

MANGAUNG METROPOLITAN MUNICIPALITY



INTEGRATED WASTE MANAGEMENT PLAN (IWMP) DRAFT

January (2023 – 2026)

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1. INTRODUCTION

1.1 HISTORICAL OVERVIEW FOR THE DEVELOPMENT OF INTEGRATED WASTE MANAGEMENT PLAN

The National Environmental Management: Waste Act (Act No 59 of 2008 as amended) (hereafter referred to as the Waste Act) states in Section 11 that each municipality must develop an Integrated Waste Management Plan (IWMP). An IWMP provides a framework within which Mangaung Metro can deliver a waste management service to all residents and businesses. According to section 12 of the Waste Act, the following should be included in the contents of an IWMP:

- Demographic information.
- Assessment of waste generation, quantities and types.
- Status quo of services for collection, minimisation, re-use, recovery, treatment and disposal of waste.
- Determination of people not receiving waste collection services.
- Identification of poor waste management and its negative health and environmental impacts.
- Establishment and implementation of targets and initiatives for waste minimisation, re-use, recycling and recovery.
- Incorporation of best environmental practices.
- Identification of implementation measures.
- Planning of new facilities for disposal and decommissioning of existing waste disposal facilities.
- Indication of financial resources required to implement projects.

Implementation requires that municipalities move away from traditional “end of pipe” solutions that focus on waste after it has been generated (i.e. collection, transport, processing, recycling or disposal of waste material), to a service which focuses on the prevention of waste as well as the minimisation of waste as a by-product of production (DEAT, 2009, p.1). This approach is in recognition of the widely adopted waste management hierarchy, which includes the three Rs of waste management, i.e. recovery, reuse and recycle (see Figure 1) as well as energy recovery. Only after these efforts should the residual waste be disposed of at a landfill. Section 16.1c & d of the Waste Act states that the holder of waste must take all reasonable measures

within the holder's power to ensure that, where waste must be disposed of, the waste is treated and disposed of in an environmentally sound manner, such that it does not endanger health or the environment or cause nuisance through noise, odour or visual impacts.

The delivered service must maximise efficiency and minimise environmental impacts and financial costs, with the ultimate aim of improving quality of life. Any IWMP must suggest measures that are practical, achievable, implementable and sustainable.

The following Diagram (Figure 1) illustrates the waste management hierarchy of the DEFF. The hierarchy is premised on three (3) of the key principles of the NWMS 2020, namely waste minimisation, waste prevention and waste as a resource.



Figure 1: Waste Management Hierarchy

Integrated waste management is a multi-pronged approach that requires the co-operative effort of government and waste generators. Local Government, as a service provider, must ensure that there is a waste management service delivery system providing a network of collection and disposal options, so that generators can effectively exercise their responsibilities. This would include separating their waste at source (the point of generation), and then properly recycling, storing and disposing of the different parts of the waste. Local Government as a regulator must ensure compliance with relevant waste related legislation. Local Government therefore has a dual role as both service provider and regulator.

The IWMP addresses several key objectives by:

- Discussing the current situation in respect to the description of the population development profile of the area; reviewing the quantities and types of waste generated in the area; describing the services provided (or that are available) for the collection, minimisation, re-use, recycling and recovery, treatment and disposal of waste; and commenting on the number of persons in the area who are not receiving waste collection.
- Identifying and planning for future waste management needs and requirements of MMM.
- Ensuring that the plan identifies strategies for provision of adequate and equitable waste services to all residents within MMM.
- Incorporating the principles of the internationally accepted waste management hierarchy into daily, as well as short to long-term, waste activities and planning.
- Building on the waste management foundations currently established and improving all aspects of waste management within MMM.
- Promoting the reduction of the quantity of waste disposed of at landfill by the continual support of private and community waste minimisation and recycling projects and initiatives, and the development of municipal projects.
- Recommending that the municipality establish systems to have critical waste information at hand for optimisation of waste management services.
- Ensuring that all recommendations minimise adverse social and environmental impacts related to waste management and thereby improving the quality of life for the communities of MMM.
- Assessing the institutional arrangements of MMM and recommending measures for optimising the efficiency of the waste management system in terms of infrastructure, equipment, human resources, the development of skills and capacity.

1.2 LEGISLATIVE REQUIREMENTS

THE SOUTH AFRICAN CONSTITUTION, 1996 (ACT 108 OF 1996)

Section 24 of the Bill of rights of the Constitution of South Africa clearly states that everyone has the right to:

- (a) An environment that is not harmful to their health or well-being; and
- (b) Should have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:
 - (i) prevent pollution and ecological degradation.
 - (ii) Promote conservation; and

- (iii) Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The Constitution places an emphasis on the need to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures e.g IWMP. It is within this provision that IWMP's must strive or come up with measures to uphold the rights of all citizens within the jurisdiction of the Municipality and should enhance and promote environmental protection from any form of degradation as enshrined by the South African Constitution.

THE NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT: (ACT NO. 59 OF 2008)

Chapter 3, Section 11 of the Waste Act requires that certain organs of state must develop Integrated Waste Management Plans (IWMP's). Section 12 of the Waste Act outlines what the contents of integrated waste management plans should be, whilst section 13 stipulates the reporting mechanisms on the implementation of IWMP's. In terms of Section 11 (4) (a) (ii) of the Waste Act, municipalities must incorporate the approved IWMP in their Integrated Development Plans (IDP's) as called for by chapter 5 of Municipal Systems Act, 2000 (Act 32 of 2000) (hereinafter referred to as the "MSA"). The MSA Chapter 5, sections 23-37 deals with the process of developing IDP's. Section 36 of the MSA states that, a Municipality must give effect to its IDP and conduct its affairs in a manner which is consistent with its IDP. This means that the development and implementation of the IWMP must be aligned with the IDP.

MUNICIPAL SYSTEMS ACT, 2000 (ACT 32 OF 2000)

In terms of Section 25 of the MSA each municipal council must, within a prescribed period after the start of its elected term, adopt a single, inclusive and strategic plan (IDP) for the development of the Municipality. In relation to waste management, the IDP is required to include sectoral environmental plans which would be an IWMP for waste management. In their IDP's municipalities are required to ensure proper resource allocation to achieve the targets set in the respective plans.

NATIONAL ENVIRONMENTAL MANAGEMENT ACT 107 OF 1998

NEMA is the mother of all environmental management Acts in South Africa. The purpose of NEMA is to uphold the provisions of section 24 of the Bill of rights (The Constitution of the Republic of South Africa). It aims to promote and uphold the rights of South African citizens to live in an environment that is not harmful to its health or well-being.

It places sustainable development at the centre of every development process that has the potential to have an impact on social, economic and environment whereby it requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations.

NATIONAL WASTE MANAGEMENT STRATEGY (NWMS) 2020

Gazetted on 28 January 2021 by DFFE , aims at giving effect to the objectives of the Waste Act. Municipalities are required to align their IWMP's to the NWMS targets where possible in order to contribute to the attainment of the goals and targets set in the NWMS.

This strategy is a revision and update of the 2011 strategy and builds on the successes and lessons from the implementation of that strategy. The NWMS provides government policy and strategic interventions for the waste sector and is aligned and responsive to the Sustainable Development Goals (SDGs) of Agenda 2030 adopted by all United Nations (UN) member States. It is also aligned and responsive to South Africa's National Development Plan (NDP): Vision 2030 which is our country's specific response to, and integration of the SDGs into our overall socio- economic development plans.

This NWMS 2020 revises and updates the 2011 strategy by building on the successes and lessons from the implementation of that strategy and addressing the challenges and gaps identified. Given that this strategy has been developed at the onset of the 6th term of democratic administration in the country, its revision has also taken into account the national and Medium Term Strategic Framework (MTSF) priorities outlined for the 5 -years comprising the term of administration.

Most importantly, the 2020 strategy has the concept of the "circular economy" at its centre. The circular economy is an approach to minimising the environmental impact of economic activity by reusing and recycling processed materials to minimise: (a) the need to extract raw materials from the environment; and (b) the need to dispose of waste. The circular economy is built on innovation and the adoption of new approaches and techniques in product design,

production, packaging and use - industrial symbiosis, for instance, is a way of preventing waste in industrial production by redirecting waste from one production process to serve as raw materials for another production process.

In line with the outcome -based planning approach of government, the strategy is premised on three (3) pillars which will see a future South Africa with zero waste in landfills; cleaner communities, well managed and financially stable waste services, and a culture of zero tolerance of pollution, litter and illegal dumping. The Government priorities will be achieved through three (3) supporting pillars, namely Waste Minimisation; Effective and Sustainable Waste Services; Compliance, Enforcement and Awareness. Collectively, the outcomes, strategic pillars, interventions and actions consolidate and builds on the eight (8) overarching goals of the 2011 strategy.

Significant strategic shifts from the 2011 strategy made in the NWMS 2020 includes: Addressing the role of vulnerable groups, waste pickers and the informal sector and supporting women, youth and people living with disabilities in the circular economy; Promoting approaches to the design of products and packaging that reduce waste or encourage reuse, repair and preparation for recycling, support markets for source separated recyclables; Investigating potential regulatory or economic interventions to increase participation rates in residential separation at source programmes; Investing the economies associated with transporting of recyclables to waste processing facilities; Addressing the skills gap within the sector with a special focus on women, youth and people living with disabilities; and National Waste Management Strategy 2020 Engagement with the National Treasury regarding the operational expenditures for municipalities associated with implementing the NWMS and the Waste Act.

NATIONAL POLICY FOR THE PROVISION OF BASIC REFUSE REMOVAL SERVICES TO INDIGENT HOUSEHOLDS

This policy provides for the provision of basic refuse removal for Indigent households. The policy defines basic refuse removal service level as the most appropriate level of waste removal service that should be provided and this is based on site specific circumstances. Such a basic level of service be it in an urban or rural set-up, is attained when a Municipality provides or facilitates waste removal. The policy further outlines the appropriate levels of service for different settlement densities, frequency of collection and provision of waste receptacles amongst others.

2. DEFINING THE GEOGRAPHICAL AREA

The Mangaung Metropolitan Municipality is a Category A municipality in the Free State Province which is bordered by the Gauteng, Eastern Cape, Northern Cape, KwaZulu-Natal and North West Provinces, as well as by the neighbouring country of Lesotho. It is also bordered by the Mantsopa, Masilonyana and Tokologo Local Municipalities to the north; the Letsemeng Local Municipality to the west; and the Kopanong and Mohokare Local Municipalities to the south. Mangaung, meaning 'Place of the Cheetahs', accentuates the vibrant, dynamic and energetic character of the tourism industry in the 'At the Heart of it All'. It covers an area of approximately 988,763 ha of land and the city is centrally located within the Free State and is accessible via National infrastructure including the N1 (which links Gauteng with the Southern and Western Cape), the N6 (which links Bloemfontein to the Eastern Cape), and the N8 (which links Lesotho in the east and with the Northern Cape in the west via Bloemfontein). Following the local government elections held on the 3rd August 2016 new areas from the surrounding local municipalities were incorporated into the Mangaung Metropolitan Municipality, thus impacting on both the size of the population and land area. New areas that have been incorporated into Mangaung Metro are Vanstadensrus, Wepener and Dewetsdorp from Naledi Local Municipality and Soutpan from Masilonyana Local Municipality.

The municipality is divided into 50 wards and comprises a total of 2,481 parent farms and 6,302 farm portions. Small Holdings total about 3,171 units, while there is an estimated 209,467 individual erven within the municipal area. The municipality comprises of the following seven towns.

Bloemfontein is the sixth largest city in South Africa and the capital of the Free State Province. It serves as the administrative headquarters of the province. It also represents the economic hub of the local economy. The area is also serviced by an east/west and north/south railway line and a national airport.

Botshabelo is located 55km to the east of Bloemfontein and represents the largest single township development in the Free State. Botshabelo was established in the early 1980s and was intended to provide the much needed labour in Bloemfontein without the inconvenience of having labour at the employers' doorstep.

Thaba Nchu is situated 12km further to the east of Botshabelo and used to be part of the Bophuthatswana "Bantustan". As a result, it exhibits a large area of rural settlements on former trusts lands.

Soutpan/ Ikgomotseng is a small town that was established due to the existence of salt in the immediate surroundings of the town. The town is 52 km away from the town of Bultfontein to the north and 38 km away from Bloemfontein to the south. The area is known for the Florisbad anthropological area and also the Soetdoring Nature Reserve. Ikgomotseng is 5 km to the east of Soutpan and can almost be seen as a center on its own.

Dewetsdorp lies 75km south-east of Bloemfontein on the R702. The town of Dewetsdorp is part of the Battlefields Route. One attraction is the British War Graves and Monument. The town has a beautiful nine-hole golf course and is also the home of the Osram Total Car Rally.

Wepener was founded in 1867 on the banks of Jammersbergspruit, a tributary of the Caledon River. The Caledon Nature Reserve is about 15km south of Wepener on the R702. The Caledon River flows through the reserve, and the Welbedacht Dam is located in the southern region of the reserve. Also of interest is the Louw Wepener Memorial statue, Thaba Bosiu Memorial stone and Jammerbergdrif Battlefield site.

The sandstone street of Jammersberg Bridge over the Caledon River has been declared a national monument.

Van Stadensrus is located 30km from Wepener on the R702 and is one of the frontier towns on the border of

South Africa and Lesotho. It is in close proximity to the Egmont and Van Stadensrus Dams, and is on the AngloBoer War Route. Mangaung Metro Municipality and its towns is shown on Figure 2 below:

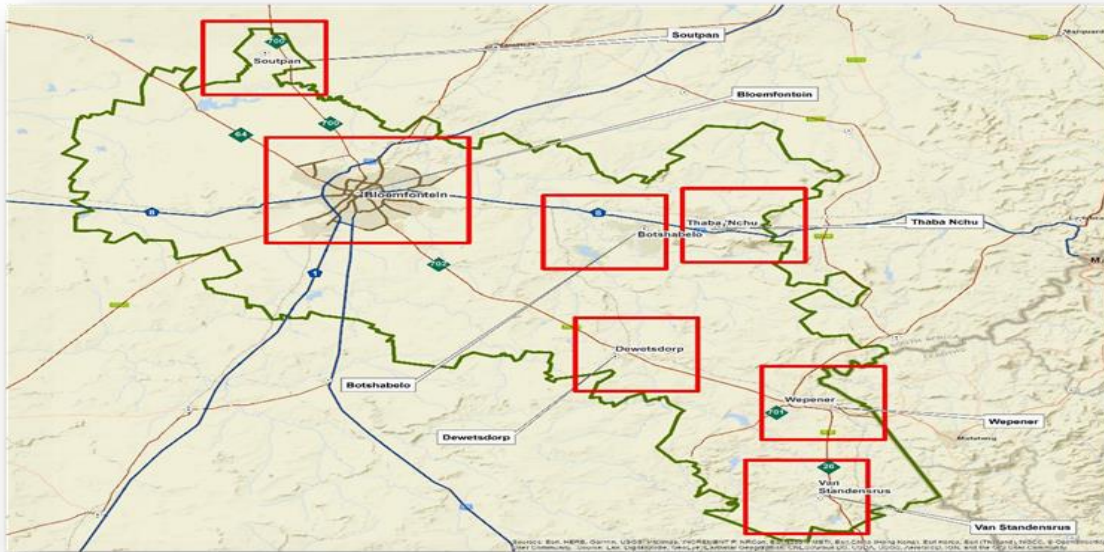


Figure: 2 MMM spatial reflection

Climate

MMM is a semi-arid region with a Highveld climate. Summer in MMM is from October to February and winter from May to August. Mangaung has an average summer temperature of 26°C and an average winter temperature of 16°C, with severe frost at times over the entire region. Snow is often recorded on the eastern mountains of the Free State and occasionally over the rest of the region. MMM is situated in a summer rainfall region with an average rainfall of between 600mm and 750mm per annum (Draft IWMP 2011).

Topography & Hydrology

The landscape mainly comprises wide open plains (flat) interrupted by a number of small hills and ridges in the central and western parts. The eastern extents of the Mangaung Metropolitan Municipality are, however, more mountainous as it represents the most southern extents of the Maluti mountains which is a prominent feature in the bordering Lesotho.

The area is primarily drained by three drainage systems:

The Caledon River to the east which drains southwards towards the Orange River and which it links into at the Gariep Dam; The Riet River which originates in the vicinity of Dewetsdorp from where it flows in a northwesterly direction towards the Tierpoort Dam and then into the Kopanong Local Municipality towards the Kalkfontein Dam;

The Modder River which also originates in the Dewetsdorp vicinity from where it flows northwards towards the Rustfontein Dam near Botshabelo and northwestwards through Maselspoort, Glen and into the Krugersdrif Dam before linking up with the Riet River, and further downstream it links into the Vaal River which eventually links up with the Orange River at Douglas in the Northern Cape. The Leeuspruit to the far north-east originates in the vicinity of Tweespruit close to Thaba Nchu and eventually becomes part of the Vet River to the north thereof.

The most prominent dams within the municipal area include the Krugerdrif, Rustfontein, Tierpoort and Welbedacht Dams. The surface water resources in the Mangaung Metropolitan Municipality area are well developed, with a high degree of utilisation. Water requirements outstrip the local yield and water is transferred into the catchment to meet the requirements.

Groundwater has always been an important source of rural water supply within the Mangaung Metropolitan Municipality area. In the drier parts of the municipal area groundwater constitutes the main, and in many cases the only source of water for rural domestic supplies and stock watering, as well as for towns. Groundwater is therefore considered as an essential resource, specifically for the smaller towns.

In the Bainsvlei/Kalkveld area to the north-west of Bloemfontein and the area to the south-west of Bloemfontein, groundwater is used extensively for agricultural purposes. In these areas, higher recharge rates occur in localised areas, resulting in particularly high-yielding aquifers on which agriculture is strongly dependent. (Mangaung Spatial Development Framework 2019)

Geology and soils

“There area has two geological groups present. From oldest to youngest in age these are the Ecca and Beaufort Groups of the Karoo Supergroup. These constitute sandstone, shale and mudstone, which have been intruded by dolerite sills and dykes. They are part of the vast Karoo basin that covers almost two thirds of South Africa, and were deposited between 200 and 300 million years ago. The western region of the study area is underlain by rocks of the Tierberg Formation, Ecca Group comprising shale, mudstone and sandstone. The central study area is underlain by rocks of the Adelaide Formation of the Beaufort Group while the east is underlain by rocks of the Tarkastad Formation of the Beaufort Group. Shales are generally more favourable for waste site development because of the development of clay layers by weathering, low hydraulic conductivity and lower groundwater potential.” (AISWMS 2011)

The western parts mainly comprise red weakly structured soils with high base status while the central and far south-eastern areas (around Vanstadensrus) are characterized by soils with a marked clay composition. The more mountainous eastern escarpment area comprises soils with minimal development, usually shallow and with or without intermittent diverse soils.

The areas to the north and north-east of Bloemfontein are characterized by black and red, strongly structured clayey soils with high base status. This soil type also extends to the south-east of Bloemfontein parallel to Route R702. (Mangaung Spatial Development Framework 2019)

Biodiversity and Conservation

Mangaung municipality falls under one biome, which covers 100% of the municipality, the Grassland, which is one of the most threatened biomes in the country. It comprises ten different grassland types of which the Bloemfontein Dry Grassland covers the largest area. There are also six other small vegetation types with less grasses, including riparian thickets and pan associated vegetation. According to the Mangaung Environmental Management Framework, 2017 there are no critically endangered ecosystems within the area of jurisdiction of the municipality. An estimated 10% of the municipal area (95,000 ha) is categorized as a Critical Biodiversity Area 1 and 3% as Critical Biodiversity Area 2 (26,000 ha).

Critical Biodiversity Areas are mainly clustered along the eastern border of the Mangaung Metropolitan Municipality from Vanstadensrus in the south right up to Tweespruit and Rakhoi towards the north. A few smaller clusters of Critical Biodiversity Areas also occur to the south of Bloemfontein in the vicinity of Grootvlei, Tierpoort and De Brug; as well as the areas around the Soetdoring Nature Reserve and towards Soutpan to the north. (Mangaung Spatial Development Framework 2019)

3. SITUATION ANALYSIS

3.1 DEMOGRAPHICS (POPULATION AND DEVELOPMENT PROFILES)

3.1.1 Growth & Demographic Profile

GROWTH ESTIMATES	
Municipality Population (as per Census 2011):	775028
Estimated Population Growth (%) as per Census 2011:	1.05
Estimated population as of 2016 (year is a parameter):	787804
DEMOGRAPHIC PROFILE	
Age:	
Youth	489088
Middle age	198220
Old age	60122
Gender:	
Male	362186
Female	385245
Education:	
Primary	199250
Secondary	72774
Tertiary	40887
Employment:	
Employed	211746
Unemployed	339977

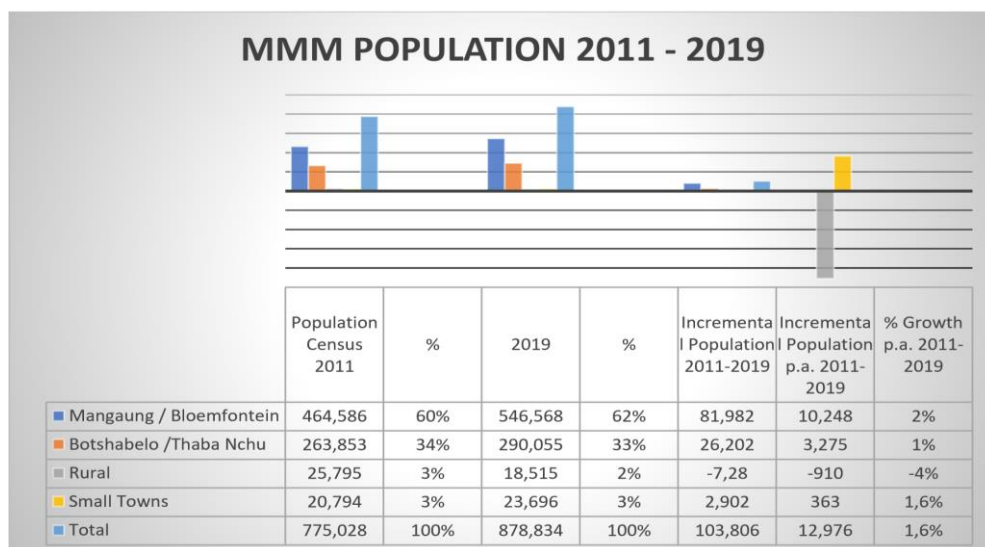
Population distribution graphs:

- Age
- Gender
- Education
- Employment

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Figure 3	Figure 4
<p>Graph 11</p> <p>If you are reading this message, please be sure to enter all of the relevant data to obtain a graph.</p>	<p>Graph 12</p> <p>If you are reading this message, please be sure to enter all of the relevant data to obtain a graph.</p>
Figure 5	Figure 6

Currently the Municipality represents approximately 28% of the provincial population. During the period 2011 to 2019 an estimated population of the Mangaung increased from 775,028 to 878,834 – an increment of about 103 806 (1.6%) people as shown in figure 7 below. The city has 51 wards as per the demarcation of 27 November 2020 with the representation of 101 councilors.

Figure 7: Mangaung Population 2011-2019

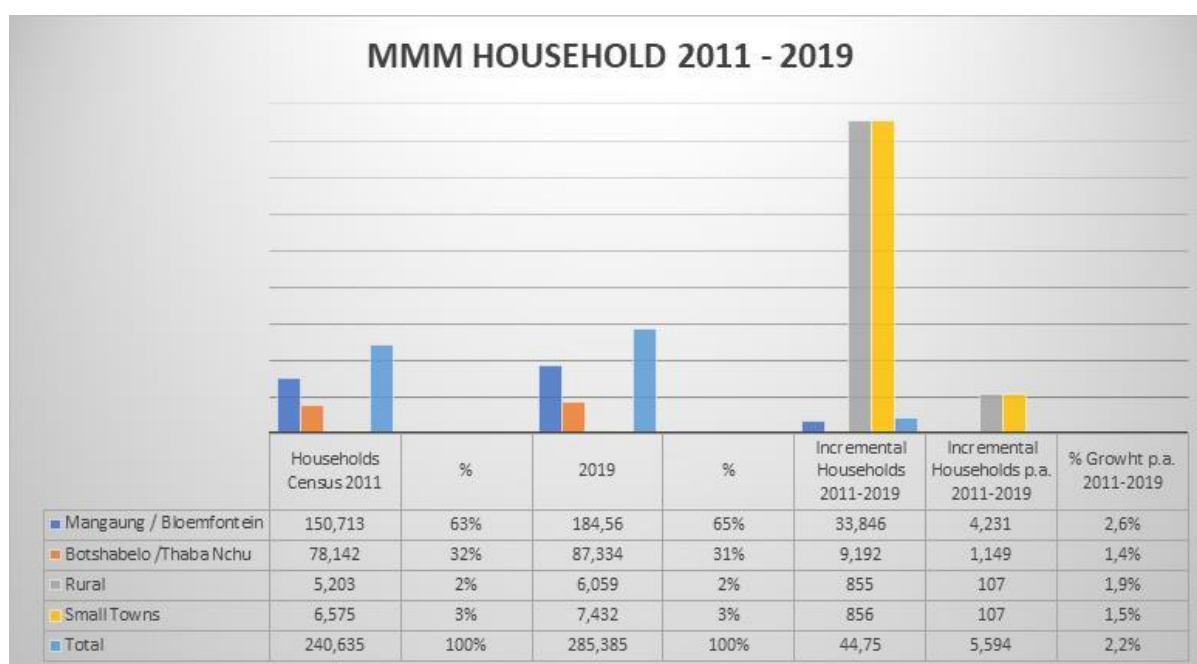


Source: Mangaung Spatial Development Framework 2019

Household Structure

The population represents an estimated 285,385 households at an average household size of 3,1 people per household. About 65% of all households reside in Mangaung/Bloemfontein; 31% in Botshabelo-Thaba Nchu, 3% in the other small towns and 2% in the farm areas. The estimated household increment during the period 2011 to 2019 is approximately 44 752 which translates to approximately 5,594 households per annum as depicted in the figure 8 below. (Mangaung draft IDP 2021/22)

Figure 8: Mangaung Household structure 2011-2019



Source: Mangaung Spatial Development Framework 2020-2036.

The Municipality is rendering a weekly refuse removal service to about 79% of all households whilst an additional 4% receive similar service less frequently. About 95.5% of known informal settlements also have access to refuse removal. About 35325 indigent households were receiving Free Basic Services in the 2016/17 financial year compared to 31686 that are currently receiving these services as shown in table 2 below. (Mangaung draft IDP 2021/22).

Table 2

	2019	2016	2011
Population	878834	787803	775184
Households	285,385	265561	240700
Weekly refuse removal	217 711	217711	153797
Free Basic Services	31686	35325	38000



Figure 9. Solid Waste employees at work

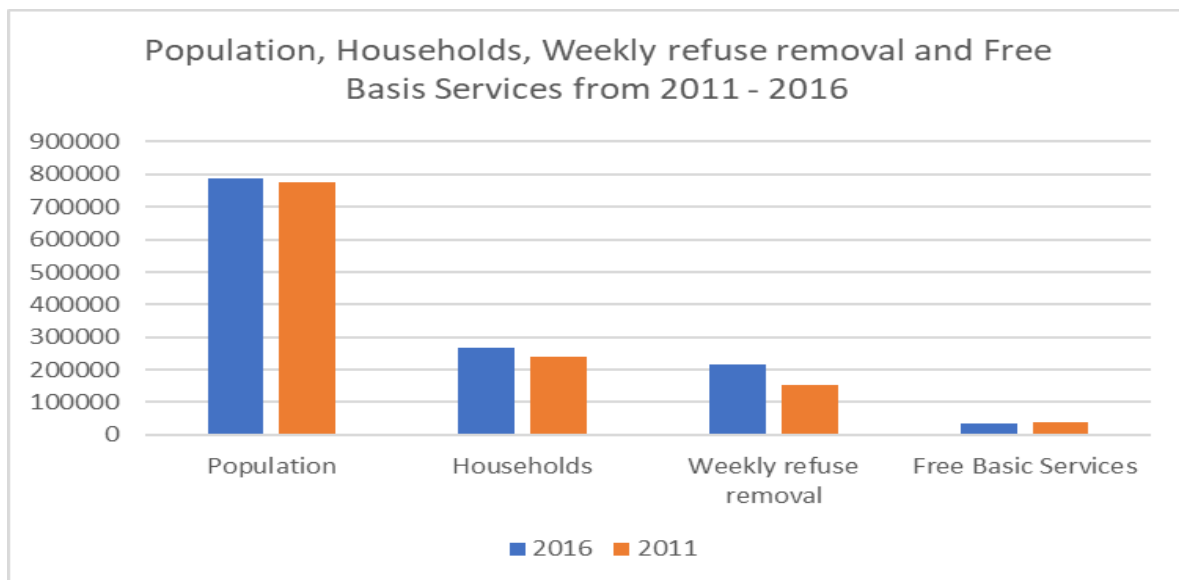
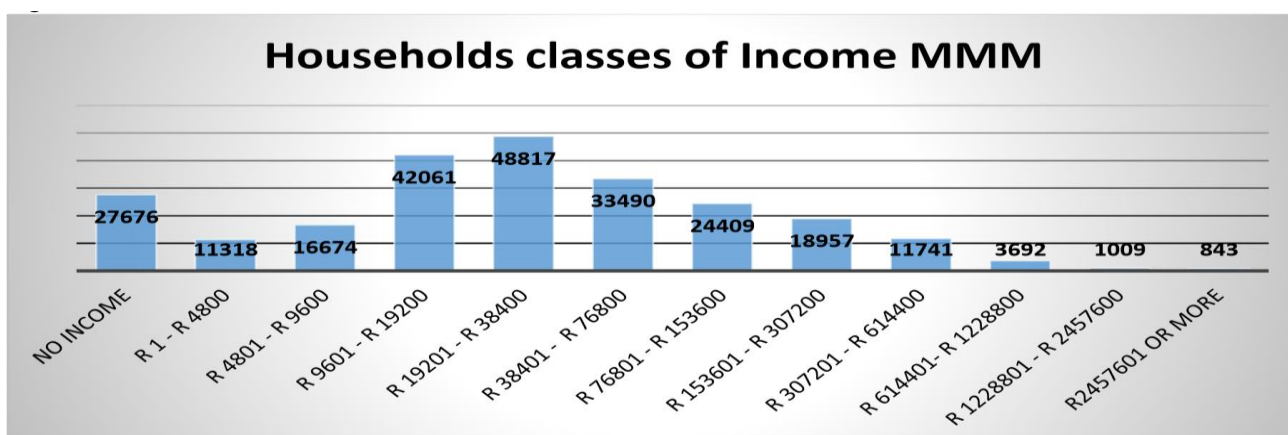


Figure 10. Refuse removal and FBS.

The Community Survey 2016 by Stats SA in figure 11 below give an indication on the types of household's classes of Income within Mangaung Metropolitan Municipality.

Figure 11. household classes of income



Source: Stats SA, Community Survey 2016

3.1.2 Dwelling Types

The dwelling types of Mangaung show that about 76% of all dwelling units are formal houses while informal dwellings (backyard and informal settlements) represent about 11% of all housing stock in the municipality. In Mangaung/Bloemfontein this figure is higher at about 14% and even higher (16%) in Botshabelo/Thaba Nchu and 18% in the other small towns as shown in the figure 12 below.

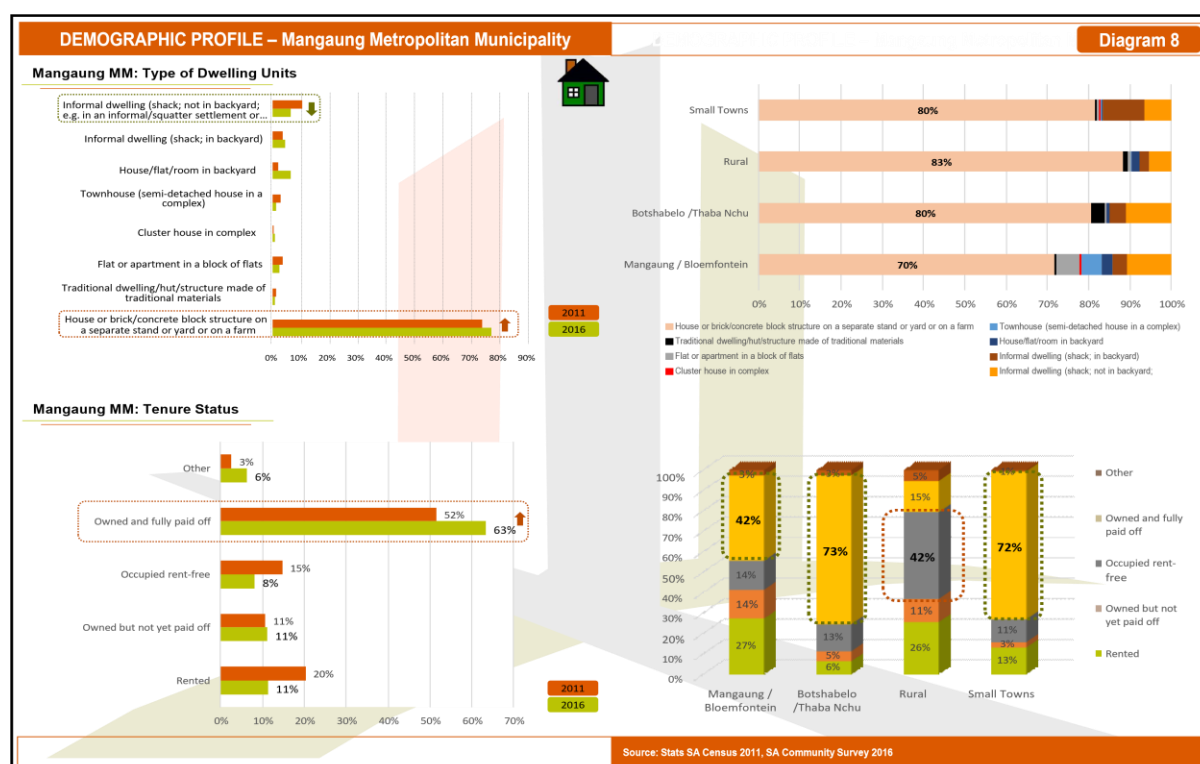


Figure 12 shows dwelling types of the municipality

3.2 Determining current waste generation and estimating future waste generation rates and quantities.

3.2.1 Domestic Waste generation

Waste generation rates generally around the world are rising. This is an inevitable consequence of the processes where materials are used. Estimations on waste generation by populations are made due to difficulties in recording the waste generated at source. Studies have shown that waste is still increasing proportionally with income, economic and environmental costs but the commonly used assumption is that higher income level groups generate more waste than lower income level groups.



Figure 13 Total Municipal Solid Waste generation

As shown in the above figure 13 domestic waste generated from households indicates that High Income Population is about 15759, Middle Income Population is about 181224 and Low- and No-income Population is around 590948. According to this information the high-income population generate more waste compared to the middle- and low-income population. The total municipal Waste generation rate is about 117945 tonnes/annum with the following household's income information:

- High income households 3013 tonnes/annum
- Middle income 31400 tonnes/annum
- Low and no 83532 tonnes/annum

Domestic waste generation graph:

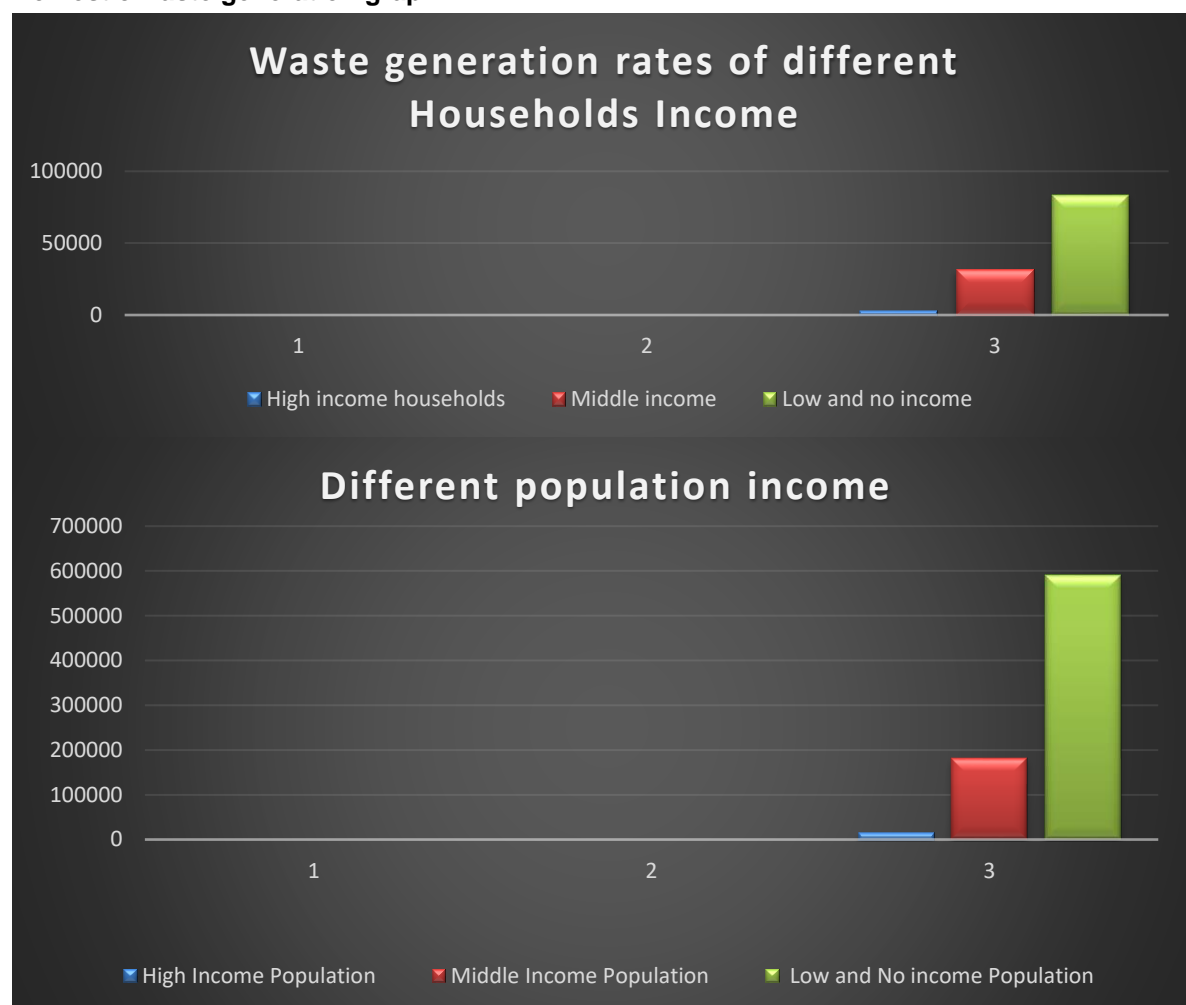


Figure 23: Mangaung Solid Waste officials, waste pickers and JG Afrika consultants during a waste characterization exercise at South Landfill site 24 February 2020.

Table 3: Consolidated generated MSW composition and tons (less commercial & Industrial) for Mangaung (% by weight) in 2020

Category	Mangaung
Food	26.8%
Garden	19.9%
Paper & Cardboard	11.4%
Plastic-film	6.1%
Plastic-dense	5.3%
Metals	1.8%
Glass	5.2%
Textile	4.5%
Wood (treated)	0.4%
WEEE	0.8%
Other	17.9%
Generated MSW (tpd)	323
Generated MSW (tpa)	117 945

Table 4: Total Generated MSW composition in Mangaung 2016.

Description	Mangaung
Population Size	787 930
Average HHGR (kg/c/d)	0.41
High Income HHGR (kg/c/d)	0.52
Middle Income HHGR (kg/c/d)	0.47
Low/No-income HHGR (kg/c/d)	0.39
Average HH size (PPHH)	3.7
High Income HH	15 759
Middle Income HH	181 224
Low/No-income HH	590 948
Generated MSW (tpa)	117 945
SR (% of MSW generated)	85.4%
RR (% of MSW generated)	2.7%
Commercial & Industrial (t/a)	51 767
Bulk Garden Waste (t/a)	37 387
Inert & other (t/a)	169 681
Recycled (t/a)	3 228
Total (t/a)	3760

3.4 WASTE RECYCLING, TREATMENT AND DISPOSAL

3.4.1 Status Quo of Waste Disposal Facilities

The municipality has seven (7) landfill sites, three (3) of the sites were permitted in accordance with the DWA minimum requirements and three (3) were licensed according to the Waste Act, 59 of 2008. One of the sites (Wepener) is still undergoing the licensing process.

Site	Status	Size	Latitude	Longitude
Northern	Operational	± 30.2 ha (302 000 m ²)	S29° 3'59.64"	E26°14'29.31"
Southern	Operational	± 42. 0 ha (425,000m ²)	S29°10'48.18"	E26°11'48.78"
Botshabelo	Operational	Approx. 152,000m ²	S29°14'44.72"	E26°44'57.46"
Van Stadensrus	Operational	± 0.36 ha	S29° 59' 33.12"	E26° 59' 49.68"
Wepener	Operational	± 1.73 ha	S 29° 44' 9.43"	E 27° 3' 8.02"
Dewetsdorp	Operational	± 5.88 ha	S 29° 36' 3.31"	E 26° 39' 26.26"
Soutpan/Ikgomotseng	Operational	± 0.69 ha	S 28° 43' 7.21"	E 26° 6' 3.57"

Northern Landfill

Site Description

The Northern landfill site is was permitted in terms of Section 20 of the ECA on 9 April 2003, with no significant leachate production. This 30.211ha landfill site has been classified as general, medium, class B landfill (G:M:B). According to the assessment done by SMEC in 2020 the remaining site life is about 2 years

The site, situated about 6 km north of Bloemfontein city centre was designed (and licensed) to accept general non-hazardous waste including household waste, garden waste and construction rubble. Tyres are disposed in a random manner. The average volume of waste received per month from August 2012 projected through to June 2019 was 25 650 m³ although monthly totals varied significantly (refer to figure 24).



Figure 24 : Northern Landfill: Aerial View

Southern Landfill

Site Description

The Southern landfill site (Suidstort landfill) was permitted in terms of Section 20 of the ECA on 3 March 1995. This 42.448 ha landfill site has been classified as a general, medium, class B landfill (GMB⁻). According to the assessment done by SMEC in 2019 the remaining site life is about 20 years.

The site is located 7.5 km south of Bloemfontein City centre and was designed (and licensed) to accept general non-hazardous waste including household waste, garden waste and construction rubble. The average volume of waste received per month from August 2012 to June 2019 was 23 568 m³ although monthly totals varied significantly (refer to figure 25).

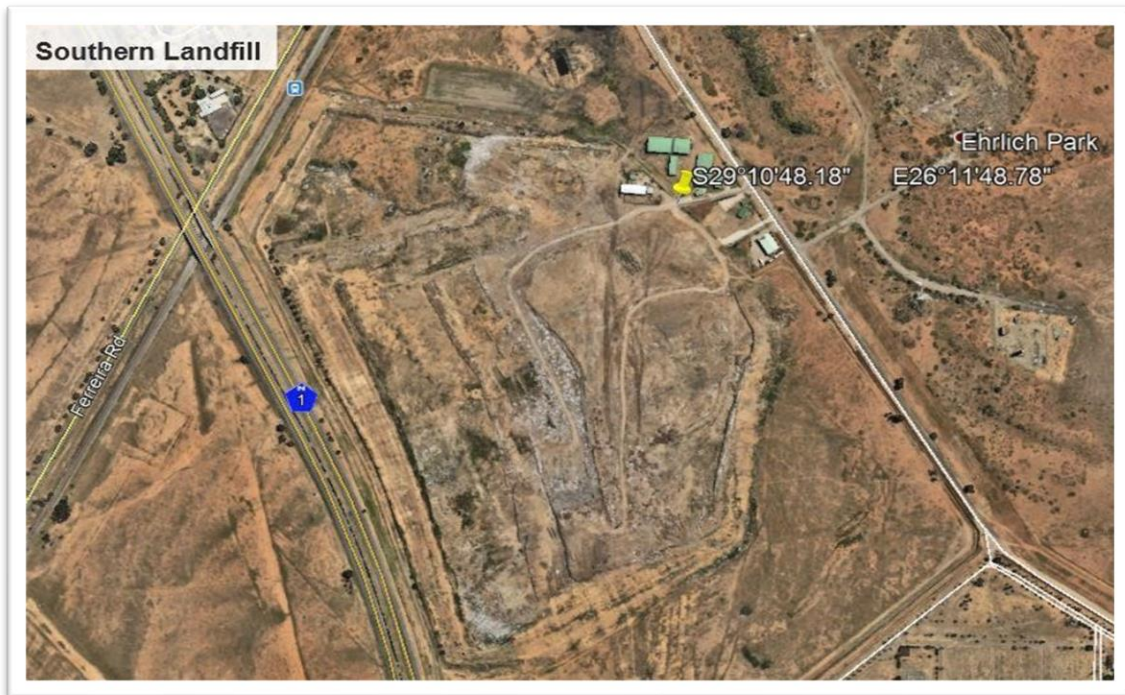


Figure 25: Southern Landfill - Aerial view

Botshabelo Landfill

Site Description

The Botshabelo landfill site (Eastern site) was permitted in terms of Section 20 of ECA on 15 January 1997. The 15-ha landfill site was designed to accept general non-hazardous waste only and has been classified as a general, medium, class B landfill (GMB⁻). According to the assessment done by SMEC in 2019 the remaining site life is about 97 years

General waste including household waste, garden greens, construction rubble and tyres disposed in a random manner. On average, the Botshabelo landfill site received 747 tons of waste per month from August 2012 to June 2019. However, the month-to-month tonnages vary considerably (refer to figure 7).



Figure 26: Botshabelo Landfill - Aerial view

Van Stadensrus Landfill

Site Description

The Van Stadensrus landfill site is a 0.36ha landfill site and as a Class: B site. It was designed to receive general waste only with a disposed volume of not more than 25 tonnes per day.

The site is situated South West of Van Stadensrus and receives waste from Van Stadensrus and Thapelong. The average volume of waste received per month is about 96 tons and was calculated by projecting through the waste information in a previous report (June 2014). The decrease in waste disposal from 2017 to 2019 is due to a decrease in the population growth in Van Stadensrus.



Figure 27: Van Stadensrus Landfill: Aerial View

Wepener Landfill

Site Description

The Wepener landfill site is the only site that has not been licensed yet. DESTEA is waiting for the Final Scoping Report from the EAP. This is a 1.73ha landfill site and it is classified as a class B site. Therefore it was designed to receive general waste only with a disposed volume of not more than 25 tonnes per day.

The site is situated South East of Wepener, approximately 1.5km from Wepener and receives waste from Wepener and Qibing. The average volume of waste received per month is about 273 tons and was calculated by projecting through the waste information in a previous report (June 2014). The decrease in waste disposal from 2017 to 2019 is due to a decrease in the population growth in Wepener.



Figure 28: Wepener Landfill: Aerial View

Dewetsdorp Landfill

Site Description

The Dewetsdorp landfill site is a 5.88ha landfill site and it is assumed that it is classified as a class B (G:S:B-) site. Therefore it was designed to receive general waste only with a disposed volume of not more than 25 tonnes per day.

The site is situated South West of Dewetsdorp, approximately 2.3km from town and receives waste from Dewetsdorp and Morojaneng. The average volume of waste received per month is about 247 tons and was calculated by projecting through the waste information in a previous report (June 2014). The decrease in waste disposal from 2018 to 2019 is due to a decrease in the population growth in Dewetsdorp.



Figure 29: Dewetsdorp Landfill: Aerial View

Ikgomotseng/Soutpan Landfill

Site Description

The Soutpan landfill site is a 0.69ha landfill site and it is assumed that it is classified as a class B (G:S:B⁻) site. It was designed to receive general waste only with a disposed volume of not more than 25 tonnes per day.

The site is situated East of Soutpan and West of Ikgomotseng and receives waste from both areas. The average volume of waste received per month is unknown as there is no data available (waste received and previous survey information).



Figure 30: Soutpan Landfill: Aerial View

TRANSFER STATION – THABA'NCHU TRANSFER STATION

Mangaung has one waste transfer station which has been dismantled and is in the process of being refurbished by DFFE. This Transfer Station is situated in Thaba'Nchu. On completion the transfer station will assist in the diversion of waste from the Landfill as more waste will be sorted instead of being disposed of. This will also create jobs for the waste pickers.

HAZARDOUS WASTE DISPOSAL SITES

Mangaung does not have any hazardous waste disposal facilities. Health care and Hazardous waste generated in Mangaung is collected by the private service providers to the nearest hazardous waste facilities outside the Free State.

3.4.2 STATUS QUO OF WASTE RECYCLERS

There are no companies that process recyclable waste within Mangaung as a result the recyclable waste has to be stockpiled for reaching significant amounts before it is hauled out of the province to Gauteng for further processing and the market. There is however an informal recycling taking place where the informal recyclers would pick waste from the streets or from landfill sites. This in turn is sold to the buy-back centres, some BBC would go to the landfill sites to purchase the recyclable material from the waste pickers. A list of known buy-back centres/scrap metal companies in Bloemfontein, is as follows:

- Rat Race Waste
- OFS Wastepaper
- Collected Waste and Scrap Metal

- Paper and Plastic Recyclers
- Avery Scrap Metal and Glass Recyclers

There are also NGOs, Churches that are collecting/accepting recyclables. Fichardt Park Neighborhood Association is one of the Associations. The NGK in Pellisier is also accepting recyclables on a daily basis and from congregants on Sundays.

3.4.3 STATUS QUO OF OTHER TYPES OF FACILITIES

E-WASTE COLLECTORS

In MMM there is an active e-waste industry. There are a few metal scrap dealers who collect white goods (i.e. fridges). The Refurbish Warehouse in Bloemfontein is a recycler who offers collection, processing and recycling services to individuals, IT industry, Telecommunications and Corporations (www.refurbwarehouse.co.za). Recyclables from The Refurbish Warehouse is transported to Desco Electronic Recyclers, an eWASA accredited recycler, in the Gauteng province. It is noted that a company “PartServe Channel Support” refurbishes e-waste in Bloemfontein. There is also another E-Waste collector whose premises are at the Central University of Technology (corner of Karzerne and Saltzmann street in Bloemfontein).

BUY – BACK CENTRES

There are a number of number of privately owned Buy-Back centres that sort and package (bailing and granulation) various materials within Mangaung. These facilities service commercial, industrial sectors and general public. Materials processed in these facilities are sent to the nearest recycling facilities outside the province due to unavailability of these facilities within Free State. These companies are currently assisting a lot in diverting waste from the landfills. Mangaung owns three Buy Back Centres (BBC) situated in Botshabelo, Thaba’Nchu and Bloemfontein respectively. These BBC were established in conjunction with the DEA through their Environmental Protection & Infrastructure Programme (EPIP) to raise awareness on recycling and assisting in diverting waste from the landfills.

The Chris Hani buy-back centre was the only one operating before it was burnt and the Department of Forestry, Fisheries and Environment (DFFE) formerly known as the Department of Environmental Affairs was in the process of supporting to refurbish and buy equipment it was totally demolished by criminals and a case has been opened. Therefore, there is currently no infrastructure and no fence at the Chris Hani site.

Botshabelo and Thaba Nchu buy-back centres were vandalised before being operational. The municipality is receiving support from DFFE to refurbish and buying equipment for these two buy-back centres. The procurement process has already kickstarted for the appointment of a contractor.

BOTSHABELO BUY-BACK CENTRE	
Type	Buy-back centre
Ownership	Municipality
Status	Licensed
Total capacity	0
GPS Co-ordinates	29°13'16.5234"S; 26°40'43.3632"E



Figure 31 -Botshabelo Buy-back centre in May 2016



Figure 32 -Botshabelo buy-back after vandalism

THABA'NCHU	
Type	Buy-back centre
Ownership	Municipality
Status	Licensed
Total capacity	0
GPS Co-ordinates	29°11'43.2022"S; 26°48'02.9412"E



Figure 32 - Thaba'Nchu Buy-back centre in 2020

CHRIS HANI	
Type	Chris Hani buy-back centre
Ownership	Municipality
Status	Licensed
Total capacity	0
GPS Co-ordinates	29°11'49.5431"S; 26°16'02.5496"E



Fig 33 -Chris Hani Buy-back centre during operation (Left) after it was burnt (Middle) and after total vandalism & theft of material

The waste Transfer Station is situated in Thaba Nchu. It was also vandalized before it was fully completed due to lack of security. Funds have been budgeted for the installation of a Weighbridge and to develop the second phase of the Transfer Station.

THABA'NCHU TRANSFER STATION	
Type	Waste Transfer station
Ownership	Municipality
Status	Licensed

Total capacity	0
GPS Co-ordinates	29°12'42.12"S; 26°51'30.43"E



Figure. 34 - Thaba'Nchu Waste Transfer Station

DRAFT JAN 2023

3.5 STATUS OF WASTE COLLECTION STATUS OF WASTE COLLECTION SERVICES

NATIONAL DOMESTIC WASTE COLLECTION STANDARDS

To ensure effect to the Constitution and NEMA the **National Domestic Waste Collection Standards** that sets solid waste services' standards which must be uniformly applied throughout South Africa were gazetted in 2011. These standards define a waste service level based on some principles which were guided by protection to the Environment and to the Health and Safety of inhabitants. Equity, affordability and availability of resources within municipalities are key. Practicality and Community participation in designing of applicable and appropriate collection systems have also been highlighted.

It is recognized that South Africa is a developing country and the purpose of setting of standards is to ensure a service to all, while complying with health and safety regulations without unnecessarily changing current creative collection processes as long as they function well and deliver a service of acceptable standard to all households. These National Domestic Waste Collection Standards are therefore applicable to all domestic waste collection services throughout the country.

The standards recognise that service levels may vary between areas depending on the practicality and cost efficiency of delivering the service by municipalities. It therefore is recommended that in areas where travelling distances and the resulting costs may render regular waste collection services impractical, the municipality, through by-laws, must allow for more feasible alternative ways of waste handling which have been stipulated. According to these standards the frequency of waste collection must not encourage illegal dumping or cause a nuisance in terms of odours and volumes of waste being stored hence the recommendation that non-recyclable waste must be removed at least once a week.

The National Domestic Waste Collection Standard will be used as guideline on the acceptable waste collection standards for the different settlement types in the municipality. Mangaung Metropolitan Municipality is currently servicing seven towns. Due to different access conditions different approaches in the formal and informal communities on waste collection services are required. One of the methods the municipality is utilising is the kerbside collection services. These services incorporate the collection of waste placed in either bags or bins outside properties on scheduled collection days. This type of service can only be provided to residential areas where street networks are sufficiently developed to allow reasonable access to individual properties and, as such, are only applicable in the formally developed residential areas. Compaction vehicles are used for residential and trade waste collection. Flat deck trucks, compactor trucks, tipper trucks and sometimes street sweepers when they are

available are used for street cleaning. The service is done by own teams or Service Providers on behalf of the municipality when they have been appointed although Service Providers utilise different types of modes of transport.

ITEM	TOTAL NUMBER
Households	285385
Serviced households	217771
Unserviced households	47569
Indigent households	31686
Unserviced indigent households	0
Service Level A: On-site appropriate and regularly supervised disposal	0
Service Level B: Community transfer to central collection point:	0
Service Level C: Organised transfer to central collection points and/or kerbside collection:	217711
Service Level D: Mixture of Service Level B and Service Level C:	22694
Total Serviced households as per the National Domestic Waste Collection Standards:	240405

National Domestic Waste Collection Standards Graph:

Graph 7
 If you are reading this message, please be sure to enter all of the relevant data to obtain a graph.

Figure 35. Graph on National Domestic Waste collection standards

3.6. FINANCING OF WASTE MANAGEMENT

3.6.1 Budget/Expenditure: Income and expenditure

Table 6 –MMM budget /expenditure: Income & expenditure

Item	Amount
Collection	
Transportation	R 0
Capex-purchase (vehicles)	R 0
Maintenance	R 0
Fuel	R 0
Receptacles	R 7 861 460
General	R 79 965 409
	R 0
Subtotal	R 0
Governance	
Staff (remuneration)	R 141 094 389
Education and awareness	R 6 169 744
IWMPS	R 0
By-laws	R 0
	R 0
Subtotal	R 0
Disposal	
Transfer station	R 0
Disposal sites	R 0
Acquisition of land, equipment	R 0
Regulatory compliance, EIA's and licence	R 0
	R 0
Subtotal	R 0
Total	R 0

Budget/Expenditure graph:

Graph 25

If you are reading this message, please be sure to enter all of the relevant data to obtain a graph.

Figure: 35 – MMM budget/expenditure graph

3.6.2 Revenue sources

Table 7: Revenue sources

Source	Amount
Funding sources	R 0
USDG Funding	R 0
Equitable share funding	R 0
Revenue from waste disposal fees	R 0
	R 0
Total	R 0

3.6.3 Organisational and institutional matters – Refised in 2023 (SW – Social Services / Fleet: CS / Technical Services)

Organogram:

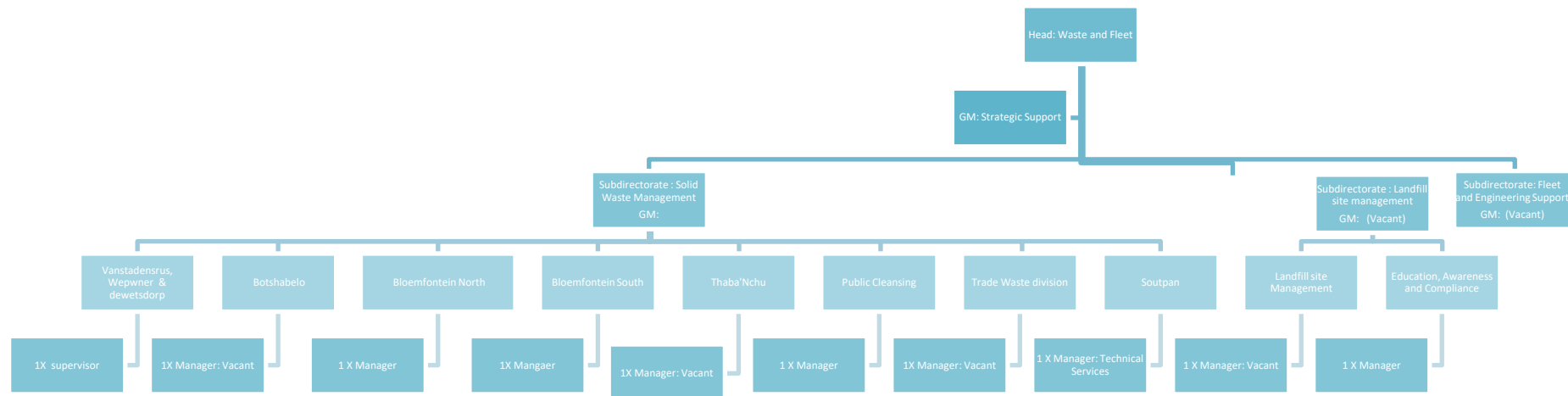


Figure: 37 – MMM SWM organogram

The Solid Waste Management is a Sub-directorate under the Directorate: Waste and Fleet which is headed by Head of Department. SWM is headed by a General Manager, under whom there are seven (7) divisions – Public Cleansing; Domestic Waste (Bloemfontein North and South); Botshabelo; Thaba N'chu, Vanstadensrus, Wepener & Dewetsdorp, Soutpan and Trade Waste. Each divisions have a manager/acting manager.

In general, the current organigram is sufficiently well framed. However, there are many critical positions vacant, some of which are supervisory positions and that hampers the smooth running of the sub-directorate.

The lack of skills, in particular, technical skills in municipalities, is a serious problem throughout South Africa. MMM has a need for additional skilled staff. There is a need for training, especially landfill sites operations (i.e. slopes, daily cover and compaction, health and safety training)

DRAFT JAN 2023

3. DESIRED END STATE

4.1 SETTING STRATEGIC GOALS, TARGETS AND INDICATORS

The desired end state entails identifying priorities and goals that Mangaung wishes to attain with regards to waste management. Using the information collected on the historical and present waste management situation, strategic goals for the IWMP should be developed. Strategic goals that Mangaung should develop must aim to address the gaps and the needs of the community and more importantly should respond to the Waste Act requirements. A program on how these will be attained is developed as an implementation plan. The strategic goals must be set based on the relevant waste legislation, regulations and policies and should be guided by the waste management hierarchy principles. Further, it should also include the setting of targets for waste management services such as collection, recycling, recovery and disposal. The setting of goals, objectives and targets must also take into consideration the municipal response to the goals and targets set in the National Waste Management Strategy.

Mangaung must achieve the set of goals provided by the National Waste Management Strategy that municipalities are expected to achieve in order to give effect to the Waste Act. It is important that there should be a target date by which municipal strategic goals and targets are to be attained within the 5 years from the date the IWMP has been approved.

Strategic goals can be divided into:

- Immediate: 1 year
- Short-term: 2 to 3 years
- Medium term: 3 to 5 years and
- Long-term: 5 to 10 years
- Long term goals relate to targets that extend beyond the 5 year period of implementing an IWMP i.e. decommissioning and planning to develop a new waste disposal facility.

Goal 1: Promote recycling and recovery of waste			
Objectives	Targets	Activities	Timeframe
Improve recycling and recovery of waste	50% of Municipal solid Waste diverted away from the landfill disposal	Source separation of waste Integration of waste reclaimers into municipal waste service BBC Transfer for organic waste Waste Flagship – Organic Diversion and Open Windrow Composting	2022 - 2026 year plan
		Private sector involvement in recycling	

Goal 2: Ensure the effective and efficient delivery of waste services			
Objectives	Targets	Activities	Timeframe
Improve waste collection	90-100	Situation analysis of the status quo on provision of waste removal services Supply of refuse receptacles Placing of skip and litter bins at strategic points Ensure availability of funds for the fleet management (maintenance etc) Availability of appropriate resources (human and capital)	2022 -2026 year plan

Provision of waste removal service to rural and other unserviced areas		Determining a suitable model for providing a waste removal service	2022 -2023 year plan
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Goal 3: Ensure that legislative tools are developed to deliver on the Waste Act and other applicable legislation			
Objectives	Targets	Activities	Timeframe
To improve the management of waste facilities to comply with the relevant legislation	80-100% compliance	Machinery availability, access control, licence/permit conditions compliance, appropriately qualified personnel	2022 -2026 year plan
Effective by-laws	80-100% compliance	Update by-law, Law enforcement	2022 -2024 year plan

Goal 4: Sound budgeting and financing of waste management services			
Objectives	Targets	Activities	Timeframe
Cost effective tariffs	50% of cost reflective tariffs	Assessment of the appropriate cost for provision of waste services Ring fence waste management service finances	2022- 2024

Goal 5: Ensure the safe and proper disposal of waste			
Objectives	Targets	Activities	Timeframe
Ensure safe and proper disposal	Disposal facilities are 80-100% compliant with permit/license conditions	Start Northern landfill site closure and Rehabilitation plan Upgrading of all landfills Education and awareness Law enforcement Adequate amenities Collection consistency	2022 -2024 year plan

Goal 6: Education and awareness			
Objectives	Targets	Activities	Timeframe
Conduct and promote education and awareness on waste management	80_100%	Promote and support clean -up campaigns Removal of illegal dumps Conduct education and awareness to schools and communities Promote waste reduction, reuse and recycling Regularly source and share contemporary recycling information with waste reclaimers	2022 -2024-year plan

		<p>Forge a sound working relationship with recycling companies</p> <p>Encourage communities to adopt a spot that is turned for sustainable projects such as food gardening</p>	

Goal 7: Compliance and enforcement			
Objectives	Targets	Activities	Timeframe
Ensure compliance and enforcement to by-laws and legislation	90 -100% compliance and enforcement	<p>Ensure training and appointment of designated EMIs</p> <p>Issuing fines</p> <p>Issuing of compliance notices</p> <p>Educate and raise awareness on waste legislation with communities</p>	2022 -2026-year plan

5. COMMUNICATION AND STAKEHOLDER PARTICIPATION

5.1 CONSULTATION PROCESS SUMMARY

Under the Waste Act, Chapter 3, section 11 (7b) states that. “A municipality must, before finalising its integrated waste management plan, follow a consultative process contemplated in section 29 of the Municipal System Act, either as a separate process or as part of the consultative process relating to its IDP contemplated in that section”.

Apart from the Waste Act calling for community/stakeholder participation, Chapter 4 of the Municipal systems Act encourages municipalities to conduct community participation when developing their IWMP and it provides different mechanisms by which this could be done. Mangaung internal and external stakeholders will play an important role in the development of the IWMP. A number of consultations with different public , private and business forums will be used to ensure maximum participation.

The IWMP draft will also be distributed through the Mangaung website, Executive Management Team, Section 80 Committee for Waste and Fleet, Mayoral Committee Meeting and to Council for approval before it is sent for endorsement to DESTEA. During these consultation and public participation processes issues raised/concerns, Mangaung responses and other general comments will be recorded in line with the table below.

Table:8 Issues/concerns register sample

Stakeholder	Issues raised/ Concerns	Municipality's response	General comments

6. IMPLEMENTATION INSTRUMENTS

6.1 PARTNERSHIPS

The partnerships development as a mechanism for providing the services and facilities required for Integrated Waste Management is key for consideration. The IWMP provides the categories of partnerships that should be considered by municipalities. Mangaung is interested on having partnerships that will ensure that the municipality achieves its goals and objectives as set out in this IWMP.

- **DFFE/GIZ Partnership:**

The Government of South Africa, in partnership with the German Government, has embarked upon two complimentary Programmes that address the implementation of an Advanced Integrated Solid Waste Management (AISWM) Programme; and the Waste Management Near-Term Priority Climate Change Flagship Programme, which includes identifying areas for strategic interventions that advance the objectives of both the National Climate Change Response Policy and the National Waste Management Strategy (NWMS). Six partner municipalities were identified by the Department of Environmental Affairs, which included Mangaung Metropolitan Municipality. Some of the objectives of the Programme are to:

- Develop and analyse intervention strategies/scenarios to improve Integrated Waste Management Systems emphasizing diversion of waste from landfill in response to the National Climate Change Response Policy (NCCRP) and National Waste Management Strategy (NWMS)
- Identify preferred project from the scenarios and develop business and implementation plans (pre-feasibility)
- Identify international and national financing opportunities for further project preparation (bankability) and implementation e.g. Green Climate Fund (GCF) submission

The identified preferred project for Mangaung was a centralised Open Windrow Composting based on the waste composition in the municipality. A funding proposal to the GCF for the Municipal Solid Waste Programme including, a feasibility study, and detailed designs for the

target municipalities – feedstock, baseline study and site verification report were developed. This facility, if funds become available has to be established at the South Landfill site along with a centralised garden green chipping facility. This project, if funded will be complimented by an establishment of garden waste drop-off facilities at Thaba Nchu, Botshabelo at their respective buy-back centres.

DFFE Partnership

The National Department of Forestry, Fisheries and Environment has appointed a Service Provider to assist Mangaung in managing the Southern Landfill site for a period of 12 months. This will assist the municipality to ensure that the landfill site is upgraded to an acceptable standard and complies with its permit conditions.

Other categories of partnerships to be considered are:

- **Public-private partnerships (PPP):** for collaborating on financial assistance for waste services, establishment of waste management facilities, establishment of separation at source and other waste management initiatives i.e. development and management of waste disposal facilities, establishment and management of MRFs, transfer stations, and recycling facilities.
- **NGO/Community based organisations (CBO's):** partnership with the municipality in order that they may participate or carryout awareness and education campaigns and programs.

6.2. LEGISLATIVE INSTRUMENTS: DEVELOPMENT AND ENFORCEMENT OF BY-LAWS

Local government may develop by-laws, which augment National and Provincial regulatory requirements. Mangaung will therefore have to review its by-laws with an aim to give effect to the right contained in section 24 of the Constitution by regulating waste management within the area of the municipality's jurisdiction; provide, in conjunction with any other applicable law, an effective legal and administrative framework, within which the Municipality can manage and regulate waste management activities; ensure that waste is avoided, or where it cannot be altogether avoided, minimised, re-used, recycled, recovered, and disposed of in an environmental sound manner; and promote and ensure an effective delivery of waste services. These by-laws must also be aimed at discouraging littering and illegal dumping by prosecuting offenders amongst others.

Mangaung will enforce these by-laws the training of designated EMI's. To increase capacity to enforce municipal by-laws; Mangaung will explore training Metro police/ local enforcement agencies on waste related matters in order that they too are equipped and are able to issue fines on waste management transgressions. Environmental Health Practitioners (EHP's) will also be taken on board in order that they can also administer the enforcement of waste by-laws.

6.3 FUNDING MECHANISMS

In order for municipalities to have sustainable sources of revenue, a full cost accounting of how much it realistically costs them to deliver waste management services should be developed. It has always a challenge to know how much it costs for Mangaung to deliver waste management services as Solid Waste Management funds have not been ring-fenced. Mangaung needs to undertake a full cost accounting exercise which after development Mangaung will then be able to charge tariffs that are reflective of the cost of rendering waste management services and will generate accurate revenue for the waste services rendered.

A critical precondition for the successful implementation of IWMPs is access to sufficient funding to carry out the plan. Funding will be required for inter-alia: building capacity within the municipality; the development and implementation of by-laws; development and implementation of IWMP; development, operation and maintenance costs of waste management facilities; and the design and commissioning of new waste management facilities. There are different funding sources that municipalities can obtain e.g. Equitable Share Funding, grant allocation, revenue from rates and tariffs, revenue from fines. Mangaung must also be able to determine whether there is under-recovery of waste collection revenue from its customers or not.

6.4 IMPLEMENTATION PLAN (SUMMARY OF AN IWMP PLANNING PROCESS)

An implementation plan which details how the targets set in the goals will be attained as well as what resources will be required to attain the targets in the next five years must be developed by a municipality. In this instance, the implementation plan has been developed in a manner that summarises the entire IWMP planning process in order to demonstrate how each of the steps fit into each other.

Situation Analysis	Desired end state (Goals)	Targets	Activities	2020	2023	2024	2025	2026	Selected alternatives	(Implementation mechanisms) Resources		
										Human Resource (HR)	Equipment (EQP)	Finance (HR+EQP)
Current staff compliment inadequate Current staff – 467	Full staff complement	136 employees (full staff complement)	Filling of vacant positions	0	68	68	0	0	EPWP, DEFF CWP usage	136	Tools and Equipment (PPE)	Wage/salary
Inadequate vehicles for waste collection	Adequate and reliable vehicles	48 compaction vehicles	Liaise with fleet management to ensure fleet availability	x	x	x	x	x	Budget for the hiring of equipment	Existing staff and Service Providers	Compaction vehicles	capex
Inadequate vehicles for Public Cleansing				x	x	x	x	x			Tipper trucks TLBs Flat deck trucks	
Inadequate vehicles for waste disposal				x	x	x	x	x			Tipper trucks FELs Water tankers Dozers Landfill compactors	

The current by-laws do not include the 4 town that became part of the municipality after the 2016 elections and not aligned to NEMWA	By-laws to include all towns within MMM	To review and update by-laws	To update the Municipal by-laws	x						Existing staff		Municipal budget
By-laws not adequately enforced	To ensure by-law enforcement	To employ 18 law enforcers	To appoint and train officials as compliance officers/designated EMTs	6	6	2	2	2	Utilisation of the municipal Law Enforcement unit	existing and additional	stationery	Municipal budget
			Implementation of by-laws	x	x	x	x	x		Existing and additional staff	Sign boards that deter illegal dumping	Municipal budget

Waste collection services are not rendered to all households	To render waste collection services to all households	To ensure all the outstanding backlogs are eradicated	Extend services to those area that are not currently serviced	x	x	x	x	x	Budget for hiring of equipment and Utilisation of service Providers	Existing staff and Service Providers	Waste compaction vehicles, skip bins, skip loader trucks	R 30 000 000
Inadequate public cleansing services	Adequate public services	Clean streets and public areas	Street cleaning and cleaning of public areas	x	x	x	x	x	CWP, EPWP, PEP DEFF/DESTEPA Participants, Private Sector	Existing staff and external stakeholders	Skip bins, mechanical sweepers, skip loaders, Tipper trucks, TLB tools and equipment PPE	Municipal budget
Lack of waste diversion	Promote recycling and recovery of waste (Waste Diversion)	50% of waste diversion away from landfills by 2023	Composting facility at South Land fill site	10%	10%	10%	10%			Existing staff and external stakeholders		

			Piloti ng of sepa ratio n of wast e at sour ce in area s with high wast e reso urce s	x	x	x	x	x	Private sector	Existing staff, private sector	Tools and equipment, trucks, PPE , clear bags	
Non compliance of Waste facilities in terms of the legislation	To ensure waste facilities to comply with relevant legislation	All waste facilities to comply with relevant legislation	Ensu re Wep ener wast e disp osal site is	x						Existing staff, DESTEA, DWS		

			Lice nsed									
			Sout h land fill com plian ce	x	x	x	x	x		Existing staff, DESTE A DEFF, Private sector	Tipper trucks FELs Water tankers Dozers Landfill compactors	
			Nort hern landf ill site	x	x	x	x	x		Existing staff, DESTE A DEFF, Private sector	Tipper trucks FELs Water tankers Dozers Landfill compactors	
			Bots habe lo landf ill site	x	x	x	x	x		Existing staff, DESTE A DEFF, Private sector	Tipper trucks FELs Water tankers Dozers Landfill compactors	
			Wep ener	x	x	x	x	x		Existing staff, DESTE A DEFF, Private sector	Tipper trucks FELs Water tankers Dozers Landfill compactors	

			Dew etsd orp	x	x	x	x	x		Existing staff, DESTE A DEFF, Private sector	Tipper trucks FELs Water tankers Dozers Landfill compactors	
			Van stad ensr us	x	x	x	x	x		Existing staff, DESTE A DEFF, Private sector	Tipper trucks FELs Water tankers Dozers Landfill compactors	
			Sout pan landf ill site	x	x	x	x	x		Existing staff, DESTE A DEFF, Private sector	Tipper trucks FELs Water tankers Dozers Landfill compactors	
Buyback centres dysfunctional (Botshabelo & Thaba'Nchu)	All buy-back centres to be functional	2 buy back centres to be fully functional	Refu rbish ment of buy back centr es	x	x	x	x	x	DEFF & existing NPOs and Cooperatives	DEFF,Co- operatives, municipal staff		
			Train ing of Co-	x	x	x	x	x	DEFF & existing NPOs and Cooperatives	DEFF,Co- operatives, municipal staff		

			oper ative s and wast e pick ers and provi ding equi pme nt to Cop erati ves									
Dysfunctional existing facility at the Southern landfill site	The facility to be turned into a MRF and a buy back centre	To refurbish Southern landfill buy- back centre	To sour ce fund s for the refur bish ment and traini ng of wast e pick ers ans SM MEs for	x	x				DEFF, MMM, DESTEA and SMMEs, Service Providers			

			oper ating									
			Oper ation by SM MEs			x						
			Upd ating the wast e pick ers' data base	x	x	x	x	x				
		To refurbish Southern landfill MRF										

North Landfill nearing its lifespan	Regional Landfill site to be developed	Closure of the Northern landfill site	Appoint ment of a servi ce provi der to do a clos ure and end use repo rt									
		Development of a regional waste management facility	Ident ificati on of land									
			Secu ring of fund s for the deve lopm ent of the site									

Reporting on Monitoring

Section 13(3) of the Waste Act, 59 of 2008 requires that the annual performance report prepared in terms of section 46 of the Municipal Systems Act must contain information on the implementation of the municipal integrated waste management plan in so far as it relates to performance of the municipality, including the following:

- (a) the extent to which the plan has been implemented during the period;
- (b) the waste management initiatives that have been undertaken during the reporting period;
- (c) the delivery of waste management services and measures taken to secure the efficient delivery of waste management services, if applicable.
- (d) the level of compliance with the plan and any applicable waste management standards.
- (e) the measures taken to secure compliance with waste management standards.
- (f) the waste management monitoring activities.
- (g) the actual budget expended on implementing the plan.
- (h) the measures that have been taken to make any necessary amendments to the plan.
- (i) in the case of a province, the extent to which municipalities comply with the plan and, in the event of any non-compliance with the plan, the reasons for such non-compliance: and
- (j) any other requirements as may be prescribed by the Minister.

Mangaung undertakes to report on the matters stipulated above as regards the IWMP during an annual performance report prepared in terms of section 46 of the Municipal Systems Act.

7.1 STRATEGIC ISSUES

The Solid Waste Management unit of the municipality will be responsible for reporting on the progress of the seven strategic goals that are contained in chapter 4 of this IWMP. An implementation plan has also been put in place to ensure that the goals are attained.

7.2 COMMUNICATION AND PUBLIC PARTICIPATION PLANPUBLIC PARTICIPATION

The Waste Act requires the development of an IWMP to follow a public participation and consultation process (Section 72 and Section 73). The draft IWMP will communicated through the Mangaung website, libraries, local newspapers and all the media Mangaung is utilising for communication.

Table:9 Mangaung IWMP Public Engagement and Approval process

ITEM	TIME_FRAME	RESPONSIBILITY
Finalisation of the 1 st draft	30 May 2022	Mangaung
Send Draft for public participation in the website, library, workshop etc	01 -31 June 2022	Mangaung
One day workshop (presentation of the draft IWMP)	Mid June 2022	Mangaung
Incorporates inputs/comments	July 2022	Mangaung
Present to Council for approval	August 2022	Mangaung
Submit to Province for endorsement	September 2022	Mangaung and DESTEA
Annual performance reporting of the plan to DFFE		Mangaung

7.3 FINANCIAL PLAN

The financial plan of this IWMP is linked to the implementation plan in Chapter 6. This plan attempts to summarize how the entire IWMP implementation is going to be implemented in order to demonstrate how each of the steps talk to each other.

8. ANNEXURE OR REFERENCES (OPTIONAL)

Draft from the office of:

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