

## Waste Contingency Planning Workshop 13 August 2009

### **Purpose of the Workshop:**

For industry and government to discuss planning for the possibility of incidents that will impact the operation of waste treatment facilities in WA (recycling, AWT and Landfill facilities).

Specifically:

- To identify and evaluate risks.
- Determine what can be done to mitigate problems.
- To resolve responsibility for contingency planning.

These issues potentially affects Local Government, private industry, Regional Councils, and State Government departments including the Department of Environment and Conservation, Waste Authority, FESA, and Department of Health.

### **Workshop Outcomes:**

Participants were asked to create a list of the **FACTORS** that could impact/lead to a major disruption of one or more **recycling, alternative waste treatment** and **landfill** facilities in Western Australia.

Some general factors that were considered a potential risk for all of these types of facilities included:

#### **GENERAL FACTORS**

- Power failure or disruption/ fuel shortage;
- Significant increase in the price of power and/or fuel;
- Inappropriate facility siting (e.g. in densely populated areas), population encroaching into buffer zones;
- Plant breakdown/equipment or major component failure;
- Contract disputes (e.g. with suppliers etc.);
- Contamination of facility by inappropriate waste types;
- Facility becomes a crime scene;
- Negative public perceptions, community pressure to close an “unpopular” facility, protest;
- Staffing problems: Union strike, staff/skills shortage (long and short term);
- Politics: changes in the level of support for the industries;
- Legislative changes, tight/confusing regulations causing a drag on industry development;
- Transport problems e.g. strike, route disruption, shipping problems for raw materials or end products;
- Natural disaster e.g. storm damage to facilities, fire (in facility or surrounding area), earthquake, flood;
- Human/animal epidemic/pandemic;
- Malicious damage/vandalism;
- Lack or forward planning and investment, mismanagement; and
- Introduction of the Carbon Pollution Reduction Scheme.

Some factors that were specific to the three types of facilities included:

#### RECYCLING FACILITIES/INDUSTRY:

- Business failure and/or loss of markets or suppliers.

#### AWT FACILITIES/INDUSTRY:

- Very high fire risk in some AWT facilities.
- New/unproven technologies used at some facilities.
- Loss/lack of development of markets for end products.
- Lack of political/financial commitment to the industry.
- High ongoing maintenance requirements and costs.
- Licensing issues (e.g. change in regulations or licensing requirements).

#### LANDFILL FACILITIES:

- Liner failure.
- Non-compliance with environmental regulations.
- Underground fire.
- Timing of excavation of next cell (lack of adequate planning for expansion).
- Rapid population growth putting pressure on landfill capacity.
- Political issues e.g. impact of the Landfill Levy changes.
- Underground gas.
- Decrease in total capacity when old landfills close.
- Long term management of closed landfill sites.

Participants were asked to create a list of the possible **CONSEQUENCES** of a major disruption of one or more **recycling, alternative waste treatment** and **landfill** facilities in Western Australia.

Some general consequences that were considered applicable to all of these types of facilities included:

#### GENERAL CONSEQUENCES

- Health concerns of community (e.g. vermin, odour).
- High costs of downtime and repairs, redirection of waste to other facilities, reconstruction.
- Pollution (e.g. air, groundwater, soil).
- Negative media attention and poor public perception.
- Increase to insurance premiums.
- Staff redundancy, loss of skilled workers on site.
- Loss of revenue.
- Impacts on allied infrastructure.
- Legal issues arising from failure to meet contract requirements (e.g. demand of users of end products not met). Penalties for license breaches.
- Lack of alternative ways to dispose of particular types of waste.
- Increased emissions due to the need to transport wastes longer distances to alternative facilities. Increased heavy vehicle traffic in some areas.
- Increased pressure on alternative facilities that must accept increased waste loads.
- Need for metropolitan area or state wide coordination of the logistics of moving waste to alternative facilities.
- Impacts on the commercial sector, and properties surrounding the facility.

Some consequences that were specific to the three types of facilities included:

**RECYCLING FACILITIES/INDUSTRY:**

- Stockpiling of unrecycled materials or treated end products.
- Loss of public confidence in recycling, lack of willingness to recycle in the future.
- Loss of markets.

**AWT FACILITIES/INDUSTRY:**

- Stockpiling of untreated materials.
- Odour, explosive gasses.
- Loss of community confidence in the industry.
- Loss of markets.

**LANDFILL FACILITIES:**

- Disruption of household collection services (great direct impact on the community).
- Loss of landfill capacity as materials usually recycled or treated at AWT's is diverted to landfill.
- Increase in illegal dumping.
- Likely to have greater consequences than the closure of any other type of facility.
- Possible behaviour change, increase in recycling by community.

Participants were asked to create a list of the **possible disasters** that could impact/lead to a major disruption of the waste industry in Western Australia, and the possible **consequences** of these disasters on the waste industry (social, economic and environmental).

**Possible disasters:**

- Terrorism (external, employees).
- Major transport disruption, failure of ports.
- Collapse of Government.
- Natural disasters: fire, flooding, earthquake, lightning strike, storm or cyclone (extreme weather).
- Economic failure/collapse.
- Large scale contamination of water/food supply.
- Major utility failure.
- Illegal dumping of hazardous materials.
- NBC (nuclear, biological or chemical disaster).

**Consequences of disaster:**

- Build up/stockpiling of waste.
- Environmental impacts/pollution.
- Lack of expertise/trained staff to deal with disaster and waste types created.
- Public panic.
- Huge financial cost of cleanup.
- Proliferation of illegal dumping sites.
- Problems accessing facilities.
- Lack of infrastructure/equipment to deal with the disaster.
- Areas within Local Governments (e.g. ovals, carparks) become designated sites to stockpile/deal with the waste if facilities offline.
- Need for metropolitan area or state wide leadership, coordination of the logistics of treating large amounts of waste.
- Need to have large capacity available quickly.
- Waste create may be extremely hazardous and difficult/impossible to treat/neutralise.

Participants were asked to vote for which FACTORS had the highest likelihood and potentially greatest consequences. Groups then chose scenarios, that had high likelihood and great consequences, and discussed:

- (1) What could be done (if anything) to prevent/mitigate the situation.
- (2) If it did happen, what could be done, and who is responsible for doing it.

### **SCENARIO 1: Occurrence of a major natural disaster, and its impacts landfill facilities.**

Ways to mitigate the problems caused by natural disaster may include:

- Developing spare capacity across the state/metropolitan area to accept waste at short notice in case of natural disaster (funding for this could come from the Landfill Levy).
- Clear establishment of who has the authority to act/make decisions relating to landfills in case of natural disaster AND what the roles and responsibilities of stakeholders are (Local and State Government, private sector, Regional Councils etc.).
- Simulated scenario planning for different kinds/scales of natural disasters.
- In case of disaster, develop plans for:
  - Disaster Management
  - Traffic Management
  - Staff Sourcing
  - Communication (to public and between operators, Government departments etc.)

If a major natural disaster occurs, strategies to deal with it may include:

- Exemption for disaster-related waste from the Landfill Levy (or reduced rate).
- Mutual cooperation between landfill sites – establishing strong networks.
- Sorting waste into types and prioritising different waste types for treatment.

### **SCENARIO 2: Occurrence of fire and/or plant breakdown/equipment failure at a recycling facility.**

Ways to mitigate the problems caused by fire and/or plant breakdown/equipment failure may include:

- Have an up to date and regularly reviewed disaster contingency plan.
- Establish an MOU with a similar facility.
- Preventative maintenance:
  - Regular maintenance program.
  - Keep a stock of critical/difficult to obtain parts.
  - Maintenance of for control systems.
  - Asset and risk management.
- Appropriate design and use of recycling facility (e.g. do not overload capacity, do not store materials inappropriately).
- Carry out training/drill, mock of fire/breakdown scenarios.
- Adequate staff training in equipment use.
- Stockpile management.

If fire and/or plant breakdown/equipment failure occurs, strategies to deal with it may include:

- The facility OWNER is ultimately responsible, but in case of fire/breakdown they must cooperate closely with external agencies such as DEC, FESA, Department of Health.
- Community/media liaison needed (clear and open communication with public).

### **SCENARIO 3: Occurrence of a severe weather event/storm (strong winds, flooding, lightning), and its impacts landfill facilities.**

Problems caused by severe weather may include:

- Damage to landfill infrastructure (equipment, power supply etc.).
- Damage to access roads.
- Waste on site being blown/washed away.
- Contamination of site.
- A large volume of waste produced (especially C and D waste and greenwaste) requiring landfilling (burden on capacity).

Ways to mitigate the problems caused by severe weather may include:

- DEC must ensure there are alternative sites available in case of damage to one landfill (e.g. if Red Hill landfill was closed, there would currently be no sites for disposal of Class 4 waste).
- Business continuity planning (storage, personnel, repairs and asset management).
- Ensure fire fighting equipment/procedures are in place on site, in case of lightning strike.
- Appropriate drainage design at landfill to cope with flooding/high rainfall.
- Emergency Management Plan that includes a strategy for repairs to allow access to landfill and re-commencement of operations following storm damage.

If severe weather occurs, strategies to deal with it may include:

- Ensure clear communication to the public (radio, signage).
- Short term storage of waste onsite if needed, or external storage of waste at designated sites.
- Diversion of waste to alternative sites if one landfill site damaged.

### **SCENARIO 4: Occurrence of major equipment/component failure at an AWT facility.**

Ways to mitigate the problems caused by equipment/component failure may include:

- Have a sophisticated maintenance program in place.
- Clear identification of critical components and parts storage onsite. Inbuilt redundancy in systems.
- Have a sound technical skills base (permanent staff and contractors).
- Diversion and communications plans in place.
- State Government buy-in for centralised AWT planning.

If equipment/component failure occurs, strategies to deal with it may include:

- Diversion of waste to another AWT or landfill.

### **SCENARIO 5: Occurrence of an NBC (Nuclear/Radiological, Biological or Chemical) disaster, and its impacts on the waste industry in WA.**

Strategies to prevent risk:

- EDUCATION:
  - Public.
  - Industry (producers, transporters, end managers, storage facilities).
  - Regulators.
  - Politicians.
  - Personnel at all stages in the process (from production to shipping of end products).

- ENFORCEMENT:
  - Adequate regulations in place to prevent or deal with disaster.
  - Adequate monitoring and auditing (resources for inspection and enforcement regimes).
  - Industry protocols.
  - Collaboration between regulators and industry.
  - Enforcement at the “front end”.
  - A “whole of life” approach, from generation to disposal.
  - Adequate security (e.g. at waste disposal sites).
- ENGINEERING:
  - Containment of materials and wastes (pre- and post-generation).
  - Planning issues – adequate forward planning, buffer zones, appropriate siting of facilities.
  - Up to date and adequate safety equipment and treatment products.
  - Transport equipment and protocols.

If an NBC disaster occurs, strategies to deal with it may include:

1. Hazard identification: identify type and size of problem, get key stakeholders together.
2. Containment: includes tracking the “victims” of the disaster.
3. Neutralisation
4. Localisation
5. Community-wide response

Dynamic operational management systems must be implemented, including systems/IT, command, control, resourcing, facilities, liaison/collaboration, media management etc.

The Hazard Management Agency (HMA) is ultimately responsible (in the case of NBC, this is the Health Department).

**CONCLUSION:** Some general points on risk mitigation and management for the waste industry in Western Australia.

- Risk may be:
  - Prevented
  - Mitigated
  - Transferred
  - Reduced
  - Stopped
  - Accepted
- Contingency planning needs to be done on both a metropolitan and state level. Regional centres must be included.
- Agencies that could be included in waste contingency planning:
  - State Emergency Management Committee (SEMC)
  - Waste Authority
  - Investigation of triggers to get Commonwealth Government involved.
  - State Mitigation Committee (SMC)
  - Lifelines Committee (subset of SMC)
- Responsibility for contingency planning and dealing with problems/disaster after they occur lies with operators, State Government (Department of Environment and Conservation, Department of Health), Regional Councils, and Local Governments.

- Scale of disaster/incident determines response:
  - Large scale – SEMP (State Emergency Management Plan) or DEMP (District Emergency Management Plan) needed.
  - Small scale (e.g. within a Local Government area) – LEMP (Local Emergency Management Plan) needed.
  
- Implications of waste being classified as an “Essential Service” – this would mean waste services would be treated as a “lifeline” and given priority to get back on line after disasters occurred.
  
- Funding opportunities: Local State and Commonwealth sources, SWIS grants to achieve mitigation actions.