

SEPTEMBER 2021

# North One Hotel Development and Apartments

WASTE MANAGEMENT PLAN



**CONTROL AND REVISION HISTORY****Revisions**

Version	Document	Author	Reviewer/Approver	Date Reviewed
Version 1.0	WMP	Sharon Arena – BPL	John Hamilton - Urbanscope	June 2021
Version 1.1	WMP	Sharon Arena - BPL	John Hamilton - Urbanscope	September 2021



Completed by: **BPL Environmental**

ABN: 88 119 156 884

Tel: 0419 934 461

Address : 5/7 Albany Highway, Armadale  
Western Australia 6122

For further information on this report please contact:

**Ms Sharon Arena – BPL Environmental**

Tel: 0419 934 461

Email: [sharon@bplenvironmental.com.au](mailto:sharon@bplenvironmental.com.au)

**Disclaimer**

*In the preparation of this document, BPL Environmental (BPL) has relied on data, plans and other information provided by KTT Investment Pty Ltd and its Agents. Except as otherwise stated in the Report, BPL has not verified the accuracy or completeness of the information. BPL will not be liable in relation to incorrect conclusions or recommendations should any data or information, be incorrect, misrepresented or otherwise not fully disclosed to BPL. Within the limitations imposed by the commission, the assessment of the site and preparation of the report have been undertaken in accordance with generally accepted practices using a degree of care ordinarily exercised by professional resource and environmental consultants. No other warranty, expressed or implied, is made.*

**CONTENTS**

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Project Overview .....	1
1.2	Proponent Details.....	1
1.3	Objectives.....	3
1.4	Legislation and Policy.....	3
<b>2</b>	<b>WASTE STREAMS .....</b>	<b>4</b>
2.1	Construction Wastes.....	4
2.1.1	Construction Waste Generation .....	4
2.2	Operational Wastes .....	4
2.2.1	Operational Waste Generation.....	4
<b>3</b>	<b>WASTE MANAGEMENT .....</b>	<b>6</b>
3.1	Construction Wastes.....	6
3.1.1	Building, Fabrication and Rubble Wastes.....	6
3.1.2	Green waste .....	6
3.1.3	Packaging .....	6
3.1.4	Domestic Wastes.....	6
3.1.5	Hazardous Wastes.....	6
3.1.6	Sewage and Wastewater .....	7
3.2	Operational Wastes .....	7
3.2.1	Refuse Storage Area .....	7
3.2.2	General Waste.....	8
3.2.3	Food and Putrescible Waste .....	8
3.2.4	Cardboard/Paper/Packaging Wastes .....	8
3.2.5	Comingled Recyclable Wastes .....	9
3.2.6	Hazardous Wastes.....	9
3.2.7	Fats and Oils.....	9
3.2.8	E-Waste.....	9
3.2.9	Green Waste .....	9
3.2.10	Sewage and Wastewater .....	9
<b>4</b>	<b>WASTE MANAGEMENT HIERARCHY .....</b>	<b>11</b>
4.1	Avoid and Reduce .....	11
4.2	Reuse.....	11
4.3	Recycle .....	11

4.4	Recovery.....	11
4.5	Landfill.....	11
<b>5</b>	<b>RECORDS MANAGEMENT .....</b>	<b>12</b>
5.1	Waste Records.....	12
5.2	Incidents and Complaints.....	12
5.3	Inspections .....	12
<b>6</b>	<b>TRAINING AND AWARENESS .....</b>	<b>13</b>
<b>7</b>	<b>WMP REVIEW .....</b>	<b>13</b>
<b>8</b>	<b>REFERENCES .....</b>	<b>14</b>

### LIST OF TABLES

Table 1-1: Proponent Details .....	1
Figure 1-1: Project Location .....	2
Figure 1-2: Waste Management Hierarchy .....	3
Table 2-1: Waste Generation Rates .....	4
Table 2-2: Average Daily Waste Volumes.....	5
Table 3-1: Potential Impacts and Management for Waste .....	7
Figure 3-1: Site Plan Indicating Refuse Storage Area and Loading Dock.....	10

### LIST OF FIGURES

Figure 1-1: Project Location .....	2
Figure 1-2: Waste Management Hierarchy .....	3
Figure 3-1: Site Plan Indicating Refuse Storage Area and Loading Dock.....	10

### LIST OF ABBREVIATIONS

Abbreviation	Meaning
BPL	BPL Environmental
Development/Project	North One Hotel and Apartment Development
E-waste	Electronic waste
ha	Hectare
km	Kilometre
KTT	KTT Investment Pty Ltd
NT	Northern Territory
NT EPA	Northern Territory Environmental Protection Authority
Regulations	<i>Waste Management and Pollution Control (Administration) Regulations 1998</i>
WMP	Waste Management Plan
WMPC Act	<i>Waste Management and Pollution Control Act 1998</i>

## 1 INTRODUCTION

KTT Investment Pty Ltd (the **Proponent**) intends to develop the North One Hotel and Apartments (the **Development**) - a high-quality multi-story hotel/villa, apartment complex with public bar and markets, situated at Little Mindil Beach (the **site**).

To achieve the waste management goals for the North One Development and to align with the objectives for waste management within the Northern Territory (**NT**), KTT has prepared this Waste Management Plan (**WMP**) for the construction and operational phases of the Development.

### 1.1 PROJECT OVERVIEW

The proposed North One Development is situated at 25 Gilruth Avenue, The Gardens, Northern Territory, approximately 2.5 kilometres (**km**) north-west of the Darwin Central Business District (**Figure 1-1**).

The 5.13 hectare (**ha**) Project site is currently largely cleared, with a partially developed at-grade carpark, associated landscaping and a large lawn area. Little Mindil beach is to the north-west and the site is adjacent to the Mindil Beach Casino Resort complex.

The Development will consist of five buildings comprising the following:

- 150 hotel rooms (including 16 lagoon villas and 3 garden villas);
- 53 serviced apartments;
- Six retail spaces;
- 277 car parks; and
- Beachfront food and beverage venue.

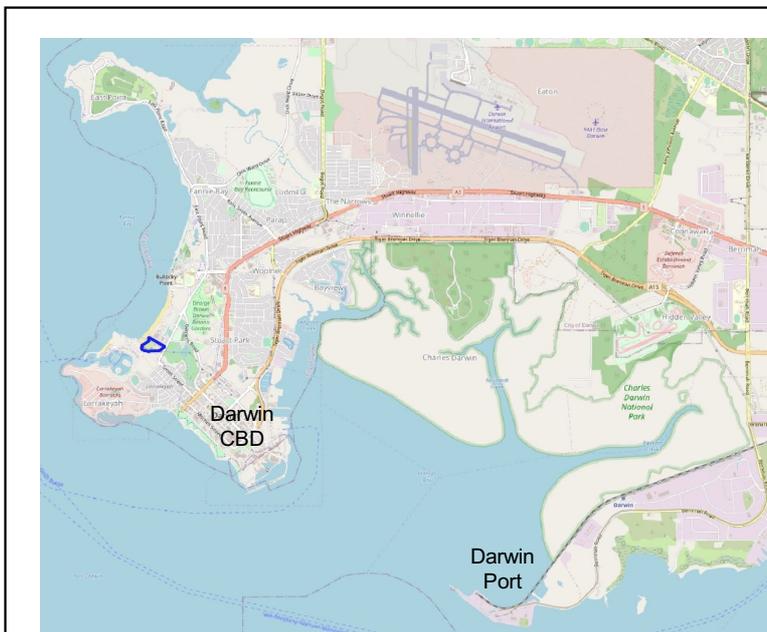
Bars, function and entertainment venues, dining facilities and a market area will be incorporated into the complex design.

### 1.2 PROPONENT DETAILS

Proponent details for the North One Hotel and Apartment Development are summarised in **Table 1-1**.

**Table 1-1: Proponent Details**

<b>Proponent</b>	KTT Investment Pty Ltd
<b>Contact</b>	John Hamilton – Urbanscope (Australia) Pty Ltd
<b>Postal address</b>	c/- 459 Harris Street Ultimo NSW 2007
<b>Phone</b>	+61 2 9042 0600
<b>Fax</b>	+61 2 9660 7681
<b>Email</b>	johnha@urbanscope.com.au
<b>Proponent ABN</b>	70 634 253 197



0 50 100 m



### Project Location

Figure 1-1

Lot 7651 boundary

Date: 26/02/2021  
 CRS: GDA 1994 MGA Zone 52  
 Author: eleanor@animalplantmineral.com.au

### 1.3 OBJECTIVES

This WMP aims to:

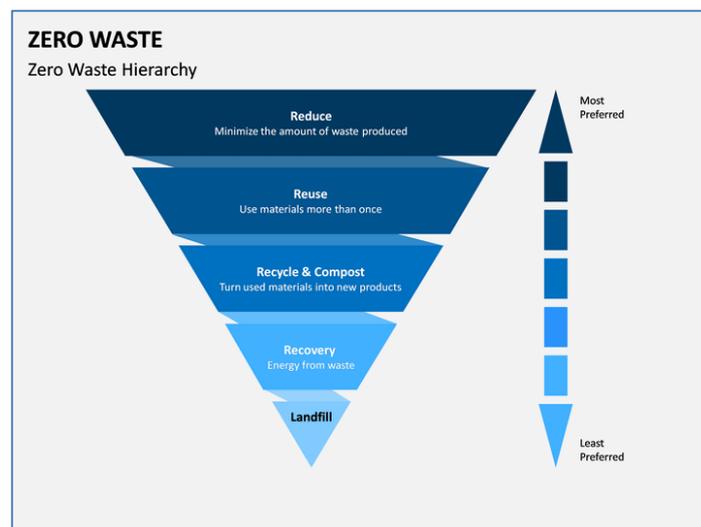
- Detail the legislative and policy framework for waste management;
- Identify waste streams associated with North One construction and operation;
- Detail waste management procedures for the Project; and
- Describe the application of the waste management hierarchy.

### 1.4 LEGISLATION AND POLICY

The overarching legislation applicable to waste management within the NT is the *Waste Management and Pollution Control Act 1998 (WMPC Act)* and *Waste Management and Pollution Control (Administration) Regulations 1998* (the **Regulations**). The key aim of the WMPC Act is to:

*“...to provide for the protection of the environment through encouragement of effective waste management and pollution prevention and control practices and for related purposes.”*

The minimisation of waste generation through application of the waste management hierarchy is provisioned in section 27 of the *Environment Protection Act 2019 (EP Act)*. The principles of the waste management hierarchy are described in **Figure 1-2**.



**Figure 1-2: Waste Management Hierarchy**  
(Source: SketchBubble, 2021)

The Northern Territory Environmental Protection Authority (**NT EPA**) has also produced the *Waste Management Strategy for the Northern Territory 2015 – 2022*, which:

*“...provides a basis for understanding and improving the management of waste across the Northern Territory (the Territory) to reduce the generation of waste, increase rates of resource recovery and to minimise environmental impacts caused by waste.”*

## 2 WASTE STREAMS

### 2.1 CONSTRUCTION WASTES

Construction phase waste streams for the Development may include:

- Building material waste;
- Fabrication consumables;
- Domestic waste (food scraps and office waste);
- Green waste;
- Rubble;
- Hazardous wastes, including hydrocarbons, paints, chemicals;
- Shipment packaging; and
- Sewage and wastewater.

#### 2.1.1 Construction Waste Generation

As the detailed design phase of the Development is not complete, quantification of predicted construction waste volumes has not been undertaken. Generation of construction wastes will, however, be short-term; with waste types and volumes changing depending on the stage of construction.

### 2.2 OPERATIONAL WASTES

The waste streams anticipated from the longer term operation of the North One Hotel and Apartment Development may include:

- General waste;
- Food and putrescible wastes;
- Cardboard/paper/packaging wastes;
- Comingled recyclable wastes;
- Hazardous wastes (small quantities only such as cleaning products etc)
- Fats and Oils;
- Electronic waste (E-waste);
- Green waste; and
- Sewage and wastewater.

#### 2.2.1 Operational Waste Generation

In order to determine the anticipated volumes of waste generated by the proposed Development, the waste generation rates detailed in **Table 2-1** have been applied.

**Table 2-1: Waste Generation Rates**

Source	Garbage Generation	Recycling Generation	Unit
Bedrooms	5-10	1	L/Bed/Day
Restaurants	667	133	L/100m <sup>2</sup> FloorArea/Day
Bars/Clubs	50	50	L/100m <sup>2</sup> FloorArea/Day

\* Based on Randwick City Council waste generation rates

The North One Hotel Development will incorporate two, three and four bedroom villas and apartments, along with 149 single hotel rooms. In total, the Hotel will have a 320 bed capacity. The estimated occupancy rate will vary significantly depending on seasons, with an expected occupancy of 80%-90% during the dry season and 50% in the wet season.

All day dining, bars and entertainment areas account for 688 m<sup>2</sup> of floor space within the complex. Of this, 422m<sup>2</sup> is restaurant area, with the remainder being bar and function/entertainment facilities.

Given the decreased occupancy during the wet season, a 50% reduction has been applied to waste generation rates for that period. A 90% rate has been applied for the dry season.

The calculated daily waste volumes for both wet and dry seasons are presented in **Table 2-2**.

**Table 2-2: Average Daily Waste Volumes**

Season	Garbage Generation (L/day)	Recycling Generation (L/day)
Wet Season	800 – 1,600	504
Dry Season	4,079 – 5,519	908

### **3 WASTE MANAGEMENT**

Whilst every effort will be made to reduce waste generation through procurement or recycling strategies, an important focus is ensuring that remaining wastes are handled and disposed in an environmentally acceptable manner.

Waste management protocols will form a component of the North One Environmental Management System, which will be established prior to opening of the Hotel to the public.

Management summaries for the proposed waste streams are provided below.

#### **3.1 CONSTRUCTION WASTES**

Generation of waste materials in the construction phase will be short term. Waste handling and disposal protocols, including good housekeeping and inspection regimes, will be established to ensure impacts are minimised.

##### **3.1.1 Building, Fabrication and Rubble Wastes**

Designated waste storage areas for construction wastes will be incorporated within the site, facilitating segregation of waste types to ensure all potential recycling options are realised. Wastes will be removed from site by a licenced contractor for recycling or disposal.

##### **3.1.2 Green waste**

Minimal green waste will be generated from construction activities due to the largely devoid nature of the site. Clearing/scrubbing will be undertaken on a campaign basis, with wastes mulched or removed from site immediately following clearing activities to reduce odour impacts.

##### **3.1.3 Packaging**

Where possible, packaging materials will be returned to the relevant supplier. Remaining wastes will be segregated into recyclable and non-recyclable materials and stored within the waste storage area prior to removal from site.

##### **3.1.4 Domestic Wastes**

Putrescible wastes will be disposed within designated bins around the site. All domestic waste bins will be secured with lids to deter scavenging from fauna species.

Waste storage areas will be located to maximise the distance from sensitive receptors and wastes will be removed from site frequently to control odour impacts.

##### **3.1.5 Hazardous Wastes**

Specific storage areas, consistent with the requirements of *Australian Standard 1940:2017 Storage and Handling of Flammable and Combustible Liquids*, material safety data sheets (**MSDSs**) and requirements from the WMPC Act, will be established for hazardous wastes generated during construction (e.g waste oil, asphalt, paints and solvents etc). A licenced contractor will be engaged to remove hazardous wastes from site for appropriate disposal or recycling.

### 3.1.6 Sewage and Wastewater

Temporary ablution blocks will be established at the site for the duration of the construction phase. These facilities will be located away from sensitive receptors and wastes will be regularly collected by a licenced contractor.

## 3.2 OPERATIONAL WASTES

### 3.2.1 Refuse Storage Area

A dedicated Refuse Storage Area and loading dock has been incorporated into the design of the Hotel complex to facilitate effective management of waste streams generated by the Development. Key components of the refuse management area include:

- Garbage cool room;
- Recycling and cardboard storage area; and
- Loading dock.

The waste storage facilities will be accessed via Gilruth Avenue and will be situated within the complex. Storage areas will be screened from both Hotel guests and the general community living or working adjacent to the Development. Waste collection will be scheduled to minimise impacts upon guests and residents, e.g specifically avoiding the peak arrival and departure times of the hotel. The Refuse Storage Area, indicated in Figure 3-1, will have sufficient storage capacity for peak season waste volumes.

Potential impacts arising from operation of the Refuse Storage Area are identified in Table 3-1, along with proposed management strategies.

**Table 3-1: Potential Impacts and Management for Waste**

Potential Impact	Management Strategies
Odour emissions	<ul style="list-style-type: none"> <li>• Ensure wastes are covered at all times.</li> <li>• Putrescible and odour generating wastes to be stored within the Garbage Cool Room.</li> <li>• Regular, frequent collection of wastes to avoid overtopping of storage receptacles and generation of odours.</li> </ul>
Attraction of Pest and Vermin Species	<ul style="list-style-type: none"> <li>• Maintain good housekeeping practices.</li> <li>• Ensure wastes are covered at all times.</li> <li>• Staff to report any sightings or signs of pest or vermin activity.</li> <li>• Pest control to be undertaken as required to prevent outbreaks of vermin populations.</li> <li>• Staff training regularly completed with regard to waste management and storage requirements.</li> </ul>
Noise impact from waste handling activities	<ul style="list-style-type: none"> <li>• Noise impacts from Refuse Storage Area operation will be considered during the final design stage. Where appropriate, noise barriers will be constructed.</li> <li>• Collection of wastes by licenced contractors will be scheduled during daylight hours.</li> <li>• Equipment used for waste handling and storage will be maintained to manufacturer specifications to</li> </ul>

Potential Impact	Management Strategies
	<p>ensure optimum operation, reducing excessive noise generation from faulty equipment.</p> <ul style="list-style-type: none"> <li>• Staff training regularly undertaken with respect to waste management and storage requirements.</li> </ul>
Contamination to soil or water	<ul style="list-style-type: none"> <li>• Refuse Storage Area will be hardstand and incorporate stormwater/runoff collection systems.</li> <li>• Staff training will be provided for the appropriate handling and storage of waste streams.</li> <li>• Spill response equipment will be available to limit any potential migration of contamination. Staff will be appropriately trained in the use of equipment.</li> <li>• Inspection protocols will be implemented for waste storage facilities, incorporating bunded areas, stormwater drains and storage receptacles.</li> </ul>
Visual amenity impact	<ul style="list-style-type: none"> <li>• Daily inspections of the Refuse Storage Area and Hotel facilities to identify issues with windblown litter, review bin capacity, inspect housekeeping standards etc.</li> <li>• Ensure the Refuse Storage Area is appropriately screened from Hotel guests and local neighbours of the complex.</li> <li>• Ensure wastes are covered at all times and stored appropriately within the Refuse Storage Area.</li> </ul>

Further detail on handling of different waste streams is provided in the below sections.

### 3.2.2 General Waste

General wastes will be collected from the numerous bins located within rooms and around the complex. As part of standard cleaning and housekeeping services, waste from these bins will be deposited into bulk waste receptacles situated within the Garbage Cool Room. General wastes will be frequently removed from Hotel facilities to ensure overtopping of refuse does not occur. A regular schedule will be implemented for removal of general wastes from the site for disposal at Shoal Bay Waste Management Facility.

### 3.2.3 Food and Putrescible Waste

Separate bins will be provided within food preparation areas to collect food wastes. Food wastes will be stored within the Garbage Cool Room prior to disposal off site. It is expected that the frequency of collection for off-site disposal will increase during peak periods, to ensure overtopping of wastes and odour issues do not occur. Options for food pulp systems will also be considered as part of the detailed design phase of the Development.

### 3.2.4 Cardboard/Paper/Packaging Wastes

Dedicated bins will be provided for cardboard and paper, particularly in offices, storage areas and within the loading dock. Wastes will be collected regularly, compacted as appropriate and stored within the Recycling and Cardboard Storage Area prior to collection by a licenced waste recycling company.

Where applicable, packaging materials will be returned to the supplier as an alternative to disposal. Items will be stored within the Refuse Storage Area prior to being returned.

### **3.2.5 Comingled Recyclable Wastes**

Specific bins will be provided throughout the Hotel for recyclable wastes such as glass, recyclable plastic products, cans. Smaller recycling bins will be regularly collected as part of the standard cleaning and housekeeping service and deposited into a bulk recycling waste bin located within the Recycling and Cardboard Storage Area. A regular collection service will be established with a licenced waste recycling company to removed recyclables from the complex.

Where practical, segregation of recyclable products will be promoted as an alternative to co-mingled disposal.

### **3.2.6 Hazardous Wastes**

Hazardous wastes are not anticipated in large quantities and will mainly be associated with cleaning products and chemicals, and small quantities of diesel and fuel required for backup gensets and operation of equipment associated with grounds maintenance. Hazardous materials will be stored in accordance with *Australian Standard AS:1940-2017 The Storage and Handling of Flammable and Combustible Liquids* and MSDS requirements. This will include any requirements for bunding and segregation. A licenced hazardous waste contractor will be engaged to collect wastes for off-site treatment on an as needs basis.

### **3.2.7 Fats and Oils**

Dedicated receptacles will be placed within food preparation areas for disposal of fats and oils. The contents of individual receptacles will be transferred to a bulk waste storage vessel located within the Refuse Storage Area. A specialised waste contractor will be engaged to regularly remove fats and oils from the complex. It is expected that the frequency of collection will be increased during peak periods compared to the off-season period.

### **3.2.8 E-Waste**

A dedicated e-waste bin will be provided within the administration facilities at the Hotel to collect electronic wastes. A specialised recycling company will be engaged to remove e-wastes from the site on an as needs basis.

### **3.2.9 Green Waste**

Maintenance of the Hotel's landscaped grounds will result in the periodic generation of green wastes. Wastes will be preferentially mulched or removed from site. Interim storage for green wastes will be established within the screened maintenance compound. Green wastes not mulched will be removed promptly to limit odour and fire risks.

### **3.2.10 Sewage and Wastewater**

The North One Hotel and Apartment Complex will be connected to the existing sewer system. A Trade Waste Agreement will be established with Power and Water Corporation, as appropriate, to account for disposal of wastes to the sewer system.



## **4 WASTE MANAGEMENT HIERARCHY**

The waste management hierarchy is a nationally and internationally accepted philosophy for prioritising efforts to manage waste (NT EPA, 2015). The hierarchy will be the guiding principle for use and management of products to reduce waste generation, as detailed below.

### **4.1 AVOID AND REDUCE**

The highest priority is to avoid or reduce the generation of waste. The North One Development will implement this through:

- Procuring items that will generate the least waste, particularly packaging waste;
- Purchasing of recyclable products where available;
- Avoiding single use items wherever possible;
- Implementing effective ordering processes so over-ordering of products and materials is avoided.

### **4.2 REUSE**

Where avoiding or reducing the generation of waste is not possible, the next priority for waste management is reuse of materials without further processing. The North One Development will:

- Identify wastes that can be reused;
- Establish systems for segregation and storage of reusable wastes prior to reuse;
- Explore options for reuse within the organisation for as many items as possible or seek alternative reuse options by external parties.

### **4.3 RECYCLE**

Some wastes can be reused with additional processing, as an alternative to landfill disposal. The North One Development will:

- Identify wastes that can be recycled;
- Establish a dedicated collection system throughout the complex for recyclable materials;
- Engage licenced contractors to collect and process materials for recycling;
- Implement awareness programs, including adequate signage, throughout the Hotel to encourage recycling of wastes.

### **4.4 RECOVERY**

Where wastes cannot be reused or recycled, options for conversion of the waste to energy should be explored. The energy recovery process from waste materials reduces the depletion of natural resources to produce light, heat and electricity. The North One Development will consider options for energy recovery from wastes produced within the complex as an alternative to disposal to landfill.

### **4.5 LANDFILL**

Disposal to landfill is the least preferred option for wastes generated at the North One Hotel and Apartment Complex and will only be considered where the above alternatives are not applicable. Wastes disposed to landfill will be collected by a licenced contractor and disposed to a licenced facility, in this case the Shoal Bay Waste Management Facility.

## **5 RECORDS MANAGEMENT**

### **5.1 WASTE RECORDS**

Records for waste management that will be maintained for the North One Development will include:

- Waste type;
- Volume / weight;
- Date of collection;
- Company and Registration Number of waste collector;
- Destination of waste (e.g. recycler, landfill)
- Inspection records for waste storage areas

### **5.2 INCIDENTS AND COMPLAINTS**

Incidents involving waste products will be recorded in the organisation's Incident Reporting System. Initial response actions will be implemented for the incident and, where appropriate, corrective actions will be instigated to prevent re-occurrence. Records of incidents will be maintained and reviewed to identify patterns of occurrence.

A Complaints Register will also be maintained for the Hotel to record complaints associated with waste generation, storage and management within the complex. Where warranted, actions will be employed to address the complaint and reduce further occurrences. Actions instigated will also be recorded within the Complaints Register.

### **5.3 INSPECTIONS**

An effective inspection regime will be implemented for all waste handling areas. Inspections will be undertaken throughout the complex and within the Refuse Storage Area at least daily, with records maintained. Inspections will:

- Check bin capacity to avoid overtopping of waste;
- Ensure wastes are contained within the appropriate storage areas;
- Ensure all wastes are covered;
- Inspect areas for windblown waste and housekeeping standards;
- Inspect for signs of pest and vermin species;
- Note any odour issues.

Weekly inspections of Little Mindil Creek and escarpment vegetation areas will also be conducted for presence of litter.

## **6 TRAINING AND AWARENESS**

All personnel and subcontractors shall receive suitable WMP induction/training. The aim of the training is to ensure that all site personnel are aware of the issues relating to waste management, their responsibilities and are competent to carry out the works.

WMP requirements will be explained during site induction, staff meetings, notifications, on-going training and other communication forums. Access to the WMP will be made available during induction and maintained on the server.

During inductions and training the following information will be provided to personnel:

- Description of the different waste streams likely to be generated and the potential issues associated with them;
- Storage and handling requirements;
- Inspection processes;
- Records management;
- Complaints management; and
- Principles of the Waste Management Hierarchy.

All such inductions and other training shall be recorded in the Site Induction & Training Register.

## **7 WMP REVIEW**

This WMP should be reviewed annually at a minimum. The WMP should also be reviewed following significant incidents and updated where appropriate to ensure that it remains relevant and effective throughout the life of the Development.

All reviews, changes or updates are to be recorded using the Control and Revision History boxes on page i of this document.

## 8 REFERENCES

NT EPA (2015) *Waste Management Strategy for the Northern Territory 2015 – 2022*. Northern Territory Government Publication.

SketchBubble (2021) *Zero Waste Template*. Accessed at <https://www.sketchbubble.com/en/presentation-zero-waste.html>