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Chapter 4:
Prevention and mitigation

4. Prevention and mitigation

Key points

- Reducing disaster risks through prevention and mitigation measures is everybody's business.

- Prevention aims to decrease or remove the negative consequences of hazards.

- Mitigation seeks to minimise the impact and consequences of an emergency.

- Prevention and mitigation activities are a shared responsibility – everybody has a role in the community.

- Land owners' decisions and actions are often key to reducing risks. They play key roles in prevention and mitigation actions for their own benefit, and for the broader safety of their communities.

- Hazard reduction activities and priorities should be informed by risk. Risk is the product of likelihood and consequences of an event.

4.1   Overview

Hazard and risk are related. Untreated, a hazard may increase the likelihood and consequence of an event (risk). Risk management processes can be guided by relevant industry standards.

Prevention measures seek to eliminate the impact of hazards and/or reduce susceptibility to them. Mitigation measures accept that the event will occur and seek to reduce the inevitable impact by both:

* physical means (e.g. flood levees); and
* increasing the resilience of the community that may be impacted by those hazards through education and awareness.

Governments, non-government organisations, businesses, communities and individuals must undertake prevention and mitigation activities and strategies.

The *Tasmanian Disaster Resilience Strategy 2020–2025* strongly emphasises:

* Risk reduction (prevention) is a shared responsibility.
* The need to focus more on reducing risks to reduce response and recovery impacts.

These arrangements outline key responsibilities relating to all parts of the PPRR phases.

While the State Government has the lead role for response and recovery, plus whole-of-jurisdictional and emergency management sector preparedness, all parties have shared responsibilities especially in prevention, mitigation, and risk reduction.

* Government agencies, businesses and other organisations are responsible for prevention, risk mitigation and preparedness as part of their day-to-day functions within the scope of their responsibilities.
* Individuals and households play key roles in reducing their risks through prevention, mitigation and preparedness decisions and actions.
* Governments at all levels and non-government

organisations support individuals and other organisations to reduce their risks.

Examples of whole-of-community prevention and mitigation strategies include:

* cybersecurity policies, procedures and standards to protect critical information and infrastructure;
* hazard-specific control programs, such as building flood levees, bushfire mitigation programs and installation of automatic sprinkler systems;
* land-use planning and building controls in legislation and regulations, construction and infrastructure design standards and codes;
* quarantine and border control measures;
* public health strategies;
* community education and awareness;
* hazardous material safety/security initiatives;
* critical infrastructure protection;
* resilience programs;
* crowded places strategy;
* ensuring access to publicly available geologic and topographic mapping and earthquake and tsunami monitoring services; and
* implementing specific hazard/risk and research studies.

Examples of organisations' prevention and mitigation strategies include:

* business continuity plans and contingency planning; and
* building and other facilities' risk management.

Individuals' and households' prevention and mitigation strategies include:

* considering risk when making major purchases; and
* home maintenance and insurances.

TEMA Table 10 outlines prevention and mitigation Management Authorities. The functional responsibilities listed in TEMA Table 11 are not exhaustive.

Figure 4: Summary of prevention/mitigation processes
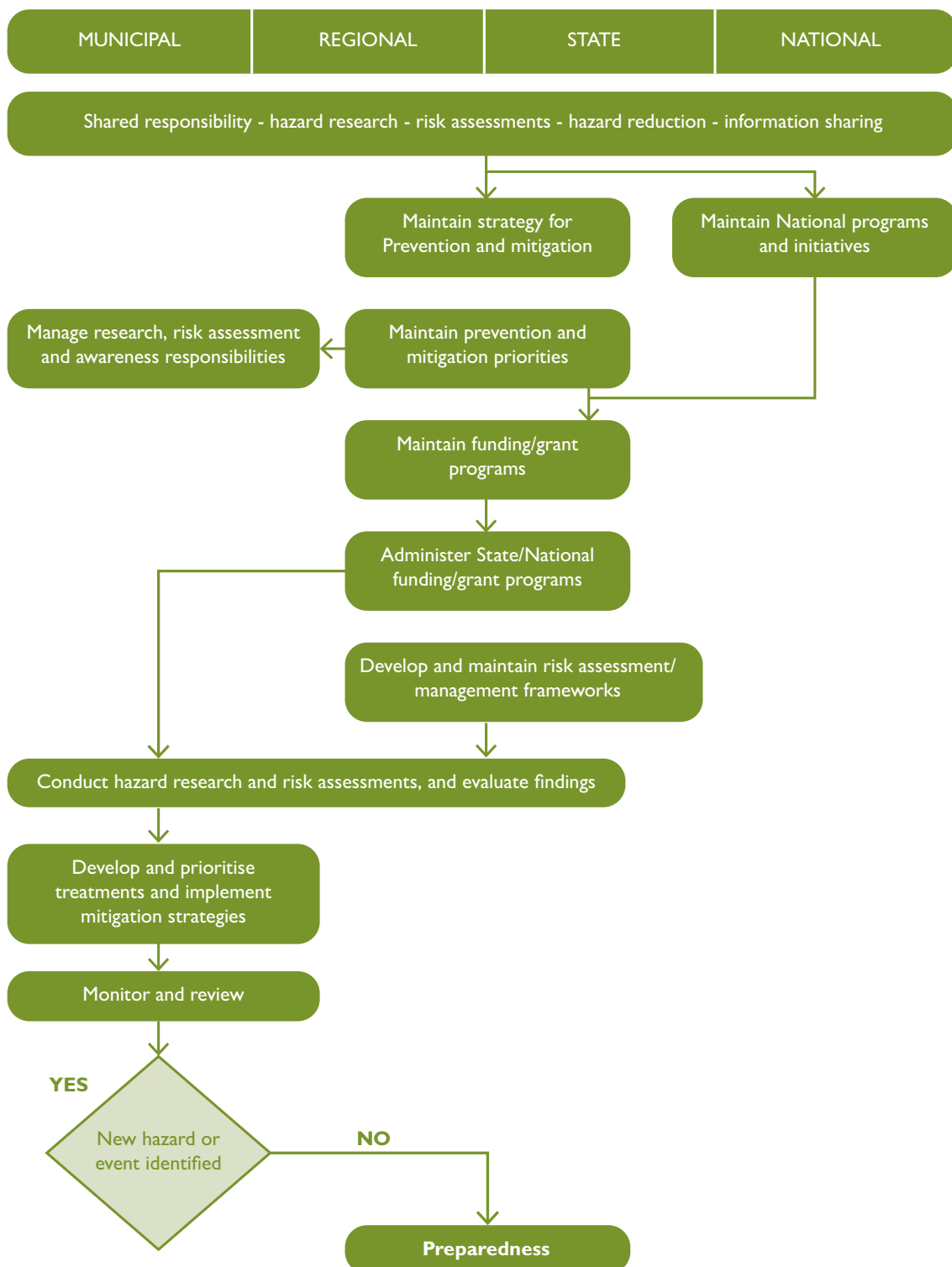
4.2   Risk Assessment

The *2016 Tasmanian State Natural Disaster Risk Assessment* (TSNDRA) provides an understanding and awareness of the natural hazard-based and other risks that have the most potential to impact the State. The TSNDRA is a key driver of emergency management strategy and requires review every four years to capture emerging risks or threats. The 2020 TSNDRA will include non-natural hazards such as cybersecurity.

The TSNDRA includes the risk register and risk treatment options, together with the accompanying hazard summary report. Stakeholders and practitioners throughout the Tasmanian emergency management sector use the TSNDRA to inform emergency management planning.

Management Authorities responsible for prevention and mitigation functions must ensure that processes are in place to provide specialist advice to support hazard-specific risk assessments in Tasmania.

At the municipal level, emergency risk assessment processes are used to understand and maintain awareness of local hazards, the risk they pose to the community and to help Municipal Councils to prioritise risk treatment strategies when setting their work programs.

Preparedness Management Authorities apply it when reviewing their arrangements and updating their risk-based plans.

All facilities/building managers, critical infrastructure providers, agencies and businesses do, or should, have risk assessment and management as part of their normal business.

Risk assessment and risk management activities are completed in line with processes set out in:

- *Tasmanian Emergency Risk Assessment Guidelines* (TERAG) 2017;
- *National Emergency Risk Assessment Guidelines* (NERAG) 2015; and
- Current national/international standards (AS/NZS ISO31000:2018 Risk Management Principles and Guidelines).

4.3   Risk Management

The identification and implementation of risk treatments, controls or mitigation strategies occurs after emergency risk assessments. Risk reduction strategies may be categorised in a number of ways and summarised as:

- levels of autonomy (e.g. behavioural, procedural and physical controls);
- nature of control (e.g. process or physical); and
- life-cycle phases (e.g. PPRR, operational phases/ elements).

Once risk assessments are validated and accepted, relevant stakeholders manage programs and projects to treat those risks. Management Authorities for prevention and mitigation and/or the relevant SEMC Hazard Advisory Agencies report the outcomes of the programs and projects through the emergency management governance framework.

4.4   Current Themes in Prevention and Mitigation

Current research and risk assessment themes in Tasmania include:

- climate change impacts on frequency and intensity of flooding and bushfire;
- cybersecurity;
- protection of critical infrastructure and crowded places;
- cascading and concurrent events;
- flooding;
- land stability and debris flow;
- storm surge and coastal erosion;
- bushfire;
- pandemic influenza;
- heatwave; and
- tsunami.

Current themes in risk treatment focus include:

- business continuity management;
- physical prevention works and activities;

- building capacity; and
- land-use planning reforms.

Business continuity planning and management is critical, especially during a protracted emergency event. Planning for emergencies will help to protect and prepare businesses.

4.4.1 Business continuity planning

A business continuity plan should include four parts:

1. Know your disaster risk: assess the risks to the business.
2. Get ready: prepare the business and staff for emergencies.
3. Take action: the business owner/operator to know what to do during an emergency.
4. Re-assess, recover and learn: track recovery after a disaster.

For further information and guidance, see the Tasmanian Government Business Tasmania website.

4.4.2 Mitigation strategies

Building capability and capacity is an important mitigation strategy. This includes developing skill and knowledge sets, and tangible resources related to:

- plan management, equipment and infrastructure enhancements;
- developing and/or maintaining tangible assets and/or resources (e.g. stockpiles, hazard-specific response equipment and deployable kits); and
- risk management, project management and business system integration, community education and awareness programs (e.g. psychological first aid).

Tasmania's strategic and statutory land-use planning instruments, along with building controls, include a range of prevention and mitigation strategies that can be used by State and local planning authorities to reduce communities' exposure to emergencies resulting from natural hazards. The intent of this approach is to deliver long-term community safety outcomes and, by either requiring a greater consideration of the hazard for new development or strategically changing settlement patterns, to minimise the risks (financial, infrastructure, cultural) to the community.

While climate change is not in itself classified as a hazard, it is predicted to contribute to global sea level rise and to increase the frequency and intensity of natural hazard events. Incorporating consideration of climate change in the land-use planning system helps to mitigate impacts associated with climate change. A range of complementary initiatives for achieving an integrated approach is currently being undertaken, including:

- The Tasmanian Planning Scheme and Tasmanian Building Codes implements hazard policy for coastal erosion and coastal inundation, landslip and bushfire prone areas by incorporating state-wide mapping and coordinated statutory controls in land-use planning.
- The upcoming consultation and development of the Tasmanian planning policies.
- State-wide sea level rise planning allowances based on the IPCC 5 – RCAP 8.5 emissions scenario.
- The *Climate Change (State Action) Act 2008.*
- Climate Action 21: Tasmania's Climate Change Action Plan.
- State Coastal Policy 1996;
- Implementation guidelines for risk in planning schemes;
- Commonwealth-funded grant programs;
- Regional Planning Initiative;
- Standard Schedules Project; and
- Tasmanian Emergency Management Spatial Information System Project.