
Department of Planning and Environment

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Incident and emergency management for local water utilities

Management framework and guidance

January 2023



Acknowledgement of Country

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Glossary

Abbreviation	Term in full
ADWG	Australian Drinking Water Guidelines
AGWR	Australian Guidelines for Water Recycling
AIIMS	The Australasian Inter-Service Incident Management System
BCP	business continuity plan
CCP	critical control point
EMPLAN	New South Wales State Emergency Management Plan
EUSFA	Energy and Utilities Services Functional Area
EUSFAC	Energy and Utilities Services Functional Area Coordinator
EUSPLAN	Energy and Utilities Services Supporting Plan
FMEA	failure mode and effects analysis
GIS	global information system
IERP	incident and emergency response plan
LEMC	Local Emergency Management Committee
LEMO	Local Emergency Manager Officer
LEOCON	Local Emergency Operations Controller
PIRMP	Pollution Incident Response Management Plan
PLC	programmable logic controller
POEO	Protection of the Environment Operations (Act 1997 and Regulation 2021)
PPRR	prevent, prepare, respond, recover
RCA	root cause analysis
REMC	Regional Emergency Management Committee
REOCON	Regional Emergency Operations Controller
SCADA	supervisory control and data acquisition
SEMC	State Emergency Management Committee
SOP	standard operating procedure
STP	sewage treatment plant
TWRRP	Town Water Risk Reduction Program
WSSG	Water Services Sector Group
WTP	water treatment plant

Executive summary

Local water utilities provide essential drinking water and sewerage services to their communities. In the past 5 years, almost every local water utility in NSW has been affected by some sort of serious incident or emergency. These range from smaller localised incidents such as loss of power, infrastructure failure or water quality issues, through to wide-ranging emergencies such as bushfires, floods and pandemic. Responding to and recovering from these events quickly and efficiently is vital to providing continuity of water supply and sewerage services to NSW communities.

Reviews of these events have shown that local water utilities would benefit from looking beyond incident and emergency response to focus more broadly on incident and emergency management through a prevent, prepare, respond, recover approach.

The NSW Department of Planning and Environment, in conjunction with the local water sector, identified incident and emergency management as a key area of risk for local water utilities and the communities they serve.

NSW Government agencies offer significant guidance on formal emergency response arrangements. However, there is little guidance on how to manage minor incidents and events affecting local water utilities, or on how to integrate local water utility incident response with existing formal emergency management processes.

The department worked with industry to develop an incident management framework and guidance to support local water utilities in better managing risks. This document presents a management framework, comprising a set of outcomes and actions for local water utilities. This framework draws on several existing requirements in NSW Government policy and legislation for incident and emergency management. The framework aims to guide local water utilities in their development of specific incident management plans, using a risk-based and outcomes-focused approach.

The outcomes for effective incident management for local water utilities are:

- Appropriate planning and training minimises the scale and duration of incidents and impacts.
- Appropriate resourcing, supported by an escalation framework, supports effective incident management.
- Key individuals exercise their required incident functions during incidents or emergencies.
- Utilities meet statutory requirements for reporting incidents and use learnings to inform future incident management.

Each of these outcomes is supported by specific actions and guidance on how to achieve these outcomes.

Incident management outcomes

The tables below summarise the incident management outcomes, the risks they manage, and advises how a utility could achieve the outcomes. Sections 3 and 4 of this report give more guidance on how to develop and implement actions to achieve these outcomes.

Outcome: Appropriate planning and training minimises the scale and duration of incidents and impacts.

Risk: Insufficient planning and testing of plans to manage incidents and emergencies can increase the severity of consequences, the recovery time and likelihood of an incident occurring again in the future.

How to meet outcome	Section
<ul style="list-style-type: none"> Consider and document high-risk events specific to systems. Prepare incident management plans that include plans for identified incidents response activities and tactical and operational planning. Identify and address knowledge gaps. 	Section 3.1
<ul style="list-style-type: none"> Develop and implement processes, systems and monitoring for managing threats to services. 	Section 3.3
<ul style="list-style-type: none"> Implement activities in incident and emergency management plans when required. 	Section 3.5
<ul style="list-style-type: none"> Annually test incident plans through exercises or drills (documented with attendance of key individuals). Implement a formal incident training program. 	Section 3.6
<ul style="list-style-type: none"> Review incident plans incorporating outcomes of testing exercises and training. Include monitoring and review requirements and appropriate document control in incident plans. 	Section 3.7

Outcome: Appropriate resourcing, supported by an escalation framework, supports effective incident management.

Risk: Failure to escalate incidents to the appropriate level could constrain resources, which may increase the severity of consequences and the recovery time.

How to meet outcome	Section
<ul style="list-style-type: none"> Consider and document processes to classify the incidents and escalate them to the appropriate response levels, based on severity. Identify key personnel involved in incident and emergency management. Understand and document roles and responsibilities for incident and emergency management. 	Section 3.2

Outcome: Key individuals exercise their required incident functions during incidents or emergencies.

Risk: Without up-to-date and correct contact details for the relevant people, organisations and stakeholders in an emergency, required actions or reliant plans may not be enacted. This may lead to escalation of an incident or may extend the recovery time of the incident.

How to meet outcome	Section
<ul style="list-style-type: none">• Maintain current contact lists for individuals to be contacted when responding to incidents and emergencies.• Develop communication protocols for incidents and identify roles and responsibilities.• Prepare templates for public communication.	Section 3.4

Outcome: Utilities meet statutory requirements for reporting incidents and use learnings to inform future incident management.

Risk: A failure to correctly report incidents to relevant authorities and stakeholders will minimise the learnings taken from the incident, which in turn increases the likelihood of the incident occurring again.

How to meet outcome	Section
<ul style="list-style-type: none">• Develop and document processes for reporting of incidents to relevant authorities.	Section 4.1
<ul style="list-style-type: none">• document how lessons learnt from incidents will be incorporated into incident management plans• following any incident or emergency investigate and debrief with all involved staff, discuss performance and address any issues or concerns• review and update incident plans with lessons learnt• train staff on the updated plans.	Section 4.2

1.Introduction

Water supply and sewerage services are essential to the functioning of communities in regional NSW. Incidents that challenge and interrupt these services can have serious outcomes for both local water utilities and the communities they serve. Planning for incident management can significantly reduce the consequences and severity of the effects of incidents.

1.1. Importance of planning for incident management

Planning for incident management better manages risks and provides significant benefits to local water utilities.

Risks of not planning for incident management

- increased frequency of incidents
- minor incidents are not identified and managed, leading to increased severity
- increased risk to public health and environment
- increased risk to life and property
- loss of reputation
- increased economic loss for both the local water utility and affected businesses
- failure of regulatory obligations.

Benefits of planning for incident management

- reduced frequency of incidents
- reduced severity of incidents through early identification and management
- reduced risks to public health and the environment
- reduced risk to life and property
- maintained and enhanced reputation
- minimised economic loss
- meets regulatory obligations.

1.2. Project background

The NSW Department of Planning and Environment established the Town Water Risk Reduction Program to identify long-term solutions to the barriers local water utilities face.

The Town Water Risk Reduction Program, in partnership with the local water utility sector, identified incident and emergency support as an area to be progressed. The program identified 3 priority areas to improve incident and emergency management support. They are to:

- help local water utilities develop more robust incident planning
- help local water utilities regularly exercise their incident plans, together with other relevant agencies and entities
- provide targeted incident response support for local water utilities that have too few resources to adequately respond to incidents while also managing their critical day-to-day business operations.

The Town Water Risk Reduction Program formed the Incident and Emergency Management Focus Group, bringing together experts from local councils, local water utilities and NSW Government agencies, to support development of this framework.

The group identified that while existing emergency management processes were well defined and implemented, there was a significant gap at the local water utility level in managing and escalating local incidents and events.

The group worked with the department and Atom Consulting to identify a set of outcomes for incident management and actions to support achieving them.

1.3. Regulatory context

There are 7 NSW Acts and regulations that include incident and emergency management requirements for local water utilities:

- *Dams Safety Act 2015* and *Dams Safety Regulation 2019*
- *Fluoridation of Public Water Supplies Act 1957*
- *Local Government Act 1993* and *Local Government (General) Regulation 2021*
- *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations Regulation 2021*
- *Public Health Act 2010* and *Public Health Regulation 2022*
- *Rural Fires Act 1997*
- *State Emergency and Rescue Management Act 1989* and [State Emergency Management Plan 2018](#).

Legislative requirements differ, but can be classified into the following categories:

- **incident and emergency response plans:** overarching plans that must be developed to address incident and emergency response
- **risk assessment:** assessment of threats to a local water utility's system that could lead to an incident or emergency. This includes identifying and assessing existing or proposed controls
- **training and testing:** training and testing for staff on implementing incident and emergency response plans
- **reporting and communication:** requirement to have a system in place for reporting incidents or communicating with relevant stakeholders in the case of an emergency
- **incident management committee:** a committee that must be organised and maintained with the responsibility of incident and emergency preparation, prevention, response and recovery.

The Minister for Lands and Water also has authority under section 62 of the *Local Government Act 1993* to direct local water utilities to act during an emergency. This power requires agreement from the Minister for Health.

Appendix A shows details and mapping of legislative requirements.

1.4. Regulatory and assurance framework for local water utilities

The department's [Regulatory and assurance framework for local water utilities](#)¹ sets out the expectations for utilities in their strategic planning. This framework includes 12 strategic planning outcome areas.

The strategic planning outcome area 'Understanding other key risks and challenges' poses questions for a local water utility to consider, which have implications for aspects of their incident and emergency management, particularly in the prevention and preparation phases.

- How will the local water utility address other key risks in its systems now and into the future?
- How will the local water utility meet relevant regulatory standards (for example, such as on dam safety)?
- How has the local water utility considered climate risks?
- How is the local water utility planning for drought?
- How is the local water utility planning and preparing for incidents, emergencies, and extreme events and ensuring continuity of service?

Several of these outcomes link to the prevention principle. Table 1 shows more strategic planning outcomes that are linked to incident and emergency prevention.

¹ Department of Planning and Environment 2022, *Regulatory and assurance framework for local water utilities*, NSW. https://water.nsw.gov.au/_data/assets/pdf_file/0004/518566/regulatory-and-assurance-framework-for-local-water-utilities.pdf

Table 1. Linkages between strategic planning outcomes and incident and emergency prevention

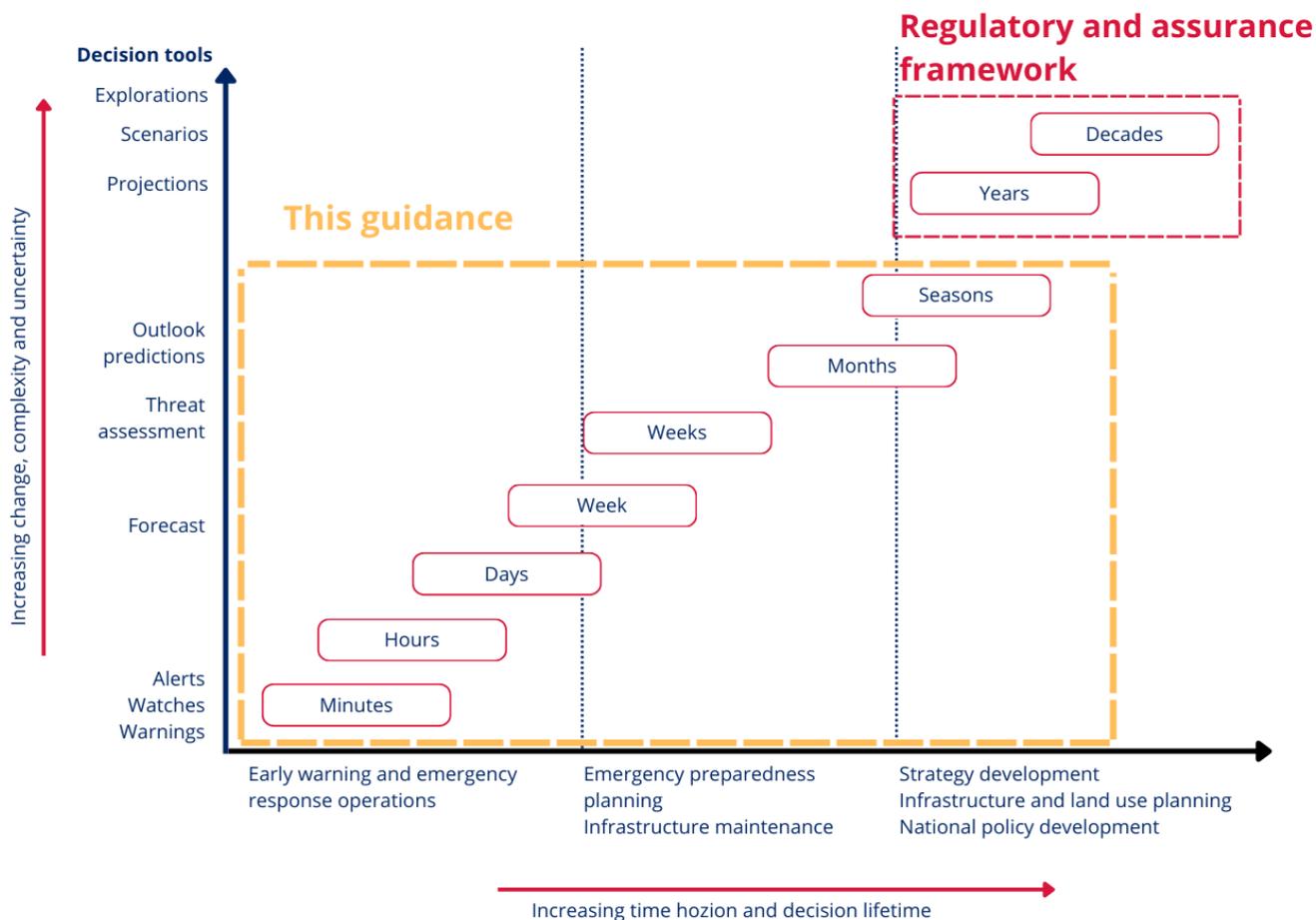
Strategic planning outcomes	Question addressed
Understanding water security	How will the local water utility address current and future risks for continuity and reliability of access to water supply sources?
Understanding water quality	How will the local water utility address current and future water quality risks in its supply systems?
Understanding environmental impacts	How will the local water utility address current and future environmental impact risks in its sewerage systems?
Promote integrated water cycle management	How are urban water cycle outcomes – including water security, public health, environmental and urban amenity, and livability – identified, achieved, and funded?

The Regulatory and assurance framework for local water utilities² focuses on the prevention phase of the prevent, prepare, respond, and recover (PPRR) framework³. It considers improvements occurring across years and decades. This guidance focuses on more immediate activities occurring across the PPRR framework, as shown in Figure 1.

² Department of Planning and Environment 2022, *Regulatory and assurance framework for local water utilities*, NSW. https://water.nsw.gov.au/_data/assets/pdf_file/0004/518566/regulatory-and-assurance-framework-for-local-water-utilities.pdf

³ Business Queensland 2021, *The PPRR risk management model*, Queensland Government.

Figure 1. Relationship between this guidance and the regulatory framework for decision tools and activities⁴



⁴ Adapted from Department of Home Affairs Australian Government, *Climate and disaster risks: What they are, why they matter and how to consider them in decision making*, Belconnen, ACT, Australia, 2019.

1.5. Support from the department

The department is a key partner for local water utilities planning and responding to incident and emergency management. The role played by the department differs depending on the situation and type of incident and emergency. We give advice and support to local water utilities during incidents and emergencies. These activities include:

- onsite and remote operational support to respond to and recover from incidents
- engagement with other emergency response and recovery agencies to coordinate support, including Energy and Utilities Services Functional Area Coordinator (EUSFAC) and Public Works Advisory.
- emergency funding for water carting or emergency water supply works
- coordination of mutual aid and resources from other water utilities.

The department also gives advice and support to local water utilities planning and preparing for incidents and emergencies. These activities include:

- technical advice and support on treatment and other operational issues
- advice about strategic planning that identifies key system risks and controls.

The department's regulatory and assurance framework sets out expectations for local water utilities to plan and prepare for incidents and emergencies. These activities include:

- inspections of water supply and sewerage infrastructure operations and maintenance and inspection reports
- assurance of strategic planning that identifies key system risks and controls
- monitoring of local water utility performance.

1.6. Document structure

This document provides a background on the context of emergency management in NSW and Australia, actions to support water utilities in meeting the incident management outcomes, and a summary of existing regulatory requirements.

The report is structured into the following chapters:

- Emergency management landscape and principles (Section 2)
- Incident planning and response guidance (Section 3)
- Post-incident reporting and learning guidance (Section 4)
- Current regulatory context and requirements (Appendix A).

2. Emergency management landscape

Australia's state and territory governments have primary responsibility for the protection of life, property and the environment within their jurisdiction. It is important for local water utilities to understand formal emergency management arrangements to effectively plan for, manage and escalate incidents at a local level.

2.1. Incident and emergency management terminology

The terms 'incident', 'emergency management', 'emergency' and 'disaster' can have different interpretations in different contexts. This report uses the following definitions.

Incident: An event, occurrence or set of circumstances that:

- has a definite spatial event
- has a definite duration
- calls for human intervention
- has a set of concluding conditions
- is or will be under the control of an individual who has the authority to make decisions about how it will be resolved.⁵

Incident management: Those processes, decisions and actions taken to resolve an emergency incident and support recovery that will enable the community to return to normality.

Emergency: An event, actual or imminent, which endangers or threatens to endanger life, property or the environment, and which requires a significant and coordinated response.⁶

Emergency can also have a specific legislative meaning. When a state of emergency is declared, additional powers are enabled. Section 2.4 gives more information on emergency powers.

Emergency management: A range of measures to manage risks to communities and the environment; 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 coordinated way to deal with the whole spectrum of emergency needs including prevention, response and recovery.⁷

⁵ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria.

⁶ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria.

⁷ Australian Institute for Disaster Resilience 2019, *Australian Emergency Management Arrangements Handbook (AIDR 2019)*.

2.2. Emergency management arrangements in Australia

In NSW, the *State Emergency and Rescue Management Act 1989* (SERM Act) specifies the roles and responsibilities in the planning for and controlling of emergency operations. The state-level approach is set out in the [NSW State Emergency Management Plan \(EMPLAN\)](#)⁸.

Nationally, the Australian Disaster Preparedness Framework⁹ informs the strategic governance, policy and investment needed for natural disaster preparedness. The framework is a dynamic mechanism by which Australia prepares for severe to catastrophic disasters. It incorporates consideration of risk and consequence, and new and emerging ideas and technologies, to inform the strategic capability requirements and arrangements across governments and the private, non-government, community and international sectors. The Department of Home Affairs holds Commonwealth responsibility for this role, through the [Emergency Management Australia](#) division.

The Water Services Sector Group (WSSG) provides a forum for water utilities that includes the areas of business continuity, incident and emergency management and critical infrastructure resilience. The WSSG facilitates the use of the Australian Water Sector Mutual Aid Guidelines.

The [Sendai Framework for Disaster Risk Reduction](#)¹⁰ (adopted by Australia and other UN members) outlines 4 global priorities for action to prevent new and reduce existing disaster risk worldwide:

- understanding disaster risk
- strengthening disaster risk governance to manage disaster risk
- investing in disaster risk reduction for resilience
- enhancing disaster preparedness for effective response, and to 'Build Back Better' in recovery, rehabilitation and reconstruction.

As incidents become more complex and cross jurisdictions, it is important to have agreed ways of working. The Australasian Inter-service Incident Management systems set out agreed ways of working (See AIIMS Call-out box).

⁸ [New South Wales Government 2018, State Emergency Management Plan.](#)

⁹ [Department of Home Affairs Australian Government 2018, Australian Disaster Preparedness Framework.](#)

¹⁰ [United Nations 2015, Sendai Framework for Disaster Risk Reduction 2015-2030, 18 March, Sendai, Japan.](#)

Australasian Inter-Service Incident Management System (AIIMS)¹¹

AIIMS is the nationally endorsed system for managing incidents. AIIMS provides a common incident management system for all responding organisations and personnel, enabling seamless integration of activities and resources for effective and safe resolution of incidents.

AIIMS describes a structure that is adaptable and scalable. Central to this structure is the incident management team. The principles relating to the building and tasking of an incident management team apply to its structure regardless of the size or complexity of the event.

AIIMS is founded on 5 fundamental principles:

- management by objectives
- unity of command
- flexibility
- functional management
- span of control.

Management by objectives: To ensure all incident personnel are working towards one set of objectives, the incident controller, in consultation with the incident management team, determines the desired outcomes of the incident. These are communicated to all involved. At any time, an incident can have only one set of objectives and one incident action plan (see Section 3.8.1) for achieving objectives.

Unity of command: There is one incident controller and one set of common objectives for all those involved in the response to an incident, leading to one consolidated plan for all responders. Each sub-ordinate reports to only one supervisor

Flexibility: The system must be adaptable and able to respond to changes that occur with the evolution of an incident both during escalation and resolution.

Functional management: AIIMS identifies 8 critical functions needed to effectively manage emergencies: control, planning, intelligence, public information, operations investigation, logistics and finance. The same person may take on multiple functions in some cases.

Span of control: The size and structure of the incident management team reflects the size and complexity of the incident and the stage of the response and recovery. A full-scale response is not required for every incident. It applies to both the structure and staffing of an incident management team.

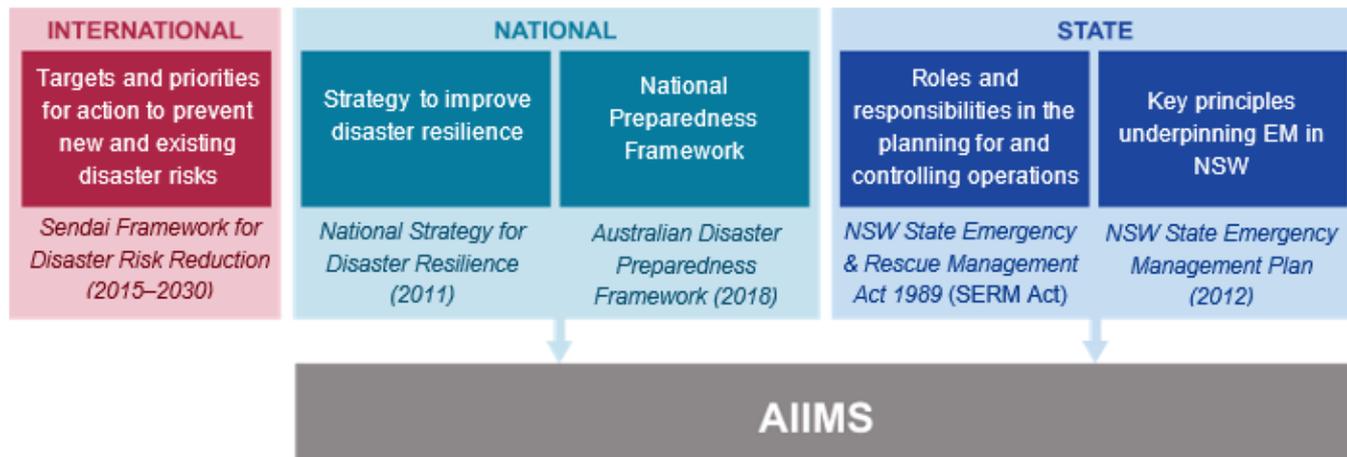
Command: the internal direction of the members and resources of an agency in the performance of the organisation's role and task. It operates vertically within an organisation.

Control: the overall direction of emergency management activities. Authority for control is established in legislation or an emergency plan. Control carries responsibility for tasking other organisations. It relates to situations and operates horizontally across organisation.

¹¹ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria.

Figure 2 shows the interrelationship of international, national, and state-level documents with the Australasian Inter-service Incident Management systems.

Figure 2. Key documents at the international, national and state level¹²



¹² Adapted from: *Resilience NSW 2020, A Capability Development Framework for NSW Emergency Management Sector.*

2.3. Emergency management principles

The principles of prevent, prepare, respond, recover (PPRR) are embedded across Australian emergency management (Figure 3). These principles are included in the *State Emergency and Rescue Management (SERM) Act 1989* (NSW) and underpin the NSW State Emergency Management Plan¹³ (Table 2).

While these are commonly depicted as a circle, they are not necessarily sequential. Prevention occurs concurrently with preparedness, often with little sense of a distinction. During incidents, recovery, at least in theory, begins when the incident starts¹⁴.

Figure 3. The Prevent, Prepare, Respond Recover Framework



¹³ New South Wales Government 2018, *State Emergency Management Plan*.

¹⁴ Holley, J, McArthur, T 2022, *PPRR and AIIIMS: a whole-of-government strategy in NSW*, Australian Journal of Emergency Management, July, p65-74.

Table 2. Principles of emergency management in NSW¹⁵

Principle	Detail
Comprehensive approach	Prevention, preparation, response and recovery
Continuous improvement	All agencies with responsibilities under EMPLAN undertake continuous improvement, updating plans and arrangements in light of lessons learnt from the testing and evaluation of plans, and on the basis of operational experience.
Coordination and information sharing	NSW's emergency management arrangements reflect a commitment to an all-hazards, all-agencies approach, which includes maximum coordination and information sharing across the full spectrum of prevention, preparation, response and recovery even though specific hazards may require specific plans and management. Lead agencies in whatever context will identify and involve partner agencies at the earliest opportunity so that planning and operational management is enhanced.
All-hazards	The all-hazards approach is based on the principle that those systems and methods of operation that work for one hazard are most likely to work for other hazards. It does not, however, prevent the development of specific plans and arrangements for hazards that require specialised approaches.
All-agencies approach	The all-agencies approach recognises that no one agency can address all of the impacts of a particular hazard, either in a proactive or reactive sense. It is necessary for a lead agency to coordinate the activities of the large number of organisations and agencies that are involved. These can be drawn from across all levels of government and non-government and private sectors.
Local capability	Responsibility for preparation and risk management rests at the local level in the first instance. Emergency response and recovery are conducted at the lowest level of effective coordination. Resources and support are augmented by region and state-level coordination as required.
Community and stakeholder engagement	Community and stakeholder engagement is a critical aspect of emergency management across the full spectrum of prevention, preparation, response and recovery. Agencies will engage with the community and stakeholders, which will improve community understanding of these arrangements and promote disaster resilience.
Roles and responsibilities	To implement the comprehensive PPRR approach, roles and responsibilities are allocated to members of the State Emergency Management Committee (SEMC) and its regional and local equivalents. Roles and responsibilities are also allocated to key operations controllers at state, regional and local level and related organisations, agencies and key personnel, including from within local government.

¹⁵ [New South Wales Government 2018, State Emergency Management Plan.](#)

Principle	Detail
Emergency risk management	<p>This is a process that involves dealing with risks to the community arising from hazards. It is a systematic method for identifying, analysing, evaluating and treating emergency risks. Risk treatments include the reduction in frequency or consequence through prevention and mitigation measures, and preparation, as well as provision for response and recovery should an emergency event occur.</p>
Disaster resilience	<p>Disaster resilience is an outcome derived from a sharing of responsibility between all levels of government, business, the non-government sector and the community who then act on this basis before, during and after a disaster. Disaster resilience is significantly increased by active planning and preparation. A shared understanding of the disaster risks at community level is a vital precursor.</p> <p>The benefits of resilience are that agency resources are focused on those most in need or at threat, and conversely that disaster planning and actions during a disaster are more effective because the community, who is in many ways best placed and best informed, is actively engaged in securing itself.</p> <p>The nexus between community and government to achieve resilience will vary, but should as much as possible be through the existing channels that work for each community.</p> <p>Agencies operating under EMPLAN promote disaster resilience by helping to understand and share risk information, by engaging communities in the development of plans and in their exercise, and by supporting the development by communities of local capabilities.</p>

Twenty-five core capability requirements have been identified for the NSW emergency management sector as part of A Capability Development Framework¹⁶. While local water utilities do not require all the capabilities, they are encouraged to consider and develop the relevant ones.

2.4. What makes an emergency

Under the *State Emergency and Rescue Management (SERM) Act 1989* (NSW), the Premier can declare a state of emergency in part of or the whole of the state. The declaration enables powers under the SERM Act, including powers to:

- direct government agencies
- evacuate people
- take safety measures.

Once an emergency has been declared, the requirements for tendering under s55 (1) of the *Local Government Act 1993* do not apply (s55(3)(k)).

¹⁶ [Resilience NSW 2020, A Capability Development Framework for NSW Emergency Management Sector.](#)

Authority to give direction in an emergency

In addition to the requirements for incident and emergency response management, local water utilities should also be aware of legislation that gives ministers or regulators power to act or provide direction in the case of an incident or emergency (Table 3). These directions do not require the declaration of a state of emergency.

Table 3. Acts that give authority to give direction

Act	Authority	Intervention incident type
<i>Dams Safety Act 2015</i>	Dams Safety NSW	Dams Safety NSW may take full charge of a dam in the event that an emergency order is in force for a declared dam.
<i>Local Government Act 1993 (s62)</i>	Minister for Lands and Water	The Minister for Lands and Water may give direction to a council if the minister considers an emergency exists that constitutes a threat to public health or that is likely to cause damage to property. This requires the agreement of the Minister for Health.
<i>Public Health Act 2010 (s16)</i>	Minister for Health	The Minister for Health may act or give a direction they consider necessary to: <ul style="list-style-type: none">a. restrict or prevent the use of unsafe waterb. restore water to a safe condition.

The *Rural Fires Act 1997* allows an officer of the rural fire brigade to access water from a water supply vested in or under the management or control of any water supply, public authority or body. This is relevant to local water utilities to ensure that they can best manage their resources in the case of a fire emergency.

2.5. NSW EMPLAN

The [New South Wales State Emergency Management Plan¹⁷](#) (EMPLAN) provides a coordinated and comprehensive approach to emergency management in NSW. This plan is enabled under the *State Emergency and Rescue Management Act 1989*.

The EMPLAN describes the NSW approach to emergency management, the governance and coordination arrangements and roles and responsibilities of agencies. The plan is supported by hazard-specific subplans and functional area supporting plans.

Combat agencies are nominated for identified hazards, such as fire and flood. They lead the development of the applicable subplan.

Types of emergency operations as identified in the EMPLAN are shown in Table 4.

¹⁷ [New South Wales Government 2018, State Emergency Management Plan.](#)

Table 4. Types of emergency operations¹⁸

Type of emergency operation	Control
Combat agency managed	<ul style="list-style-type: none"> • Combat agency controls operation and may request other agencies or emergency operations controllers to assume responsibility for controlling specific elements • Supporting agencies command own elements and carry out support tasks as directed by combat agency, other agency or emergency operations controller
Operations controlled by emergency operations controllers	Emergency operations controller controls operation and co-ordinates resources. Individual agencies command own resources and carry out tasks as directed.

Functional areas support the combat agencies. They conduct their own planning and preparation. Those relevant to local government water utilities are summarised in Table 5.

Table 5. Functional areas and supporting plans¹⁹

Functional area	Responsible agency	Plan	Purpose
Energy and Utility Services	Office of Energy and Climate Change	Energy and Utilities Services Supporting Plan (EUSPLAN)	Outlines the coordination arrangements for managing severe and sudden disruptions to the supply of energy and utility services due to severe, widespread or unexpected disruptions that require a significant and coordinated response to restore supply.
Engineering Services	Department of Regional NSW, Public Works Advisory	Engineering Services Supporting Plan	Identifies the necessary arrangements at state level to coordinate the mobilisation of all engineering resources available within the state efficiently and effectively for emergency response and initial recovery operations.
Health Services	NSW Health	Health Services Supporting Plan	Details the arrangements for the coordination of health support during an emergency.

¹⁸ [New South Wales Government 2018, State Emergency Management Plan, Annexure 2.](#)

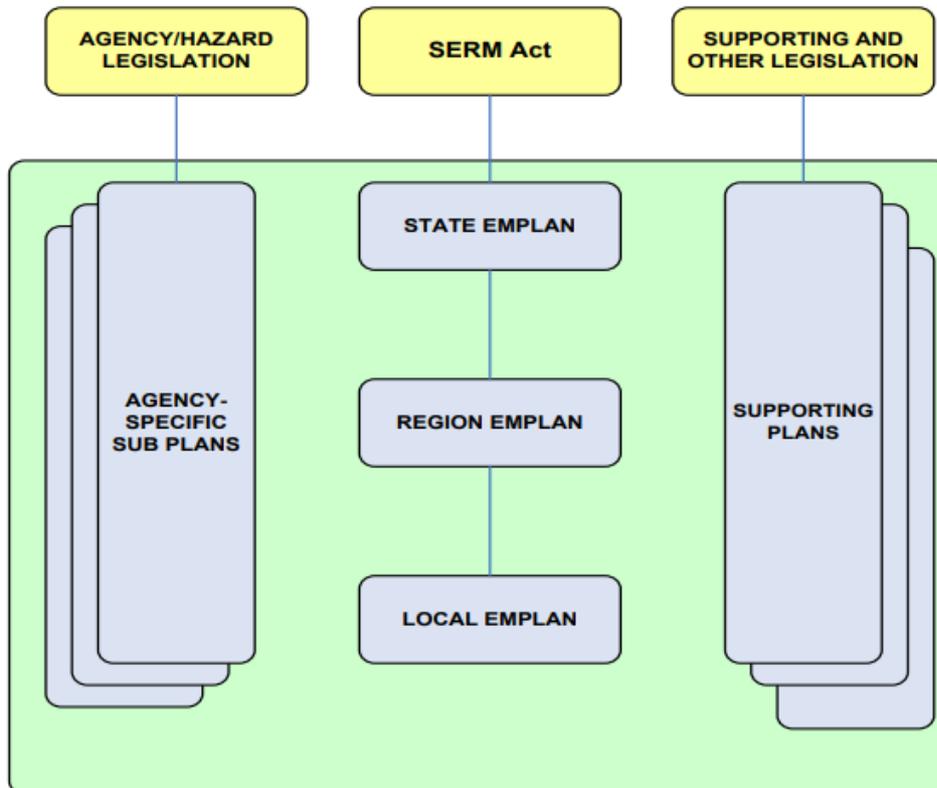
¹⁹ [New South Wales Government 2018, State Emergency Management Plan, Annexure 4.](#)

The state EMPLAN is relevant to local water utilities through 2 pathways:

- the local EMPLAN (for councils) or the Region EMPLAN (for county councils)
- the Energy and Utilities Services Supporting Plan (EUSPLAN)

Under the state EMPLAN, there are regional and local EMPLANs. These plans have an emergency management committee. These relationships are shown in Figure 4 and key roles in the EMPLAN in Table 6.

Figure 4. Relationship between state, regional and local EMPLANs and functional area plans²⁰



²⁰ New South Wales Government 2018, State Emergency Management Plan, figure 2.

Table 6. Key roles in the EMPLAN

Item	State	Region	Local
Emergency operations committee	State Emergency Management Committee	Region Emergency Management Committees (REMC)	Local Emergency Management Committees (LEMC)
Emergency operations controller	Emergency Operation Controllers (EOCON) – Senior executive members of the NSW Police Force	Region Emergency Operations Controller (REOCON) – region commander of police	Local Emergency Operations Controller (LEOCON) - police officer stationed within the local government area
Emergency management officers	n/a	Police provide executive support	Local Emergency Management Officers (LEMOs) from council provide executive support to the LEMC
Chair	Appointed by the Minister for Emergency Services and Resilience	Region Emergency Operations Controller (REOCON) – region commander of police	Council general manager

Local councils can escalate incidents through their Local Emergency Management Committees (LEMC). As county councils may span local government areas, they should escalate through the Region Emergency Management Committees (REMC).

2.6. NSW EUSPLAN

The EUSPLAN is the NSW Energy and Utility Services Functional Area Supporting Plan to the EMPLAN. The NSW Department of Planning and Environment is the agency responsible for coordinating the Energy and Utility Services Functional Area (EUSFA) in an emergency. Under the EUSPLAN there is an Energy and Utility Services Functional Area Coordinator (EUSFAC).

The EUSPLAN recognises that local water utilities are responsible for the management of their infrastructure and seeks to coordinate support to help restore services and utilities if the EMPLAN has been enacted.

2.7. Business continuity planning

Business continuity plans are commonly developed and used by councils to identify and plan for continuity of functions and services during incidents and emergencies. While business continuity plans are not mandatory, many councils have them. They exemplify good risk-management processes within a council. As water and sewerage are essential services, continuity planning for

them (which may be a subplan of a council business continuity plan) can form a key component of council's incident and emergency response plans and processes.

The following guidance is available to support the development and review of a business continuity plan:

- ISO 22301:2019 – Security and Resilience – Business Continuity Management – Requirements: Specifies the structure and requirements for implementing and maintaining a business continuity management system. This includes carrying out, maintaining and improving a system to protect against disruptions, reduce their likelihood, prepare for them, and respond to and recover from them when they arise
- [Business Continuity Management Guidelines, Water Directorate²¹](#): Business continuity plan guidelines and template plans for risk management, emergency and crisis management and business continuity management.

2.8. Incidents and events that utilities manage

Most incidents and events affecting local water utilities will not be severe enough to trigger the establishment of an emergency management committee. They will be managed by the utility. The utility needs to ensure that it has its own processes in place to recognise, manage and/or escalate abnormal operations. The utility should understand:

- the types and complexity of incidents that it can manage
- when it will escalate an incident to bring in external resources (this may be added resources from within council or resources from other utilities)
- when an event is escalated to the LEMC.

A lesson from the 2019 bushfires was that local water utility staff often do not have the same exposure to the LEMC compared to other council infrastructure functions. The facilities maintenance function has day-to-day liaison with Rural Fire Service, State Emergency Service, and other combat agencies where council owns and maintains these facilities, along with an Emergency Operations Centre. There is also usually close liaison between the council roads engineer and the police through traffic management committees.

For the effective management of incident and events, local water utilities should identify communication protocols and triggers for engaging and activating the LEMC. Utility managers should engage with and liaise with the LEMC as a functional area specialist for water supply and sewerage services emergencies.

²¹ [Water Directorate, Business Continuity Management Guidelines, March 2012.](#)

3. Incident planning and response guidance

This section sets out guidance on typical ways a local water utility could meet the following incident management outcomes:

- Appropriate planning and training minimises the scale and duration of incidents and impacts.
- Key individuals exercise their required incident functions during incidents or emergencies.
- Appropriate resourcing, supported by an escalation framework, supports effective incident management.

This section provides guidance on the following activities:

- Preparing incident management plans
- Scope of incident planning
- Incident escalation framework (Incident management structure)
- Communication
- Plan implementation
- Training and incident exercises
- Monitoring and review of planning and preparation
- Incident response and recovery (Incident action planning and Recovery).

3.1. Preparing incident management plans

Outcome: Appropriate planning and training minimises the scale and duration of incidents and impacts.

How to meet this outcome:

- consider and document high-risk events specific to system
- prepare incident management plans that include plans for response activities and tactical and operational planning
- identify and address knowledge gaps.

Local water utilities have a range of obligations to prepare incident management plans. A summary of high-level requirements relevant for incident and emergency plans are included in Appendix A.

Incident management plans should be developed for the water supply and sewerage services that consider the following:

- all-hazards approach (Section 3.1.1)
- scope of incident planning (Section 3.1.2)
- incident escalation framework (Section 3.2)
- incident structure (Section 3.2.2)
- early warning systems (Section 3.3)
- communication protocols and contact lists (Section 3.4)
- activities for plan implementation (Section 3.5)
- training and incident exercises (Section 3.6)
- monitoring and review of planning and preparation (Section 3.7).

Effective plans consider the value of the information in council's existing business management systems, including:

- asset management systems
- hydraulic models
- SCADA and other communication and control systems
- risk management systems
- geographical information system (GIS).

Strategic planning preparedness is covered under the Regulatory and assurance framework for local water utilities²², in the strategic planning outcome area 'Understanding other key risks and challenges', which sets out the expectations for utilities in their strategic planning relating to planning for incidents and emergencies. This includes an outcome to understand the resilience of its

²² Department of Planning and Environment 2022, *Regulatory and assurance framework for local water utilities*, NSW. https://water.nsw.gov.au/_data/assets/pdf_file/0004/518566/regulatory-and-assurance-framework-for-local-water-utilities.pdf

infrastructure and organisation and has identified the events that could affect continuity of service. These assessments should be used to inform the development of tactical and operational incident plans.

Example incident management plan contents for a drinking water supply

Incident and emergency levels

- Escalation framework (incident levels, response level actions and notification requirements)
- Communication protocols (including notification requirements)
- Termination and recovery.

Incident response plans

- Failure of drinking water CCP / critical limit non-conformance
- NSW Health Response Protocol for the Management of Physical and Chemical Quality
- Loss of power at water treatment plant
- Failure of control system at water treatment plant
- Pump station failure
- Flooding

Public notifications (responsibilities, templates and protocols for authorising and issuing a Boil Water or Do Not Drink alert)

- Preparing for an incident or emergency
- Training requirements (level and frequency)
- Document review and update requirements (lessons learnt, training exercise)

Guidelines

Table 7 shows key guidelines for incident management plans.

Table 7. Relevant guidelines

Item	Document reference
General guidance	<ul style="list-style-type: none"> • Australasian Inter-Service Incident Management System (AIIMS)
Disaster and emergency planning	<ul style="list-style-type: none"> • AIDR Handbooks and supporting resources • Australian Institute for Disaster Resilience, Emergency Planning Handbook • Australian Institute for Disaster Resilience, Knowledge-Into-Action brief, The Emergence planning process, • Australian Institute for Disaster Resilience, National Emergency Risk Assessment Guidelines (NERAG) Handbook
Business continuity plans	<ul style="list-style-type: none"> • ISO 22301:2019 – Security and Resilience – Business Continuity Management • NSW Water Directorate Business Continuity Management Guidelines
NSW Health drinking water incident response protocols	<ul style="list-style-type: none"> • Managing pathogen risks in drinking water: response protocol for water utilities and public health units • NSW Health response protocol: for the management of physical and chemical quality
Fluoride incident	<ul style="list-style-type: none"> • New South Wales Code of Practice for Fluoridation of Public Water Supplies
Cyanobacterial (Blue-green algae) bloom/toxins	<ul style="list-style-type: none"> • Regional Algal Coordinating Committee Contingency Plans NSW • Water Directorate Blue Green Algae Management Protocols
Dam Safety Emergency Plans	<ul style="list-style-type: none"> • Dam Safety NSW Guideline - Emergency plans <p>This guideline has information on emergency plans for declared dams. It should help owners of declared dams who are preparing or amending their dam emergency plan</p>
Pollution Incident Response Management Plan	<ul style="list-style-type: none"> • Guideline: Pollution Incident Response Management Plans, EPA

3.1.1. All-hazards approach

Effective planning for all hazards is a key principle of emergency management. Systems which work for one hazard are most likely to work for other hazards. This approach does not, however, prevent the development of specific plans and arrangements for hazards that require specialised approaches. There are areas where management planning is determined by relevant standards and legislation (Appendix A).

An all-hazards approach avoids incident planning gaps that may exist if utilities only prepare legislated plans. This approach may be documented as part of the utility's business continuity planning.

3.1.2. Scope of incident planning

Local water utilities (and their councils) apply a range of risk-management processes. Two examples are:

- drinking water quality risk assessments
- asset criticality assessments.

The department encourages local water utilities to consider plans to address all high-risk (or out-of-risk-appetite) events, regardless of the likelihood.

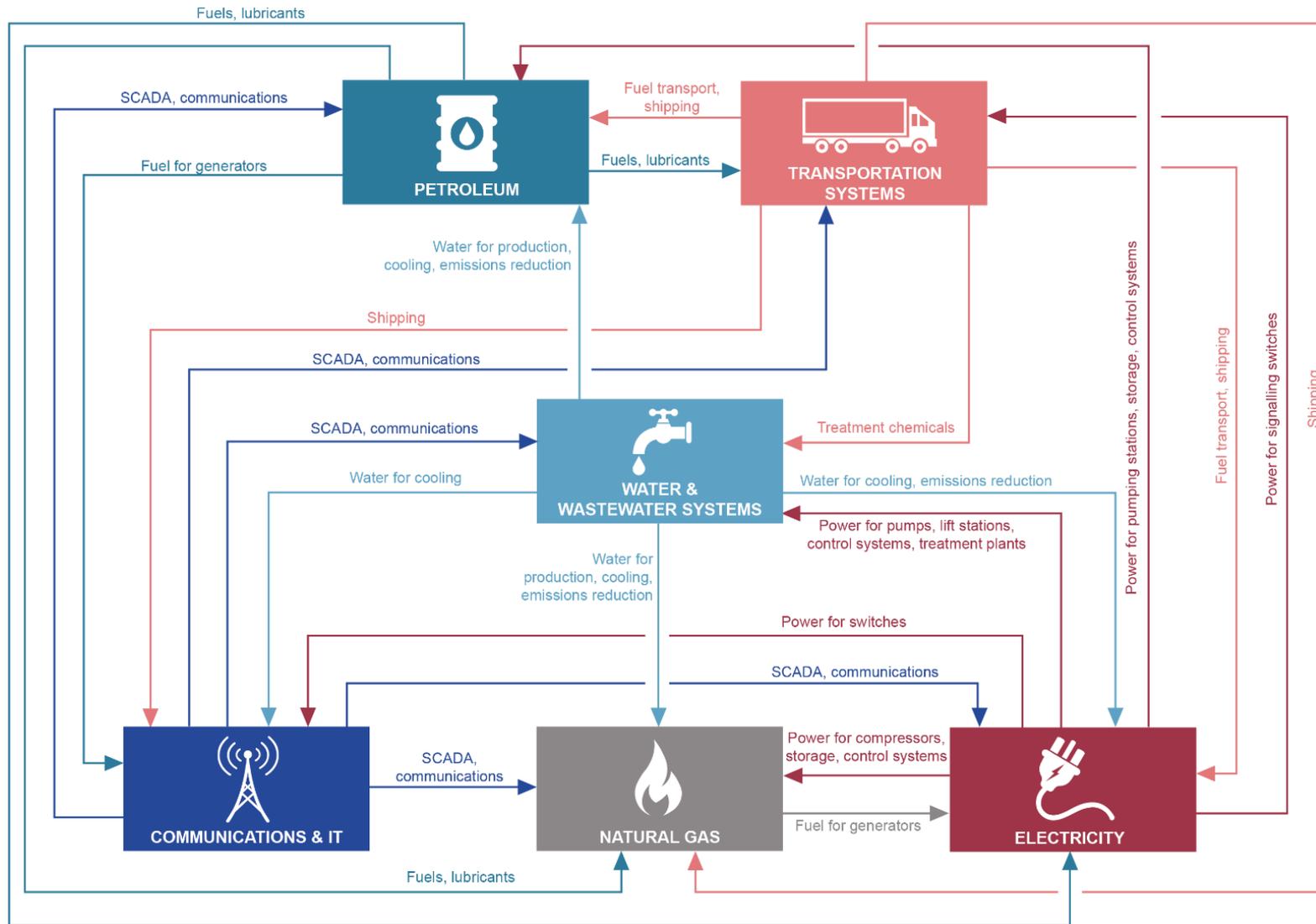
Effective plans consider the extent of options to manage the system, for example:

- avoid a boil water alert (through early warning processes to cease extraction)
- limit the area needing to boil water (through understanding and managing system hydraulics and zoning)
- recover from a boil water alert (by understanding flushing and rechlorination options).

Consider interdependencies

The interdependencies between critical assets means a failure of one element cascades and affects the entire system's resilience. The interdependencies among 6 different infrastructure sectors are illustrated in Figure 5. When planning, identify these interdependencies and the key contacts for these areas. Document this information as part of your communication plan and contact list (see Section 3.4).

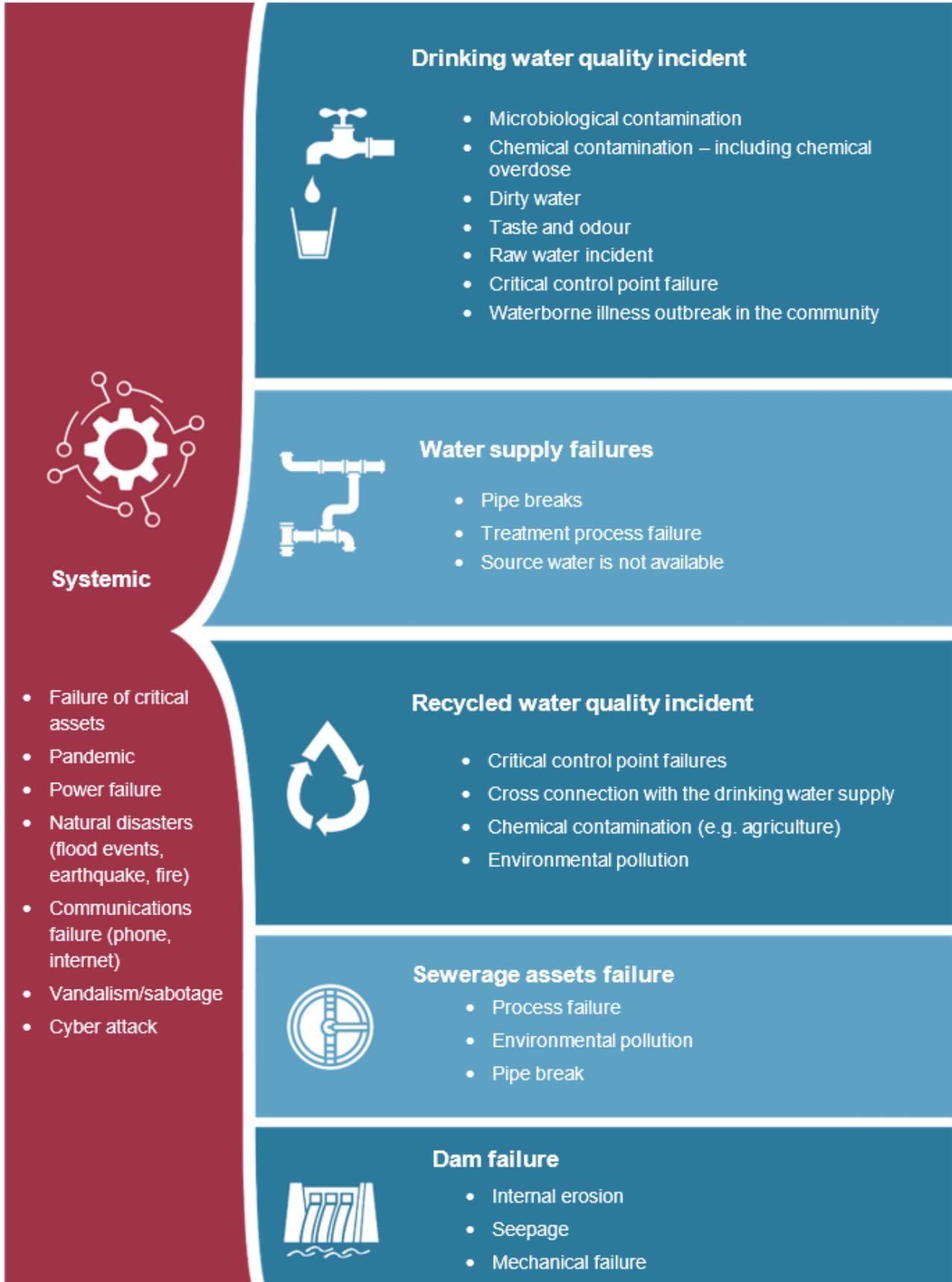
Figure 5. Critical infrastructure interdependencies²³



²³ Adapted from: Verner, D, Petit, F, & Kim, K 2017, 'Incorporating Prioritization in Critical Infrastructure Security and Resilience Programs', Homeland Security Affairs 13, Article 7. <https://www.hsaj.org/articles/14091>

Examples of key incidents to consider are shown in Figure 6.

Figure 6. Key types of incidents for water and sewage systems



3.2. Incident escalation framework

Outcome: Appropriate resourcing, supported by an escalation framework, supports effective incident management.

How to meet this outcome:

- consider and document the processes to classify the incidents and escalate them to the appropriate response levels based on severity
- identify key personnel involved in incident and emergency management. Understand and document roles and responsibilities.

3.2.1. Developing an escalation framework

An escalation framework supports a water utility to respond appropriately to any incident by identifying the severity of the incident and assigning resources appropriately. Pre-defined risk escalation levels allow planning of required actions and the allocation of resources to support the incident response. Increasingly complex incidents require different levels of resources and external support.

An escalation process should be flexible to enable appropriate incident management and resource allocation. An escalation framework should include:

- escalation triggers
- incident management responsibility at each level (incident controller and typical incident management teams)
- resources needed at each level
- how incidents are to be managed when the local water utility is no longer the lead agency
- de-escalation process
- reporting obligations.

Figure 7 and AIIMS (see AIIMS call-out box) identifies 3 levels of incident classification. This guidance proposes 4 escalation levels for local water utility incident management. We have added Level 4 to reflect the change in incident management when a local utility is no longer the lead agency.

Figure 7. Example incident escalation levels

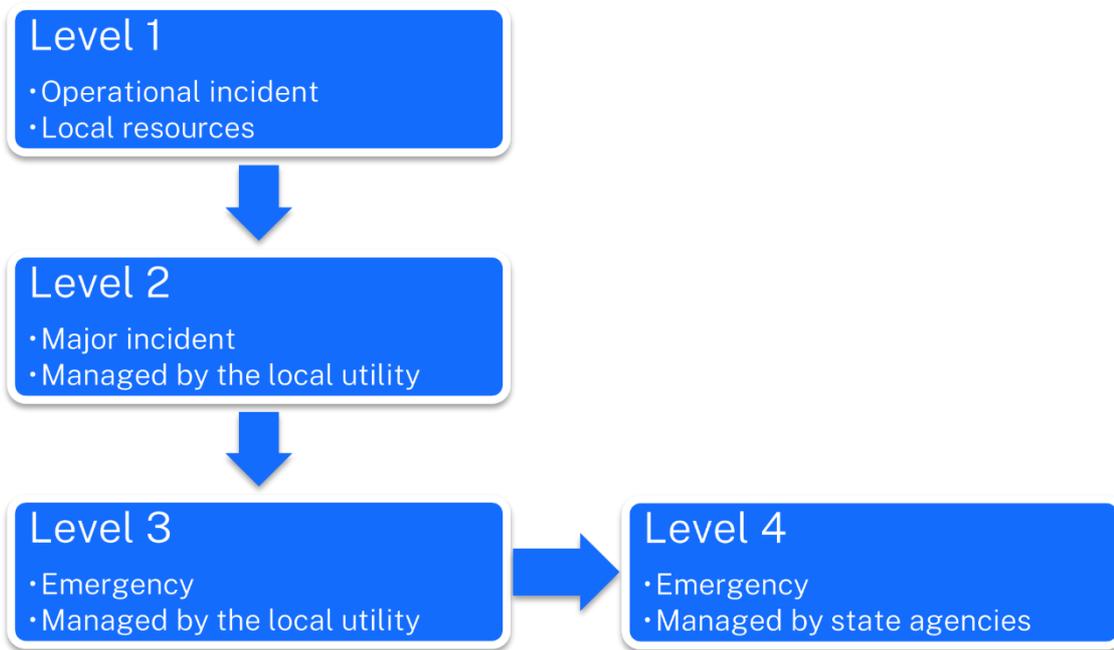


Table 8 shows a typical escalation framework that a utility could use.

Table 8. Description of each response level

Incident level	Resources required	Description
Level 1 – Operational incident	<ul style="list-style-type: none"> Local or initial response resources Establishment of a site controller. 	An operational incident that can be resolved through local or initial response resources. No loss of critical functions.
Level 2 – Major incident	<ul style="list-style-type: none"> Deployment of resources beyond initial response Establishment of incident management team External technical advice (including regulator). 	More complex incident due to size, resources, risk or level of consequence. Loss of critical functions will not exceed the maximum acceptable outage.
Level 3 – Emergency (internally led)	<ul style="list-style-type: none"> Managed by the local water utility through an incident management team and incident control centre External technical advice (including regulator) Multiple resource types. 	<ul style="list-style-type: none"> A serious incident with broad impacts anticipated to have an extended recovery period. Multiple incidents may need to be managed at the same time. Loss of critical functions may exceed maximum acceptable outage times. Regulator’s powers may be invoked – for example, a lightning strike leading to a loss of the local water utility’s critical infrastructure, which affects water supply or quality.
Level 4 – Emergency (externally led)	<ul style="list-style-type: none"> Managed by an external lead agency. Local water utility will still have internal emergency team that feeds into the lead agency Requires more extensive and wide-ranging resources External technical advice (including regulator). 	<ul style="list-style-type: none"> A serious incident where the local water utility is not the lead agency. Significant external support required. Broad impacts anticipated to have an extended recovery period – for example, a flood or bushfire that has damaged the town’s and local water utility’s critical infrastructure. Loss of critical functions will exceed the maximum acceptable outage. Multiple incidents may need to be managed at the same time.

In developing their escalation framework, local water utilities are encouraged to consider the maximum acceptable outage for their water supply and sewerage services and use this, along with a consideration of the population at risk, to determine escalation levels.

Example: Maximum allowable outage for a local water utility²⁴

This example identifies disruption scenarios and defines an associated maximum allowable outage

Disruption scenario	Maximum allowable outage
Failure of water treatment system and disinfection system	2 hours
Failure of reticulation	4 hours
Not enough staff available to carry out services	2 hours
Mains power failure	6 hours
Failure of both the mains power failure and backup generator	2 hours
Loss of control due to telemetry failure	6 hours

3.2.2. Incident management structure

A utility should develop an incident management structure for each incident. Information on incident structure is found in AIIMS.²⁵ The utility should appoint an incident controller who is responsible for managing the activities for the incident.

Roles and responsibilities for incident structures should consider escalation pathways. It is key that all parties, including the mayor, councillors and the executive leadership, management, operations and support teams understand their role and the role of an incident controller to ensure effective emergency management.

Different combinations of tasks can be grouped to form functions required by the incident control team, with AIIMS identifying 8 groupings as the most useful. Table 9 explains these functions.

The incident controller may delegate one or more functions as the scale or complexity of the incident increases. This delegation is flexible and adaptive to the changing situation.

²⁴ Adapted from Narramine Shire Council

²⁵ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria, section 7: Building an Incident Management Structure

Table 9. Incident response functions²⁶

Function	Description
Control	<p>The management of all activities necessary for the resolution of an incident:</p> <ul style="list-style-type: none"> • Takes charge and exercise leadership • Sets and achieves incident objectives • Establishes procedures to identify and manage all risks • Approves the incident action plan • Ensures a safe approach to the management of the incident • Keeps all relevant people, including those in any communities or organisations affected or involved, informed about the incident’s status and potential
Planning	<ul style="list-style-type: none"> • The development of objectives, strategies and plans for the resolution of an incident based on the outcomes of collection and analysis of information • Maintains a resource management system of resources that have been allocated to the incident
Intelligence	The task of collecting and analysing information or data that is recorded and disseminated as intelligence to support decision-making and planning
Public information	Provision of warnings, information, and advice to the public and liaison with the media and affected communities
Operations	The tasking and application of resources to achieve resolution of an incident
Investigation	The task of conducting investigations to determine the cause of an incident and/or determine factors that contributed to the impact of the incident or specific events
Logistics	The acquisition and provision of human and physical resources, facilities, services, and materials to support achievement of incident objectives (While all operational resources are under the control of the Operations function, unserviceable resources are managed by Logistics)
Finance	<p>The task of managing:</p> <ul style="list-style-type: none"> • accounts for purchases of supplies and hire of equipment • insurance and compensation for personnel, property and vehicles • the collection of cost data and provision of cost-effective analyses and providing cost estimates for the incident

As part of the process, utilities should consider where they will get more resources and what the triggers are to do this.

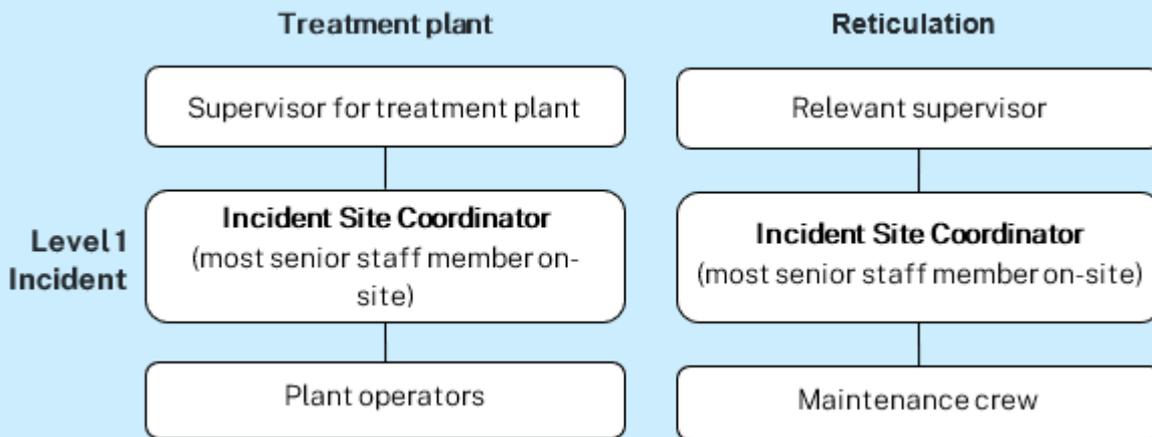
Utilities may escalate an incident to council’s continuity management or critical incident team, which brings council-wide resources to the incident. The mutual aid guidelines may also be enacted to source water and sewerage specialises from unaffected utilities.

²⁶ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria.

Example: Incident organisation structure for a drinking water supply system

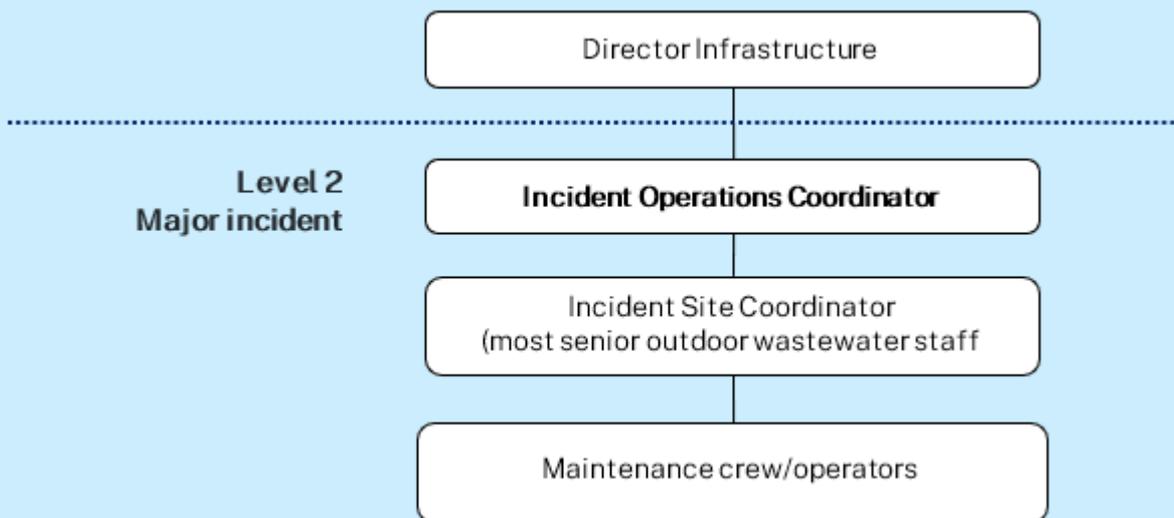
Level 1: Operational incident

Level 1 operational incidents or routine incidents (which occur frequently) are resolved by a maintenance crew or by operators. Level 1 incidents require attention but have little operational effect. An incident site coordinator is responsible for the incident site operation, control and response.



Level 2: Major incident

Incidents are escalated to a Level 2 – major incidents – when initial onsite staff or resources cannot deal with them. Level 2 incidents can be handled with normal operational resources and do not require ongoing management by an emergency response team. The incident operations coordinator is responsible for the incident response.



Level 3: Emergency

A Level 3 Emergency is a serious incident with broad impacts anticipated to have an extended recovery period, requiring coordination by a management team.

Local water utilities, regional alliances, joint organisations and county councils may create cross-organisational plans to manage major situations and cross-border help by providing a consistent approach. See the Orana Water Utilities Alliance Tier 1 BCP below.

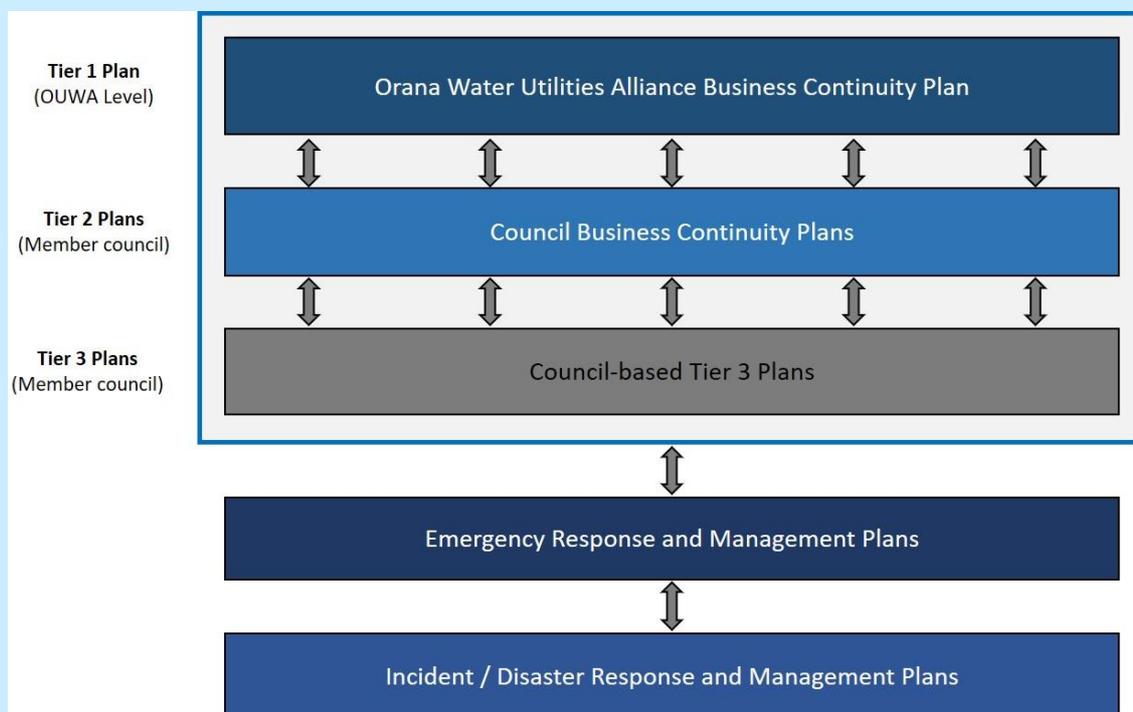
Case study: Orana Water Utility Alliance Business Continuity Plan²⁷

The Orana Water Utility Alliance (OWUA) developed a business continuity plan that spans the member councils. The plan’s objective is to bring together the key decision-makers to re-establish critical business functions as quickly as possible in the event of a major to severe incident (critical incident).

To effectively respond and recover in the event of an incident or event that affects their member council operations, the OWUA has adopted the following components they can activate:

- Critical Incident Response Team Director
- Critical Incident Response Team and associated members
- Business Continuity Management Team
- Local Response Team(s) and associated members
- Recovery Team.

The relationship between the Alliance Business Continuity Plan, council and other plans is illustrated below.



²⁷ Orana Water Utilities Alliance 2021, *Business Continuity Plan*, version 1.0.

3.3. Early warning systems

Outcome: Appropriate planning and training minimises the scale and duration of incidents and impacts.

How to meet this outcome:

- **develop and implement processes, systems and monitoring for managing threats to services.**

Developing processes that provide early warning enables organisations to effectively respond as conditions alter. Developing, documenting and implementing these processes enables utilities to look ahead as conditions change and effectively and efficiently mobilise for incidents and mitigate their impacts.

This may include:

- outlook predictions
- projections.

Outlook predictions

Outlook predictions typically look 3 months ahead. By looking at these predictions, utilities can plan and prepare for upcoming conditions. The Bureau of Meteorology provides outlook predictions for rainfall, temperature and climate influences (including La Niña , El Niño and the Indian Ocean Dipole).

Projections

Utilities can use projections to understand intervention thresholds. The outlook predictions can be combined with water demand projections to determine operational requirements and intervention points, allowing utilities to understand when changes need to be made to their operations.

Projections may be made to understand:

- how long a system can operate without producing water that allows a poor water event to pass the extraction point or when an alternative source needs to be brought online
- when a system may run out of treatment chemicals (see Case study: Alum Shortage).

Alerts and warnings

Processes should be in place to ensure that upstream alerts (such as river gauges, algal alerts or weather warnings) are routinely monitored and acted on by operational staff to enable early response. Relief staff must also understand how to access and act on this information. Many early warnings are missed because relief staff are not aware of information available or the appropriate actions. This may result in avoidable incidents or extend the incident response and recovery.

Case study: Alum shortage

The floods of January 2022 washed out 17 sites across the main East–West rail line. The line was closed while it was being repaired. This closure had a significant effect on the transport of goods across Australia, including the transport of alum produced in Western Australia to the manufacturing site in eastern Australia.

At the time of notification, the length of time for which alum would be unavailable was uncertain. While there were initial predictions that the line may re-open within 12 to 17 days, more rain was predicted that may have hindered the recovery efforts. Even once the track was repaired, the chemical supplier could not predict how quickly the transport backlog would be cleared and they could restart manufacture.

Water utilities were notified of the shortage. Utilities took a range of measures, depending on their situation. These included:

- projecting their alum usage to determine if they had enough chemicals for the predicted outage period
- conducting jar tests to optimise their dosage
- investigate the use of alternative coagulants
- investigating alternative supplies
- reducing dosage at sewage treatment plants to extend supply.

A limited staff resources planning checklist (such as pandemic or shire or regional emergency) is shown in Figure 8.

Figure 8. Resources planning checklist

	<h3>Identify your critical functions</h3>
<p>CRITICAL FUNCTIONS</p>	<p><i>What must keep working to provide continuity of service?</i></p> <ul style="list-style-type: none"><input type="checkbox"/> What are the minimum daily, weekly and monthly operational activities?<input type="checkbox"/> What critical maintenance must be done?<input type="checkbox"/> What maintenance can be deferred?
	<h3>Develop a pandemic operational structure</h3>
<p>STAFFING RESOURCES</p>	<p><i>What is your current structure (planning phase) and what staffing changes (illness or isolation) would trigger a reduced operating ability?</i></p> <ul style="list-style-type: none"><input type="checkbox"/> What are the triggers for moving from one structure to the next and back? How will they be communicated?<input type="checkbox"/> What alternative resources are available?<input type="checkbox"/> What are the familiarisation and training requirements for relief staff?
	<h3>Identify resource gaps and mitigation measures</h3>
<p>RESOURCE GAPS</p>	<ul style="list-style-type: none"><input type="checkbox"/> Critical spares (treatment and monitoring equipment, water reticulation, sewer collection, recycled water assets)<input type="checkbox"/> Key equipment (cars, laptops, access keys)<input type="checkbox"/> Supply chain risks (chemicals, fuel)<input type="checkbox"/> Alternative staff resources<input type="checkbox"/> Key supplier risks (electrical/mechanical support and heavy equipment)
	<h3>Develop a review plan for key operating documentation</h3>
<p>OPERATIONAL DOCUMENTATION</p>	<ul style="list-style-type: none"><input type="checkbox"/> Are your SOPs up to date and suitable for the proposed relief staff?<input type="checkbox"/> Do you have daily checklists suitable for relief staff?<input type="checkbox"/> Do you have a monitoring plan with minimum testing requirements, triggers and actions?<input type="checkbox"/> Are your communications protocols up to date and do you have adequate fall-back channels?<input type="checkbox"/> Are your contingency plans up to date and relevant to the current situation?<input type="checkbox"/> Have relief staff been trained in these plans and procedures?
	<h3>Test and train your staff for remote operation</h3>
<p>TESTING & TRAINING</p>	<ul style="list-style-type: none"><input type="checkbox"/> Remote monitoring systems (for example, SCADA)<input type="checkbox"/> Radios<input type="checkbox"/> Access to corporate networks?

3.4. Communication and stakeholder awareness

Outcome: Key individuals exercise their required incident functions during incidents or emergencies.

How to meet this outcome:

- maintain current contact lists for individuals to be contacted when responding to incidents and emergencies
- develop communication protocols for incidents with roles and responsibilities identified
- prepare templates for public communication.

Stakeholder awareness

Effective planning requires communication and consultation with communities and stakeholders, include identifying those stakeholders who need to be aware of incident management plans. Arrangement should be formalised for those stakeholders who need to be informed that an incident management plan has been activated and of the actions that they need to take²⁸.

We recommend formalising in an incident management plan how the community and stakeholders access information once the plan has been activated.

A utility may need to develop strategies that consider the diverse approaches needed for stakeholder communication. Groups that may need to be considered include²⁹:

- disability sector
- culturally and linguistically diverse sector
- business sector
- tourism sector
- residential sector
- aged care sector
- people experiencing homelessness.

It may be appropriate to make incident management plans available to the community and stakeholders.³⁰

²⁸ Australian Institute for Disaster Resilience 2020, *Emergency Planning Handbook*, 2nd edn.

²⁹ Australian Institute for Disaster Resilience 2020, *Emergency Planning Handbook*, 2nd edn.

³⁰ Australian Institute for Disaster Resilience 2020, *Emergency Planning Handbook*, 2nd edn.

Public information

Preparation of templates and identification of mechanism for public communications should be developed as part of incident management planning. Planning should consider how information is shared when there is no power, or staff are isolated due to bushfires or flooding events.

Templates for [boil water alert communications](#) are available on the NSW Health website.

Vulnerable community sites should be noted as key areas for inclusion in emergency management communication documentation, where residents are less able to cope with the consequences of failure of services. This may include keeping records of dialysis patients, hospitals, aged care homes and schools contact information.

Contact list

A key part of communicating during an incident is being able to contact relevant people, organisations and stakeholders. Insufficient, out-of-date or incorrect details may result in required actions or reliant plans not being enacted in an incident in a timely matter. This may lead to incident escalation or may extend the recovery time of the incident.

Local water utilities have regulatory requirements to maintain emergency contact lists. A summary of high-level requirements for emergency contact lists are included in Appendix A.

It is recommended that emergency management contact lists (or an equivalent process) also identify the individuals that may be required to be seconded, act in a combat agency or emergency coordination roles, or volunteer during disasters. This can assist local water utilities to better plan resourcing and maintain or recover services promptly³¹.

Roles in communication

Formalise communication responsibilities during an incident to ensure clear and effective communications (staff, senior executive, councillors and mayor).

Roles and responsibilities may include:

- incident and operational team roles
- those responsible for preparedness programs
- internal notifications
- media, community and business notifications and liaisons
- related organisations with capability and capacity to provide specific services (including internal responsibilities for communications).

To ensure clear communication pathway are maintained, adoption of a policy position on management and communications during incident events may be considered by council.

³¹ Auditor-General for New South Wales, *Local government business and service continuity arrangements for natural disasters*, The Audit Office of New South Wales.

Case study – Incident management and public communication during a boil water alert

Dubbo Regional Council's incident response for a boil water alert impacting Dubbo in 2022 was managed by council's Continuity Management Team (CMT). The CMT is made up of senior executives with other roles brought in as required, dependent on the nature of the incident. The CMT was already in place at the time of the incident, in response to the COVID 19 pandemic and previous flooding events. This resulted in an effective response process and clearly understood roles.

What worked well:

- good constant level of communication with all branches in council
- regular communications and upfront on issues with customers (business and users)
- online communications of zoned approach to lifting the boil water alert (interactive map)
- critical customers spreadsheet already in place
- early drafting of webpage and development of frequently asked questions
- automatic recording on phone line, directed residents to website and reduced the number of calls to be answered
- interagency meetings (consistency of people attending the meetings)
- brought in technical expertise from external consultants
- appropriate incident procedures were already in place (boil water/do not drink procedure)
- system knowledge was key in determining a plan for lifting the boil water alert.

3.5. Plan implementation

Outcome: Appropriate planning and training minimises the scale and duration of incidents and impacts.

How to meet this outcome:

- **implement activities in incident and emergency management plans.**

It is not enough to develop incident management plans; it is the plan's implementation that makes it useful.

It is important that the plan is understood, and the arrangements are effective. Plan implementation activities include:

- ensuring the plan is accessible (across a range of situation such as power failure, lack of communications)
- communicating the emergency plan with the stakeholders and the community
- communicating the emergency plan to relevant staff
- developing procedures, contracts, checklists, action cards
- training staff in emergency plans and procedures
- exercising the plan
- ensuring that capabilities and capacities identified in the emergency plan are available
- asset maintenance
- stockpiling or restocking emergency supplies – for example, treatment chemicals, critical spares, personal protective equipment.

Bushfire case studies

Eurobodalla Shire Council

During the 2019 bushfires, the raw water pump stations in Eurobodalla Shire Council were threatened. If these pump stations had burnt down, the utility would have been unable to extract from the rivers, significantly hampering the firefighting effort.

Communication between council and the Rural Fire Service were essential to protecting the pumps and managing this interdependency

Clarence Valley Council

Due to power fluctuations during the 2019 bushfires, the circuit breakers for Clarence Valley Council's raw water pumps at Shannon Creek Dam tripped. Access to the area was closed due to bushfires and it was 48 hours before the area was deemed safe to enter. The Rural Fire Service then escorted council staff to the dam to reset the breakers.

Council had a backup generator available but given the restricted access to site, they would have been unable to re-supply fuel. The Rural Fire Service was defending the pump station and was within 15 to 20 metres of the generator. Fuel on site would likely have made the situation worse.

Understanding how the information in these systems can support incident management during the planning and preparation phases allows for a more effective response both within the utility and when sharing information with stakeholders.

3.6. Training and incident exercises

Outcome: Appropriate planning and training minimises the scale and duration of incidents and impacts.

How to meet this outcome:

- annually test incident plans through exercises or drills (documented with attendance of key individuals)
- implement a formal incident training program.

Undertaking training, through exercising incident plans is integral to the preparation of personnel to carry out their functions during incidents and emergencies³².

Incident management training programs should:

- ensures employees are knowledgeable of their roles and responsibilities.
- ensures that employees are knowledgeable of procedures to affect a safe and appropriate response to incidents and emergencies.

Training on the plans should be conducted to help determine what works and what does not so that revisions can be made accordingly.

Training is recommended for staff at all levels involved in emergency management. Incident management awareness training based on AIIMS is recommended, including for the executive management of councils, the mayor and councillors to ensure during incidents that incident response teams can function efficiently and effectively.

Training may include:

- **Orientation sessions:** basic instructions and explanation of incident plans and procedures
- **Desktop incident exercises:** Where employees are presented with a fabricated incident or emergency. They verbally respond to a series of questions and evaluate whether their response matches the incident plans.
- **Functional exercises:** designed to simulate a real incident or emergency.
- **Full-scale drills:** Emergency response personnel and equipment are mobilised and moved to a scene. A problem is presented to the response personnel, and they respond as directed by the incident plans and response coordinator at the scene.

The *Australian National Disaster Resilience Handbook Collection, Managing Exercises*³³ provides guidance and further styles of exercises dependent on capability and exercise aims.

- It is recommended that training and testing of plans (as a desktop incident exercise or higher) occurs every 12 months. Evaluate the effectiveness of the exercise as part of the training.

³² Australian Institute for Disaster Resilience 2017, *Australian Disaster Resilience Handbook 3: Managing Exercises*, CC BY-NC.

³³ Australian Institute for Disaster Resilience 2017, *Australian Disaster Resilience Handbook 3: Managing Exercises*, CC BY-NC.

Conducting an incident exercise³⁴

- define the incident exercise aim and objectives
- determine the scope and style of the exercise
- prepare documentation
- appoint an exercise team
- facilitation of exercise (or incident debrief)
- evaluate the effectiveness of the incident
- document the outcomes of the exercise.

The exercise team should be appropriate to the scope of the exercise:

- managerial and operational staff (relief staff should be involved as well as the substantive position)
- EMPLAN representatives (such as LEMO, LEOCON, REOCON as appropriate)
- regulators
- other key stakeholders as appropriate.

Training and testing of the plan should be undertaken across all areas. Each exercise may focus on one or multiple areas (refer to Figure 9).

Figure 9. Example incident exercise scope covering multiple areas



³⁴ Adapted from Australian Institute for Disaster Resilience 2017, *Australian Disaster Resilience Handbook 3: Managing Exercises*, CC BY-NC.

Key guidelines relating to training and exercise of incident plans are summarised in Table 10.

Table 10. Training and incident exercise guidelines and key references

Plan	Guidance document reference
Emergency management training	<p>Emergency management training NSW Government</p> <p>Resilience NSW provides free (including to state and local government) emergency management training programs under the direction of the State Emergency Management Committee (both online and classroom-based courses)</p> <p>Also includes accredited training (PUAEMR013 Design and management exercises and PUAEMR011 Manage and evaluate emergency management exercises)</p>
Training in Australasian Inter-Service Incident Management System (AIIMS)	<p>22459VIC Course in Australasian Inter-service Incident Management System</p> <p>Course in Awareness of AIIMS</p> <p>22459VIC Course in the Australasian Inter-Service Incident Management System (AIIMS) – delivered by TAFE</p>
Incident exercises	<p>Managing Exercises, Australian Disaster Resilience Handbook Collection, Handbook 3 (Australian Institute for Disaster Resilience, 2012)</p> <p>Provides guidance on the design, planning, conducting and evaluation of exercises</p>
Pollution Incident Response Management Plan	<p>Guideline: Pollution Incident Response Management Plans</p> <p>Includes requirements and guidance on staff training (section 2.3.10) and testing of the PIRMP (section 2.2.3)</p>
Dam Emergency Plan	<p>Guideline – Emergency plans</p> <p>Includes requirements for emergency exercises</p>

Example exercise scenarios for use by local water utilities are shown in Table 11.

Table 11. Example incidents to test each plan

Plan	Example scenarios
Drinking water incident plans	<ul style="list-style-type: none"> • A critical limit has been exceeded at a critical control point (CCP) for pathogenic risk • Reservoir contamination by vermin • Microbial and chemical contamination in the reticulation (backflow from industrial site)
Recycled water incident plans	<ul style="list-style-type: none"> • Failure of off-specification bypass leads to contamination event • Chemical underdose or overdose leading to treatment failure
PIRMP	<ul style="list-style-type: none"> • Sewer overflows • Chemical spill (STP/WTP) • Power failure (sewer pump station) • System infiltration with stormwater (sewage treatment plant)

3.7. Monitoring and review of planning and preparation

Outcome: Appropriate planning and training minimises the scale and duration of incidents and impacts.

How to meet this outcome:

- review incident plans incorporating outcomes of testing exercises and training
- include monitoring and review requirements and appropriate document control in incident management plans.

A failure to have current emergency management documentation may lead to incident escalation or extend the recovery time of the incident.

Risk events identified as part of the planning process may change over time, including identification of emerging risk events, or changes in magnitude or frequency. These changes may result in adjusting priorities and management strategies. As a result, incident plans need to be regularly reviewed and updated.

Incident plans also need ongoing monitoring and review to ensure that they reflect current arrangements and any lessons learnt or opportunities for improvement are incorporated. The monitoring and review process should be documented in the incident management plan³⁵.

- incorporating lessons learnt from training exercises and incidents

³⁵ Australian Institute for Disaster Resilience 2020, *Emergency Planning Handbook*, 2nd edn.

-
- ensuring identified arrangements are operating effectively and have not changed over time
 - accounting for changes in the context of the risk assessment
 - incorporating the impact of emerging risks.

As part of the planning process, a timeline for monitoring and reviewing the outcomes of the process need to be programmed and the responsibilities defined.

Incident plans should also document:

- who is responsible for its review
- review cycle
- document control with a register of amendments.

3.8. Incident response and recovery

A key component of any successful response to an incident or emergency is effective planning, supported by appropriate team structures, processes, support tools and skills sets. Incident action planning is the fundamental responsibility of the incident controller (supported by their team).

The incident controller and the incident management team will need to:

- build a picture of what has happened, what is happening, and what is likely to happen
- decide what needs to be done, and how
- prepare a plan that captures those decisions
- gather the necessary resources
- implement the plan and monitor its progress
- keep people and organisations informed of all these actions
- maintain records of their deliberations and decisions
- manage environmental impacts and consequences of the response effort
- initiate and support relief and recovery efforts for affected communities.

These activities rarely occur in a sequence. The initial response may occur in a chaotic environment particularly due to an unexpected event or one that rapidly escalates in size and complexity³⁶.

3.8.1. Incident action planning

Incident action planning is a process that is central to the application of AIIMS. After consideration of all known factors affecting the incident, an incident action plan is developed to manage the incident and is used as a tool to communicate the incident objectives.

An incident action plan may be provided in the form of a simple verbal briefing for small, short duration incident, or as a comprehensive document for larger, protracted incidents.

³⁶ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria.

The primary purpose of an incident action plan is to document the strategies of the incident controller, and to inform others in the incident management structure what is required of them to bring about a resolution of the incident.

The function of an incident action plan is to:

- specify the overall incident objectives and strategies and the incident controller's intent
- identify key threats and risk exposures (including the impact on the community and the environment)
- establish continuity of command and control
- ensure effective use of resources
- identify anticipated resources needed.

Any incident action plan must be flexible and adaptable to the changing circumstances of an incident. It should anticipate what may happen in the future.

These plans can be mental, written (outline), or written (full), but whatever form they take, an assessment of the situation must be undertaken, and the objectives for the resolution of the incident must be determined and communicated. At a short-direction, routine Level 1 incident, a written plan may be unnecessary and in the early stages of a rapidly escalating incident it may be challenging to prepare a written plan. Where it is apparent that the incident will not be controlled rapidly it is important to move from a mental plan to a written (outline) plan as soon as practical. A documented plan makes it easier to track multiple resources and to confirm that incident objectives and strategies remain current and appropriate. A written plan also provides a valuable resource for briefings, transfers of control and post-incident analysis and review³⁷.

AIIMS³⁸ Chapter 8 provides further guidance on developing incident action plans.

Record keeping and incident logs

The incident controller, and those personnel within the incident management structure must ensure that records of decisions and actions taken to resolve the incident are maintained for subsequent shifts and later review. This should occur regardless of the size or duration of the incident, and regardless of where a person operates within that structure.

³⁷ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria.

³⁸ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System*, AFAC Ltd, East Melbourne, Victoria, Chapter 8.

3.8.2. Recovery

Recovery is the process of supporting individuals and communities affected by incidents to achieve an effective level of functioning. The [UN Sendia Framework](#)³⁹, endorsed by the Australian Government, incorporate the idea that improved resilience is an outcome of recovery (build back better).

Information on relief and recovery activities be found in AIIIMS⁴⁰, including responsibilities and consideration for the incident management team.

The extent of recovery will depend on the level and type of incident, with Level 1 and 2 may not have significant recovery components.

³⁹ United Nations 2015, Sendai Framework for Disaster Risk Reduction 2015-2030, 18 March, Sendai, Japan.

⁴⁰ Australasian Fire and Emergency Service Authorities Council 2017, *The Australasian Inter-Service Incident Management System* (Chapter 10), AFAC Ltd, East Melbourne, Victoria.

4. Post-incident reporting and learning guidance

This section sets out guidance on typical ways a local water utility could meet the following incident management outcome:

- Utilities meet statutory requirements for reporting incidents and use learnings to inform future incident management.

This section provides guidance on the following activities:

- Reporting
- Incident review and lessons learnt process (Root causes analysis guidance, and Guidelines).

4.1. Reporting

Outcome: Utilities meet statutory requirements for reporting incidents and use learnings to inform future incident management.

How to meet this outcome:

- document the processes for reporting of incidents to relevant authorities.

Local water utilities have requirements for reporting of incidents across their functional areas under applicable legislation. A summary of high-level requirements relevant to notifications of incidents and emergencies are included in Appendix A. Notifications can include regulatory authorities, employees and end users. Processes and forms should be developed to ensure notifications to appropriate people are undertaken in the event of an incident.

4.2. Incident review and lessons learnt process

Outcome: Utilities meet statutory requirements for reporting incidents and use learnings to inform future incident management.

How to meet this outcome:

- document how lessons learnt from incidents are incorporated into incident management plans
- following any incident or emergency, undertake an investigation/debrief with all involved staff, discuss performance and address any issues or concerns
- review and update incident plans with lessons learnt
- train staff on the updated plans.

Learning lessons from incidents leads to improved operational effectiveness, reduced operational risk and increased cost efficiency. Effective debriefs or incident reviews should feed information into the lesson management process, including review and update of incident plans. An incident plan should document how lessons learnt from incidents inform and are used in the review of the emergency⁴¹.

There are different methods of incident review that can be utilised. Incident investigations are a systematic process to find the root causes of problems. Incident reviews should be undertaken for all incident levels, with the scope of the review appropriate to the incident level and type. For example, an incident debrief can be appropriate to the event.

4.2.1. Root causes analysis guidance

Root cause analysis is a systematic process that identifies factors that contributed to an incident event⁴².

Root causes must satisfy the following criteria:

- is a basic cause
- is systemic (for example, design, operation, maintenance, training and procedures). A root cause does not relate to the actions of an individual person
- can be reasonably identified or detected
- can be controlled to prevent or minimise the likelihood of future events.

A root cause does **not** include:

- actions taken by individual people
- symptoms of the event

⁴¹ Australian Institute for Disaster Resilience 2020, *Lessons Management Handbook*, 2nd edn.

⁴² IEC 62740:2015 Root Cause Analysis (RCA).

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- environmental conditions
 - conditions that cannot be identified or measured
 - conditions that cannot be controlled
 - conditions inherent in doing business (that is, producing drinking water).

There are several root cause analysis techniques that can be utilised (refer to the IEC 62740:2015 Root Cause Analysis Standard). Example techniques include:

- the 'why' method: guides the analysis through the causal chain by asking the question 'why'.
- fishbone or Ishikawa diagram: helps identify, analyse and present the possible causes of an event, illustrating the relationship between the event and the factors that may influence it
- Failure Mode and Effects Analysis (FMEA)
- fault tree analysis: displayed graphically in a logic tree diagram.

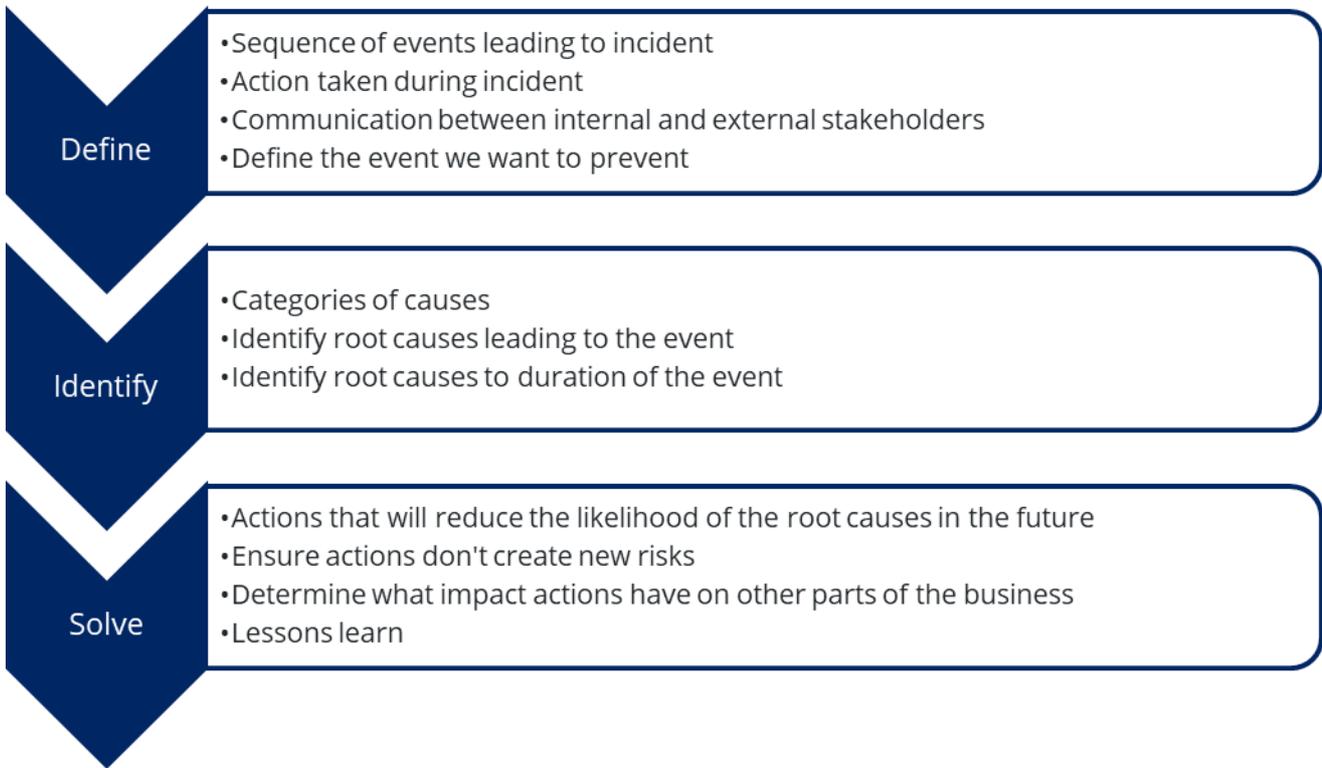
Conducting a root cause analysis⁴³

- **Initiation:** Define the purpose and scope of the analysis
- **Establish facts:** Collect data and establish the facts of what happened, where, when and by whom
- **Analysis:** Use root cause analysis tools and techniques to ascertain how and why the event occurred
- **Validation:** Distinguish and resolve the different possibilities as to how and why the event
- **Presentation of results:** Document the outcomes of the analysis

⁴³ IEC 62740:2015 Root Cause Analysis (RCA).

An example debrief workshop process is shown in Figure 10.

Figure 10. Example incident root cause analysis workshop process



4.2.2. Guidelines

Guidelines relevant to incident review and lessons learnt are shown in Table 12.

Table 12. Relevant guidelines

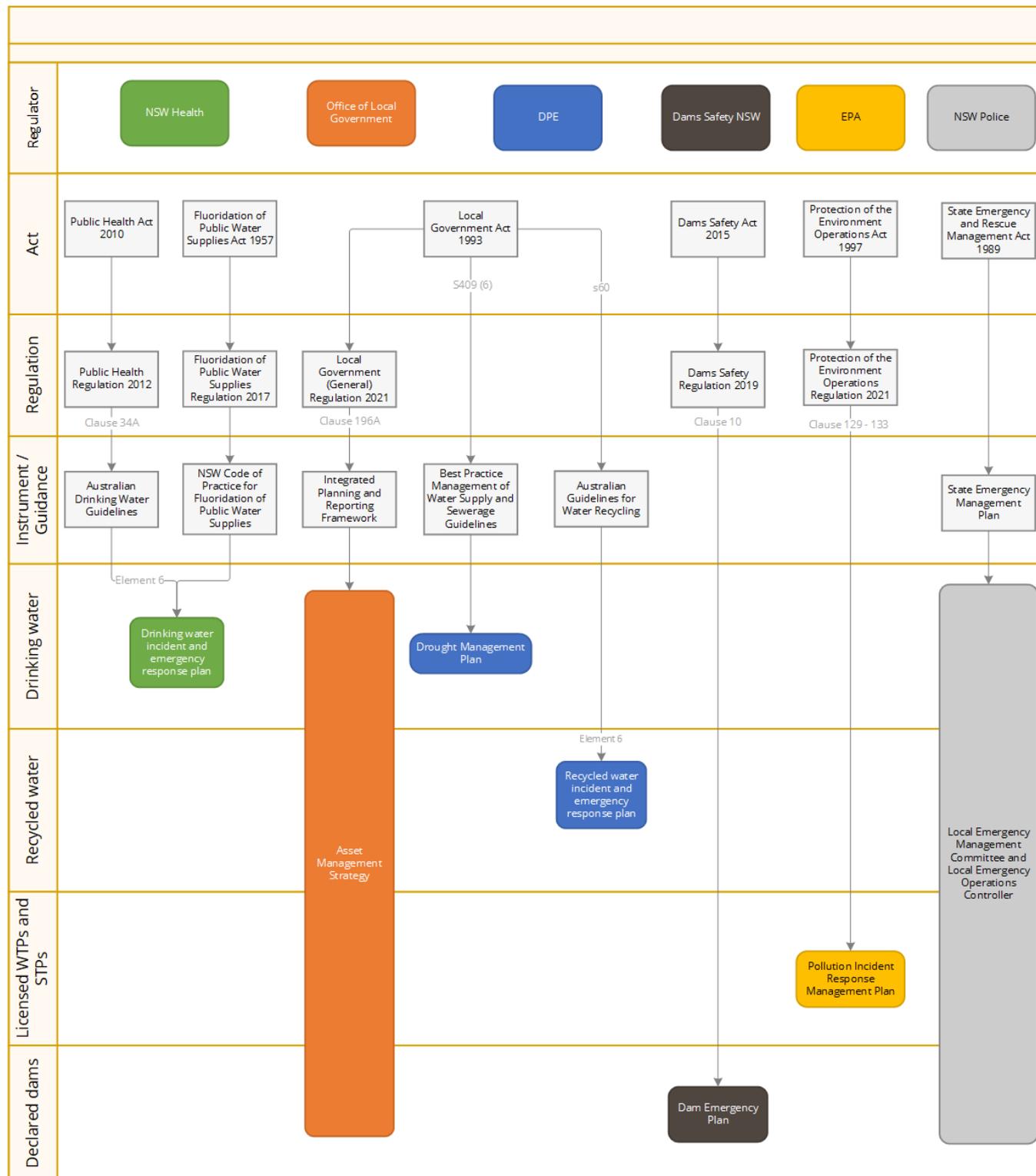
Item	Document reference
Root cause analysis	<ul style="list-style-type: none"> • Standard: IEC 62740:2015 Root Cause Analysis (RCA) Includes descriptions of root cause analysis techniques
Lessons management	<ul style="list-style-type: none"> • Australian Disaster Resilience Handbook Collection, Lessons Management • Australian Disaster Resilience Handbook Collection, Companion Document, Lessons Management Models and Example
Writing Good Observations	<ul style="list-style-type: none"> • Resilience NSW. Writing Good Observations: The building blocks for lessons management

Appendix A Regulatory context

A.1. Regulatory context

Incident and emergency response for local water utilities is currently covered by several legislative acts and regulations. These acts, their relevant regulations and/or guidance and other acts relevant to local water utilities have been depicted in Figure 11 along with details of any regulations or guidelines that help in informing the specific requirements of the act.

Figure 11. Environmental scan of local water utility incident and emergency planning obligations



A.2. Existing requirements

There are 7 NSW Acts and regulations that include requirements for local water utilities relating to incident and emergency management:

- *Dams Safety Act 2015* and *Dams Safety Regulation 2019*
- *Fluoridation of Public Water Supplies Act 1957*
- *Local Government Act 1993* and *Local Government (General) Regulation 2021*
- *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations Regulation 2021*
- *Public Health Act 2010* and *Public Health Regulation 2022*
- *Rural Fires Act 1997*
- *State Emergency and Rescue Management Act 1989* and [State Emergency Management Plan 2018](#).

The Minister for Lands and Water also has authority under section 62 of the *Local Government Act 1993* to direct local water utilities to take action during an emergency. This power requires concurrence of the Minister for Health.

Key legislative requirements have been classified into the following categories (Table 13):

- *incident and emergency response plans*: any overarching plans required to be developed to address incident and emergency response.
- *risk assessment*: assessment of threats to a local water utility's system that could lead to an incident or emergency. This assessment includes the identification and assessment of existing or proposed controls.
- *training and testing*: training and testing for staff on the implementation of IERPs.
- *reporting and communication*: requirement to have a system in place for reporting of incidents or communication with relevant stakeholders in the case of an emergency.
- *incident management committee*: a committee required to be organised and maintained with the responsibility of incident and emergency preparation, prevention, response and recovery.

Table 13. Incident and emergency response requirements by Act

Act	Incident and emergency response plans	Risk assessment	Training and testing	Reporting and communication	Incident management committee
Dams Safety Act & Dams Safety Regulation	Yes	Yes	n/a	Yes	n/a
Fluoridation of Public Water Supplies Act	Yes	Yes	n/a	Yes	n/a
Local Government Act	Yes	n/a	Yes	Yes	n/a
Protection of the Environment Operations Act & Protection of the Environment Operations Regulations	Yes	Yes	Yes	Yes	n/a
Public Health Act and Public Health Regulation	Yes	Yes	Yes	Yes	n/a
State Emergency and Rescue Management Act	Yes	n/a	Yes	n/a	Yes

A.3. Declared dams (Dams Safety Act and Regulation)

Area	Requirement
Incident and emergency response plans	<ul style="list-style-type: none"> • All declared dams must have an emergency plan. Details of what should be included in an emergency plan are prescribed in the Dams Safety Regulation (clause 10). • Emergency plan is to be routinely reviewed (at least annually to ensure contact details are up to date) and updated every 5 years. • The emergency plan must be updated within 30 days following: <ul style="list-style-type: none"> – a change to the consequence category of the dam – a significant change, since the consequence category of the dam was last determined, to the number of persons who would be put at risk if there were to be a failure of the dam – a change to the emergency management arrangements – an incident.
Contact list	<ul style="list-style-type: none"> • Annual review of contact details to ensure that a change to the contact details of a person responsible for exercising functions in the event of an emergency is updated as soon as practicable after the change.
Incident testing and training	<ul style="list-style-type: none"> • Exercises must be undertaken every 3 years with staff involved in the operation of the dam. Practical emergency exercises to be undertaken for high and extreme consequence dams every 5 years (that includes emergency agencies). • The <i>Guideline - Emergency Plans</i> states that good practice would also include an annual seminar, or ‘run-through’ of emergency procedures, with key onsite staff to help familiarise them with emergency systems and procedures and measures for emergency preparedness.
Notifications	<ul style="list-style-type: none"> • Reporting of incidents in relations to Dams, to Dam Safety NSW as specified under Clause 19 of the <i>Dam Safety Regulation 2019</i> (clause 19)

A.4. Drinking water supplies (Public Health Act and Regulation)

Area	Requirement
Incident and emergency response plans	<ul style="list-style-type: none">• Drinking water suppliers must have a quality assurance program that includes processes for managing incidents and emergencies. Details of what processes should be included is prescribed in the Public Health Regulation (clause 34B(e)).• Identification of the types of incidents and emergencies that may occur and that would require management.• Develop procedures to be followed during an emergency (including communication procedures).• Investigate any incidents or emergencies and revise protocols as necessary (this requirement is specified in the Australian Drinking Water Guidelines Framework Element 6).
Contact list	<ul style="list-style-type: none">• Document contact details (including name, business name and telephone number) of who should be contacted in an emergency relating to drinking water quality.
Incident testing and training	<ul style="list-style-type: none">• Regular testing of emergency response plan.• Training employees in incident and response plan.
Notifications	<ul style="list-style-type: none">• Document processes to inform the community of any incidents.

A.5. Fluoridated water supplies (Fluoridation of Public Water Supplies Act, Regulation and Code of Practice)

Area	Requirement
Incident and emergency response plans	<ul style="list-style-type: none">• Any over or under dosing incidents are quickly identified and effectively managed to minimise any impact on consumers (Code of Practice s10.3).• Develop an emergency response plan to minimise (or preferably prevent) fluoride concentrations over 1.5 mg/L reaching consumers in the event of an overdosing incident. The response plan should form part of the utility's overall emergency management strategy and plans and must include liaison with the local Public Health Unit.
Risk assessment	<ul style="list-style-type: none">• Conduct and maintain a site-specific environmental hazard risk assessment for fluoride (Code of Practice 7.1.1).
Waste disposal plan	<ul style="list-style-type: none">• Prepare and document a waste disposal plan for fluoridating agent (Code of Practice 7.1.1).
Notifications	<ul style="list-style-type: none">• Overdosing incidents are managed and reported to NSW Health (Code of Practice Form 5 - incident notification form).

A.6. Recycled water systems (Local Government Act)

Area	Requirement
Incident and emergency response plans	<p>Develop a recycled water management system in line with the AGWR Framework (Local Government Act s 60 approval):</p> <ul style="list-style-type: none"> • Develop incident and emergency response protocols in consultation with relevant authorities (this requirement is specified in the AGWR Framework). • Define communication protocols with regulators. • Investigate any incidents or emergencies and revise protocols as necessary.
Incident testing and training	<ul style="list-style-type: none"> • Train employees and regularly test emergency response plans (this requirement is specified in the AGWR Framework).
Notifications	<p>In line with requirements specified in the AGWR Framework:</p> <ul style="list-style-type: none"> • Develop a public and media communication strategy. • Train designated contact. • Inform employees and recycled water end users during an incident and at the end of an incident.

A.7. Licensed sewage treatment plants and water treatment plants (Protection of the Environment Operations Act and Regulation)

Area	Requirement
Incident and emergency response plans	<ul style="list-style-type: none"> • Develop and maintain a Pollution Incident Response Management Plan (PIRMP). • Assessment of hazards and pre-emptive action taken to minimise risk.
Incident testing and training	<ul style="list-style-type: none"> • PIRMP is to be routinely tested at least every 12 months. • PIRMP is to be tested within one month of a pollution incident occurring in the course of an activity to which the license relates.
Chemical register	<ul style="list-style-type: none"> • The PIRMP is to include an inventory of potential pollutants.
Contact details	<ul style="list-style-type: none"> • The PIRMP is to include contact details for key individuals.
Notifications	<ul style="list-style-type: none"> • Duty to notify the relevant authorities of pollution incidents.

A.8. State Emergency and Rescue Management Act

Area	Requirement
Emergency committee	<ul style="list-style-type: none">• Establish LEMC with council representatives as prescribed in the State Emergency and Rescue Management Act (section 28).
Incident testing and training	<ul style="list-style-type: none">• The LEMC may recommend and assist in the coordination of training in relation to emergency management in the local government area (section 29).• The LEMC may develop, conduct and evaluate local emergency management training exercises (section 29).
Incident and emergency response plans	<ul style="list-style-type: none">• The LEMC is responsible for the preparation and review of plans in relation to the prevention of, preparation for, response to and recovery from emergencies in the local government area (section 29).
Government response activities	<ul style="list-style-type: none">• Minister is responsible for coordinating the government response activities necessary to respond to an emergency.