

Emergency Waste Management Plan Template

Background

There have been a range of situations in Western Australia where recovery efforts have been hampered by challenges associated with emergency waste management. Ineffective emergency waste management has the potential to significantly delay recovery efforts, present a considerable risk to human health and the environment and increase the costs of recovery. Effective planning for waste likely to be generated by emergency events can assist in addressing this issue. This plan helps local governments to think through, at a high level, the likely types of waste that could be generated and consequent considerations and management options to explore.

1. Hazards and waste types

- *For each of the pairings, choose one that is most relevant to your Local Government.*
- *Once identified, outline what associated types of waste you might expect to see (Appendix 1 and 2 can be used to cross reference and verify)*

Hazard	Associated types of waste
1. Fire OR Cyclone	1.
2. Air crash OR Collapse	2.
3. Animal & plant biosecurity OR Human epidemic	3.
4. Flood OR Marine oil pollution	4.

Source of Information: Appendix 1 and 2, Local Emergency Management Risk Assessment Profile and DFES District Emergency Management Advisors.

Rationale: The type of hazard can influence the type, variety and amount of waste generated in broad terms – e.g. flood = widespread green waste, fire = localised construction and demolition waste.

Example

Hazard	Associated types of waste
1. Fire OR Cyclone	1. <i>Specific areas: hazardous, construction and demolition, scrap metal General – C&D, scrap metal In vegetation – limited waste generation, minimal impact, clearing paths only.</i>

2. Understanding and mapping your environment

Built functional area

- *Against these facility types, identify key structures present in your Local Government.*
- *What specific risks do they present for waste management?*

Facility type	Key Structures	Waste-related Risk
Local Government <input type="checkbox"/> Admin/Civic centre <input type="checkbox"/> Library <input type="checkbox"/> Aquatic centre <input type="checkbox"/> Recreation centre <input type="checkbox"/> Theatre <input type="checkbox"/> Sporting facilities <input type="checkbox"/> Childcare <input type="checkbox"/> Operations depot <input type="checkbox"/> Waste facility <input type="checkbox"/> Airport <input type="checkbox"/> Commercial properties		
Roads/bridges		
Schools		
Hospitals		
Prisons		
Police stations		
Fire stations		
Waste facilities		
Public housing		
Private Residential		
Commercial / Industrial <input type="checkbox"/> Petrol stations <input type="checkbox"/> Power stations <input type="checkbox"/> Water pump stations <input type="checkbox"/> Gas pipeline booster stations <input type="checkbox"/> Chemical/industrial processing plant <input type="checkbox"/> Port operations <input type="checkbox"/> Freight handling operations <input type="checkbox"/> Wastewater treatment plant <input type="checkbox"/> Abattoir <input type="checkbox"/> Wind farm <input type="checkbox"/> Solar farm		
Other Government facilities		

Source of information: Local Government Asbestos Register, DWER Prescribed Premises Licence search & Australian Business Registry, Local Emergency Management Committee (LEMC) and Local Government Infrastructure Team, Bushfire management plan.

Rationale: This helps to determine specific waste-related risks (including hazardous risks) of key built infrastructure in the Local Government.

Example

Facility type	Key structures	Waste-related Risk
Commercial / Industrial	2 x Petrol Stations 1 x Agricultural business	Licensed facilities, businesses with chemicals or processing hazardous material.
Hospital	1 x large regional hospital 1 x small doctor surgery with onside treatment	Medical waste
Local Government	1 x Admin Centre 1 x Civic Centre 1 x Aquatic centre	Asbestos (year of construction) and chemicals

Environment functional area

- Identify vegetation complexes in the Local Government.
- What specific risk do they present for waste management?

Reserve ownership	Key Areas	Waste-related Risk
Local Government		
State Government		
Shared ownership with traditional owners		
Private		

Source of Information: Local Government records, urban forest mapping, local knowledge, Aboriginal Cultural heritage register, Landgate online aerial photography etc.

Rationale: This helps to estimate quantity of green waste, and to identify the likelihood of subsequent impacts on road access and required resources to clear public areas and road reserves in recovery.

Example

Facility type	Key structures	Waste-related Risk
Local Government	Public Park x 4	Clearing trees for access to open space
State Government	National park	Clearing trails, access routes, removing damaged signage
Private	Mostly farming land, no special requirements any issues managed by owners.	

3. Predicting waste

- What amount and type of waste are likely to be generated by emergency events?
- Working with three of your selected hazards from Section 1, use the waste calculator to forecast approximate amounts for a chosen severity of emergency, e.g. Fire with 30 residential houses lost.

Note: when entering data into the waste calculator, it is better to overestimate than underestimate amounts.

Hazard & scenario	Amount/type of waste

Source of Information: Section 1 (type of hazard), Section 2 (key structures) and waste calculator.

Rationale: This approach provides the Local Government with an opportunity to road test the waste calculator for potential scenarios, gaining insights on how much waste is likely to be generated. This information can guide decisions on how the Local Government handles the waste and any subsequent actions, including when they need to seek external assistance in handling necessary logistics.

Example

Hazard & scenario	Associated types of waste
1. <i>Small fire, destroys 30 houses</i>	5 tonnes / 4,000 cubic metres of concrete, bricks, fittings, roof tiles, plasterboard, metal and timber. 129 kgs / 32 cubic metres of building content including furniture, carpets and electrical goods.
2. <i>Light aircraft crash, destroys 3 houses, 1 shed, 1 convenience store (10 x 10 m x 3m) and 100m of two lane local road.</i>	<i>Residential building 509 kg / 408 cubic metres of building material, 12.9 kg / 3.2 cubic metres of building content.</i> <i>Convenience store 59 tonnes / 99 cubic metres.</i> <i>Road 1021 tonnes / 518 cubic metres of asphalt and sub base.</i>
2. <i>Large animal biosecurity outbreak, with 250 head of cattle needing to be put down.</i>	188 tonnes / 375 cubic metre of carcasses.

4. Special or unique considerations for your Local Government

- *What are limiting factors / issues for your Local Government?*

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Source of Information: LEMA and local knowledge.

Rationale: to identify anything which, above and beyond, will influence the response and access to emergency waste management options.

Example: limited seasonal accessibility, remoteness, limited access (e.g. one way in / out), densely populated industrial zones.

Example

Kimberley Floods

The Kimberley floods severely impacted landfill access and waste management:

- **Impassable Roads:** Floodwaters made roads to the landfill impassable, necessitating a temporary waste holding area. There was one way in and one way out of the landfill.
- **Bridge Cut-off:** Homes east of town couldn't have waste picked up by the local government due to a cut-off bridge. Neighbouring Local Governments had to step in, making over 250km trips each way.
- **Landfill Capacity:** The landfill was nearing capacity before the event. The increased waste from the floods would have caused it to reach capacity, leading to waste diversion.

These challenges required significant coordination and interim solutions to manage the waste effectively.

5. Staff Capacity and Local Government Equipment

- *What is the level of staff experience, knowledge and capacity to deal with emergency waste?*
- *What equipment, at a broad level, does the Local Government have which could deal with extra waste generated?*

Staff knowledge/capacity – current number of staff and their capacity	
Equipment – what type of equipment does the Local Government have which could help with managing waste.	

Source of Information: Human Resources section of Local Government, LEMA, assets register and direct discussion with staff/contractors.

Rationale: Mapping the broad capacity of the Local Government to respond, or when they will need external assistance (and the type/amount of assistance). If surrounding Local Governments are not as well resourced, consider convening a joint committee to assist in managing the event. This could include sharing resources between councils and having in place preplanned solutions to local problems.

Example

Staff knowledge/capacity – current number of staff and their capacity	8 staff at landfill, 20 plus in P&G and works team – all competent in machinery
Equipment – what type of equipment does the Local Government have which could help with managing waste.	Array of loaders, compactors, graders, backhoes, earthmoving equipment Hook lift trucks, prime movers

6. Recovery/Disposal Options

- *What are the current recovery/disposal options in the Local Government or Region?*
- *What is the current capacity of contractors and waste facilities and how could this be scaled up in an emergency?*
- *Which scenarios, from Section 3, could the contractor/facilities deal with?*
- *Are there types of waste that could not be handled locally?*
- *Are there potential waste materials which will require special conditions for local disposal e.g. asbestos?*
- *Will these waste types require external assistance or additional communication to residents?*

Recovery / disposal options	Capacity – current / future	Scenario
<input type="checkbox"/> Waste contractors <input type="checkbox"/> Local Government landfill <input type="checkbox"/> Private Sector landfill <input type="checkbox"/> Waste Water facility		

Temporary waste sorting/transfer locations

Type of space	Location	Licence requirement	When to use
<input type="checkbox"/> Hardstand <input type="checkbox"/> Warehouse/shed <input type="checkbox"/> Oval/public open space	<i>Eg Hardstand at Shire depot</i>	<i>Eg interim amendment to facility licence</i>	<i>Eg Sorting and temporary storage of C&D waste before recovery or disposal</i>

Source of Information: DWER Prescribed Premises Licence search, Controlled Waste Tracking System and Australian Business Registry, Guidance on establishing temporary storage/sorting sites.

Rationale: mapping out what solutions are available will provide the Local Government an understanding of when they will be able to manage waste locally, and when external solutions will be required. For any emergency waste management solutions where the Local Government does not have operational control, direct engagement with providers will be required to ensure they have capacity and capability to take material; ideally an agreement will be in place with the provider – outlining terms and conditions for use of the facility, waste type, amount and form required for acceptance.

Example

Recovery / disposal options	Capacity – current / future	Scenario
<i>Local Governments landfill</i>	<i>Landfill Regulated, max 5,000 tonnes per annum – currently taking 1,000 tonnes. Small asbestos pit – very limited capacity.</i>	<i>Small and potentially medium – but would mean no capacity for anything else that year. Would have to consider alternative site for asbestos as could not deal with anything more than 1 house.</i>

7. Governance

- Who needs to know about what? What are the key roles in your Local Government, what is their responsibility and how are they linked into the Emergency Management structure?

Role	Responsibility / link to EM Structure

Rationale: Ensuring clear roles and responsibilities and lines of communication is essential. In emergency events the usual reporting lines / processes and structures are likely to be different, therefore it is essential to have these mapped.

Example

Role	Responsibility / link to EM Structure
Manager Environment and Waste (or equivalent)	Responsible for implementing Emergency Waste Management plan
Executive Management Team	EMT convene and set up working group with appropriate manager responsible
Emergency Management Team	Link into DFES etc, coordinate with agencies
Manager Health Rangers and Emergency Services	Provide updates to exec team, responsible for implementing plan
Manager Finance/Procurement	Advise on and approve preferred suppliers/fast track procurement process

8. Communications

- What is your communications plan / material for waste management?
- Can you pre-draft emergency guidance for the community?
- Should there be specific messaging for vulnerable members of the community? E.g. advising how to handle asbestos, and where you can dispose (including advice not to mix hazardous materials into the FOGO system).
- Do you have a Community Risk and Resilience Profile – understanding the needs, risks and strengths to guide communications?

Your communications plan should consider contingencies in the case of power/systems interruptions and how information will be disseminated. Consider simple communications and key messages for the potential types of waste and emergency events.

Topics	Timing	Communication material / pathways	Key personnel

Rationale: It is important for the Local Government to think through what they will communicate, at which stage of the process and how that information will need to be distributed. Depending on the type of waste and emergency event there may be very specific requirements.

Example

Topics	Timing	Communication material / pathways	Key personnel
Asbestos disposal	ASAP, once asbestos has been identified as present	Pre-written statements, distributed on social media, radio, leaflets, posters.	Comms team, incident manager

9. Funding

What decisions need to be made about funding?

For Local Government there are decisions regarding costs of services and also avenues for funding.

Area	Decision
Community	Under what circumstances, and for how long, will Local Government waive tip fees / provide free collection?
Funding	Will funding be sought from the National Emergency Funding? If so ensure: <ul style="list-style-type: none">• Geotagged photos of waste (before / after)• Setting up separate cost centres for emergency events• Effective record keeping – ensure that software has a separate category for this waste• Understanding of what is eligible / not eligible (if so, ensure that evidence collection is undertaken).
Procurement	Are preapprovals in place or have preferred suppliers been identified?

Appendix 1: Waste Types

Hazardous Material*

Material that may present an environmental, safety or health threat if discharged or released. The term includes dangerous goods, hazardous substances, controlled waste, hazardous waste, pollutants and chemicals.

(e.g. asbestos, gas cylinders, CCA treated posts, agricultural chemicals, medical waste, septic waste)

Putrescible Waste*

Material that biodegrades or becomes putrid, which may cause environmental, safety and health threats.
(e.g. household waste, food waste, nappies, animal carcasses)

Green Waste

Material that biodegrades, potentially causing environmental, safety and health threats.
(e.g. vegetative waste, garden waste, trees, diseased plant material)

Hard Waste

Material that originates from within, or around a household / business and cannot be disposed through the containerised kerbside collection system.
(e.g. electronic appliances, white goods, scrap metal, furniture, fixtures, textiles, timber, mixed plastics)

Scrap Metal

Material that includes both ferrous and non-ferrous metals.
(e.g. damaged and/or displaced vehicles, electronic appliances, white goods, fencing, aluminium window and door frames, corrugated metal sheeting)

Construction & Demolition Waste

Material originating from structural damage to infrastructure and the built environment.
(e.g. inert materials, timber, scrap metal)

Appendix 2:

Waste Type	Hazard Type										
	Animal & Plant Biosecurity	Bushfire	Cyclone / Storm	Earthquake	Electrical supply disruption	Flood	Heatwave	Marine transport emergency	Crash (Air, Road, Rail)	Industrial Disaster	Tsunami
Vegetative	✓	✓	✓	✓		✓					✓
Soil, mud and sand	✓	✓	✓	✓		✓		✓	✓	✓	✓
Building rubble		✓	✓	✓		✓				✓	✓
Scrap metal		✓	✓	✓		✓					✓
Timber		✓	✓	✓		✓					✓
Personal property / household items		✓	✓	✓		✓			✓		✓
Household hazardous waste		✓	✓	✓		✓					✓
White goods		✓	✓	✓		✓					✓
Vehicles and vessels		✓	✓			✓		✓	✓		✓
Putrescible waste	✓	✓	✓	✓	✓	✓	✓		✓		✓
Hazardous liquids and oil		✓	✓	✓		✓		✓	✓	✓	✓
Animal mortalities	✓	✓	✓	✓		✓	✓	✓	✓		✓
Human mortalities		✓	✓	✓		✓			✓	✓	✓
Sewage waste		✓	✓	✓		✓					✓
Health care infectious waste	✓		✓	✓		✓					✓