

Understanding flood emergency planning risks

Speed read

- Flood risk is the result of a combination of flood hazard, exposure, vulnerability and capacity.
- The flood emergency planning process is supported by risk analysis to understand flood emergency management risks.
- The flood emergency planning process considers sources of flood risk information, information on flooding behaviour and impacts, analysis of elements at risk of flooding, community vulnerability to flooding and local knowledge.

Key points

Produce information to inform flood emergency plans from flood studies and plans. Information found during the flood study will help to establish flood emergency response classifications. Flood studies often look at:

- types and sources of flooding than could happen
- shape and extent of the floodplain
- stream characteristics or coastline characteristics
- bridges, embankments or other flow-restricting structures
- location and nature of any mitigation or control works
- location and description of any dams
- sources of floodwaters (sub-catchment contributions)
- tidal conditions at the time of the onset and peak of the flood and the impact of tidal fluctuations on river flood conditions
- analysis of available data to identify causes of floods
- typical ground and floor levels of properties.

Interactive spatial mapping can present and analyse flood risk by integrating various spatial data sources that assess flood hazard, exposure and vulnerability. Flood intelligence records can summarise flooding consequences and predictive insights that inform strategies and trigger levels.

Understand exposure to flooding. Exposures include people, communities, settlements, the environment, infrastructure and the economy. Specific considerations include:

- current and future land use and zoning
- impact and severity of flooding, including extent and flood heights
- collation of data on possible flood consequences:
 - the number, type and location of properties flooded (and to what depths)
 - whether the residents were surrounded by water or experienced access difficulties at various gauge heights
 - the length of time the communities are likely to be isolated, together with estimates of likely needs for evacuation or resupply
 - number and location of potential evacuees
 - the extent to which essential infrastructure, services, or buildings are vulnerable and any compounding cascading impacts
 - any indirect consequences to the community
 - any environmental consequences
 - number of casualties or deaths recorded in past events
 - the threshold flood frequency which results in community isolation
 - prior preparation (or lack thereof) in past events.

Understand vulnerability and capacity by:

1. Engaging infrastructure operators to understand the vulnerability of essential infrastructure such as gas, electricity, water, telecommunications, transport.
2. Establishing a community profile to identify risks, strengths and vulnerabilities. This should occur with involvement from the community.

Communities can be vulnerable to flooding because of:

- where they live in relation to essential and emergency services and evacuation routes
- variations in personal characteristics and systemic vulnerabilities (e.g. age, disability, language, access to information and services, socio-economic factors, personal and social relationships).

Note the needs of essential services, buildings with a high proportion of vulnerable occupants and institutions in flood-prone areas e.g. schools, nursing homes, senior citizens' centres, hospitals, childcare centres, animal holding establishments, caravan parks, hostels, libraries, art galleries, museums, jails, sporting facilities, supermarkets, banks, business districts and industrial areas.

Local communities can provide valuable information to inform decision making. Local knowledge such as river levels, levee conditions and historical flood behaviour. Consider documenting the establishment of pathways and networks for local knowledge to be captured and included in decision making before, during and after a flood.

Take action

Use example of flood intelligence record in Appendix B of *Flood Emergency Planning* (AIDR 2021)

More information

- [Flood Emergency Planning for Disaster Resilience](#) (AIDR 2020)
- [Community Engagement for Disaster Resilience](#) (AIDR 2020)
- [Land Use Planning for Disaster Resilient Communities](#) (AIDR 2020)
- [Managing the Floodplain, Guideline 2: Flood emergency response classification of the floodplain](#) (AIDR 2017).
- Specific resources for disability inclusive disaster risk reduction can be found at: <https://collaborating4inclusion.org/disability-inclusive-disaster-risk-reduction/>