Waste Management Guidelines for Small Communities in the Northern Territory

Working Towards Best Practice 2009

Effective from: 1 January 2010
Review to be conducted: late 2010
EXECUTIVE SUMMARY

These Waste Management Guidelines for Small Communities in the Northern Territory (the Guidelines) were developed by the Local Government Association of the Northern Territory (LGANT) as part of the Northern Territory Government Program ‘Re-Thinking Waste Strategy’. The project was jointly funded by the Packaging Stewardship Forum (PSF) and the Northern Territory Government (NTG).

Under the Northern Territory Waste Management and Pollution Control Act, communities with populations over 1,000 are required to have a licensed landfill and an Environmental Management Plan for the operation of the facility. The Department of Natural Resources, Environment, The Arts and Sport (NRETAS) has developed the ‘Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory’ to assist with management of these licensed facilities.

The information included in this document is focused on improving the delivery of waste management services of communities with less than 1,000 people. Waste management in small and remote communities has very specific challenges for community managers, and it is important that these challenges are met and waste management services are not at a lower standard than would be expected in more populated areas. These Guidelines are intended to provide support to community managers and technical service operators in working towards best practice to ensure that waste management in small and remote communities is safe for staff, the community and the environment. Given this, these Guidelines focus on:

- reducing the hazards associated with waste in small communities;
- working towards improved environmental management of waste;
- allowing communities to assess their current situation and provide some initial steps in how to improve waste management in their community; and
- providing guidance on the service delivery standards that should be aspired towards under the new shire structure.

While these Guidelines have been developed for waste management services and landfill site management, they only provide broad advice and should not be considered as a technical manual, but rather as an operational guide to be used on a daily basis. Each community’s needs and circumstances are unique and site-specific investigation, design, operation and management plans will be required in each case to achieve the best outcomes. Working with your council, LGANT and Government Agencies will help you to develop more strategic plans to guide the future direction of your community waste management plan.

LGANT would also like to thank the following for their valuable contribution to the content of these guidelines:

- Northern Territory Department of Health and Families – Environmental Health Program
- Northern Territory Department of Natural Resources, Environment and The Arts
- Northern Territory Department of Local Government and Housing
- Katherine West Health Board
- Charles Darwin University – Remote Indigenous Australian Knowledge Centre
- Batchelor Institute for Indigenous Tertiary Education
- Centre for Appropriate Technology
- Western Australia Local Government Association (WALGA)


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Local Government Association NT
For information or queries regarding this document, please contact LGANT on any of the following:
E: Info@lgant.asn.au P: 08 8936 2888 W: www.lgant.asn.au
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INTRODUCTION

The aim of these Guidelines is to address the most immediate issues of waste management first – hazard reduction. It is not intended that any one section has priority over the others, however many small communities have hazardous waste management issues, and addressing these issues is generally the first challenge. The key waste management performance areas addressed in these Guidelines are:

1. Hazard Reduction
2. Environmental Protection
3. Service Delivery
4. Ongoing Site Management

The management of waste is an important role for local government. It has benefits for community health, preventing environmental harm, amenity management, and community morale. Waste management can be a difficult and complex task for remote communities, so a planned strategy of management is a useful tool in assisting councils.

The challenge for solid waste management is to adopt an integrated approach, including avoidance, recycling, minimisation, treatment and disposal. Under this integrated management approach, councils and the community should determine what options will best fit the community. This may mean that a landfill is not actually needed, and a transfer facility system is preferable. Transfer of some or all waste to a landfill serving other communities may be a more economically viable option than developing a new landfill. Transferring waste also minimises environmental impact by reducing the number of waste disposal sites across a region. Under such a system, waste is either transported directly to the landfill serving the area’s communities or deposited in a transfer station before being taken to the landfill.

DEFINITIONS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tbody>
<tr>
<td>BIITE</td>
<td>Batchelor Institute of Indigenous Tertiary Education</td>
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<td>CDU</td>
<td>Charles Darwin University</td>
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<tr>
<td>Clinical waste</td>
<td>Such wastes include, but are not restricted to, wastes arising from medical, nursing, dental, veterinary, laboratories, pharmaceutical, podiatry, tattooing, body piercing, emergency services, blood banks, mortuary practices and other similar practices, and wastes generated in health care facilities or other facilities during the investigation or treatment of patients or in research projects</td>
</tr>
<tr>
<td>DHF</td>
<td>Northern Territory Department of Health and Families</td>
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<tr>
<td>FAHCSIA</td>
<td>Australian Government Department of Families, Housing, Community Services and Indigenous Affairs</td>
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<tr>
<td>HAZMAT</td>
<td>Hazardous Material</td>
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<tr>
<td>Health Care Facility</td>
<td>Includes a health centre, health clinic, or mobile surgery, e.g. dental or eye</td>
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<tr>
<td>HR Licence</td>
<td>Heavy Rigid Vehicle Licence (A rigid motor vehicle or an articulated motor omnibus that has 3 or more axles and a gross vehicle mass (GVM) greater than 8 tonnes)</td>
</tr>
<tr>
<td>KABC</td>
<td>Keep Australia Beautiful Council</td>
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<tr>
<td>Landfill</td>
<td>Site where waste is disposed of. A licensed landfill has been issued a licence by the Department of Natural Resources, Environment, The Arts and Sport under Schedule 2 of the Waste Management and Pollution Control Regulations (Admin).</td>
</tr>
<tr>
<td>LGANT</td>
<td>The Local Government Association of the Northern Territory</td>
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<tr>
<td>Listed Waste</td>
<td>Materials listed under Schedule 2 of the Waste Management and Pollution Control Regulations (Admin) considered to be harmful to people and/or the environment if disposed of incorrectly.</td>
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<tr>
<td>MGB</td>
<td>Mobile Garbage Bin</td>
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<td>MSDS</td>
<td>Materials Safety Data Sheet</td>
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<td>NRETAS</td>
<td>Northern Territory Department of Natural Resources, Environment, The Arts and Sport</td>
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<tr>
<td>OHS</td>
<td>Occupational Health and Safety</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
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<tr>
<td>RTO</td>
<td>Registered Training Organisation</td>
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<tr>
<td>Small communities</td>
<td>For the purpose of this document, a ‘small community’ is that which has less than 1,000 permanent residents</td>
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<tr>
<td>SWMS</td>
<td>Safe Work Method Statement</td>
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APPLICABLE LEGISLATION

The information contained within this document guides councils in improving their waste management practices, however, they are not legally binding or statutory in nature. The Guidelines have been developed in consultation with various councils, Government and non-government agencies.

The Waste Management and Pollution Control Act (the Act) is the main legislation relating to waste disposal in the Northern Territory. This document is aligned with the Act and provides information to councils on their responsibility to prevent or minimise activities that result in environmental harm (Section 12 of the Act). Other legislation, guidelines and standards are also applicable and they should be consulted to ensure compliance.

Table 1  Related legislation and guidelines and the relevant agency, as it relates to Waste Management in the Northern Territory

<table>
<thead>
<tr>
<th>Related Legislation and Guidelines</th>
<th>Enforcement Agency</th>
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<tbody>
<tr>
<td>• Waste Management and Pollution Control Act</td>
<td>Department of Natural Resources, Environment, The Arts and Sport (NRETAS)</td>
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<tr>
<td>• Water Act</td>
<td></td>
</tr>
<tr>
<td>• Public Health (Nightsoil, Garbage, Cesspits, Wells and Water) Regulations</td>
<td>Department of Health and Families (DHF)</td>
</tr>
<tr>
<td>• Public Health (General Sanitation, Mosquito Prevention, Rat exclusion and Prevention) Regulations</td>
<td>(<a href="http://www.nt.gov.au/health/envirohealth">www.nt.gov.au/health/envirohealth</a>)</td>
</tr>
<tr>
<td>• Environmental Health Standards for Remote Communities in the Northern Territory 2001</td>
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<tr>
<td>• Local Government Act</td>
<td>Department of Local Government and Housing</td>
</tr>
<tr>
<td>• Workplace Health and Safety Act</td>
<td>(<a href="http://www.dlgh.nt.gov.au">www.dlgh.nt.gov.au</a>)</td>
</tr>
<tr>
<td>• Workplace Health and Safety Regulations</td>
<td></td>
</tr>
<tr>
<td>• Dangerous Goods Act</td>
<td>Department of Justice</td>
</tr>
<tr>
<td></td>
<td>(<a href="http://www.nt.gov.au/justice/">www.nt.gov.au/justice/</a>)</td>
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PLANNING A NEW LANDFILL OR EXPANDING AN EXISTING SITE

Constructing a new landfill or upgrading an existing facility requires careful planning and consideration of a range of factors. Waste management planning starts with site selection and continues through to closure of the site and rehabilitation of the area.

Under the Waste Management and Pollution Control Acts:

- an Environment Protection Approval is required to develop a landfill. This is required for all new landfills, regardless of the size of your community; and
- an Environment Protection Licence (EPL) is required to operate a landfill. An EPL is only required for landfills that service a population of more than 1,000 people AND landfills of any size that accept Listed Waste.

A new landfill site may also require an environmental assessment under the Environmental Assessment Act. If planning new landfill or trench sites, you should contact your council Director of Infrastructure to ensure that any new construction is approved. An Environmental Management Plan (EMP) is a useful tool in planning and/or operating your landfill. The EMP provides the framework for the management and mitigation of environmental impacts during construction, operation and closure of the landfill, as well as for the post-closure period. Advice on creating an EMP is available from LGANT and NRETAS.

Another important area of landfill planning is the consideration of disposing of Listed Waste from your community in your landfill (Listed Waste is discussed in more detail on page 8). It is important to note here that if Listed Waste is accepted and disposed at the landfill then the landfill must have an Environment Protection Licence. The licence only needs to cover the area where the Listed Waste is disposed and does not need to cover the whole landfill area. Listed Waste mixed in with general waste and disposed with general waste does not need a licence.

Although you don’t require a licence if your landfill services less than 1,000 people, NRETAS has ‘Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory’ guidelines that may be useful in planning your landfill. These guidelines and other factsheets can be found at: http://www.nt.gov.au/nreta/environment/waste/guidelines/index.html
HOW TO USE THESE GUIDELINES

The Guidelines have been divided into four “key performance areas” that are based on the main aspects of waste management in small communities. They are:

1. Hazard Reduction
2. Environmental Protection
3. Service Delivery
4. On-going Site Management

Within each key performance area, there are a number of “focus” areas that break down the main waste management activities within the key performance area.

To help communities improve their waste management processes each focus area includes three levels of management: Best Practice, Minimum Standards and Unacceptable Practices. These levels can be used to assess where the community is in terms of waste management and steps have been provided to assist in working towards best practice. The most important focus of these waste management guidelines is continual improvement. Small steps can lead to big changes.

It is highly recommended that users of the Guidelines actively record comments and notes in each section. These can be used to provide feedback on the Guidelines and to feed into council record keeping.

**Best Practice:** This is an ultimate goal to be achieved in every community, however, it is dependent on available resources including funding and infrastructure.

**Minimum Standard:** This is considered the minimum standard that is acceptable for safe waste management. However, there are no legislative requirements except to prevent or minimise activities that result in environmental harm. Once you reach this level of waste management, you should be able to work on improving specific aspects of waste management as opportunities arise.

**Unacceptable Practice:** This is considered unacceptable in any situation. If any aspects of your waste management are listed in this category it should receive urgent attention. A key goal would be to ensure that all aspects of waste management do not fall within this category.

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**Key Performance Area:**

**Focus area**

This area provides more information on the focus area.

See explanation above on the levels of management described in the Guidelines.

Steps have been provided to help you achieve Best Practice. Use the check boxes to track your progress. An area has been provided under each step to write notes and information which may include contacts and issues specific to your community. Additional notes pages are included at the back of the Guidelines.

Photos provide examples of good and bad practices whilst providing more information on the focus area.
1. Hazard Reduction

The first priority when looking at waste management in your community is to reduce the risk of harm to your community, your staff and the environment. To do this, you need to consider dangerous practices and dangerous materials.

1.01 Listed Waste

‘Listed waste’ is a term used in the Waste Management and Pollution Control Act (the Act) to describe materials that are considered to be harmful to people and/or the environment if disposed of incorrectly. Some materials are also listed in the Dangerous Goods Act. There are 73 materials registered as a Listed Waste in Schedule 2 of the regulations that accompany the Act.

Listed Wastes that may be encountered in communities include:

- Asbestos Containing Material (ACM)
- Chemicals and heavy metals (including herbicides and pesticides)
- Grease trap waste
- Lead-acid batteries
- Medical: Clinical and related wastes
- Medical: Waste medicines, pharmaceuticals, drugs
- Paint
- Septic tank sludge
- Tyres
- Waste oils

Wastes such as these pose a significant threat to people and/or the environment so are treated differently to general waste. If a landfill of any size accepts Listed Waste on a commercial basis from a contractor or paid council worker for disposal within the landfill, it must be licensed. However, a license is not required for landfills where small amounts of Listed Wastes are found within the general waste received from residents. Licenses are also required by contractors who transport Listed Waste. Radioactive waste is prohibited from disposal in small communities under the Radiation Protection Act.

**Best Practice:**

A) If you collect or store Listed Waste at your landfill site, store them separately and safely until removal by a licensed contractor for disposal in a licensed facility OR

B) If you dispose of Listed Waste in your landfill (eg bury tyres from your local community), then your landfill must be licensed to dispose of Listed Waste. The license only needs to cover the area where the Listed Waste is disposed.

**Minimum Standard:** Listed Waste is stored separately from general waste in appropriate storage facilities with adequate signage and is not buried onsite.

**Unacceptable Practice:** Listed Waste is not removed from around the community, in yards and houses and is scattered over the landfill site. Listed Waste is accepted and disposed of in large quantities from contractors. Council workers or unlicensed contractors are transporting Listed Waste.
Key Performance Area: 1. HAZARD REDUCTION

Some Listed Waste pose a very high risk to human health or to the environment and therefore should not be handled by unlicensed people or stored at landfills for even short periods (eg cyanide, mercury or asbestos). If unsure contact the health department or NRETAS. Don’t risk your health or the health of the community.

General Management Information for all Listed Waste

1. Set up separate areas for each of the Listed Wastes that are brought to the landfill.
2. Erect appropriate infrastructure to exclude people and animals.
3. Include signage in a prominent position with relevant symbols.
4. Educate staff and community members on where each Listed Waste is stored.
5. Keep the area clear. Ensure the grass is kept short and don’t allow rubbish to build up as this can be fuel for an accidental fire.

Steps for Achieving Best Practice

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<tbody>
<tr>
<td>1.</td>
<td>Educate staff and community on what materials constitute Listed Waste, and the dangers of handling and disposing them.</td>
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<td>2.</td>
<td>Investigate the need for the community/shire to store, transport and/or dispose of Listed Wastes. This could also be managed by an external contractor.</td>
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<tr>
<td>3.</td>
<td>If disposal of Listed Waste is required at the landfill contact NRETAS (<a href="mailto:Licencing.nretas@nt.gov.au">Licencing.nretas@nt.gov.au</a>) to obtain approval to construct and a licence to operate a Listed Waste facility.</td>
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<td>4.</td>
<td>If Listed Wastes are to be stored at the landfill site to await collection by a licensed contractor, appropriate infrastructure and segregation of waste is required (see following pages).</td>
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<td>5.</td>
<td>Arrange for a separate collection or clean out of hazardous wastes from community and households.</td>
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<tr>
<td>6.</td>
<td>Ensure all contractors working in the community remove their own Listed Wastes.</td>
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</table>
Asbestos dust or fibres can be extremely dangerous to human health when inhaled and can be released into the air when products containing asbestos are not handled correctly.

- ‘Non-friable’ asbestos is the most common form, usually found as cement sheeting (either flat or corrugated), vinyl floor tiles, water or flue pipes, or other asbestos-bonded products produced before 1980. If left undisturbed, non-friable asbestos presents no known health risks.
- ‘Friable’ asbestos was used in pipe lagging, insulation and asbestos-backed vinyl floor tiles, and presents significant health risks if disturbed.

In any situation where there is friable asbestos or more than 10 sq meters of asbestos containing material (ACM), a licensed asbestos removalist must be employed to remove it. Asbestos waste should be buried at an approved licensed asbestos disposal site. This ensures that its location is recorded and it does not create contamination issues in the future.

If asbestos is identified in your community, the most important action you can take is to secure the site and prevent anyone from accessing it – particularly children, who are unlikely to understand the risk this material poses.

For further information about asbestos go to the NT Government’s Asbestos Alert website: http://www.asbestos.nt.gov.au/ and for up-to-date information contact NT WorkSafe on 1800 019 115.

Specific Management Information:
1. Record GPS coordinates of any known asbestos dump sites – inform your council of these coordinates.
2. Fence off any known asbestos disposal sites and ensure coverage is at least 1m deep over these areas. The area should be clearly signposted with “Danger Asbestos” and the GPS coordinates.
3. Educate the community on the dangers of handling asbestos.
4. If you come across exposed and potentially dangerous asbestos in your community, you need to restrict access to the area, cover the material if possible and contact your council and NT Worksafe for more information on how to get it disposed of safely.
5. Any newly identified asbestos material that poses a health hazard and has been identified to be removed must be done by a licensed contractor and transported to a licensed facility by a contractor licensed to transport this waste.
6. If you suspect there is asbestos in the landfill contact your council, NT WorkSafe, DHF, FaHCSIA (prescribed communities only) and NRETAS.
7. Disposal at local landfills is possible provided NRETAS oversees the planning and provides a licence.

Notes and key contacts:
Key Performance Area: 1. HAZARD REDUCTION

Chemicals

When some chemicals are mixed with others, they can catch fire or explode. Some chemical products can burn the skin or even lead to unconsciousness and death when ingested. If chemicals aren't stored correctly they could pollute local waterways and the environment.

All chemicals and compounds should have a Material Safety Data Sheet (MSDS). The MSDS contains important information about the hazards of the substance, safety information and first aid. You can generally access MSDS for chemicals online, or your council should be able to provide this information.

Specific Management Information:
1. Obtain MSDS sheets of all known chemicals used by the council depot and the local community. MSDS are available at www.msds.com.au.
2. Train relevant staff in the safe management of chemical waste.
3. Educate the community on the process and importance of safe storage of chemicals.
4. Designate specific chemical storage areas, either at the landfill or at a central place at the depot. Storage sites should be clearly signed.
   a. Chemicals need to be stored in a lockable, weatherproof, ventilated facility located away from houses and other buildings and well sign posted.
   b. Containers of chemicals to be kept above ground and closed.
   c. Do not store different types of chemicals in the same container.
   d. Prevent flames, sparks and other sources of heat in the facility as these can start fires and explosions (e.g. cigarettes, cigarette lighters, matches, motor mowers, generators).
   e. Keep a fire extinguisher near the facility.
   f. Organise regular collections of chemicals by a licensed contractor.
5. Hold regular chemical clean outs in the community.
6. Pesticide containers should be cleaned in accordance with the Agsafe Standard for Effective Rinsing of Farm Chemical Containers (www.drummuster.com.au).
7. Have an emergency response plan for spills, fires, and explosions. Clean up all spills immediately.
8. Empty chemical containers should be punctured to ensure they aren't used for gathering or storing water.
9. Contracts involving chemicals to include a requirement that excess chemicals and containers are removed from the community by the contractor.

Notes and key contacts:

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**Key Performance Area:**  **1. HAZARD REDUCTION**

### Lead-acid batteries

Acid from car batteries can burn the skin, injure eyes and corrode metals. As they contain lead, batteries can also contaminate soil and pollute waterways. It is important that car batteries are not left around the community where children can access them. Car batteries should ideally be stored in leak-proof containers made from corrosion resistant material (e.g., heavy duty plastic, not metal).

**Specific Management Information:**

1. Designate a separate area for the storage of batteries. Stack batteries on a plastic or wooden pallet and fence on three sides to prevent knocking over. Site should be well sign posted.
2. Train staff in the importance of separating out and safe handling of car batteries.
3. Educate community on the process for disposal of car batteries, and importance of keeping them separate from household waste.
4. Conduct regular collection / clean up of car batteries in community.
5. Engage contractor for regular removal / recycling of car batteries.

**Notes and key contacts:**

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### Medical: Clinical and related wastes

Medical waste has the potential to cause injury, infection, disease or public offence, and includes sharps, human tissue waste, laboratory waste, animal waste resulting from medical, dental or veterinary research or treatment. Medical waste includes materials generated from the health clinic and also from individuals who are administering medical treatments at home such as insulin dependent diabetics.

**Specific Management Information:**

1. **Health clinics:** Sharps are to be placed in a rigid yellow plastic sharps containers and when ¾ full, placed into a dedicated transporting device (yellow wheelie bin or yellow metal box). Other clinical waste to be contained in plastic bags and stored in a labelled, lockable yellow wheelie bin (or equivalent) for transportation to a waste management facility (*Remote Health Atlas – Section 27: Infection Control*). Medical waste should not go to landfill and incineration is not recommended (unless approved by Environmental Health within DHF). If medical waste is found in the landfill meet with the health care facility to discuss current disposal practices.
2. **Individual waste:** Sharps and other clinical waste have the potential to cause injury or infection and should be returned to the clinic for proper disposal.

**Notes and key contacts:**

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### Medical: Waste medicines, pharmaceuticals, drugs.

Left over tablets or other pharmaceutical products could be a danger to other people, especially children who may ingest them. These should be returned to the medical centre for proper disposal.

**Notes and key contacts:**

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### Key Performance Area: 1. HAZARD REDUCTION

#### Paint

Paint can be particularly toxic to both humans and the environment. Allowing paints to enter the water constitutes pollution and could poison animals and people.

**Specific Management Information:**

1. **Water-based paints:** Dispose of solid waste by sealing it and placing it for disposal with other solid waste.
2. **Latex-based paints:** If small amounts are remaining in container remove the lid and allow the water to evaporate in an area away from children and animals. Once the paint is completely dry it can be disposed with general waste.
3. **Solvent-based paints:** These are particularly dangerous and should be disposed of by sealing the containers and placing it for collection by an appropriate waste contractor.
4. **Lead-based paints:** Even small amounts of dust or chips of paint containing lead can be a health risk. Lead based paint needs to be contained (even dry painted surfaces) and removed to a facility licensed to dispose of lead.

**Notes and key contacts:**

- ...
- ...
- ...

#### Tyres

Tyres are dangerous when burned as they produce toxic fumes that are hazardous to human health. Tyres can also self-combust if stored in large stacks and stockpiles provide breeding habitats for mosquitoes.

**Specific Management Information:**

1. Designate a specific area at the landfill site for the storage of tyres.
2. Train council staff in correct storage procedure for tyres (puncture tyres to prevent mosquito breeding).
3. Educate community in the importance of separating and storing tyres carefully.
4. Conduct a clean up in the community to collect old tyres and remove them to the landfill.
5. Assess and monitor numbers of tyres generated per month, quarter, and year and investigate opportunities for reuse of tyres at the landfill and in the community.
6. Investigate opportunities for recycling and/or reprocessing by external contractors etc, using estimated numbers of tyres generated in community.
7. As a last resort tyres can be buried but only at a landfill licensed to do so.

**Notes and key contacts:**

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- ...
- ...

#### Waste Oil

**Specific Management Information:**

1. Organise management and removal of waste oil through a licensed contractor. They should also be able to provide advice on a suitable receptacle for collecting waste oil.

**Notes and key contacts:**

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- ...
- ...

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For information on management, storage and disposal for Listed Waste materials not detailed above please contact Department of Natural Resources, Environment, The Arts and Sport via email on Licencing.nretas@nt.gov.au or visit their website on www.nt.gov.au/nreta.
Key Performance Area: 1. HAZARD REDUCTION

1.02 Burning of Waste

Burning wastes can result in dangerous toxic emissions and ash, including: dioxins, sulphur dioxide, lead and mercury which may adversely impact on public health and the environment. Toxic emissions can cause immediate and long-term damage to the lungs, kidneys, liver, nervous system, and reproductive or developmental disorders. The damage is especially a problem for children, the elderly, and those with pre-existing respiratory conditions and may even lead to cancer. Children can also swallow contaminated dirt on their hands while playing in burnt wastes.

While burning at landfills is not an acceptable practice it is understood that it occurs in many small communities. Due to limited resources in some remote communities burning is sometimes seen as the only option as it is not possible to cover the waste on a regular basis.

**Best Practice:** Waste is not burnt in communities. Fresh waste is covered on a regular basis.

**Minimum Standard:** Controlled burns are held at the landfill site if necessary to control the amount of putrescible and windblown waste. Tyres, construction materials, whitegoods, Listed Wastes etc are all kept out of the controlled burn site.

**Unacceptable Practice:** Individual households burn waste in barrels or drums and uncontrolled fires are left to burn at the landfill.

**Steps for Achieving Best Practice**

1. Ban the burning of waste in the community and educate the community about why burning waste is banned.

2. Remove burn barrels from around the community and provide wheelie bins and a regular waste collection service.

3. Label bins with “no burning” signs.

4. If no other option is available, schedule burns in the landfill on low wind days to reduce the amount and volume of putrescible waste.

5. Instead of burning the landfill move to regularly covering the active landfill area with clean fill.

When undertaking controlled burns consider:
- how human health and safety and the environment will be protected during burning operations including protection of the community from the resultant smoke plume;
- weather conditions, especially wind direction (downwind of homes) and strength;
- the minimisation of burning plastics (especially PVC);
- the frequency of burning;
- measures required to meet the planning and approval requirements of the local fire authority including plans to prevent the fire from spreading outside the landfill site;
- steps required to ensure refuse is completely burnt or the fire is extinguished before personnel leave the site;
- training required by staff conducting the burning operations; and
- measures to prevent people entering the landfill site during burn days.
1.03 Animal Carcasses

Improper disposal of dead animals (such as feral animals, domestic pets and livestock) can lead to infection of other animals and humans. They encourage vermin and feral animals to scavenge at the landfill. Animal carcasses should not be disposed of at the landfill without approval from the shire service manager.

**Best Practice:** All animal carcasses are buried at a separate pit at the landfill site at a minimum depth of 1m using hydrated lime or similar to expedite decomposition. This separate pit is fenced to prevent other animals scavenging.

**Minimum Standard:** Carcasses are removed from the community, but still disposed of in general pit at landfill where they are buried to discourage other animals scavenging.

**Unacceptable Practice:** Animal carcasses are left to decompose at the landfill site or within community causing public health risk. Other animal scavengers are often present in the area and could be accessing carcasses.

**Steps for Achieving Best Practice**

1. Develop a dedicated pit at landfill for burial of animal carcasses. Fence and sign the area to reduce the chance of the pit being used for other wastes. Ensure that the pit is deep enough to prevent other animals digging it up.

2. Train council staff in the appropriate handling of carcasses and conduct regular monitoring within and around community to identify and collect carcasses. Order lime supplies to hasten decomposition.

3. Set a defined timeline from detection to burial in dedicated pit. Aim for 24 hours, but 3 days is acceptable (depending on climate).

4. Make contact details for collection of carcasses known within the community.

5. You may like to try some innovative ways to deal with animal carcasses on a longer term basis. Some suggestions include:
   - Plant a tree on the grave site, to mark it so that the site isn't dug up again.
   - Cut the bottom out of a cement (water) tank, and bury it into the ground. Carcasses can be disposed of into the tank, and the top of it covered with a steel plate – making it inaccessible to other pests and reducing harm to the community.

Animal carcasses should never be left to decompose on the surface – they can attract vermin and risk the spread of disease to other animals and humans.
2. Environmental Protection

Environmental protection issues of primary concern when operating a landfill of any size include water quality and controlling litter, pests and weeds. Pollution of surface and ground water (including the community's water supply) can occur from the landfill if it is not properly sited or managed. Environmental protection extends to managing the impact of the landfill on the land and ensuring that landfill sites are properly remediated following closure. Litter can also be a significant problem in and around the landfill site and needs to be managed to ensure it does not impact of the environment and the community.

This section is focused on reducing the damage to the environment from waste management. This includes groundwater contamination, littering, pest and weed control and options for waste minimisation and recycling.

*Included in this section:*

2.01 Waste Minimisation, Reuse and Recycling

2.02 Groundwater and Leachate

2.03 Litter Control

2.04 Pest Control

2.05 Weed Control
2.01 Waste Minimisation, Reuse and Recycling

Waste minimisation through reuse and recycling can save money, make your landfill last longer, reduce pollution and save wear and tear on your equipment.

Poor practices such as contractors dumping large volumes of materials into pits, not separating out furniture and whitegoods and lack of compaction will all reduce the life of your trench or landfill. Through improved management, the lifetime of each trench and your whole landfill can be extended considerably.

When there is a large amount of construction, renovation or clean up happening in your community, you should be aware of where the materials are being disposed. Your council might have by-laws or a policy on the disposal of contractors’ waste. Contractors and visitors to the community must dispose of materials appropriately.

Some simple first steps include the separation and storage of large items - such as cars, whitegoods, tyres; and establishing areas for materials that can be recycled - such as glass, aluminium, car batteries, paper, plastics and waste oil. Green (vegetation) waste can also be a major component of the wastes going to landfill. Where this is the case, you should consider recycling vegetation, possibly by mulching or storing it for use as firewood.

It is important to have a further use for materials that are separated for reuse and recycling, because excessive storage of materials may soon become a hazard. Stored materials should be kept dry and crushed (where possible) to prevent the breeding of mosquitoes, cockroaches and similar insects.

Some features of a small recover and recycling facility include:
- a defined area for the unloading and loading of items;
- an open fronted roofed area;
- colour coded bins, crates or defined bays where selected items can be placed; and
- a small hand operated crushing device for cans, or a baling machine for paper/cardboard.

**Best Practice:** As many materials as possible are reused or recycled. Recycling programs are established for materials such as steel, aluminium, glass, plastic, paper, green waste and construction materials. Household items, such as whitegoods and furniture are kept separate at the landfill site for reuse within the community or sold to provide an income for the maintenance of the facility.

**Minimum Standard:** Bulky household items are removed and inert building materials and Listed Wastes are separated for recycling. Some green wastes are separated from the landfill site for potential reuse.

**Unacceptable Practice:** All materials go to landfill without any option for reuse or recycling.

Recyclable materials being disposed of at landfill, where they are burnt and are now useless.

Simple bales used to collect containers for recycling. As each bale is filled up, it can be removed and stored for collection.
Steps for Achieving Best Practice

1. Conduct a waste audit or a visual assessment to determine which materials in the landfill could be recovered, and which materials are taking up the most room in the landfill.

2. Waste minimisation: Work with local businesses to see if you can limit the amount of packaging wastes.

3. Reuse:
   a. Undertake a feasibility study for reusing waste in the local community.
   b. Designate separate areas for bulkier items for reuse, green waste, and construction materials.
   c. Educate staff on the potential for reuse, and identify some areas or projects in the community that might benefit from this (e.g. using furniture in a community centre, construction materials to create an outdoor meeting place etc).

4. Recycle:
   a. Discuss with community members what priorities exist for a community based recycling program – such as a local container deposit scheme, drop off facilities, providing recycling bins, creating fuel 'briquettes' from recycled paper, use of green waste for composting and mulch.
   b. Investigate options to work with nearby communities and the council to share resources, and nominate a shared drop off facility to accumulate a greater volume of recyclables for collection by a contractor or other. Discuss these options with the council.
   c. Large items, like cars and whitegoods can be grouped neatly by type to save space and help recovery. Areas for smaller recycled materials like glass, paper and plastic should be checked and serviced regularly to ensure that they remain neat and tidy, and that bins and storage tanks do not overflow.
   d. Make arrangements with a scrap dealer for collection of materials for recycling. If several communities band together to have their materials collected at the same time it may be more financially attractive for the scrap dealer and make it easier to set up the collection.
   e. Items such as cardboard and paper may have a use within the community for the lighting of fires, mulching of gardens or for tree planting.
   f. If green waste is to be stored prior to recycling, the area used for storage should be large enough to contain the volumes expected to accumulate between processing periods; isolated from the general waste disposal area; and surrounded by firebreaks of at least 5 m. Stored green waste has the potential to self combust and should be kept to a minimum height and diameter.
2.02 Groundwater and Leachate

The pollution of surface and groundwater by leachate is a big concern for existing and new landfills. Water falling on and running across the landfill has the potential to spread disease and pollute the environment as it can pick up harmful bacteria and chemicals by coming into contact with wastes. If any of the following are near or within your landfill site, you need to take extra care or even consider relocating the landfill:

- Water supply catchments or groundwater recharge areas.
- Wetlands or coastal and estuarine areas subject to tidal inundation or storm surge.
- Areas which may be seasonally inundated, or are likely to be flooded in a major rain event.
- Water bodies, watercourses or open drains.

When managing a landfill site the following should be considered:

- Grade the area to drain storm water away from the waste disposal area or provide a system of drains or diversion bunds to achieve the same effect.
- Grade or drain the area to prevent water from ponding.
- Once the trench is full, cover with low permeability soil that is compacted and graded to shed water.

For landfill sites where groundwater protection is required (ie near a water source for a community), a layer of compacted clay or a synthetic liner should also be used in the bottom of the trench to prevent leachate from contaminating the groundwater.

For more information on the siting of landfill please refer to the ‘Siting, Design and Management of Solid Waste Disposal Sites in the Northern Territory’ guidelines found at: http://www.nt.gov.au/nreta/environment/waste/guidelines/index.html

**Best Practice:** Landfill has been sited correctly and does not impact on groundwater recharge areas or local waterways. Monitoring processes are in place to ensure any contamination can be detected early. Landfill is designed in accordance with the NRETAS siting guidelines to reduce leachate production and groundwater contamination.

**Minimum Standard:** Stormwater is directed away from the landfill trench(es). The location of groundwater courses and aquifers are known. If current facility is likely to be impacting on groundwater through leachate, consider relocating the landfill. New landfills are sited appropriately so they do not impact on groundwater or water courses.

**Unacceptable Practice:** Extent of leachate and relationship to underground water courses is unknown, or landfill is known to be sited on a groundwater recharge area. Run off from waste areas during wet periods is visibly going into creeks and waterways, and most likely into the groundwater. As trenches are being excavated, they fill with water.
Key Performance Area: 2. ENVIRONMENTAL PROTECTION

Steps for Achieving Best Practice

1. Assess landfill site for run off and potential leachate generation. Try to map where run off starts and ends up.

2. If trenches constantly fill up with water when dug (due to high water table), reconsider if this method is the best for your situation. Consider using an above ground cell method. Refer to NRETAS siting guidelines for more information on this method.

3. Channel water to control run off and direct it away from nearby water courses. This could be by digging channels, or creating watercourses with clean materials to create an above ground 'bund'.

4. Investigate options of engaging consultants to provide expertise on siting of new landfills.

5. Introduce long term monitoring around the landfill site to detect leachate before it gets to the groundwater.
Key Performance Area: 2 ENVIRONMENTAL PROTECTION

2.03 Litter Control

Litter can attract pests, encourage fly borne disease and pollute the environment. Littering in communities is also unsightly and can be improved by locating bins in high traffic areas with regular servicing. Litter surveys can isolate what types of litter are occurring and where it is originating. Education campaigns developed with the community can change behaviours by encouraging people to use appropriately placed bins in and around the community. Keep Australia Beautiful Council (KABC) has a number of resources that can help managing litter. Contact details are included at the back of this guide. Fencing around stores and households can also help reduce wind blown litter.

Litter is also a problem at all landfills; it is ugly and pollutes surrounding areas. Mesh fencing at the site perimeter and moveable fencing at the disposal area can be used to catch and reduce blowing litter. Litter fences should be maintained in good repair and the moveable fences should be checked periodically to ascertain whether they are working effectively, since changes in the orientation of the disposal area or in the direction of prevailing winds may significantly change the situation. This primary control should be followed up by regular patrols of the site, access road and adjacent properties to remove accumulated litter and return it to the disposal area.

Best Practice: Adequate bins with lids are well placed in public areas as well as at households. Bins are emptied regularly and council staff maintains litter collection in public areas. Waterways and creeks are regularly cleaned up to remove any incidental litter, and as part of frequent community awareness campaigns. Supporting measures are in place to reduce the likelihood of litter. There is a 1.8m perimeter fence surrounding the landfill site

Minimum Standard: Bins are located in public areas and are routinely collected to reduce the incidence of wind blown litter. A perimeter fence is erected around the landfill site when resources permit. If fencing is not practicable other possibilities should be considered to control litter.

Unacceptable Practice: There are no litter bins in the community; even household bins are inadequate – with no lids on those that exist. There’s no fencing at the landfill site or no designated area for the community to dispose of their waste. Litter blows all around the community and ends up in trees and waterways.

Steps for Achieving Best Practice

1. Conduct a litter survey (contact KABC for more information and resources on litter surveys) to determine how much of a problem litter is in the community, and where it is a problem.

2. Work with the community to hold a community clean up or “emu bob” as an initial way to get rid of lots of litter, and as a regular (maybe monthly) activity to help maintain the area. It is a good idea to make it a bit more fun with a sausage sizzle or sporting event as well.

3. Ensure landfill site has a boundary fence, as well as internal moveable fences to help control litter inside the tip.

4. Work with your community to ensure households have boundary fences, to make it clear who is responsible for what litter, and to further reduce windblown wastes.

5. Look into planting some trees in and around the community and the landfill to work as windbreaks to reduce windblown litter.
Key Performance Area: 2. ENVIRONMENTAL PROTECTION

6. Investigate the whole waste cycle – look at reducing packaging waste from the community store.

7. Work with the community to develop education and communication activities around litter

Without litter control, public amenity is damaged and windblown materials can pollute waterways and the community (above)

A perimeter fence (above) at your landfill site can reduce the amount of windblown litter in your community

Litter bins (left) placed in strategic locations can help to reduce the amount of litter dropped in the community
2.04 Pest Control

Vermin and other pest animals (like pigs and dogs) often frequent landfill sites and rubbish bins. These pests seriously threaten local native animal populations and can transfer diseases to humans, either directly, or through contamination of food or other animals.

To protect public health and minimise harm to native animals, an operational plan for animal control should be developed and implemented. Elements of the plan should include:

- Installation of appropriate fencing to prevent animals from gaining access to the wastes at the landfill
- Implementation of other controls (such as baiting and trapping programs and covering wastes with soil) to eradicate pests and to prevent animals from gaining access to the landfill.

DHF and NRETAS can provide advice on monitoring and control of vermin and feral animals. Contact details are at the back of this document.

**Best Practice:** Waste is covered with 150 mm designated fill cover regularly. Bulky items are separated out to reduce the amount that needs to be covered. Organic waste is also separated out for composting to reduce putrescible waste at the landfill site. Landfill is well fenced to prevent dogs and larger pests from entering. When necessary, baiting or trapping is undertaken to eradicate pests. Bins in the community are emptied frequently and have lids.

**Minimum Standard:** A perimeter fence is erected around the landfill site when resources permit. Bins in the community generally have lids and are emptied regularly. Baiting or trapping is undertaken to manage pests.

**Unacceptable Practice:** There is no fencing on site and animals enter waste site freely and pose a risk to the community. Putrescible waste remains uncovered for long periods, encouraging flies and animals to the area. Bins in community are rarely emptied, have no lids, and harbour pests.

**Steps for Achieving Best Practice**

1. Ensure bins in the community are well maintained, have lids and are regularly emptied.

2. Assess your landfill for: the types of pests requiring control, if the fencing is appropriate and what other methods might be needed to control pests.

3. Ensure there is adequate fill available at the landfill to cover putrescible waste and consider options if more fill is required due to an unusual event (such as an animal cull) that could attract additional pests.

4. Soil used as landfill cover should have low permeability, good compaction characteristics, good trafficability under all weather conditions, resistance to swelling and cracking when wet and dry, resistance to wind erosion and have the ability to support plant growth. Good cover soils include loam, clay loam and some clay soils.

5. Work with the community to ensure people are aware of the importance of pest control and how they can help to reduce it by wrapping putrescible wastes and nappies prior to disposal.

Feral animals are often attracted to materials disposed at the landfill. Good management can help prevent feral animals from visiting your landfill and fences should be made durable enough to keep them out.
2.05 Weed Control

Weeds found growing at a landfill should be treated and destroyed in accordance with the requirements of the *Weeds Management Act*. Staff maintaining the landfill should be able to identify the various types of declared weeds which may exist in the region so they can identify infestations and undertake appropriate treatment.

Declared weeds disposed of at a landfill (eg mission grass) can readily spread from the site and cause problems with native plant populations and/or be poisonous to animals. Declared weeds should not be disposed at a landfill unless the facility has been declared a designated weed disposal area under the *Weeds Management Act*. It should also be noted that this Act prohibits transportation of declared weeds over public roads, or from one property to another, without a permit.

NRETAS Weeds Branch contact details are available at the back of these guidelines.

| **Best Practice**: Weed species are identified in the community and at the landfill site. The Weeds Branch in NRETAS is contacted for appropriate weed-specific disposal methods. There is a weed management plan for the community. |
| **Minimum Standard**: Staff can identify declared weeds and have a weed management plan. Composting is done where possible but generally weeds are chemically sprayed or burnt. |
| **Unacceptable Practice**: Council staff do not know how to identify weeds and therefore uncontrolled weeds occur at the landfill site. Green waste including weeds is disposed of with general waste. |

**Steps for Achieving Best Practice**

1. Contact your council or the NRETAS Weeds Branch to find out what weeds are problematic in your area and if there are any existing programs for weed control. More information can be found at the NRETAS Weeds Branch website: [http://www.nt.gov.au/nreta/natres/weeds/index.html](http://www.nt.gov.au/nreta/natres/weeds/index.html)

2. Assess your landfill to identify any weed infestations.

3. The seeds of some plant/weed species are not destroyed by the composting process. For those species that can be effectively composted, designate a separate weed disposal area and set it up for composting.

4. Educate staff and community on the identification and disposal methods of weeds.

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Weeds can quickly get out of control if they are not disposed of carefully at your landfill.
3. Service Delivery

Waste management is core business of local government, which is supported in the Local Government Act. Aside from the responsibilities under the Act, waste management is also an essential community service and an area that you can really work closely with your community to develop some positive outcomes. Waste management services extend to providing training to council staff, a safe working environment and general good public amenity.

Engaging your community is important for successful waste management programs, and to help you deliver the best service. Local stores, businesses and licensed premises are important contributors to any litter control plan and can play a responsible role in community litter awareness and education.

Involving the community in the program, and generating community awareness around waste management will result in increased community pride, improved quality of life and living areas, promote community safety and reduce the risk of injuries to staff and community and a reduction in vermin and pests. It could even create opportunities for business enterprises, such as reuse, arts, crafts and markets.

You can consider these benefits when planning your awareness campaigns. When a community has a litter problem there are usually four basic issues that could be contributing to the cause:

- Infrastructure. Are there enough bins in the right location, well signed and supported by educational material?
- Service frequency. Are the bins constantly overflowing? If so, consider adjusting the frequency of bin servicing.
- Awareness of the impact and consequences of littering. Has the community been educated on the reasons why littering is a problem?
- Education about the correct disposal of rubbish. Are there enough signs using appropriate images and language to instruct community members where rubbish should be disposed of? Are the signs in the correct position? Consider an education program for your community.

There are contact details in the back of these guidelines for Keep Australia Beautiful Council (NT) who can provide more information and support on community awareness and education campaigns.

Included in this section:

- 3.01 Education and Community Awareness
- 3.02 Occupational Health and Safety
- 3.03 Staff Training
- 3.04 Bins
- 3.05 Collection Vehicles
- 3.06 Collection of Waste
- 3.07 Frequency
Key Performance Area: 3 SERVICE DELIVERY

3.01 Education and Community Awareness

An important part of waste management is community awareness and education. You should liaise with the community throughout the life of any waste management program to ensure local communities are informed and engaged in the program. Community liaison should be conducted in an open and timely fashion, to allow local knowledge to be obtained.

It is important that the community is able to readily contact an informed representative of the council regarding waste management and that queries are dealt with promptly. It is also important to gather local knowledge when determining the location of a new waste disposal site or any significant change to waste management services. A record of community comments regarding waste management programs should be maintained.

Community awareness campaigns can be targeted to sections of the community, such as school children or businesses, or they can involve the whole community. Awareness of waste problems can be generated by an event, or built up over time through news items and announcements in local and regional media.

| **Best Practice:** | Education campaigns have been specifically designed for the community, and address the specific needs of the community in waste management. |
| **Minimum Standard:** | Educational materials have been developed with some input from the community. |
| **Unacceptable Practice:** | There is little or no signage and the community is not kept informed about waste management programs and priorities. Education campaigns have been developed without community input. |

Steps for Achieving Best Practice

Each community will be different when it comes to education and awareness, however when planning a community awareness campaign, consider how you can best achieve the following:

1. Ensure everyone is aware of a problem and the solution you have in mind and provide an opportunity for the community to develop its own solutions.

2. Encourage community members to suggest ideas for running the project.

3. Provide opportunities for people to get directly involved in solving the problem:
   - choose times and days that will suit most people.
   - break the project into tasks that can be done by various members of the community, such as school children, people with cars, older people, etc.
   - perhaps arrange a child care centre to look after small children to free up their parents.

4. Provide the means to solve the problem (collection bins and bags, a vehicle to pick up waste, gloves, shovels, etc.).

5. Acknowledge the efforts and achievements of your community (individuals, groups, or the community generally).

6. Publicise the results so that people are aware of changes, improvements, and benefits (make announcements at gatherings, on local radio, or in local newspaper stories).
Key Performance Area: 3 SERVICE DELIVERY

3.02 Occupational Health and Safety

Under the Workplace Health and Safety Act you must provide a working environment that is safe for staff. You must also ensure that the health and safety of any other person is not adversely affected by the work. To comply with this requirement the following must be achieved:

- Providing and maintaining plant and equipment so that it is safe.
- Developing, implementing and maintaining safe systems of work.
- Ensuring the safe use, handling, storage and transporting of dangerous goods and hazardous substances.
- Maintaining workplaces under your control and management in a condition that is safe and without risk to health.
- Providing information, instruction, training and supervision to workers.
- Ensuring visitors to your community are aware of the safety requirements.

An important aspect of safety when dealing with waste is correct Personal Protective Equipment (PPE). Appropriate PPE for all staff working with waste includes solid boots, thick gloves, long pants and long sleeved shirt, high visibility vests or markings if possible and eye protection such as goggles. Sun safety gear is also recommended as many staff will be working out in the sun for extended periods.

Another aspect of any operational position, such as working with waste, is developing Safe Working Method Statements (SWMS). These are simple statements that explain each step in a task or work method, and how to do it safely.

Further information about workplace safety from is available from the NT WorkSafe website: http://www.worksafe.nt.gov.au/

**Best Practice:** All council staff are routinely and regularly trained in safe work methods and provided with Personal Protective Equipment. At least one council staff member on duty has a current first aid certificate at any time. Safe Work Method Statements exist for all processes. In the event of an OHS incident, there is a reporting strategy to ensure that incidents are investigated and followed up. Council staff has been vaccinated as necessary for handling waste.

**Minimum Standard:** Council staff are generally using safe working methods and have basic Personal Protective Equipment. There is some makeshift signage talking about safety. Safety breaches or incidents are reported.

**Unacceptable Practice:** Council staff has never been trained in their work tasks; they just turn up and follow basic instructions. No safety gear is provided; council staff are expected to wear adequate clothing. Contractors and anyone can access the tip site, without any control or guidance as to the safety requirements.

**Steps for Achieving Best Practice**

1. Develop Safe Work Method Statements (SWMS) for each work task that council staff are involved with.

2. Train in safe use of equipment and use of SWMS.

3. Supply and maintain Personal Protective Equipment (PPE) for all council staff.

4. Ensure at least one permanent council staff member, preferably the supervisor, has a current first aid certificate.

5. Develop an incident reporting process to monitor any safety breaches.
Key Performance Area: 3 SERVICE DELIVERY

Education and Community Awareness

Simple signage at your landfill will inform people of what restrictions there are on activities and penalties that may apply. Depending on your audience, you might need your signs to be in English or other language, and pictures are helpful too.

A recycling station like this one above has a dual function, both as a place to dispose of recyclable materials and as education – it tells people what recycling is.

Occupational Health and Safety

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3.03 Staff Training

Council staff involved in waste management need to be trained in the safe working methods and operational requirements of the job, including operating any equipment. Depending on the size of your community, you may decide to have council staff present at the landfill site during operational hours. Council staff can sort materials as they are delivered or direct residents to separate materials into the correct place. Council staff should also have training in personal occupational health and safety and suitable personal protective equipment should be provided. This should include steel cap safety boots, leather work gloves, and coverall clothing. It is recommended that council staff also be trained in fire suppression. Training in weed identification and control is also required for effectively managing the site. Other levels of training relevant to waste management operations are listed in the table below.

There are Registered Training Organisations (RTOs) that provide specialised training for waste management workers in the Northern Territory. This includes the Batchelor Institute of Indigenous Tertiary Education (BIITE) who offer different level Certificates in Indigenous Environmental Health and Charles Darwin University (CDU) who have a school for Remote Indigenous Knowledge. Contact details are at the back of these guidelines.

Best Practice: All council staff has been trained in the necessary aspects of waste management. A council staff training register is used to plan out future training and make sure that there are no gaps in skills or qualifications. Training is scheduled for review annually or as necessary.

Minimum Standard: Council staff have received some ad hoc OHS training but not a lot of specific waste management training. No training plan is in place to plan and track progression but one is being developed.

Unacceptable Practice: Council staff have not received any waste management or OHS training, or there are no records to support past training efforts.

Steps for Achieving Best Practice

1. Start a training register – this doesn’t have to be a complex document, just a list of names, dates of training and type of training.

2. Conduct initial OHS training for all Council Staff – contact your council for more information.

Areas For Waste Management Council Staff Training

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3.04 Bins

In small communities and outstations, modified 44 gallon drums are often used as garbage bins. These bins are not considered to be ideal for disposing of waste for several reasons. These include the safety risk to workers lifting and emptying bins, the lack of lid, and the increased likelihood for community members to burn waste at the household level.

Mobile Garbage Bins (MGB) or “Wheelie Bins” are widely accepted as being the best storage container for household waste for the following reasons:

- its long service life (>10 years)
- close fitting lid (fly proof)
- portability (wheeled to where it is required)
- storage capacity (up to 240L)
- stability
- Price (bins are affordable).

Lockable posts can also be obtained for MGBs that secure the bin upright. The Australian Standards for bin design state that household waste bins should have a red lid, while recycling bins should have a yellow lid. If provided, garden vegetation (green waste) bins should have a green lid.

**Best Practice:** Wheelie bins are used by households and in public places. Households store their own bin on their property, and bring it out for collection on the nominated day. Bins are regularly emptied, and there are spare bins kept at the depot for replacements and public events.

**Minimum Standard:** All bins should have a lid which excludes rain and animals and be located at all households and public areas (e.g., outside stores).

**Unacceptable Practice:** Houses do not have bins and/or regularly burn their waste. Council workers have to empty out the remaining rubbish and ash. No lids on the bins means lots of flies and odour around bin areas, litter often blows out of bins.

**Steps for Achieving Best Practice**

1. Investigate options for acquiring wheelie bins for your community.

2. Talk to the community about the benefits of wheelie bins instead of drums; trial a few wheelie bins to demonstrate the difference to the community.

3. Investigate whether your collection vehicle will accommodate wheelie bins and/or what is required to adapt it to wheelie bins.

4. Once you have wheelie bins for your community, work on community awareness as you roll them out.

5. You may need to install lockable posts to stop your bins being knocked over.
3.05 Collection Vehicles

The type of collection vehicle your community requires is dependant on several factors including the type of garbage bins used and the status of local roads. A four-wheel-drive vehicle may be required to negotiate difficult roads during the wet season. A rear lifter garbage truck allows collection of bulky items such as mattresses, whereas a side arm lifter does not.

**Best Practice:** Collection vehicles are appropriate to the task, are well maintained and meet OHS requirements. The collection apparatus can be a trailer that can be connected to other vehicles and has a hydraulic lift and tipper. It is simple to use and easy to maintain, and is easily and effectively charged (for hydraulic lifter). There is a secure storage place onsite and an alternate, back up vehicle available in case of breakdowns.

**Minimum Standard:** The community has a collection vehicle equipped with a ramp or a basic lifter. People who operate the vehicle have the appropriate training and licences. For smaller communities an enclosed trailer could be used as a suitable collection vehicle.

**Unacceptable Practice:** There isn’t a proper collection vehicle. An open trailer is used, where rubbish is dumped in from bins that staff manually lift. Staff are not adequately licensed or trained in using larger vehicles.

**Steps for Achieving Best Practice**

1. Find out how many of each bin type are in the community (drums and wheelie bins). Examine existing collection vehicles to determine if they are appropriate to the bins that you have, and what modifications might be necessary to increase compatibility. Don’t necessarily upgrade your drum collection vehicle for a wheelie bin collection vehicle if there are still lots of drums in the community.

2. Contact the council to see if there are other vehicles you can use.

3. Assess other community vehicles, such as trailers to determine if they can be used or modified for a back up vehicle.

4. Train council staff in how to use your various collection vehicles SAFELY so they don’t injure themselves or damage the vehicles.

5. Make sure council staff have the correct licences to drive the collection vehicles. If some collection vehicles require a special licence, make sure there’s more than one person in the community with that type of licence.

6. Review maintenance schedule for collection vehicles to ensure regular maintenance.

Collection vehicles in your community should be “fit for purpose”. It is important that they are compatible with the bins you have and are easily maintained. The trailer (left) is good if you still have old drums, and can be attached to a variety of vehicles, but if you are thinking to upgrade to wheelie bins, you might need a rear loader (right) that can take both drums and wheelie bins.
3.06 Collection of Waste

There are a number of factors that contribute to your waste collection service and your community needs, including:

- Population numbers and fluctuations between seasons.
- The average number of residents per house.
- Consumption characteristics and what items are sold in your community store.
- Climate (for green waste generation).
- Bin size and type.
- Waste reduction activities such as recycling.
- Non resident waste generation (e.g. tourists, tour operators, local industries).

You should consider having separate and regular collections for rubbish, recycling, green waste and bulky items.

**Best Practice:** Waste is collected from households on a regular basis, using ‘wheelie’ bins and loaded into the truck on a mechanised system, e.g. a ‘rear loading’ truck. Additional collections of specific waste (e.g. bulky items, green waste, whitegoods) is well advertised and coordinated to allow for sorting at the household / source. There is clear signage and education to support the different types of collections and drop off points.

**Minimum Standard:** Bins should be provided and there should be some sort of regular and reliable collection of household waste. If bins are not provided, residents require access to the landfill and are encouraged to dispose their waste on a regular basis.

**Unacceptable Practice:** Waste is rarely collected from households.

**Steps for Achieving Best Practice**

1. Assess waste for volume and component to determine how often and what kinds of materials can be collected.
   - ...

2. Ensure the community has a reliable collection vehicle (with possible back up option).
   - ...

3. Provide the community with appropriate bins (appropriate in size, number and type) and establish regular servicing for both households and public place bins.
   - ...

4. Make collection schedules well known in the community, and provide them with a phone number and/or persons name to contact in the event of a problem with the service.
   - ...

5. Monitor the number of collections and schedule maintenance of vehicles.
   - ...

6. Consider special events in the community that might require additional collections.
   - ...
**3.07 Collection Frequency**

Collection frequency is determined by the number of residents and the amount of waste generated. In some remote communities smaller bins and more frequent pick ups are better than having larger bins picked up less frequently. However, if the collection service is too frequent residents may leave bins out on the roadside permanently which can attract animals, encourage vandalism and littering. Over-servicing of bins adds unnecessary expense to the community in terms of fuel, vehicle, wear and tear costs, and labour costs. Under-servicing can result in overflowing bins with rubbish spilled on the ground. Collection services should be explained to residents and information should include:

- Garbage collection days
- Recycling collection days and what materials are accepted
- Bin placement for ease of service.

Many councils also offer an annual large item collection service. In the Top End of the Northern Territory, this is an important service as it allows people to dispose of large items before the cyclone season when such objects can potentially become dangerous debris during storms. It is still a useful service in non cyclone areas as it encourages people to do a cleanup of bulky items.

**Best Practice:** Waste is collected from households once per week (or as determined to be appropriate), on the nominated day. When collected, bins are generally close to full, but not overflowing. Occasional clean up or once off collections are arranged to target specific types of waste such as green waste or whitegoods.

**Minimum Standard:** Collection occurs in the community, but may not be regular. An assessment is conducted to determine a suitable collection frequency to prevent over or under-servicing. Community has been advised of the collection frequency.

**Unacceptable Practice:** Collection of waste is completely unmonitored and random, usually only happening once bins are overflowing and messy. Community has no idea when to put bins out for collection, so they are left out all the time, get knocked over by wind and animals.

**Steps for Achieving Best Practice**

1. Conduct a waste audit or assessment of your community; monitor how full the bins are over a period of time. This will give you an idea of how much waste you are generating in the community.

2. If bins are always empty upon collection then maybe you need to decrease the frequency of your collection. If they are always very full, you might want to consider having more frequent collections.

3. Decide on which day/s you will be collecting household waste, and publicise this in the community. Make sure people know when to expect the collection, and how often.

4. If you decide to have collections for other things (e.g. bulky items or chemical clean outs) make sure that they are often enough that people don’t dispose of them in the normal waste, or dump them at the landfill themselves.
4. Ongoing Site Management

Ideally you should aim to have a landfill site that you can use for decades into the future. Aside from good siting of your landfill, you can extend the life of your current site with good management. Extending the life of your landfill will also save you money and help to protect your local environment. Ideally the landfill should be big enough to have enough trenches or area to hold waste for at least ten years. Usually for design purposes in smaller communities, it is assumed that each person produces about 800 to 1000 kg of waste a year. The amount of waste that is generated in your community might vary significantly from this depending on the following:

- Availability of transport to and from the community. This may impact the number of people that visit your community and how you can transport items to and from the community.
- Proximity to the source of supplies. This will affect what kinds of materials you have in your community, and what packaging is used to transport items.
- Social structure of community.
- Standard of housing including the age of the infrastructure, likely quantity of demolition and waste materials generated from new housing projects.

Landfill boundaries need to be clearly identified to ensure that the landfill does not extend beyond its ‘footprint’ or onto any adjoining allotments. Site management integrates all of the focus areas discussed in the Guidelines to extend the life of the landfill and prevent harm to the environment and humans. Correct management of Listed Wastes diverts the main hazardous materials from your landfill and implementing recycling and reuse areas reduces the amount of waste in the landfill site. Fencing, signing, collection regimes and education are all important aspects of managing any landfill facility.

Other aspects of site management include improving the occupational health and safety of staff and the community, making sure you have the right equipment to manage the work required and restricting access to the site.

Included in this section:

- 4.01 Plant and Equipment
- 4.02 Security and fencing
- 4.03 Access to Tip Face
- 4.04 Signage
- 4.05 Separation of Materials
- 4.06 Emergency Response Plan
4.01 Plant and Equipment

Suitable equipment for compacting and covering wastes should be available to carry out operations for the site. Outstation communities with limited access to equipment should be assessed on a case by case basis to determine practicalities of waste management.

Any equipment should be chosen for its ability to:

- Be fit-for-purpose, with the most appropriate functions for the needs of the community
- Give trouble-free service and be easily maintained onsite
- Run economically
- Ability to be stored securely – you might consider smaller sized equipment that can be locked away in a work shed or shipping container
- Necessary licensing for operation – be careful of equipment which requires additional licensing as you might not have people in the community with necessary licences.

You may find that a variety of equipment can give adequate service but in general the larger the population served by the landfill, the more robust the equipment will have to be to enable the landfill to be operated efficiently and effectively.

Depending on supply of cover material you might need haul trucks, dozers, and loaders. At larger sites these may be permanent fixtures but at most sites they will have to be supplied on a periodic basis, by the councils or outside contractors.

Equipment for combating small fires, e.g. fire extinguishers, water tanks, pumps and hoses - should be available at larger sites, and in those areas of high fire risk. Sites with periodic or minimal supervision onsite might only need a water tank or a fire extinguisher. In such cases, the local fire authority may be able to provide equipment and fire fighting services.

It is useful to have vehicle washing areas to help prevent waste materials and soil being transported off site. Wash down facilities should be constructed so that they have:

- an impervious hardstand;
- a suitable water supply; and
- an appropriate wastewater collection and disposal system.

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**Best Practice:** Equipment onsite is well maintained and appropriate to the tasks and environment of the community. Equipment that is not used frequently is kept at a centralised depot and shared amongst communities within the council. At a minimum, have access to a back hoe and front end loader. Equipment is stored securely onsite and maintenance logs are updated.

**Minimum Standard:** Some basic plant and equipment exists onsite. Nearby communities are also assessing their equipment and options will exist for shared equipment in the future. Some storage in community, but may not be well secured.

**Unacceptable Practice:** There is no appropriate equipment in the community to undertake even simple tasks, like waste collection or equipment is present but in complete disrepair.

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**Steps for Achieving Best Practice**

1. Work with your council asset manager to assess all existing plant and equipment for condition reports.

2. Update, or commence a maintenance registry, including condition reports.

3. Ensure equipment storage area is secure and sufficient for existing equipment.
Plant and Equipment

The type of plant and equipment to have in your community for ongoing site management will depend on your needs. A small front loader (above left) can be useful to push waste up, dig small trenches and generally maintain your landfill site. If you have recycling programs, a simple mobile compaction unit (above right) could be shared between communities.

The design of your landfill site doesn’t have to be too technical (see above), but it is important to have a plan or map of the area so that you can develop a good operational plan, monitor run off and plan for future development.
Key Performance Area: 4 ONGOING SITE MANAGEMENT

4.02 Security and fencing

Fencing at your site can help with controlling access to, and movement within, the site and provides good litter control. Fences also reduce the area available for dumping to a minimal practical size and protect areas undergoing decommissioning and rehabilitation.

As well as external fencing to the landfill site, fencing within the site is necessary to help control a number of issues, e.g. 1.2 m high, three strand wire fencing may be adequate to protect areas being rehabilitated, while two or more panels consisting of 2 m high chicken wire mesh on a large steel frame would be appropriate for litter control. Moveable fences around the active landfill trench can be relocated with the filling of the trench.

Recommended fencing for landfill perimeters (from NRETAS Guidelines) is at least 1800 mm high wire mesh.

It is also important to remember the purpose of the fencing, i.e. to keep some things in and other things out. If you have feral animals in your area, they may damage your fence. If you have prevailing winds, you will need fencing to reduce windblown litter from the landfill site. Planting vegetation around the landfill helps improve the visual amenity of the site and provides wind barriers to help control dust and minimise windblown litter.

Best Practice: Site is open only during standard business hours, and is locked outside of these hours. Appropriate and well positioned signage is present. Around the site there is a permanent 1800 mm high feral animal-proof fence. Within the site there are a variety of smaller, movable fences to control litter, restrict access to dangerous areas and to guide users to the correct disposal sites.

Minimum Standard: A perimeter fence is erected around the landfill site when resources permit. An 1800 mm fence is recommended to control litter, access and feral animals.

Unacceptable Practice: There is no fencing at all onsite. Litter blows around and into community; feral animals wander through site and scavenge at the tip face. There is no restriction of access or security onsite.

Steps for Achieving Best Practice

1. Work with the community to determine the external boundary of landfill site (refer to NRETAS Siting Guidelines for more information).

2. Determine fencing needs for your site to ensure it is appropriate in height, material and distance.

3. Assess materials at the landfill site to see if materials can be reused for movable internal fencing.

4. Regularly inspect fencing for damage and repair as early as possible.
4.03 Access to Tip Face

The ‘active’ tip face is the part of your landfill that is open and where people actively dumped waste. If your tip face is very large, it is difficult to control litter, materials start to break down in the open air, vermin and feral animals have access to the waste and it generally becomes a bigger task to manage. By restricting the ‘active’ tip face, you reduce the amount of open and exposed waste that is at your site, and reduce a lot of the associated issues.

Using earth bunding around the tip face of unmanned sites is also important for the safe operation of vehicles, to prevent accidental reversing into trenches or similar hazards.

**Best Practice:** Public access to the tip face is restricted to a strip of only 2 m along the trench, which is clearly indicated by appropriate signage. Access is restricted using some earth bunding, preventing vehicles from backing up to the site, and fencing. Council staff regularly inspect the site to ensure materials are not dumped outside the tip face, and that inappropriate items don’t remain in the tip face.

**Minimum Standard:** Tip face is restricted using some quite good bunding. Material is pushed up and compacted regularly, when equipment is available. Inappropriate materials are removed from the tip face by staff when possible.

**Unacceptable Practice:** Tip face is completely open to anyone to dump anywhere. Trench is full to different levels, rarely covered over, often burnt, and various materials are dumped. No machinery can get into the tip face to compact or push it up.

**Steps for Achieving Best Practice**

1. Decide what part of the tip is best for access, a section of only about 2 m to 5 m.

2. Restrict open tip face area using internal fencing or bunding.

3. Using machinery or equipment available, compact or push wastes up to one end.

4. Cover waste regularly, and consider use of vegetation to assist in covering and dust suppression.

5. Ensure council staff monitor site to remove inappropriate items from tip.

6. As access area become full, open more of the tip face up along the trench site, being sure to restrict access to full area.

Signage is often not enough to encourage people to dump materials in the correct place (left). If access to the tip face is not restricted (right), materials are dumped everywhere and difficult to manage.
4.04 Signage

One of the simplest things you can do to improve management of your landfill site is to erect signs to direct people where they can dispose their waste. Without signs, you can’t expect people to put their materials in the right place. Signs don’t have to be expensive, detailed or technical. Using pictures instead of words will help address issues of different languages. Simple arrows and directions signs can also help to guide people where to drive at the site.

**Best Practice:** Signs are locally and culturally appropriate, using graphics and local language to support the message. Where relevant they refer to appropriate legislation and possible penalties. Signs are durable, made of steel with weatherproof paint to Australian Standards. Different signs are used for different audiences and purposes. Signs refer to disposal and safety processes, opening hours, access to site and contact details.

**Minimum Standard:** Signs are present but may be unclear. They are produced using available resources eg fridge doors or car bonnets. May only be written in English and not include graphics.

**Unacceptable Practice:** There is no signage anywhere on the site.

**Steps for Achieving Best Practice**

1. Decide on the areas that need to be sign posted (good idea to do a ‘walk through’ of the site and decide what requires specific signage).

2. Work with community and staff to ensure message is clear and culturally appropriate.

3. Gather materials from within the community (possibly from the landfill site) that could be re-used for signage.

4. Consider working with community centre or school to design signs. Maybe have a drawing or art competition?

5. Signs containing information for users of the landfill should be erected at the entrance and at appropriate points within the facility.

6. As a guide, the following information should be included in your signs:
   - Name of the facility (possibly the community name, or street name)
   - Owner and operator of the facility (i.e. council council or community name), including contact details for reporting emergency situations, making inquiries, registering complaints
   - Hours of operation of the site
   - Any arrangements or facilities for separation of materials, recycling and reuse of material
   - Wastes which should not be dumped at the landfill (and who to contact for advice on acceptable methods for disposal of such wastes)
   - Areas that are not open to the public, e.g. areas under rehabilitation or construction, or hazardous disposal points
   - Controls over scavenging, lighting or fires, littering and illegal dumping
   - Prohibited materials and Listed Waste
   - Prohibited activities (e.g. litter on approach roads, burning waste or unauthorised disposal of waste) and the penalties for offences.
4.05 Separation of Materials

Although recycling options are limited in small communities, the separation of materials at the landfill site will have major benefits to your waste management. Aside from the importance of separating dangerous goods (see Key Performance Area 1 - Hazard Reduction), other benefits include, but aren’t limited to:

- Minimise reliance on plant and equipment as less damage is caused when pushing up waste in trenches, and less need for compaction
- Increase the longevity of your tip by not allowing bulky items to be disposed in the landfill
- Provide materials for reuse for community, such as wood for firewood, building materials, and furniture.

Some good examples of reusing materials include tyres used for bunding and fencing at the landfill or in the community, washing machine bowls and other bulky items can be used as small garden beds or plant holders, building materials reused to create shade spaces or dog kennels in the community. The list is endless!

**Best Practice:** Only final residual waste is disposed of at the landfill. All bulky materials, paper, cardboard, containers and green waste are separated out. The site is well planned, easily accessed and clearly signposted. Materials separated include septage, hazardous wastes, construction materials, large bulky items, cars, whitegoods, carcasses, trees, recyclable materials.

**Minimum Standard:** Some separation of bulky items such as cars and whitegoods, and Listed Waste such as batteries and used oil, and there is signage regarding these wastes at the site.

**Unacceptable Practice:** No separation at all, with everything going into the one trench.

**Steps for Achieving Best Practice**

1. Set up drop off bays within the boundary of your landfill, away from the active tip face or trench for each waste to be separated.

2. Create “yes” signs for the various items to be separated, as well as “no” signs to stop items going in the wrong place.

3. Investigate ways these items could be reused in the community, and investigate collections for items that can’t be reused (e.g. lead acid batteries).

4. Work with community to target specific items (such as batteries) around the community.

5. Arrange for separate household collection of bulky items, green waste and dangerous goods.
Key Performance Area: 4 ONGOING SITE MANAGEMENT

Signage

Signage doesn’t have to be highly technical or professional. It is better to have some kind of signage to give people direction for dumping materials, than to wait until you have enough money for more professional signs. You can even re-use scrap materials gathered from the landfill site as signs. It can help to educate people – for example, using a car door for a sign that points to car bodies, using a fridge door to point to whitegoods disposal.

Separation of materials

If you don’t separate any materials, you will quickly run out of space in your trench (above left). Designate areas with signs, bunding and markers to show people what materials get separated and where to (above right).
**4.06 Emergency Response Plan**

Due to the nature of materials being disposed at landfill sites, you could have urgent or emergency situations that require a fast response. This could include uncontrolled onsite fires, flooding, chemical spills, loose asbestos, contaminated food items or even a sudden influx of medical wastes.

The aim of an emergency response plan is to clarify management strategies and structures that are needed to coordinate events that may be a declared or non declared emergency within the community. These events may be beyond the capacity of your community to effectively manage or control, however it is important that you have a clearly defined strategy to ensure the event is managed by the appropriate and capable authorities when necessary.

Developing a simple emergency response plan, and making sure all staff are aware of their responsibilities in an emergency can reduce the risk of a bad situation getting much worse.

**Best Practice:** An Emergency Response Plan is in place and is reviewed regularly. Topics include floods, Listed Wastes, fire, high wind events, workplace injury, and storm conditions. Identify high risk seasons and schedule preparedness measures. Identify equipment and processes to manage. The planning and location of facility should be to mitigate risks.

**Minimum Standard:** Some plans for emergencies exist, although they need updating. A communication plan is underway to educate staff and the community on emergency procedures.

**Unacceptable Practice:** Site has never been assessed for emergency procedures. No plan or preparation is in place.

**Steps for Achieving Best Practice**

1. **Contact LGANT, Northern Territory Police, Fire and Emergency Services (NTPFES) and Bushfires NT (within NRETAS) for resources on emergency planning.**

2. **Conduct a ‘walk through’ of your waste site to identify issues that may require a emergency response.**

3. **Consider each issue and determine how you could address them in an emergency situation.**

4. **Develop an Emergency Response Plan and have it approved by council.**

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Examples of fire fighting equipment
# Important Contact Details

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<thead>
<tr>
<th>Agency / Organisation</th>
<th>Most Relevant Position</th>
<th>Contact Details</th>
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<tbody>
<tr>
<td>Batchelor Institute of Indigenous Tertiary Education</td>
<td>Lecturer – Environmental Health</td>
<td>p... (08) 8939 7348 f... (08) 8939 7123</td>
</tr>
<tr>
<td>Charles Darwin University</td>
<td>School of Australian Indigenous Knowledge Systems</td>
<td>p... (08) 8946 7749</td>
</tr>
<tr>
<td>Cleanaway</td>
<td>Community Education Officer</td>
<td>p... (08) 8935 1110</td>
</tr>
<tr>
<td>Department of Health and Families (DHF)</td>
<td>Environmental Health Program Officers, including</td>
<td>Greater Darwin Region - (08) 8922 7377</td>
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<td></td>
<td>Environmental Health Officers</td>
<td>East Arnhem - (08) 8987 0440 / (08) 8987 0441</td>
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<td></td>
<td>Regional Managers</td>
<td>Katherine – (08) 8973 9061 / (08) 8973 9062</td>
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<td></td>
<td>Barkly – (08) 8962 4302</td>
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<tr>
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<td>Central Australia - (08) 8955 6122</td>
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<tr>
<td>Department of Local Government and Housing</td>
<td>Regional Managers</td>
<td>Alice Springs Regional Manager</td>
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<tr>
<td></td>
<td></td>
<td>Leichhardt Building, 21 Gregory Tce,</td>
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<td></td>
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<td>Alice Springs NT 0870</td>
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<td>p... (08) 8951 5616 f... (08) 8951 5539</td>
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<td></td>
<td>Darwin Regional Manager</td>
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<tr>
<td></td>
<td></td>
<td>1st Floor, RCG House, 83-85 Smith Street</td>
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<td>Darwin NT 0800</td>
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<td>Katherine Regional Manager</td>
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<tr>
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<td>Government Centre, Ground Floor, First Street</td>
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<td>Katherine NT 0851</td>
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<td>p... (08) 8973 8519 f... (08) 8973 8999</td>
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<td>Gove Regional Manager</td>
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<tr>
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<td>Arnhem Shopping Village, Arnhem Road</td>
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<td>Nhulunbuy, NT 0881</td>
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<td>p... (08) 8987 0528 f... (08) 8987 0353</td>
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<td>Tennant Creek Regional Manager</td>
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<td>First Floor Government Centre, Peko Road</td>
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<td>Tennant Creek NT 0861</td>
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<td>p... (08) 8962 4387 f... (08) 8962 4430</td>
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<tr>
<td>Department of Natural Resources, Environment, The Arts</td>
<td>Environmental Operations</td>
<td>Darwin – (08) 8924 4137</td>
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<td>and Sport (NRETAS)</td>
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<td>Alice Springs - (08) 8951 9201</td>
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<td>e... <a href="mailto:licencing.nretas@nt.gov.au">licencing.nretas@nt.gov.au</a></td>
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<tr>
<td>Katherine West Health Board</td>
<td>Environmental Health Officer</td>
<td>p... (08) 8971 9315</td>
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<tr>
<td>Keep Australia Beautiful Council (NT)</td>
<td>CEO</td>
<td>p... (08) 8981 5535</td>
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<td>NT WorkSafe</td>
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<td>Darwin – 1800 019 115, (08) 8999 5141</td>
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<td>Katherine – (08) 8973 8416; (08) 8973 8930</td>
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<td>Alice Springs - (08) 8951 8682 / (08) 8951 8618</td>
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<tr>
<td>The Centre for Appropriate Technology (Alice Springs)</td>
<td>Waste Management Research Officer</td>
<td>p... (08) 8951 4322</td>
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## Contacts for your community

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<thead>
<tr>
<th>Council Asset &amp; Works Manager</th>
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<td>Council Director of Infrastructure</td>
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<td>Shire services managers</td>
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If you would like to provide feedback or suggest improvements for these Guidelines please email info@lgant.asn.au