



**CITY OF JOHANNESBURG
FEBRUARY 2022**

EISD



**ENVIRONMENT AND INFRASTRUCTURE DEPARTMENT
WASTE MANAGEMENT IN SOUTH AFRICA
MAKHOSAZANE BAKER**

OUTLINE

1. Status of Waste Services in Johannesburg
2. Landfill Management
3. Landfill Compliance
4. Waste Diversion
5. Alternative Waste Treatment Technologies
6. Conclusion



a world class african city



State of Waste Services

**EISD: Waste
Directoriate
Core Department
13 Employees**

**Pikitup MOE
5035
Employees**

13 Depots

**42 Garden
Sites**

**4 Operational
Landfills**

**2 Closed
Landfills**

**Responsible for the
total Value Chain –
City Wide including
the private sector**

**1 446 649
Formal
Households
Serviced**

**+/- 9000
Business
Properties
Serviced**

**260+
Informal
Settlements
Serviced**

**300+
specialized
waste vehicles**

**Policy development
License regulation
By-law
development and
enforcement
Oversight**

**158+
Refuse
Collection
Rounds**

**1,6 million+
Tons Collected**

**1,4 million+
Tons
Waste
Disposed**

**+/- 200 000
Tons
Waste Diverted**

Landfill Management (Airspace Management)

Project	Actions
Expansion of landfill cell at Ennerdale Landfill site	Preliminary design complete. Detailed design in progress. The project is delayed by the subdivision and consolidation of the new land which must be carried out by JPC.
Marie Louise, Kya Sands and Linbro Park Landfill sites	<p>Marie Louise: Consultants were appointed for designs for the construction of a MRF, Transfer Stations and Integrated Waste Management Facilities at the Marie Louise. Project is at Preliminary Design Stage. Purchasing piece of land adjacent to the landfill site in progress.</p> <p>Kya Sand: Design works commenced on the 12 January 2022 and expected to complete design on 30 March 2022.</p> <p>Linbro Park:</p> <ul style="list-style-type: none"> Construction of sorting facility for reclaimers including ablution facilities, upgrading of boundary wall and installing high mast light at Linbro Park Construction of Integrated Waste Management Facility <p>Both projects are at the detail design stage.</p> <p>Goudkoppies Landfill: Design for upgrading pollution control pond/dam, and rehabilitation.</p>
Rehabilitation of Robison Deep Landfill Infrastructure	Preliminary design complete. Detailed design due 30 January 2022.
Development of Landfill Master Plan	<p>Landfill Masterplan developed to address the following:</p> <ul style="list-style-type: none"> Determining the tonnages per landfill site. Types of trucks use. Haulage cost. Possibility of height extension. Transfer station. Material recovery facility

Landfill Compliance

LANDFILL	ANNUAL PERFORMANCE			Performance Improvements
	2021	2020	2019	
Ennerdale	94,02%	95,20%	94,39%	-1,18%
Goudkoppies	94,55%	95,76%	93,54%	-1,21%
Marie-Louis	94,29%	94,29%	94,05%	0,00%
Robinson-Deep	94,59%	95,13%	93,33%	-0,54%
Operational Sites Average	94,36%	95,10%	93,83%	-0.74%
Kya Sands	89,64%	88,92%	86,76%	0,72%
Linbro-Park	98,81%	98,75%	96,04%	0,06%
Closed Sites Average	94,13%	93,84%	91,40%	+0,39%

Waste Diversion

Activity	Progress
Development of a Waste Minimisation Plan (5 – 20 year plan)	2014
Development of a Waste Minimisation Infrastructure Development Plan	2016
Implementation of a Waste Minimisation Partnership Plan	In progress
Integration of Co-Operatives to collect Recyclable Waste	48 Co-operatives Contracted
Identifying and formalising of Waste Pickers per Region to separate domestic waste at source	In progress
Installation of mobile scales and weighbridges at Depots and Garden Sites	In progress
Education and Awareness, Kleena Joburg	In progress
Procurement of fit for purpose collection vehicles	In progress



Alternative Waste Treatment Technologies

Landfill gas-to-energy – the city harvest methane and produce electricity of 5,2 MW from the project fed to grid and distribute to households.

Alternative waste-to-energy – treatment and disposal of solid waste through mass burn technologies. Currently Transactional Advisor is busy with feasibility study that will take the project to financial closure. The completed project will treat 500 000 tons of waste per annum.

Biodigester – the treatment of organic waste through biodigestion. Currently finalizing appointment of Engineering Procurement and Construct Service provider. The biofuel will power around 30 Metro buses per day.

Challenges and Response

CHALLENGES	RESPONSE
Population growth	<ul style="list-style-type: none"> Improve forward planning, research and development Integrate informal waste sector Secure sustainable funding for improved waste collection, storage, treatment and disposal
Provision of unfunded waste services	<ul style="list-style-type: none"> Consolidate waste budgets from relevant CoJ entities
Depletion of landfill airspace	<ul style="list-style-type: none"> Landfill airspace extension – design and construction in progress at Ennerdale, Goudkoppies, Robinson Deep, Marie Louis, Linbro Park Landfills
Inadequate waste diversion	<ul style="list-style-type: none"> RFI advertised to seek appropriate interventions and partnerships, and RFP process in progress

COMMENTS AND QUESTIONS

Jo!ourg