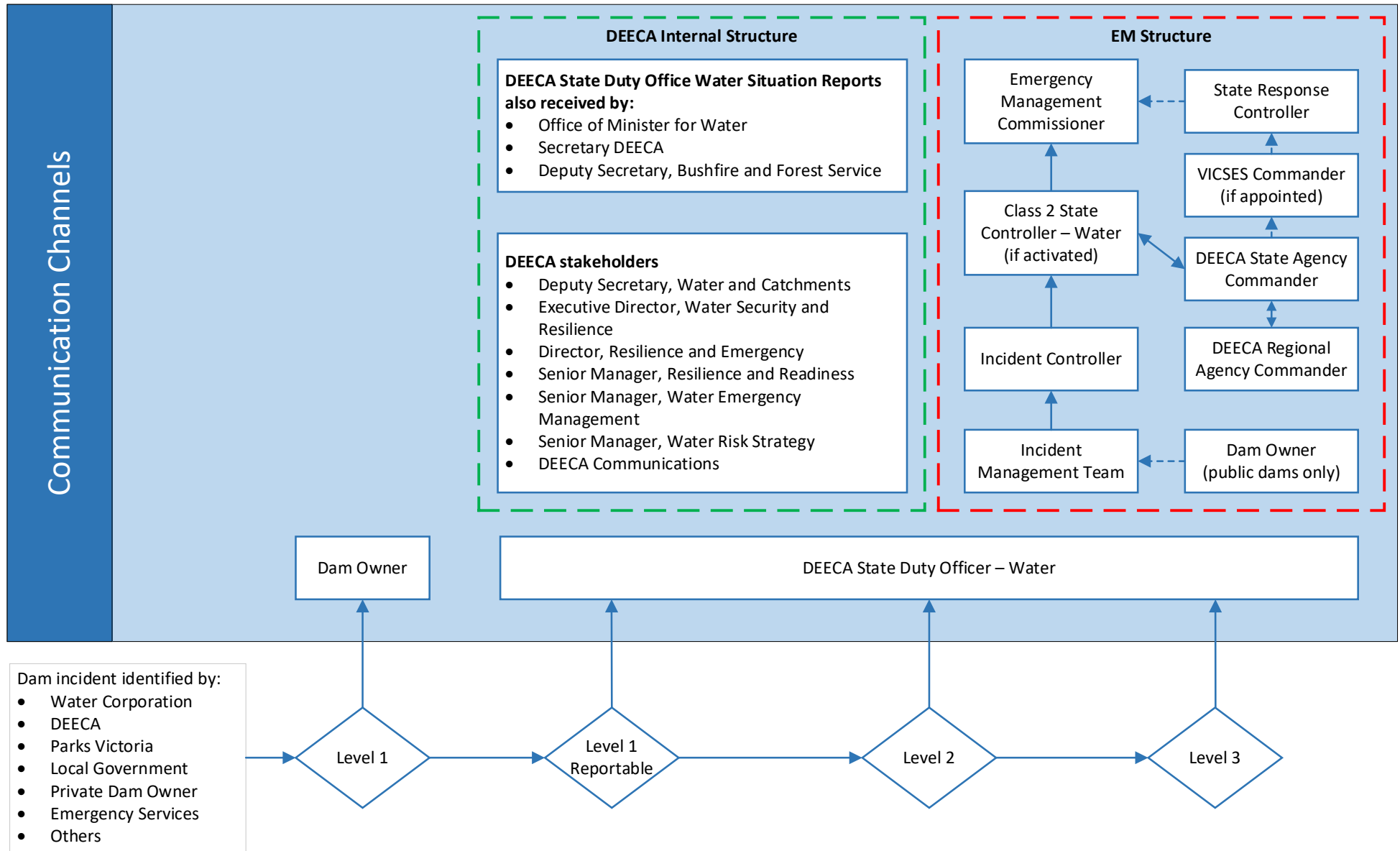


Figure 1 Dam Safety incident information flow

6.1.1 Level 1 Dam Safety Incident

A Level 1 Dam Safety Incident occurs when:

- a dam, particularly a small dam, has failed or any of the indicators of potential failure are present and the downstream consequences are very low or nil.
- A potential issue has been identified but it is not expected to cause the dam to fail and result in uncontrolled release of water
- the initial response through dam owner local/business as usual resources can readily resolve the dam safety incident and thus unlikely any escalation of the incident.

When initially advised of an incident, the Department will seek available details of the incident and identification of an initial level of the incident. If the incident level is assessed as a Level 1 the Department will provide no further emergency response to incident. A Level 1 dam safety incident is the responsibility of the dam owner and will be managed as part of their business-as-usual arrangements.

A Level 1 (Reportable) incident involves an incident where the Level 1 incident:

- may not be (has not been) resolved within two or three hours of the initial response; and/or
- may attract (has attracted) the interest of local or regional or other third parties such as the media; and/or
- may possibility escalate to Level 2,

Under these situations the Department will monitor the progression of the incident, but control of the dam safety incident remains the responsibility of the dam owner and should be managed as part of their business-as-usual arrangements.

The Department State Duty Officer - Water (SDO – Water) should be notified of all Level 1 (Reportable) incidents, either by the dam owner or by the emergency services agency receiving the initial call. They will then coordinate the other notifications required, including VICSES. For private dam owners, this can be reported through the DEECA contact centre during business hours on 136 186. For incidents where there is an immediate threat to community safety, emergency services should be contacted through 000.

The Department or the delegated licensing authority (water corporations listed at Appendix A) may, under the provisions of the *Water Act 1989*, direct the dam owner to seek technical advice and/or do works as part of business-as-usual arrangements – see Section 2.3.

6.1.2 Level 2 Dam Safety Incident

A Level 2 dam safety incident occurs when:

- there is the potential for consequences downstream of the dam potentially impacting community safety, property or the environment.
- the dam owner requires additional support to manage the incident.

The Department SDO – Water should be notified of all Level 2 incidents. They will then coordinate the other notifications required, including VICSES. Again for private dam owners, this can be reported through the DEECA contact centre during business hours on 136 186. For incidents where there is an immediate threat to community safety, emergency services should be contacted through 000.

The Department Agency Commander will ensure that an Incident Controller is appointed to lead the coordination of the incident (consistent with dam owner entity Incident Management Plans) with the roles and responsibilities summarised in Section 6.3 below.

In addition to the Department and Parks Victoria emergency management personnel, the IMT may comprise of or include appropriately qualified and experienced staff from other agencies such as a water corporation, a mining or energy company, or VICSES as per the Victorian Emergency Management Readiness Arrangements.

6.1.3 Level 3 (Class 2 Emergency) - Dam Safety Incident

The critical determinant of a Level 3 (Class 2 Emergency) dam safety incident is immediate threat to life and assets including: residential dwellings, occupied buildings or locally significant infrastructure including public roads. Further incident characteristics or decision triggers include the following:

- Large and complex; or
- It has the potential to cause or is causing extensive damage to the environment; or
- It has the potential to have or is having significant adverse consequences for the Victorian community or a part of the Victorian community; or
- A decision is made by the Department State Agency Commander (SAC) (in consultation with the Regional Agency Commander (RAC), any relevant water corporation and technical advice) that a Level 2 dam safety incident should be managed as a Level 3 (Class 2 Emergency); or
- At the request of the Emergency Management Commissioner.

The Department SDO – Water should be notified of all Level 3 incidents. They will then coordinate the other notifications required, including VICSES. For incidents involving private dams where there is an immediate threat to community safety, emergency services should be contacted through 000.

The SEMP details roles and responsibilities for command and control of Level 3 - Class 2 emergencies. Table 1 illustrates how these arrangements will be applied for dam safety Level 3 - Class 2 Emergencies. Further explanation is provided in the context of each role below.

The Department SAC or State Controller Class 2 (Water) (SC-W) will appoint an Incident Controller to manage a Level 3 (Class 2 Emergency) dam safety incident.

6.1.4 Dam Failure Flood (Class 1 emergency)

Where a dam failures and results and causes flooding downstream through the uncontrolled release of water impacting to public safety, property or the environment, the incident becomes a Dam Failure Flood (Class 1 emergency).

Control will transfer to VICSES as the Control Agency for flooding and will be coordinated by the State Response Controller. The SEMP and SEMP flood sub-plan detail roles and responsibilities for command and control for Class 1 emergencies.

The Department will continue to be involved in the response as a Support Agency.

6.2 Victorian Government Emergency Management Arrangements

The Emergency Management Commissioner manages the State response to major emergencies through the following four key teams:

- State Coordination Team (SCoT)
- State Control Team (SCT)
- State Emergency Management Team (SEMT)
- Emergency Management Joint Public Information Committee (EMJPIC)

When activated the SC-W – Water is a member of SCoT and SEMT. They will also be chairing SCT if there is no current Class 1 emergency activation.

During a large-scale emergency, the Victorian Government's Securities and Emergency Management Committee of Cabinet (SEMC) provides whole of government ministerial oversight. The State Crisis and Resilience Council (SCRC) provides the SEMC with assurance that the broad social, economic, built and natural environmental consequences of the emergency are being addressed at a whole of government level.

Neither the SEMC nor the SCRC have an operational response role.

6.3 Entity Roles and Responsibilities

Key agencies involved in supporting response or leading relief and recovery with respect to dam safety incidents include:

- DEECA – Dam safety Control Agency, agriculture, animal welfare (livestock), earth resources.
- VICSES – Control Agency for floods, storms, tsunamis, earthquakes, landslides

- Bureau of Meteorology – severe weather and flood warnings
- Dam owners – Water corporations, Parks Victoria, the Department, councils, hydropower generation companies, mining companies, private dam owners
- Other government departments — Tourism, transport infrastructure, transport services, drinking water quality, psychosocial support, health command.
- VICPOL – evacuation management
- Catchment management authorities and councils

Subject to the likely consequences of the dam safety incident, the Incident Controller may seek representatives of the above as members of the IEMT or REMT as appropriate, to access technical advice, prioritise action and facilitate coordination.

The command-and-control arrangements that apply during a dam safety incident are outlined in the Dam Safety Operations Plan. Table 2 in Appendix D shows the key dam ownership and emergency responsibilities for different categories of dams.

6.3.1 Department of Energy, Environment and Climate Action (DEECA)

The Department is the designated Control Agency for dam safety as described in the SEMP. This means that the Department has ultimate control of the response to a dam safety incident at the dam site. That control is only in relation to the integrity of the dam.

Control of the response to any downstream flooding that may result from a dam safety incident resides with VICSES as the Control Agency for flood as described in Section 6.3.2. The Department is a Support Agency for flood response so will assist under the direction of VICSES.

The Department also has a regulatory responsibility for dams as described in Sections 6.3.1.1 and 6.3.1.2.

6.3.1.1 DEECA Dam Safety

Dam safety in Victoria is regulated under the *Water Act 1989* and the *Water Industry Act 1994*. These acts are administered by the Department on behalf of the Minister for Water. The Department provides policy, guidelines and oversight to dam owners for the safety of dams in Victoria. This includes dams categorised as farm dams, private dams and dams operated by water corporations, Parks Victoria, councils and other entities. The *Strategic Framework for Dam Safety Regulation* sets out Victoria's regulatory policies and practices.

The Department can provide dams related information, where available, during incidents and emergencies relating to dams.

6.3.1.2 DEECA Earth Resources Regulator

Earth Resources Regulator (ERR), part of the Department, undertakes most regulatory functions for mine and quarry dams used as tailings storage facilities and slime dams, settling ponds or process dams. The Minister for Energy and Resources is responsible for the administration of the *Mineral Resources (Sustainable Development) Act 1990*. As part of this responsibility, ERR manages approvals for the design, construction, operation and decommissioning of these dams, monitors compliance with work plans and licence conditions and undertakes enforcement activity as necessary. Earth Resources Regulator policies for the management of tailings storage facilities are set out in the *Technical Guideline for Design and Management of Tailings Storage Facilities* and *Environmental Guidelines for the Management of Small Tailings Storage Facilities*.

During an incident involving a TSF, ERR will coordinate the technical advice and assistance to ensure the appropriate resources are integrated into both the incident and state level control. This could include:

- Appointment of an (Emergency Management Liaison Officer) EMLO from the private mining company to provide support to the IMT
- Appointment of a Senior Advisor to support Water Cell in the State Control Centre.

6.3.2 Victoria State Emergency Services (VICSES)

VICSES is the Control Agency for storm and flood and as such is responsible for the emergency response management of flood consequences downstream from dams, weirs and flood retarding basins, regardless of

the cause of the flood. VICSES may be stood up in readiness when thresholds for severe weather or flood warnings are exceeded in the weather forecast.

VICSES response activities including the provision of warnings and information to the community and recommending evacuation as provided for in the SEMP. Information provided by VICSES regarding flood risks downstream from a dam, weir or flood retarding basin will be based on the best information made available by the operator of the dam, weir or flood retarding basin and by the Department.

In some instances, local warning arrangements have been established for communities downstream from a dam, weir or flood retarding basin as discussed in Section 5.3.4.

6.3.3 Bureau of Meteorology (BoM)

BoM is responsible for issuing warnings of gales, storms, rainfall and other weather conditions likely to endanger life or property, including potential for flooding. It is also responsible for providing weather forecasts and meteorological and hydrological information together with predictions of the expected severity of floods at selected agreed locations. These locations together with performance and other forecast arrangements and characteristics are detailed in the *Service Level Specification for Flood Forecasting and Warning Services for Victoria* (BoM, 2023) which is available on the BoM website.

BoM includes information on flood releases or outflows (as provided by dam operators – see Section 6.3.4) in its forecasting methodology to ensure that flood predictions for downstream gauges account for flows passing through storages.

BoM does not have a role in issuing warnings for dam failure in Victoria.

6.3.4 Dam Owners and Operators

All dam owners are responsible for any damage resulting from their asset and are required to manage the maintenance and repair of the dam. This includes assisting with the emergency response and engaging any technical advice or resources required.

Hazardous category dams are licensed and required to have a Dam Safety Emergency Plan (DSEP) and an appropriate surveillance regime in place. Surveillance regimes for other dams and weirs and for flood retarding basins varies with size and consequence category (see Section 2.1 and Section 4.1).

6.3.4.1 Water Corporations

Most of Victoria's large dams are owned and operated by water corporations including the small number that have spillway gates⁹. These large dams were designed and constructed and are managed for water supply and irrigation purposes. They do not have a specific flood mitigation role, although some flood mitigation can occur because of flow being attenuated as it passes through the storage. Such benefit is incidental or opportunistic. Flood mitigation is discussed in Section 3 and Appendix B.

Several flood retarding basins¹⁰ have been constructed in urban areas in Victoria. Their purpose is to attenuate flooding associated with large, less frequent rainfall events.

During the passage of natural floods (see Section 6.4.1) through storages and past dams, water corporations support VICSES and BoM by following standard operating procedures which include the sharing and distribution of information about storage levels and releases along with situation reports as appropriate. This role changes little during controlled floods (see Section 6.4.2), as water corporations are expected to provide sufficient information on releases to assist VICSES identify downstream consequences, manage response and, in conjunction with BoM, inform communities likely to be impacted.

On becoming aware of a dam safety incident at one or more of its dams, weirs or flood retarding basins, a water corporation is required to take on the role of the Incident Controller and directly manage the emergency response relating to the integrity of the dam. This means that a water corporation will activate its DSEP for the dam and establish an appropriate incident management structure. Early emergency response

⁹ Spillway gates enable flow releases to be made prior to or during a flood event. Gate management is generally detailed in a flood operations plan. The objective of such a plan is to safeguard the structural integrity of the dam by safely routing the flood through the dam's spillway.

¹⁰ Flood retarding basins in Victoria are owned and operated by Melbourne Water and councils.

activity will include development of a realistic understanding of the scale or level of the incident¹¹ as well as liaison with the SDO – Water. The water corporation will maintain operational procedures aimed at achieving safe dam operation and minimisation of the risk to downstream communities. The water corporation will also liaise directly with VICSES to provide the information required to enable VICSES to undertake its Control Agency functions if downstream flooding could occur as a result of the incident. Unless a transfer of control occurs, the water corporation must remain in control of the situation at the dam site.

If the incident escalates, there may be a need for a transfer of control of the dam safety incident from the water corporation to the Department or an alternative entity nominated by the Department. Incident levels, transfer of control, and command and control arrangements are described in Sections 6.4, 6.5 and 6.6.

6.3.4.2 Owners of Small Dams

Emergency management requirements for licensed private dams are given in the booklet: *Your dam, Your Responsibility - A Guide to Managing the Safety of Small Dams* (DELWP, 2018). It outlines prudent approaches to normal dam surveillance and maintenance practice. It also explains the responsibilities of owners and operators of small dams and advises them to:

- Use the services of a suitably qualified professional to design and construct the dam
- Make periodic inspection of the dam
- Perform regular maintenance
- Maintain an up-to-date DSEP (where the dam is hazardous)
- Carry out repairs where and when required to meet current design and construction standards; and
- Have a suitably qualified professional investigate any unusual conditions which could result in partial or total failure.

These recommendations apply regardless of whether or not the small dam meets the requirements for licensing.

Where a small dam is licensed, part of the licence conditions is that owners are expected to maintain an up-to-date DSEP with appropriate notification and response arrangements. Those arrangements should include contact details for VICSES, VICPOL, the local Licensing Authority, the Department, the State Control Centre (SCC) and other emergency numbers as well as for downstream residents and camping, recreational and other facilities in the path of a failure flood.

Apart from farm dams, small dams include those owned and operated by energy and mining companies, councils, Parks Victoria and the Department.

While the Department remains as the Control Agency for dam safety incidents involving small dams, the operators of these dams are required to provide the initial response in line with their DSEP. Such incidents should only be escalated to the Department if the thresholds for a Level 2 incident are reached or expected to be reached. The command-and-control arrangements will be as described in Section 6.4.

6.3.4.3 Parks Victoria and Local Government as Owners and Operators of Dams

Dams operated by Parks Victoria and councils are mostly associated with recreational water bodies and, in the case of councils, may include flood retarding basins. These entities need to ensure that they maintain up to date DSEPs for each dam where the dam is hazardous and, depending on size and consequence category (see Section 4), each flood retarding basin where the retarding basin or hazardous.

Notification protocols and response arrangements documented in the DSEP must be consistent with the principles outlined in this document and include contact details as outlined for owners of small dams in Section 6.3.4.2.

While the Department remains the Control Agency for the integrity of such dams, the operators of these dams (and flood retarding basins) are required to provide the initial response in line with the relevant DSEP. During a dam safety incident, the command-and-control arrangements will be as described in Section 6.4.

¹¹ This understanding will guide initial decision making regarding the issuing and extent of public warnings and advice, together with other consequence management actions.

6.4 Command and Control Arrangements

An effective response to a flood or dam safety emergency requires a multi-agency approach involving the Department, VICSES, BoM, VICPOL and dam owners/operators. The SEMP designates the Department as Control Agency for dam safety and VICSES as Control Agency for flooding. It is important that the following agreed arrangements are in place to ensure that the allocation of Control Agency accountability is clear for the scenarios as described below.

In this Response Plan, the command and control arrangements are listed by incident type to make the control and Support Agency governance clear. For examples of the command and control structure based on incident level as described in Section 6.1, see the Dam Safety Operations Plan. This gives an indication of the number of resources required as the incident level and scale escalates.

For flood-related incident response, there can only be one Control Agency, regardless of the number of agencies that may have control responsibilities for aspects of the response. VICSES is the Control Agency for flood (Class 1 emergency) and as such is responsible for the emergency response management of flood consequences downstream from dams, weirs and flood retarding basins, regardless of the cause of the flood.

A dam safety incident can be controlled at a local, regional or state level depending on the scale, duration, area of impact and potential consequences of the incident and the level of resourcing required to respond to the incident.

6.4.1 Natural Flooding Incidents

VICSES is the designated Control Agency for natural flood incidents (see Section 3.1.1) and will appoint the Incident Controller to manage the incident. Through this structure, VICSES will be responsible for managing the response to flooding consequences.

This includes situations where high flows into a dam following rainfall in the upstream catchment are likely to result in outflows that exceed the minor flood level downstream of the dam. In this circumstance, the dam owner/operator will be responsible for managing the passage of water through the storage, providing technical advice and supplying observed and forecast flow data where available. Dam owner/operators can deploy an EMLO to the IMT to help manage their respective functions.

While there is not a dam safety incident in this scenario, if there are multiple dams passing significant flows, then the Department may be requested to coordinate situation reports through the Control Agency or Department Executive. This is an administrative support role not a response role. This may be escalated if any dams exhibit signs of failure.

6.4.2 Controlled Flooding Incidents

VICSES is the designated Control Agency for Controlled Flood incidents (see Section 3.1.2) and will appoint the Incident Controller. Through this structure, VICSES will be responsible for managing the response to flooding consequences.

For controlled flooding incidents, roles and responsibilities for the dam owner/operator will be as described for natural flood incident (see Section 6.4.1). The reporting of observed and forecast flow data at all official flood warning gauges will be a high priority for controlled flood incidents.

Again, while there is not a dam safety incident in this scenario, if there is a particularly sensitive dam or multiple dams with controlled releases exceeding the minor flood level, then the Department may be requested to coordinate situation reports through the Control Agency or Department Executive. This is an administrative support role not a response role.

6.4.3 Dam Safety Incidents Unlikely to Cause Downstream Flooding

The Department is the designated Control Agency in cases where a dam safety incident occurs but is assessed as unlikely to fail and cause flooding downstream. These would mainly be localised Level 1 or incidents but could also be Level 2 or 3 in some specific scenarios. In these situations, the focus is on identifying the issue and working with the dam owner to make the area safe.

Where the dam safety incident is assessed as Level 1 (i.e. no expected consequences beyond the site or asset, no threat to life, property or environment and no expectation of disruption to essential services), it is

expected that management of the incident will be undertaken by the dam owner/operator as part of business as usual arrangements.

Where the dam safety incident is assessed as a Level 1 (Reportable) (i.e. there is a possibility the incident will not be contained within one or two hours by the initial response, may attract the interest of local or regional third parties and/or there is a possibility the incident will escalate to Level 2), the SDO – Water must be notified. Where this incident is assessed as Level 1 (Reportable) or higher, the SDO – Water will also notify VICSES as per the Dam Safety Operations Plan.

If the incident does not escalate further, the Department will provide no further emergency response to the dam safety incident. Arrangements for an escalating incident are outlined in Section 6.6.

In some specific scenarios, a dam safety incident may be escalated to Level 2 or 3 even though it is unlikely that flooding will occur. This includes incidents where more resources are required to manage or respond to the incident, the situation is high risk, specialist technical resources are required or an escalation is requested by Department Executive or activated Control Agency.

If the dam is operated or licensed by a water corporation, the Department requires the water corporation to take on the role of Incident Controller. In all other cases, the Department will appoint a suitable Incident Controller.

As outlined in Section 2.3, the Department or the delegated licensing authority may, under the provisions in the *Water Act 1989*, gain access to private property, direct a dam owner undertake works to make the dam safe or undertake emergency works if the dam owner does not take action.

6.4.4 Dam Failure Likely to Cause Downstream Flooding

For a Level 2 dam failure incident (i.e. with potential to cause threat to life and/or, at a regional scale, significant disruption to essential services and/or significant consequences), or a Level 3 dam failure incident (i.e. with potential to cause threat to life and/or, at a Statewide scale, significant disruption to essential services and/or significant consequences), VICSES will be the Control Agency for flood response downstream from the dam. This means that VICSES will be responsible for the wider community consequences including the management of public warnings and information relating to any potential downstream flooding.

Where VICSES is the Control Agency, the Department and/or water corporation (if the dam is operated or licensed by a water corporation) will be a Support Agency in command of the immediate dam site, responsible for managing the structural integrity of the dam and taking any actions required to make the area safe. This is done through the appointment of a trained Incident Commander from either the dam owner or a Victorian emergency management organisation/entity. This is undertaken in accordance with dam owner's incident management plan for monitored dams if one is in place or through the Department Dam Safety Operations Plan arrangements.

When forming an IMT in response to the management of flooding downstream from the dam, it is important that the Department and VICSES along with the dam operator have access to an appropriately qualified expertise (through an EMLO or technical specialist) within the IMT. Regular updates and situation reports provided by the dam operator to the IMT will ensure a common operating picture for all entities. The IMT may be located at the incident site or at an Incident Control Centre (ICC).

The Incident Commander is responsible for command of dam owner entity resources and participates in the IEMT or REMT. They are not responsible for control of the potential or actual flood incident and are not responsible for issuing community warnings.

6.5 Control of Concurrent Class 1 and Class 2 Emergencies

The SEMP provides arrangements for the control of concurrent Class 1 and Class 2 emergencies.

For dam safety incidents arising from flood or earthquakes (a dam failing as a consequence of a broader emergency) the overall response may be led by the Class 1 State Response Controller with a Class 1 line of control applied to the overall emergency. The Department would continue to perform its dam safety response roles as a Support Agency to the Control Agency (in this case VICSES).

6.6 Incident Escalation and Transfer of Control

After the incident is reported to the Department, the appointed Incident Controller will maintain situational awareness and continuously assess the Incident Level based on observations and technical advice where available.

In cases where a dam safety incident escalates from a Level 1 incident to a Level 2 incident, a transfer of control to the Control Agency (the Department) is required for most cases. This process is illustrated in Figure 2 below with the generic term “Emergency Services” used to represent the Victorian state level emergency response arrangements outlined in the SEMP.

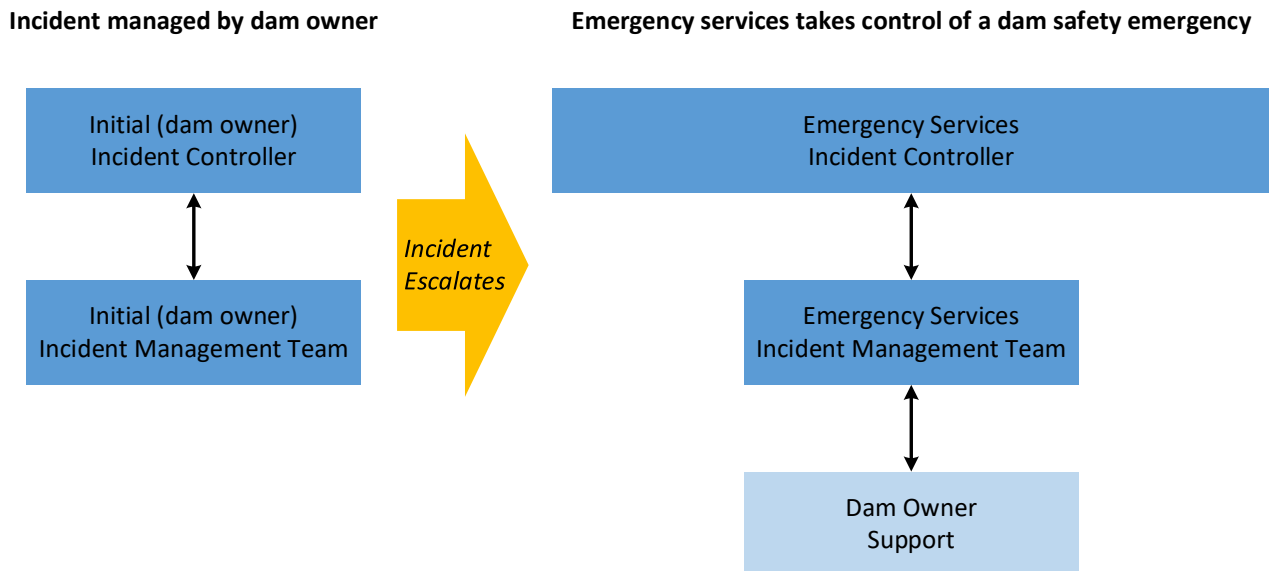


Figure 2: Dam owner transfer of control process

In cases where a dam safety incident escalates to a Level 3 Class 2 emergency, then the State Control may be activated. In this case, a SC-W will be appointed to control response activities as well as coordinate community information and warnings.

In the event that a dam fails or is likely to fail with consequential flooding, consideration and any decision to transfer control of the incident to the VICSES, including the timing of any transfer, will be determined by agreement between the Class 1 State Response Controller and the SC-W. If this scenario was anticipated, a Deputy Incident Controller may be appointed (ideally from the VICSES) in preparation.

7. Capability

The Department will use its own portfolio resources to manage the direct response to a dam safety incident. Agencies from across government (broadly described in the SEMP) will be requested to provide specific technical expertise and assistance, particularly with respect to consequence management. Specific response arrangements for Level 2 dam safety incidents and Level 3 (Class 2 Emergencies) detailed in Section 6 above indicate the source of resources within the portfolio, including local waterway/land managers, water corporations and regional and Melbourne staff from the Department.

Incident management personnel may be drawn from outside the portfolio from agencies such as Country Fire Authority or VICSES by mutual agreement to share learning, access local knowledge or assist with managing resource demand.

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- Water Act 1989* (Vic)

9. Glossary

TERM	DEFINITION
ANCOLD	Australian National Committee on Large Dams.
Competent Person	A person who, in exercising an activity in relation to a dam or dam safety, has acquired (through appropriate qualifications, experience, education and training) adequate knowledge, skills and ability relevant to that activity, so as to be capable of effectively undertaking that activity.
Consequence	In relation to risk analysis, the outcome or result of a risk being realised. Includes flood impacts in the downstream as well as upstream areas of the dam resulting from failure of the dam or its appurtenances, as well as indirect impacts over an indefinitely large area.
Consequence Category	A classification of adverse consequences resulting from a dam failure (ANCOLD, 2012b).
Consequence Management	<p>Consequence management in the emergency management context is the coordination of agencies to minimise the adverse effects of emergencies on people, communities, infrastructure and the environment while ensuring safety considerations are paramount.</p> <p>Consequence management informs strategic decision-making before, during and after emergencies and is important for longer-term decision-making after a major emergency. It also supports community recovery.</p>
Dam failure	In the general case, the inability of a dam system, or part thereof, to function as intended. Thus, in terms of performance to fulfil its intended function, the inability of a dam to perform functions such as water supply, prevention of excessive seepage or containment of hazardous substances. In the context of dam safety, failure is generally confined to issues of structural integrity, and in some contexts to the special case of uncontrolled release of the contents of a reservoir through collapse of the dam or some part of it.
Dam Operator	The individual/s and/or entity that has primary ownership and/or management responsibility for a dam. Dam operators of public dams in Victoria include the following State entities/agencies - water corporations, councils, Parks Victoria and the Department of Energy, Environment and Climate Action. For private dams included in a works licence, the dam operator is the holder of the licence. For other private dams, the dam operator is the dam owner.
Dam Owner	Person or legal entity, including a company, organisation or corporation, which either holds a licence to operate a dam or retains the legal property title on the dam site, dam and/or reservoir, and is responsible for the safety of the dam.
Dam Safety Emergency	A situation that either is expected to or has threatened the operation or structural integrity of the dam to the extent that lives, property and the environment are at risk. Immediate action is required to assess the dam and take any action required to make it safe, as well as to manage consequences or minimise downstream of the dam.
Dam Safety Incident	A situation that has not yet threatened/affected the operation or structural integrity of the dam although it could if left unchecked or has affected the safety of the dam. Management intervention is required assess the dam and take any action required to make it safe, as well as to manage consequences downstream of the dam.
DEECA	Department of Energy, Environment and Climate Action (formerly known as DELWP, DEPI and DSE).

TERM	DEFINITION
DSEP	Dam Safety Emergency Plan. A continually updated set of instructions and maps that deal with possible emergency situations or unusual occurrences at or related to a dam or reservoir.
Emergency management	The organisation and management of resources for dealing with all aspects of emergencies. Emergency management involves the plans, structures and arrangements which are established to bring together the normal endeavours of government, voluntary and private agencies in a comprehensive and co-ordinated way to deal with the whole spectrum of emergency needs including prevention, response and recovery (EMV 2021).
Emergency management arrangements for response	The emergency management arrangements for response, as described in the SEMP, illustrate command, control and coordination arrangements for Class 1, 2 and 3 emergencies. This section highlights general arrangements around roles, governance and relationships for control and coordination during the response phase.
EMV	Emergency Management Victoria leads emergency management in Victoria by maximising the ability of the emergency management sector to work together and to strengthen the capacity of communities to plan for, withstand, respond to and recover from emergencies. EMV supports the Emergency Management Commissioner to lead and coordinate emergency preparedness, response and recovery across Victoria's emergency management sector in conjunction with communities, government, agencies and business. EMV is an integral part of the broader emergency management sector and shares responsibility with a range of agencies, organisations and departments for ensuring the system of emergency management in Victoria is sustainable, effective and community focussed (EMV webpage).
Hazard	Threat or condition, which may result from either an external cause (e.g. earthquake, flood, or human agency) or an internal vulnerability, with the potential to initiate a failure mode. A source of potential harm or a situation with a potential to cause loss.
Hazardous category dam	A dam on a waterway or a dam not on a waterway as described in Section 67(1A) of the Water Act, that is classified as Significant, High (C, B or A) or Extreme Consequence Category based on the current <i>ANCOLD Guidelines on Consequence Categories for Dams</i> .
Flood Failure	A flood-induced dam failure occurring during or soon after a period of high rainfall and/or inflows. See Dam Failure
Flood retarding basins	Flood retarding basins are low-lying areas of land or holding ponds, designed to temporarily store stormwater runoff during heavy rainfall or flooding events. These help to reduce flood risk to downstream homes and businesses. Many basins also provide a recreational space for the community during dry periods. When heavy rainfall occurs, the flood retarding basin collects and holds the excess stormwater runoff, temporarily reducing the flow. The stored water is then slowly released into the downstream drain or waterway.
Incident	An event which could deteriorate to a very serious situation or endanger the dam.

TERM	DEFINITION
Large Dam	<p>A large dam (refer: www.ancold.org.au) is defined as one which is:</p> <p>(a) more than 15 metres in height measured from the lowest point of the general foundations to the 'crest' of the dam,</p> <p>(b) more than 10 metres in height measured as in (a) provided they comply with at least one of the following conditions:</p> <ul style="list-style-type: none"> (i) the crest is not less than 500 metres in length; (ii) the capacity of the reservoir formed by the dam is not less than 1 million cubic metres; (iii) the maximum flood discharge dealt with by the dam is not less than 2,000 cubic metres per second; (iv) the dam is of unusual design. <p>No dam less than 10 metres in height is included.</p>
Likelihood	A qualitative description of probability and frequency.
PAR	Population at Risk. All those persons who would be directly exposed to floodwaters assuming they took no action to evacuate.
PLL	Potential Loss of Life. The part of the population at risk that could lose their lives in the event of a dambreak.
Potential Dam Failure	<p>There is a likelihood that dam may fail, lose its primary function and cause flooding with downstream consequences.</p> <p>See Dam Failure</p>
Pre-releases	Pre-releases comprise water released from a dam before the dam has reached full supply level, in response to forecast inflows and/or rainfall conditions.
Retarding basin	See Flood Retarding Basin
Risk	Measure of the probability and severity of an adverse effect to life, health, property, or the environment. In the general case, risk is estimated by the combined impact of all triplets of scenario, probability of occurrence and the associated consequence. As a special case, average (annualised) risk can be estimated by the mathematical expectation of the consequences of an adverse event occurring (that is, the product of the probability of occurrence and the consequence, combined over all scenarios).
Statement of Obligation (SoO)	Is a regulatory instrument issued by the Minister for Water to water corporations, which imposes obligations and guiding principles in relation to performance of their functions and the exercise of their duties.
Stormwater retention basin	See Flood Retarding Basin
Suitably Qualified Professional	<p>A person who is a Competent Person (see definition) in:</p> <ul style="list-style-type: none"> • the type, size, complexity (including associated potential risks and the consequence category) of the dam involved; • as appropriate, dam design, construction supervision, operations and maintenance, surveillance, emergency management, consequence category determination, risk assessment, safety reviews and safety management; and • understanding relevant regulatory and guidance documents; <p>and is:</p> <ul style="list-style-type: none"> • registered under a law that provides for the registration of professional engineers, or

TERM	DEFINITION
	<ul style="list-style-type: none"> • a member (or would be eligible to be a member) of Engineers Australia with the status of Chartered Professional Engineer, or • entered on the National Professional Engineers Register administered by the Institution of Engineers Australia, or • the holder of professional qualifications in a relevant speciality (related to dams or dam safety) or is registered in a relevant speciality (related to dams or dam safety) by an Australian professional organisation. <p>A suitably qualified professional:</p> <ul style="list-style-type: none"> • is required to have appropriate insurance, in particular, professional indemnity insurance; • for low activity complexity, may be the only suitably qualified professional involved but for more complex activities would oversee a project team which includes other suitably qualified professionals.
Sunny Day Failure	<p>Dam failure that occurs on a “sunny” day, i.e. a day without significant rainfall or high inflows with water in the storage or pool at or below full supply level.</p> <p>See Dam Failure</p>
Surcharging	<p>Surcharging is where flood water is temporarily held above a dam’s Full Supply Level (FSL), during the passage of a flood.</p>
Tailings Storage Facilities	<p>Tailings Storage Facilities (TSF) are built structures used to confine mine tailings. The term refers to the overall facility, and may include one or more tailings dams. The primary purpose of a TSF is to safely contain tailings to achieve solid sedimentation and consolidation, and to facilitate water recovery or removal without impacting on the environment. The nature of TSF design and operation is fundamentally different from a water dam in the way water is managed and in rehabilitation and closure.</p>
Weir	<p>A weir is a small dam built across a waterway to control the upstream water level. Unlike large dams that create reservoirs, the primary purpose of a weir is not storage but rather to control the water level and flow of water in a waterway.</p>

Appendix A Licensing Authorities

The licensing authority function under the *Water Act 1989* is delegated to the following water corporations as per the areas shown in Figure 3:

- Lower Murray Water
- Grampians Wimmera Mallee Water
- Melbourne Water
- Goulburn Murray Water
- Southern Rural Water

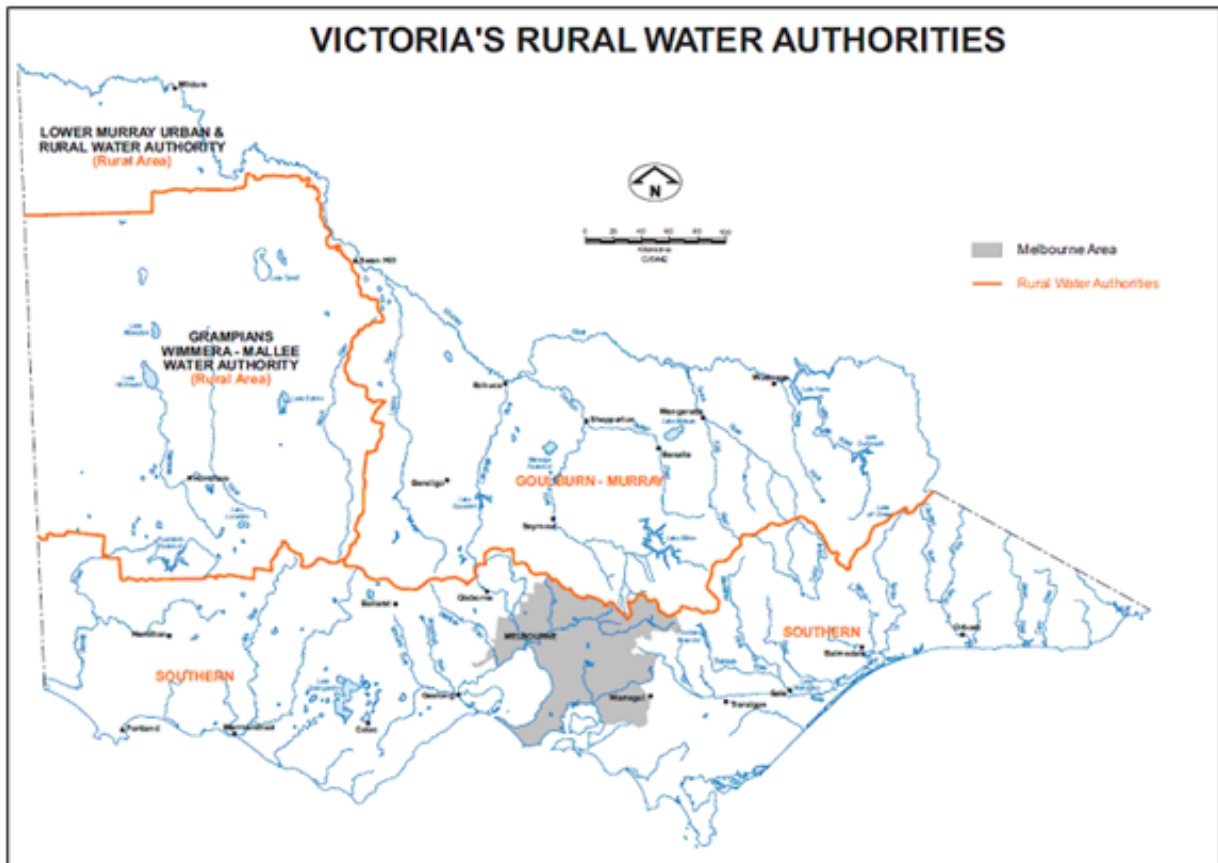


Figure 3. Victorian Licensing Authorities for dams

Appendix B Flooding Downstream of Dams – Additional information

Introduction

Floods can be caused by prolonged and/or heavy rainfall or by the failure of an upstream dam, weir or flood retarding basin retaining water stored temporary or permanently behind it.

Floods can severely damage houses and other infrastructure and assets in both rural and urban areas and can result in significant damage to crops and loss of livestock. They can also result in loss of human life.

Timely warning of such an event is critical to damage reduction and protection of human life. The arrangements that facilitate that timely warning are outlined in several documents depending on the primary cause of the flooding as described in Section 3. These documents include the SEMP Flood Sub-plan, the Dam Safety Response Plan, and the Dam Safety Operations Plan as well as dam Flood Incident Management Plans (FIMPs) and Dam Safety Emergency Plans (DSEPs) where these exist.

Effects of Dams on Flooding

Dams on waterways impose a range of permanent effects on natural stream flows and typically modify the peak flow, timing, and duration of floods such that downstream flooding effects are reduced. Depending on their operating rules, dams with control devices such as gates, valves or fuse plugs may have the ability to further modify flood flows. When control devices are used to release water during flood events (or on some occasions before a flood to create airspace in the reservoir to absorb the flood peak), flooding consequences within downstream communities can occur rapidly, often creating unexpected adverse impacts.

Only a small number of dams in Victoria have spillway gates. Spillway gates provide capability to make significant flow releases during or prior to a flooding event. Such dams in Victoria are owned by water corporations. A fixed crest dam can also make releases prior to or during a flood event through the outlet works, although the outlet capacity is relatively small compared to the flood inflow so there is not as much attenuation.

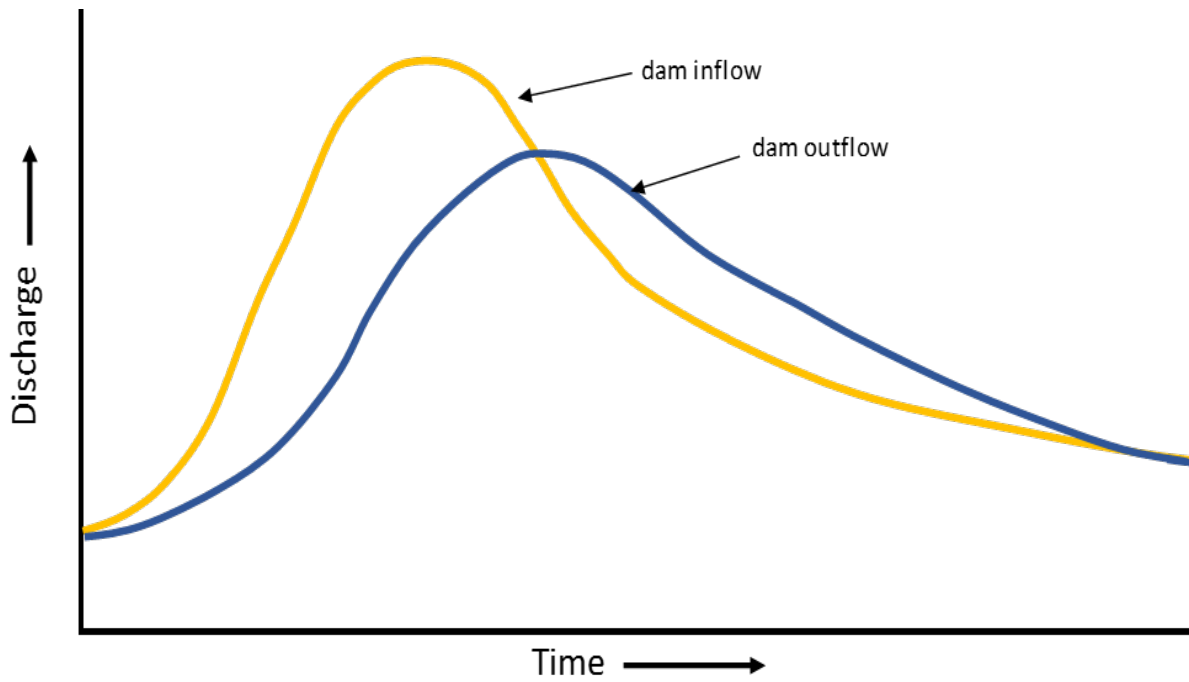
Each rainfall event has a different spatial and temporal rainfall pattern and each catchment responds differently to rainfall events. Therefore, it is important that all dam operators as well as emergency response and support agencies understand the unique behaviour of the catchment and operating requirements for each dam within their area of operational responsibility.

Particular notice should be given to response capability and flood preparedness for flooding from dams within the Macalister catchment (Lake Glenmaggie), Buffalo catchment (Lake Buffalo) and Loddon catchment (Cairn Curran, Tullaroop and Laanecoorie reservoirs). Dams in these catchments are relatively small in volume compared with the size of the catchment. These catchments have a history of responding rapidly to heavy rainfall and can produce significant floods with little warning.

Flood Mitigation

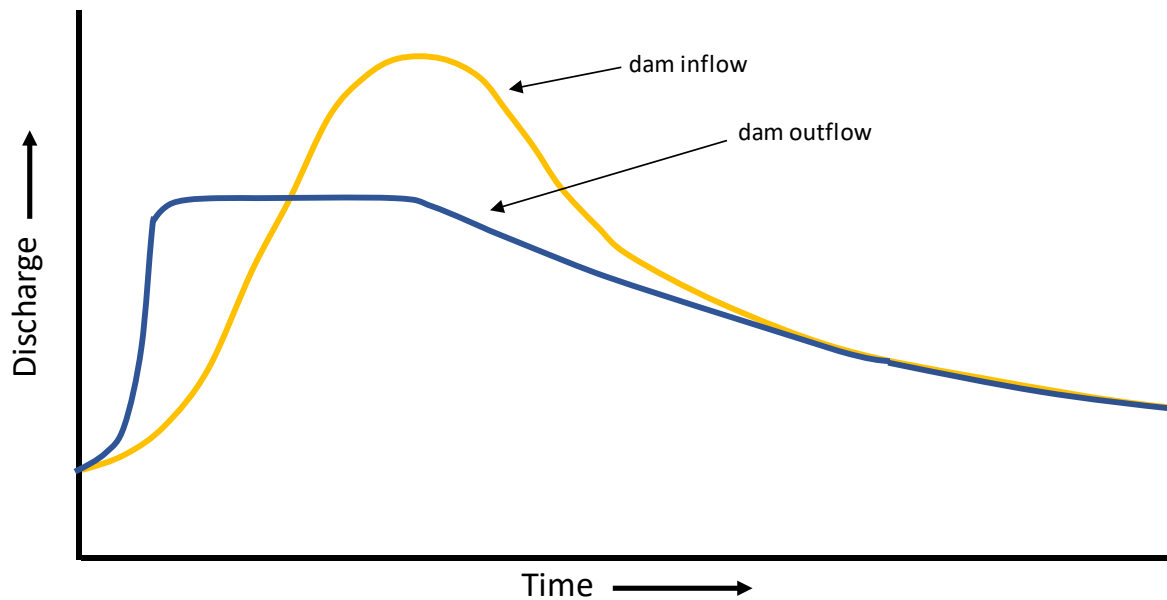
Dams provide some flood mitigation benefit as a result of the flow being delayed and attenuated as it passes through the storage (see Figure 4). The degree of mitigation is a function of inflow and storage characteristics. The flood mitigation benefit generally reduces (is less noticeable) as the size of the flood increases with little mitigation for large floods. In addition, the impact of a dam on peak flow reduces as the flood wave passes further downstream.

Figure 4. Typical inflow/outflow hydrograph of a gated dam



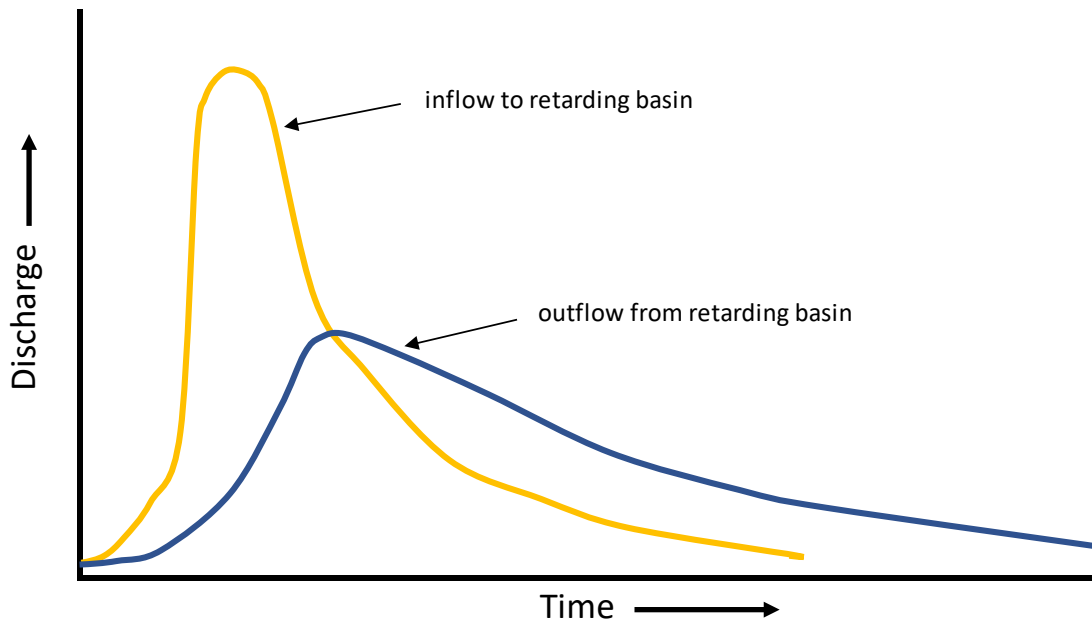
None of the large dams in Victoria were designed, constructed or are managed to provide a specific flood mitigation benefit. However, some flood mitigation is provided naturally as a result of the flow being delayed and attenuated as it passes through the storage. Dams with spillway gates could, in theory, be operated (by pre-releasing or surcharging) to provide some mitigation of downstream flooding as shown in Figure 5.

Figure 5. Typical inflow/outflow hydrograph for a gated dam with pre-release



Flood retarding basins are designed to mitigate floods as shown in Figure 6. These generally remain empty outside of floods.

Figure 6. Typical inflow/outflow hydrograph for a flood retarding basin



The degree of flood mitigation able to be provided by a dam depends on several factors including the:

- Operating rules adopted for the storage including policy on surcharging and pre-releases;
- Size of the flood event;
- Size of the upstream catchment and its condition (wet, dry, etc);
- Size of the storage;
- Level of water in the storage (reservoir) at the beginning of the event;
- Capacity of the reservoir to store floodwaters above full supply level (surcharging);
- Presence and configuration of spillway gates; and
- Discharge capacity of the spillway or outlet valve.

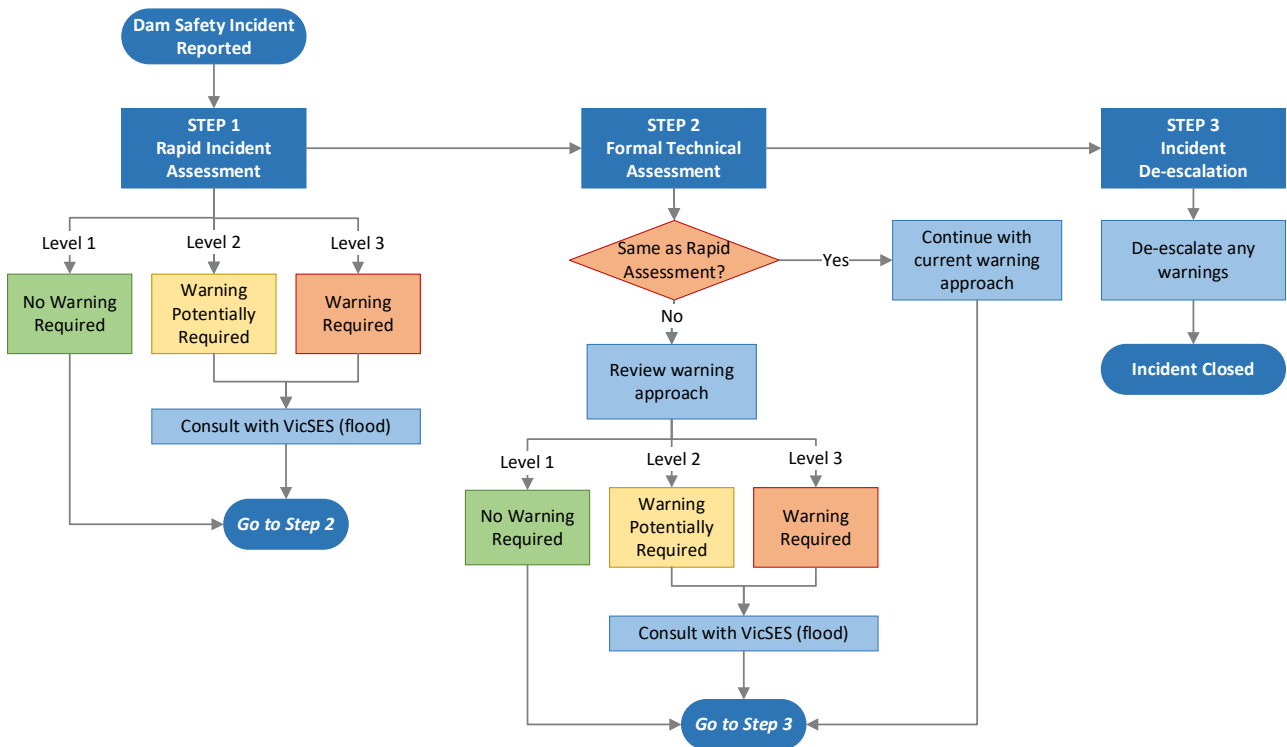
Appendix C Community information and warnings

Figure 7 below shows the process for deciding whether to issue warnings for a dam safety incident. Note that this process is different for flood events where VICSES is the control agency responsible for issuing warnings. There are also options to use this process for issuing community information messaging in cases where a warning is not required but there may be information for the community.

Any warnings must be authorised by the appointed IC or member of the Water Emergency Management team before being published by the SCC Warnings Officer through VicEmergency. For monitored dams, the dam owner should also be involved in the warning process to include this expertise and local knowledge. Figure 4 shows the dam safety incident warning decision process to follow. Note that Level 1 incidents include Level 1 (Reportable) incidents.

Pre-approved public information templates are prepared that the Public Information Officer will use to prepare messages for dam safety emergencies.

Figure 7: Dam safety incident warning decision process



Appendix D Dam ownership and emergency responsibilities

Table 2: Dam ownership and emergency responsibilities

Entity	Restore Safety of the dam structure	Response to dam safety incident	Establish State Controller (if required)
Water corporation owned/operated dam			
Water Corporation	✓	✓	
DEECA Secretary			✓
Public dam¹²			
Public land manager/dam manager/dam owner: • Councils (where they are the dam owner) • Parks Victoria • DEECA	✓	✓	
DEECA Secretary			✓
Licensed private dam			
Private dam owner/license holder	✓	✓	
Dam licensing authority ¹³		✓ ¹⁴	
DEECA Secretary			✓
Unlicensed private dam			
Private dam owners	✓	✓	
DEECA Secretary			✓
Mining and tailings dam			
Mining Corporation	✓	✓	
DEECA Secretary			✓

Note the powers of the Minister for Water and delegates to direct a dam owner – see the Dam Safety Response Plan for templates to issue a direction

Under S80 and S81 of the Water Act 1989, the Minister for Water has the power to direct all dam owners to make specific repairs or alterations to the dam, take measuring regarding the dam or remove the dam. The Minister for Water can delegate these powers to the Secretary, Deputy Secretary Water and Catchments Group, Executive Director Water and Catchments Group.

The Minister has also delegated this responsibility to dam licensing authorities (that includes some water corporations)

¹² Dams managed by councils, Parks Victoria and Department of Energy, Environment, and Climate Action for recreation, aesthetic, water sources for fire suppression and small retarding basins.

¹³ Dams licensing authorities in Victoria include: DEECA and five water corporations namely Southern Rural Water, Goulburn Murray Water, Melbourne Water, Grampians Wimmera Mallee Water and Lower Murray Water. The dam licensing authorities have powers to undertake emergency works on all dams in Victoria, except for on mining and quarry dams

¹⁴ Where the dam owner is unable to or does not undertake required emergency works.