

Polokwane Local Municipality



Integrated Waste Management Plan **draft**

Development of municipality integrated waste management plan
for Polokwane Local Municipality for a period of six months

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Name	Designation	Role	Signature	Date
KP. Tjale	Senior Environmental Scientist	Author		24/02/2025
L. Moseri	Senior Environmental Scientist	Review		25/02/2025
J. Mbharima	Waste Management & Sustainability specialist	Approval		27/02/2025

Client Distribution and Approval				
Name	Organisation	Designation	Signature	Date
T. Maselela	LEDET	Deputy Director: Environmental Quality Management		

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Table 1: List of abbreviations/acronyms

List of Abbreviations / Acronyms	
DFFE	Department of Forestry, Fisheries and the Environment
NDP	National Development System
NWMS	National Waste Management Strategy
IDP	Integrated Development Plan
IWM	Integrated Waste Management
IWMP	Integrated Waste Management Plan
LEDET	Limpopo Economic Development, Environment and Tourism
NEMA	National Environmental Management Act, Act No. 107 of 1998
NEMWA	National Environment Management: Waste Act (Act 59 of 2008)
HCRW	Health Care Risk Waste
MEC	Member of Executive Council
SAWIC	South African Waste Information Centre
SAWIS	South African Waste Information System
PLM	Polokwane Local Municipality

DEFINITIONS

Table 2: Table of definitions

Word	Description
Department of Forestry, Fisheries and the Environment	This is a national government department responsible for managing and regulating various aspects of South Africa's environment, including forestry, fisheries, and environmental protection.
National Development Plan	The NDP is a long-term vision document that outlines South Africa's development goals and strategies for achieving a more equitable and prosperous society. It covers a broad range of sectors, including education, healthcare, employment, infrastructure, and environmental sustainability. The NDP is often considered the cornerstone of South Africa's national development framework.
National Waste Management Strategy 2020	The NWMS is a strategic plan that guides waste management policies and practices in South Africa. It outlines the country's goals for sustainable waste management, including waste reduction and recycling targets.
Integrated Development Plan	An integrated development plan is a strategic planning document used by South African municipalities to outline their development goals, objectives, and
Integrated Waste Management	An integrated waste management is a holistic approach to waste reduction, which includes the reduction, collection, disposal, and recycling of waste in an environmentally responsible and sustainable manner
Integrated Waste Management Plan	An integrated waste management Plan is a comprehensive strategy that outlines how a municipality or organization intends to manage its waste, including waste reduction, recycling, and disposal methods.

Word	Description
Limpopo Economic Development, Environment and Tourism	LEDET is a government department in Limpopo, South Africa, responsible for economic development, environmental protection, and tourism promotion in the region.
National Environmental Management Act, Act No. 107 of 1998	NEMA is a South African environmental law that provides a framework for managing and protecting the environment, including natural resources and ecosystems.
National Environment Management: Waste Act 59 of 2008	This is an environmental law in South Africa that focuses on the management of waste and aims to promote responsible waste management practices.
National Environmental Management: Waste Act 26 of 2014	This is an updated version of the NEMWA that strengthens regulations and provisions related to waste management in South Africa.
Health Care Risk Waste	This refers to waste generated in healthcare facilities that may pose a risk to human health or the environment, such as infectious materials or hazardous chemicals.
South African Waste Information Centre	The South African Waste Information Centre (SAWIC) is a centralized and comprehensive information hub dedicated to collecting, managing, and disseminating data and information related to waste management and environmental conservation. SAWIC serves as a repository for various types of waste-related data, including statistics on waste generation, recycling rates, landfill usage, and other pertinent information. This organization's primary goal is to provide reliable and up-to-date waste-related information to government agencies, organizations, researchers, and the public, supporting evidence-based decision-making and policies aimed at improving waste management and environmental sustainability in South Africa.

Word	Description
South African Waste Information System	<p>The South African Waste Information System (SAWIS) is a comprehensive and integrated data management and reporting system used in South Africa to collect, manage, and analyse information related to waste generation, disposal, recycling, and other aspects of waste management. SAWIS is designed to provide accurate and up-to-date data for decision-making, monitoring compliance with environmental regulations, and developing strategies for sustainable waste management practices in South Africa.</p>

EXECUTIVE SUMMARY

The Integrated Waste Management Plan (IWMP) for Polokwane Local Municipality (PLM) provides a structured, strategic framework to address the municipality's waste management challenges while ensuring alignment with provincial and national waste management objectives. Developed in collaboration with the Limpopo Department of Economic Development, Environment, and Tourism (LEDET), this initiative supports municipalities in designing and implementing effective, sustainable waste management strategies in compliance with national legislative requirements.

A comprehensive Situational Analysis was undertaken to evaluate Polokwane's waste landscape, considering demographic trends, waste generation patterns, and the state of existing waste management infrastructure. The IWMP sets out clear, measurable objectives aimed at enhancing waste service delivery, strengthening institutional capacity, and ensuring full regulatory compliance.

Stakeholder engagement has been a critical component throughout the IWMP's development, ensuring an inclusive and consultative process that integrates input from communities, industry stakeholders, and government entities. Key recommendations emerging from this process include expanding public awareness programs, upgrading waste management infrastructure, and promoting waste minimization through reduction, reuse, and recycling initiatives. These interventions are designed to drive sustainable waste management practices while improving overall service delivery and environmental outcomes.

To ensure the effectiveness and adaptability of the IWMP, a robust monitoring, evaluation, and review framework has been incorporated. Regular annual reviews will be conducted to track progress, maintain stakeholder engagement, and refine strategies in response to evolving waste management needs.

Ultimately, this IWMP serves as a strategic blueprint for establishing a resilient, efficient, and sustainable waste management system in Polokwane. Through collaborative governance, regulatory compliance, and proactive waste management interventions.

1. INTRODUCTION

The Limpopo Department of Economic Development, Environment, and Tourism (LEDET) is committed to supporting seven municipalities in the development of their Local Municipal Integrated Waste Management Plans (IWMPs). This initiative is guided by Section 11(4) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and aims to assist municipalities in designing effective, compliant, and sustainable waste management strategies. By aligning these plans with the National Waste Management Strategy (NWMS), LEDET seeks to establish a cohesive and environmentally responsible waste management system across the province.

As part of this initiative, Polokwane Local Municipality (PLM) has been selected to develop its IWMP, with Mosa Green Consulting appointed as the professional service provider overseeing the process. This project plays a crucial role in enabling municipalities to formulate structured, long-term waste management strategies that not only comply with national regulations but also address local waste management challenges. Mosa Green Consulting will provide technical expertise and strategic guidance to ensure that Polokwane Municipality develops a comprehensive, actionable, and sustainable IWMP.

The primary objective of the IWMP for Polokwane Local Municipality is to assess the current state of waste management and develop targeted strategies for improvement over the next five years. In line with the National Waste Management Strategy (NWMS) of 2020, the plan aims to integrate and optimize waste management practices, ensuring efficiency, cost-effectiveness, and minimal environmental impact. The IWMP prioritizes key interventions, including reducing waste generation at the source, enhancing recycling and resource recovery, ensuring safe and compliant waste disposal, strengthening institutional capacity, and fostering community engagement through education and awareness programs. By implementing these measures, the IWMP seeks to improve waste service delivery, promote environmental sustainability, and enhance the overall quality of life for residents of Polokwane Local Municipality. A robust monitoring and evaluation framework will be established to track progress, measure effectiveness, and refine strategies as needed.

Ultimately, the IWMP serves as a strategic roadmap for developing a resilient, sustainable, and well-regulated waste management system in Polokwane. Through

collaboration, innovation, and stakeholder engagement, the municipality aims to achieve long-term sustainability and environmental stewardship by ensuring that waste is effectively managed, recovered, and diverted from landfills wherever possible.

1.1 DEFINITION OF WASTE

The National Environmental Management: Waste Act (2008) defines waste as any substance, material, or object that is discarded, abandoned, or intended for disposal, whether or not it can be reused, recycled, or recovered. This definition encompasses all waste types listed in Schedule 3 of the Act, as well as materials classified as waste by the Minister through a notice in the Government Gazette. However, waste ceases to be classified as such when it has been successfully repurposed through reuse, recycling, or recovery, provided that the appropriate approvals or exemptions have been granted.

1.2 INTEGRATED WASTE MANAGEMENT PLAN DEVELOPMENT PROCESS

The development of IWMPs aims to streamline waste management planning across the province to enhance efficiency, minimize environmental impacts, and reduce financial costs while ultimately improving the quality of life for all South Africans. The IWMP development process follows a structured approach, as outlined in the Department of Environmental Affairs (DEA) Guideline for the Development of IWMPs. The key steps include:

1. Situation Analysis – Assessing the current state of waste management within the municipality.
2. Defining the Desired State – Establishing long-term waste management goals and objectives.
3. Identifying and Evaluating Alternatives – Exploring different strategies to address key challenges.
4. Selecting Preferred Alternatives – Choosing the most effective and sustainable waste management solutions.
5. Implementation Plan – Developing an action plan for rolling out waste management initiatives.

6. Monitoring & Review – Establishing a system to track progress and ensure continuous improvement.

Additionally, the Department of Environmental Affairs and Development Planning (DEA&DP) Guide for Waste Management Planning provides further guidance through two volumes:

- Volume 1: Conducting a Status Quo Analysis of waste management systems.
- Volume 2:
 - Section A: Identifying waste management needs and objectives.
 - Section B: Developing, implementing, and evaluating IWMPs.

By following this systematic approach, Polokwane Local Municipality aims to develop a waste management plan that not only meets regulatory requirements but also promotes sustainable waste management practices that benefit both the environment and the community.

2. SITUATIONAL ANALYSIS

2.1. SCOPE AND PURPOSE OF THE SITUATION ANALYSIS

The initial phase of any Integrated Waste Management Plan (IWMP) involves a comprehensive situation analysis. It's crucial to recognize that this analysis provides a snapshot of the present state of waste management. Given the dynamic nature of legislative adjustments and continuous operational shifts, the situation analysis is in a constant state of evolution. It is imperative to conduct a thorough review of the situation analysis, at least aligning with the five-year IWMP review, considering all facets of waste management, encompassing aspects such as waste infrastructure, institutional capacity, and the financial aspects of waste management services.

2.2. METHODOLOGY

The investigation into the situational analysis followed the subsequent methodology:

- (i) Comprehensive records from the Municipality's Waste Management Section were acquired for the study's purposes.
- (ii) Municipality site visits occurred on November 27th to 29th, with interviews conducted with relevant representatives.
- (iii) On the specified dates, all areas within the study were personally visited to gain first hand insights into the current status of waste management services.
- (iv) Site visits on the same dates included inspections of waste infrastructure, particularly waste disposal sites.
- (v) Waste characterisation studies were done on the municipal landfills
- (vi) Financial details pertaining to waste management were extracted from the Final Reviewed IDP Budget 2023/2024.
- (vii) General information was gathered as part of the investigative process obtained from the Polokwane Local Municipality IDP (2016) and STATS 2022 data
- (viii) Mosa Green Consulting ensured that this situational analysis report includes the following information, as outlined in Chapter 3, Section 12 of the Waste Act.

3. GEOGRAPHIC AREA

Polokwane Local Municipality spans approximately 539,982.5 hectares and is centrally located in the Limpopo Province within the Capricorn District. This area constitutes 3% of Limpopo's total surface area of about 124,000 km². The municipality's land use is divided into 23% urbanized areas, 71% rural regions, and 6% comprising smallholdings, industrial zones, institutional land, and recreational spaces.

Strategically positioned at the crossroads of key national and provincial roads, Polokwane provides critical connectivity to other towns and regions. Its location also enhances its logistical significance, supported by its proximity to neighbouring countries such as Botswana, Zimbabwe, Mozambique, and Eswatini. The city's importance is further emphasized by the presence of three of the four Spatial Development Initiatives that passes through the municipality.

The spatial pattern of Polokwane reflects its urban planning, characterized by segregated settlement. The central economic hub includes the Central Business District (CBD), industrial zones, and well-established formal urban areas serving affluent residents. Surrounding this core are clusters of less formal settlements, which are experiencing rapid rural-to-urban migration. These areas face significant challenges, including inadequate infrastructure and social services, struggling to meet the demands of the growing population seeking improved living standard. Polokwane Local Municipality is administratively divided into 45 wards, enabling governance and localized service delivery across its diverse geographic and socio-economic landscape. Figure 1 displays the locality map of Capricorn District Municipality, highlighting the position of Polokwane in relation to the other municipalities.

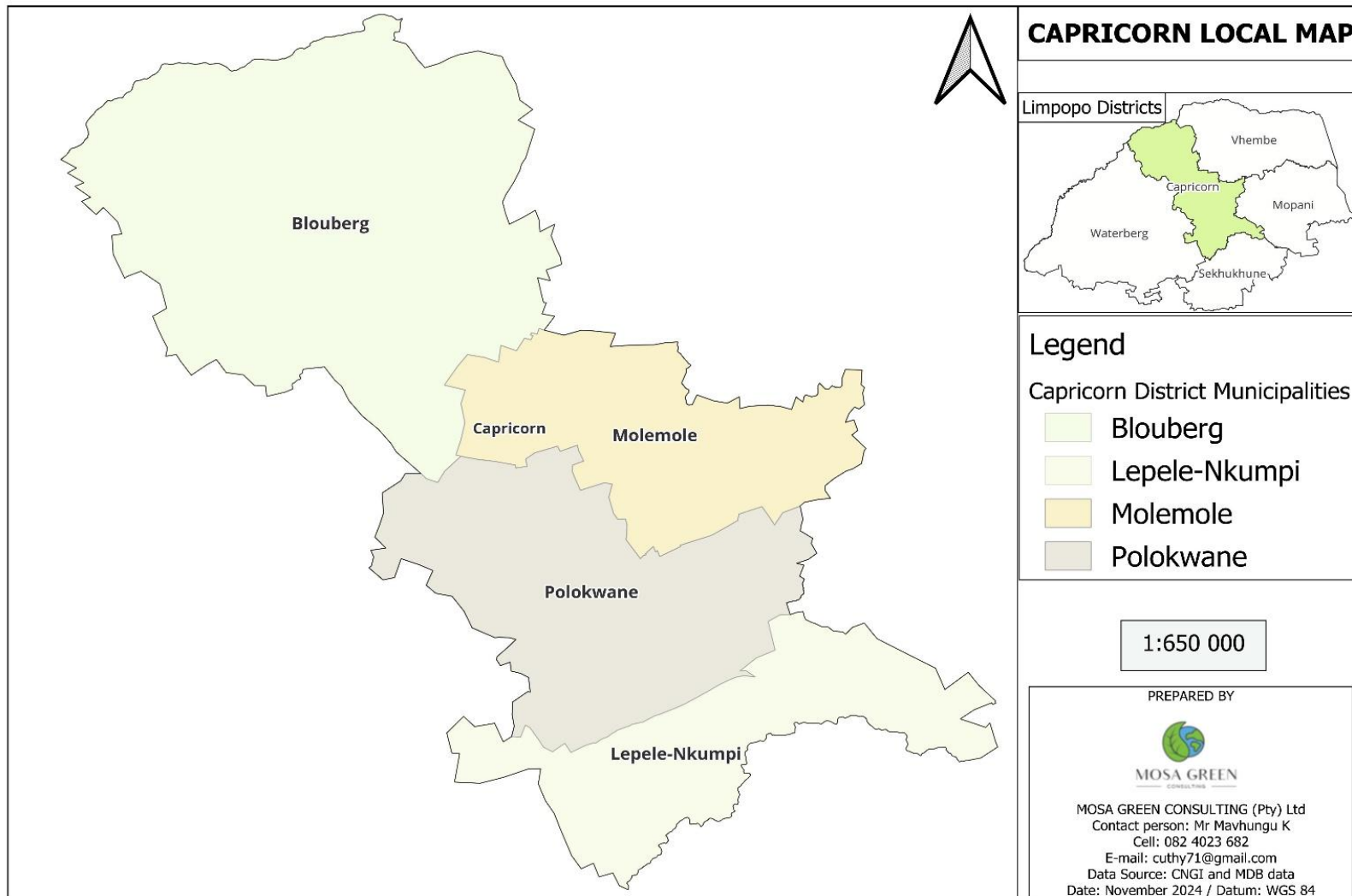


Figure 1: Capricorn District Municipalities locality map

3.1. LOCALITY OF POLOKWANE LOCAL MUNICIPALITY

Polokwane, strategically positioned in Limpopo Province, serves as a critical economic and administrative hub. Its central location is bolstered by key transportation links, including the National Road N1, which connects the city to Gauteng in the south and Zimbabwe in the north, and the Polokwane International Airport. Recognized as a gateway to Southern Africa, the city facilitates regional trade and connections with neighbouring countries such as Zimbabwe, Mozambique, and Botswana.

Designated as a Provincial Growth Point within the Limpopo Spatial Development Framework (SDF) and the Limpopo Development Plan 2030, Polokwane plays a pivotal role in regional economic strategy. Located in the Capricorn District, it is a focal point for economic activity in the province, with its economy predominantly concentrated in the tertiary sector. This contrasts with neighbouring municipalities, where mining and agriculture dominate. The city consists of seven main settlement clusters:

1. City
2. Seshego
3. Mankweng (30 km east of the city, where the University of Limpopo is situated)
4. Sebayeng/Dikgale
5. Ga-Molepo/Chuene/Maja
6. Moletjie
7. Aganang

Economic activity in Polokwane is led by the community services sector, which accounts for 32% of the city's Gross Value Added (GVA). This dominance is driven largely by government and personal services. Trade and accommodation contribute 22% to the GVA, while finance and business services add 21%. These figures reflect a sectoral composition akin to metropolitan economies. Polokwane hosts the head offices of major national financial institutions and corporations operating in Limpopo, further cementing its economic significance.

While agriculture and electricity contribute minimally to the total GVA, the agricultural sector has shown the highest annual economic growth rate between 2007 and 2017, highlighting its potential for further development. Figure 2, below shows the locality and the wards within the PLM

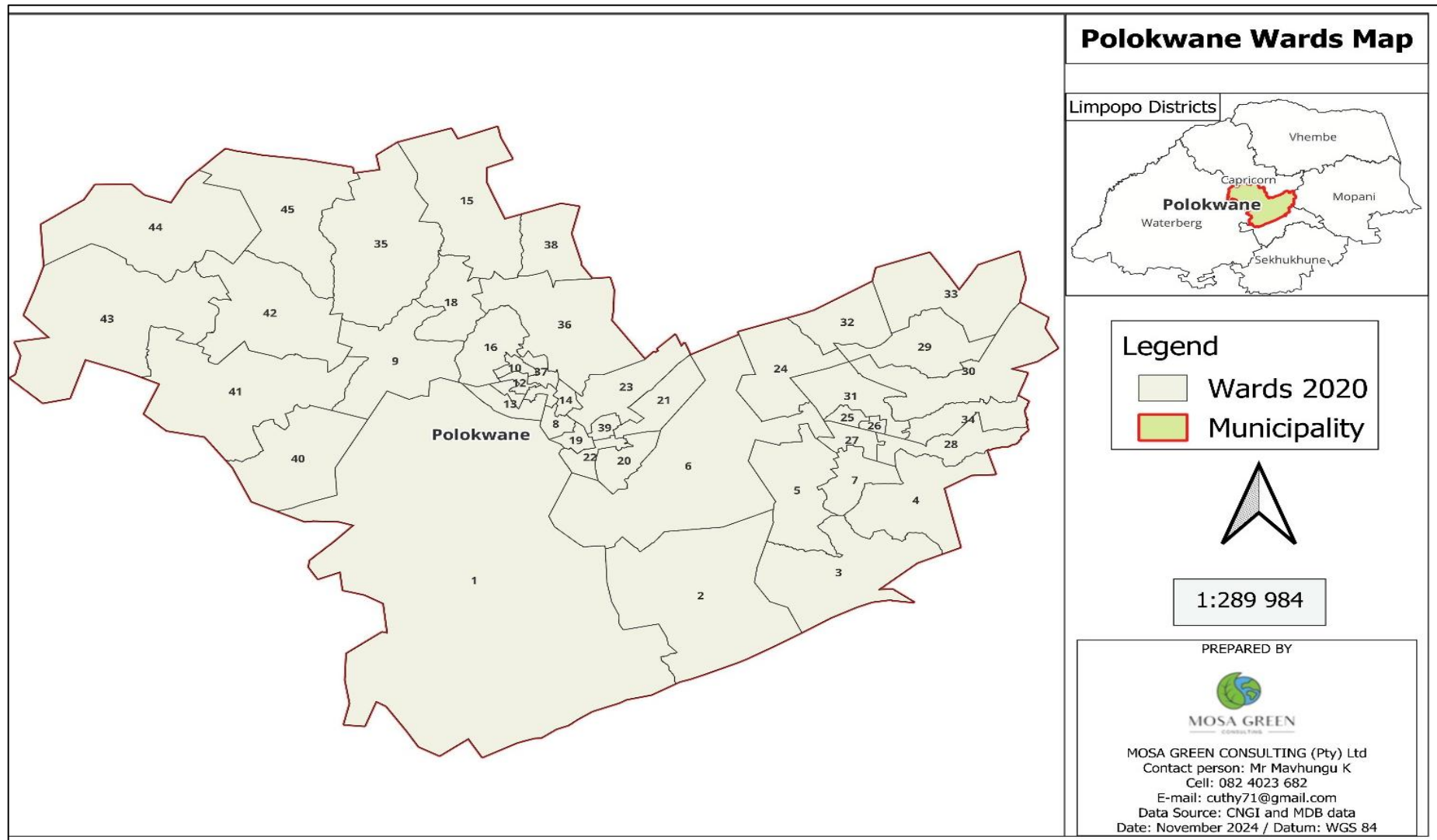


Figure 2: PLM locality map & wards

3.2. DEMOGRAPHICS AND POPULATION GROWTH

3.2.1. DEMOGRAPHIC – POPULATION AND PROFILE

The demographic landscape and developmental characteristics of Polokwane Local Municipality together offer a comprehensive depiction of its population. Demographics encompass a diverse set of statistical elements that portray the makeup of a population in a specific time and place. These elements include gender, race, age, socioeconomic status, household distribution, poverty rates, educational attainment, and employment status, among others.

In the context of waste management, demographic data plays a crucial role in accurately forecasting both current and expected waste volumes. This information is vital for various reasons, including the precise assessment of present waste generation and the anticipation of future trends in waste production.

As per the guidelines outlined by the Department of Environmental Affairs (DEA) Integrated Waste Management Plan (IWMP) in 2009, demographic data is indispensable for projecting current and future waste quantities. Moreover, this data is essential to:

- Ensure the inclusion of previously underserved areas, such as informal settlements and sparsely populated rural regions.
- Form the foundation for estimating waste volumes and types in the projections.
- Evaluate the potential for financial recovery in waste management initiatives.
- Assess the necessary resources for providing waste management services and developing related infrastructure.

3.2.1.1. POPULATION SIZE AND DISTRIBUTION

Population data has been sourced from Statistics South Africa, referencing the 2022 Census, and the Polokwane Local Municipality Integrated Development Plan (IDP) for 2023/2024. The 2022 Statistics South Africa Census reports that the Polokwane Local Municipality (PLM) has a total population of 843 459 individuals, residing in 249,443 households. This represents a 15.76% increase compared to the population recorded in the 2011 Census, which reported 728 633 residents. This significant population

growth highlights the municipality's role as a vital economic and administrative hub in Limpopo Province. Polokwane's strategic position is enhanced by critical infrastructure, including the National Road N1, which links Gauteng to the south and Zimbabwe to the north, as well as the Polokwane International Airport. As a recognized gateway to Southern Africa, Polokwane facilitates regional trade and serves as a critical connection point to neighbouring countries such as Zimbabwe, Mozambique, and Botswana. The city's economic dynamism continues to attract people, highlighting its potential for development and investment opportunities.

Table 3 below shows the total population and gender distribution for 2011 and 2022 within the Polokwane Local Municipality. The demographic data indicates significant growth in the total population over the 11-year period. In 2011, the population was 728,633, while by 2022, it had grown to 843,459—an increase of 114,826 individuals, reflecting notable population growth.

In terms of gender distribution, both male and female populations experienced substantial increases. In 2011, the male population was 302,233, compared to 406,945 in 2022, reflecting a growth of 104,712. Similarly, the female population increased from 326,766 in 2011 to 436,514 in 2022, an increase of 109,748.

Examining the male-to-female ratios over time reveals interesting demographic shifts. In 2011, females constituted a slightly larger proportion of the population, with 52.5% compared to males at 47.5%. However, by 2022, the male-to-female gap narrowed slightly, with females accounting for 51.8% and males for 48.2% of the total population. This slight shift could suggest changes in migration patterns, gender-specific mortality rates, or other socioeconomic factors that warrant further exploration.

The overall increase in both the male and female populations, combined with the narrowing of the gender ratio gap, reflects a dynamic demographic landscape. These shifts could have implications for planning and resource allocation, including healthcare, education, and economic opportunities, and present avenues for further research into the underlying causes and trends driving these changes.

Table 3: Total population & gender distribution for 2022 & 2011 (stats SA 2022)

Year	Total population	Male	Female
2022	843 459	406 945	436 514
2011	728 633	302 233	326 766

Table 4 and figure 3 demonstrates the demographic composition by racial groups within the population highlights a predominantly Black African majority, which accounts for 93.8% of the total population. This significant proportion underscores the centrality of Black African residents in shaping the social, cultural, and economic dynamics of the community. The remaining racial groups collectively form a smaller fraction of the population, with Coloured individuals comprising 0.8%, Indian/Asian individuals at 1.1%, White residents at 4.2%, and Other categories at 0.2%.

This distribution reflects the historical and socio-political factors that have influenced settlement patterns and demographic shifts over time notably apartheid segregation. While the Black African population forms an overwhelming majority, the representation of other racial groups—although minor—adds to the diversity and complexity of the community's demography.

The Coloured and Indian/Asian populations, though small, may have unique cultural or economic contributions and challenges that require targeted community engagement and tailored programs. The White demographic, at 4.2%, represents a notable minority whose needs and perspectives could be integrated into broader community initiatives to promote inclusivity. The Other category, albeit negligible in percentage, may represent individuals of mixed heritage or those who identify outside the conventional racial classifications

Table 4: Population racial distribution (stats SA 2022)

Racial Group	Frequency	%
Black African	790 542	93,8%
Coloured	6 349	0,8%
Indian/Asian	8 965	1,1%
White	35 795	4,2%
Other	1 563	0,2%

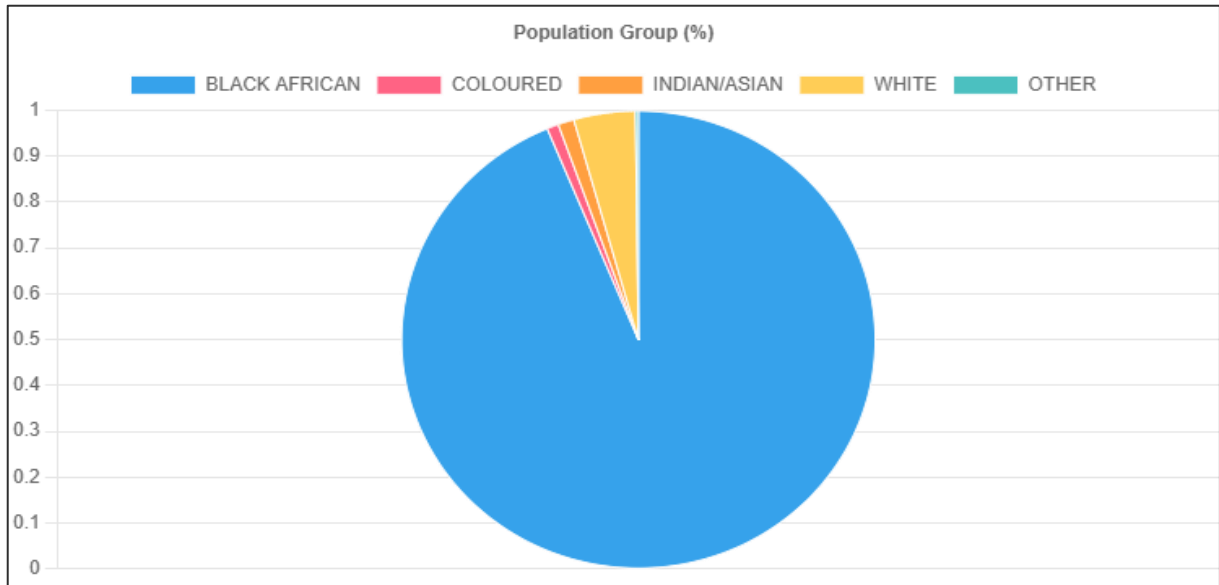


Figure 3: Race population chat (stats SA 2022)

3.2.1.2. HOUSE HOLDS AND LIVING CONDITIONS

Table 5: number of households (stats SA 2022)

Year	Number of Households
2022	249 443
2011	203 605

Table 5 above indicates the data on the number of households in Polokwane Local Municipality indicates a substantial increase from 203 605 households in 2011 to 249 443 households in 2022. This significant growth, representing a surge of about 22.5%. This also suggests dynamic demographic changes, urbanization, or developmental initiatives within the municipality. The rise in the number of households carries implications for various aspects of municipal planning and service provision.

The rising demand for housing highlights the critical need for parallel development of infrastructure, including utilities, waste management systems, and social services. This growth emphasizes the necessity of adaptive urban planning and strategic resource allocation to effectively support the expanding residential areas. Moreover, it raises important considerations for sustainability, environmental preservation, and community well-being, calling for an integrated and forward-thinking approach to municipal development.

A detailed analysis of the factors driving this increase in household numbers would provide valuable insights to inform targeted policies and initiatives. Such an understanding can ensure that infrastructure and services are aligned with the population's evolving needs. Regular monitoring and updates of demographic data are essential to facilitate evidence-based decision-making and promote sustainable growth. Proactive and comprehensive planning will enable the municipality to manage this population surge effectively and foster long-term development that benefits all residents.

Table 6: Formal dwellings (stats SA 2022)

Name	Frequency	%
Formal dwelling	236 941	95,0%
Traditional dwelling	3 140	1,3%
Informal dwelling	8 613	3,5%
Other	750	0,3%

Table 6 illustrates the proportional representation of different dwelling types among households in the municipality.

The data reveals that the municipality demonstrates a strong prevalence of formal housing, with 95.0% of residents residing in formal dwellings. This substantial majority indicates well-established infrastructure and effective urban planning, ensuring that most residents have access to stable and permanent housing options, such as standalone houses, apartments, or other regulated structures.

In contrast, 1.3% of households live in traditional dwellings, which are typically constructed using indigenous materials and methods. These structures are often found in rural areas and reflect cultural heritage, meeting the needs of populations that continue to engage with traditional building practices for their accessibility and relevance in specific contexts.

Informal dwellings account for 3.5% of the housing types, including shacks or other non-permanent structures, typically found in backyards or informal settlements. While this percentage is relatively small compared to the majority living in formal dwellings, it highlights the presence of housing challenges in certain areas, likely linked to socio-economic factors or migration patterns.

Lastly, housing classified under "Other," such as caravans, tents, or unconventional living arrangements, constitutes just 0.3% of the total. This minimal representation underscores the municipality's emphasis on providing more permanent housing solutions, though it also points to the need for addressing the unique needs of these small yet vulnerable populations.

3.2.1.3. AVERAGE HOUSE HOLD INCOME

Table 7: Average household income (Socio-Economic profile Polokwane Local Municipality,2021)

	Average household income (2019)	Average household income growth (2016-2019)
Polokwane	R1,851	2.67%
Capricorn	R2,894	2.43%
South Africa	R166,641	1.83%

Table 7 reveals that the average annual household income growth rate for Polokwane Municipality was 2.67% during the period from 2016 to 2019. This growth rate outpaced both the 2.43% growth observed in Capricorn District and the 1.83% growth recorded at the national level. Despite having lower absolute income levels, Polokwane Municipality demonstrated a stronger relative growth trajectory compared to its district and the country as a whole.

The above-average growth rate of 2.67% indicates Polokwane's potential for upward economic mobility, driven by localized economic activities, infrastructure development, and possibly improved household financial stability. While Polokwane's average household income remains below the district average, its higher growth rate suggests that the municipality is gradually narrowing the gap.

The significant disparity between income levels in Polokwane and the national average highlights the persistent income inequality within South Africa. However, Polokwane's strong growth rate relative to the national average reflects its capacity for economic development despite its lower baseline.

While Polokwane shows promising growth, there is a need to address disparities within the municipality and between the municipality, the district, and the nation through equitable resource allocation and social programs. Polokwane Local Municipality has demonstrated commendable economic growth between 2016 and 2019, outperforming both the district and national averages in terms of household income growth rates. While absolute income levels remain a concern, the municipality's growth trajectory suggests a positive outlook for future development.

3.2.1.4. AGE AND GENDER DISTRIBUTION

Referring to Table 8 provided below, A significant portion of the population within the municipality is composed of children, accounting for 28.3%, while the working-age group (15–64 years) constitutes the majority at 65.2%. Meanwhile, individuals aged 65 and older represent only 6.7%, making up a modest fraction of the total population.

This age distribution highlights the critical need for government departments and the municipality to prioritize substantial budget allocations for social development initiatives. Addressing the needs of the predominantly youthful population is essential, particularly in equipping them with relevant skills to support their transition into responsible and self-sufficient adults.

Furthermore, economic growth and creating employment opportunities must be central to the municipality's development agenda. Collaborative efforts with key sector departments such as Education, Health, Public Works, Roads, and Transport are crucial for achieving this goal. These partnerships can drive the implementation of programs that cater to the educational, health, and infrastructural needs of the community while simultaneously generating sustainable job opportunities.

Table 8: Age vs gender distribution (stats SA 2022)

Age	0-14		15-19		20-39		40-59		60-85+	
Gender	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Percent (%)	14,1	14,2	4,2	4,2	16,9	16,8	9,3	10,5	3,9	6,1

3.2.1.5. EDUCATION AND EMPLOYMENT STATUS

The educational levels of the population in Polokwane Local Municipality, as detailed in Table 9 and Figure 4, provide a clear overview of qualifications, highlighting progress made and areas needing improvement in access to education. A notable 37.7% of individuals have completed Grade 12 or Standard 10, representing the largest proportion and highlighting the municipality's efforts to improve secondary education completion rates. Following this, 29.2% of the population have attained some secondary education, further underscoring the significant strides made in promoting access to schooling.

However, only 16.8% have pursued higher education, suggesting a gap in the transition from secondary education to tertiary institutions. This disparity may be influenced by factors such as affordability, accessibility, or awareness of opportunities, and it points to a critical area for policy intervention and resource allocation. In contrast, a combined 15.2% of the population has achieved limited educational attainment, with 6.6% having no formal schooling, 5.9% completing only some primary education, and 2.7% completing primary education. These figures underscore the need for targeted interventions to address barriers to foundational education, particularly in under-resourced areas.

The 1.0% categorized under "Other" suggests a small segment with non-standard educational backgrounds, potentially including vocational training or informal education. These findings put emphasis on the importance of strengthening pathways to higher education and addressing disparities in basic education access within the municipality.

Table 9: Educational levels of population (stats SA 2022)

Name	Frequency	%
No Schooling	32 457	6,6%
Some Primary	28 978	5,9%
Completed Primary	13 439	2,7%
Some Secondary	143 402	29,2%
Grade 12/Std10	184 953	37,7%

Name	Frequency	%
Higher Education	82 691	16,8%
Other	5 041	1,0%

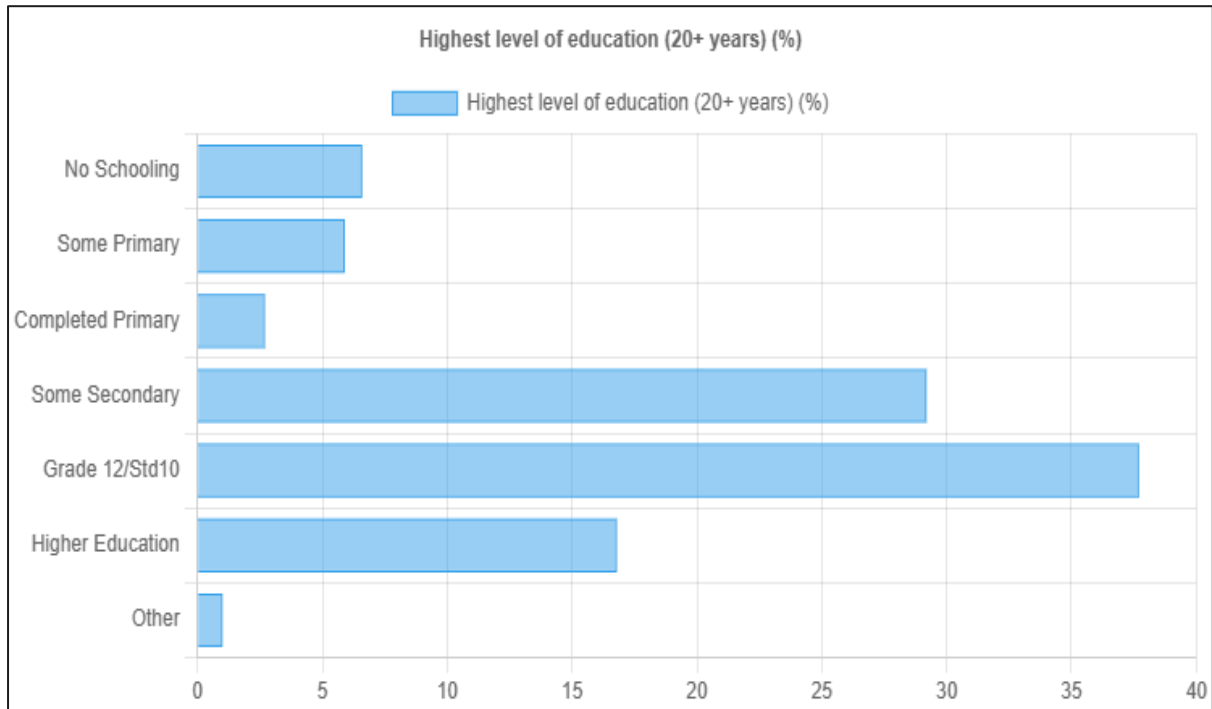


Figure 4: Highest education level acquired chart (stat SA 2022)

3.2.1.6. ECONOMIC AND SOCIAL STATUS

Employment Status

With reference to Table 10 below, the labour market indicators for Polokwane and South Africa show significant variations in unemployment, labour force participation, and labour absorption rates. Based on the narrow definitions provided by Statistics South Africa, these differences highlight contrasting trends in employment and economic activity between the municipality and the broader national context

The unemployment rate reflects the percentage of individuals in the labour force who are unemployed. In Polokwane, the unemployment rate was 28.17%, slightly lower

than the national average of 32.52%, indicating relatively better job market conditions within the municipality.

The labour force participation rate, which measures the proportion of the working-age population (15–64 years) that is economically active, was 61.35% in Polokwane, notably higher than the national average of 52.15%. This suggests greater engagement in economic activities among Polokwane residents compared to the national average.

The labour absorption rate, representing the percentage of the working-age population that is employed, stood at 42.96% in Polokwane, outperforming the national figure of 34.14%. This higher absorption rate highlights the municipality's relative success in creating employment opportunities.

Furthermore, illustrated in Figure 5, the Polokwane Municipality gained 6 567 jobs over the period 2016 to 2019.

Table 10: Socio-Economic Profile (Polokwane Municipality,2021)

	Unemployment Rate	Labour force Participation Rate	Labour Absorption Rate
Polokwane	28.17%	61.35%	42.96%
South Africa	32.52%	52.15%	34.14%

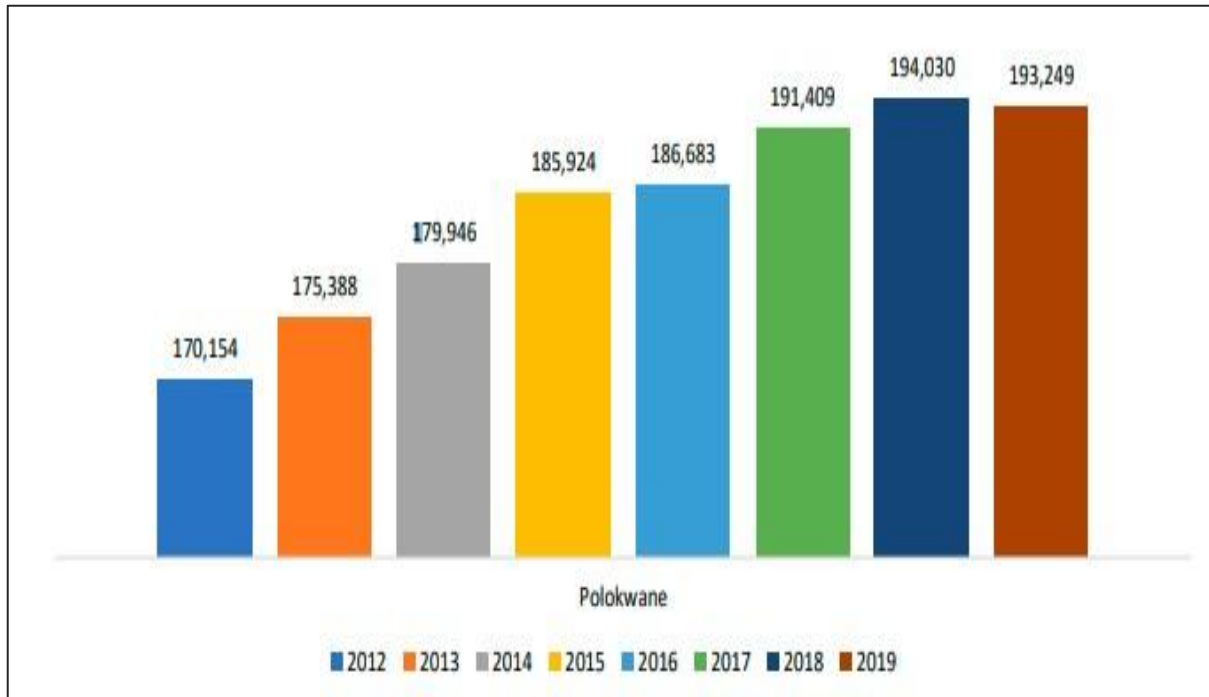


Figure 5: Socio-Economic Profile (Polokwane local municipality, 2021)

4. WASTE GENERATION AND CHARACTERISATION

4.1. WASTE CHARACTERISATION

Waste characterization is defined as the process of defining, identifying, categorizing, and quantifying the various types of waste generated in a specific area. The primary aim of waste characterization is to establish a comprehensive understanding of the composition of the waste stream, a critical factor for facilitating effective waste management and informing environmental planning strategies.

The waste characterization process was conducted to determine the weight percentage of each sub-category within the waste stream, such as various types of plastics and paper. This initiative offers a detailed breakdown of the composition of waste collected from households or commercial outlets, specifically highlighting the proportions of different materials present.

Mosa Green Consulting determined the quantities and the types of waste generated in the municipality. This involved establishing the current quantities of waste generated, recycled and disposed of. Waste quantities were measured by mass (kilograms & tons).

4.1.1. WASTE PROFILE (WASTE QUANTITIES & TYPES)

As outlined in the Guidelines for the development of Integrated Waste Management Plans (IWMPs), the Municipality is responsible for identifying and quantifying the various categories of waste within its administrative boundaries. This entails evaluating the present volumes of waste produced, recycled, treated, and disposed of, usually quantified in terms of mass, measured in kilograms or tons.

Data was collected from various sources, including:

- Municipal Waste officials on November 26th to 29th, 2024.
- Examination of Integrated Development Plan (IDP) and municipal records (IDP 2022/2023 and 2024/2025).
- A waste characterization study conducted by the Mosa Green Consulting team at the Polokwane Local Municipality 's Weltevreden landfill site.

Various waste types, including plastic (PET and HDPE), paper, food, metal, cardboard, diapers, glass bottles, textile, mixed waste, and polystyrene, are classified as general waste. These are generated within the Polokwane Local Municipality (PLM) and disposed of at either of the two landfill sites, i.e. Weltevreden Landfill site and Aganang Landfill site.

4.1.2. WASTE CHARACTERISATION METHODOLOGY

The following is a short description of the waste characterisation methodology followed in the execution of the project:

I. Data Collection Methodology

As the weighbridge was not working, PLM utilized the DEA&DP gate control sheet to record waste entries. This sheet had been developed to assist municipalities without weighbridges in quantifying their waste.

- Samples were taken from various trucks arriving from different locations throughout the municipality.
- From each truck, the contents were separated into different waste streams (waste types) using black bags, which were then weighed.
- The results of the waste characterization were presented below.

- II. Projections and Future Waste Quantities: Based on the study's findings, projections for future waste quantities by considering population growth, economic trends, and other relevant factors was made. This will aid in long-term waste management planning.

Table 11: Masses of waste received at the Weltevreden landfill

Waste Category	tonnage	%
Domestic Waste	5609	29,30
Garden Waste	428	2,24
Building Rubble	5880	30,71
Business Waste	2898	15,14
Mixed Waste	4120	21,52
Carcass & Food waste	210	1,10
Fluorescent tubes	0,29	0,00
Total	19145,29	100,00

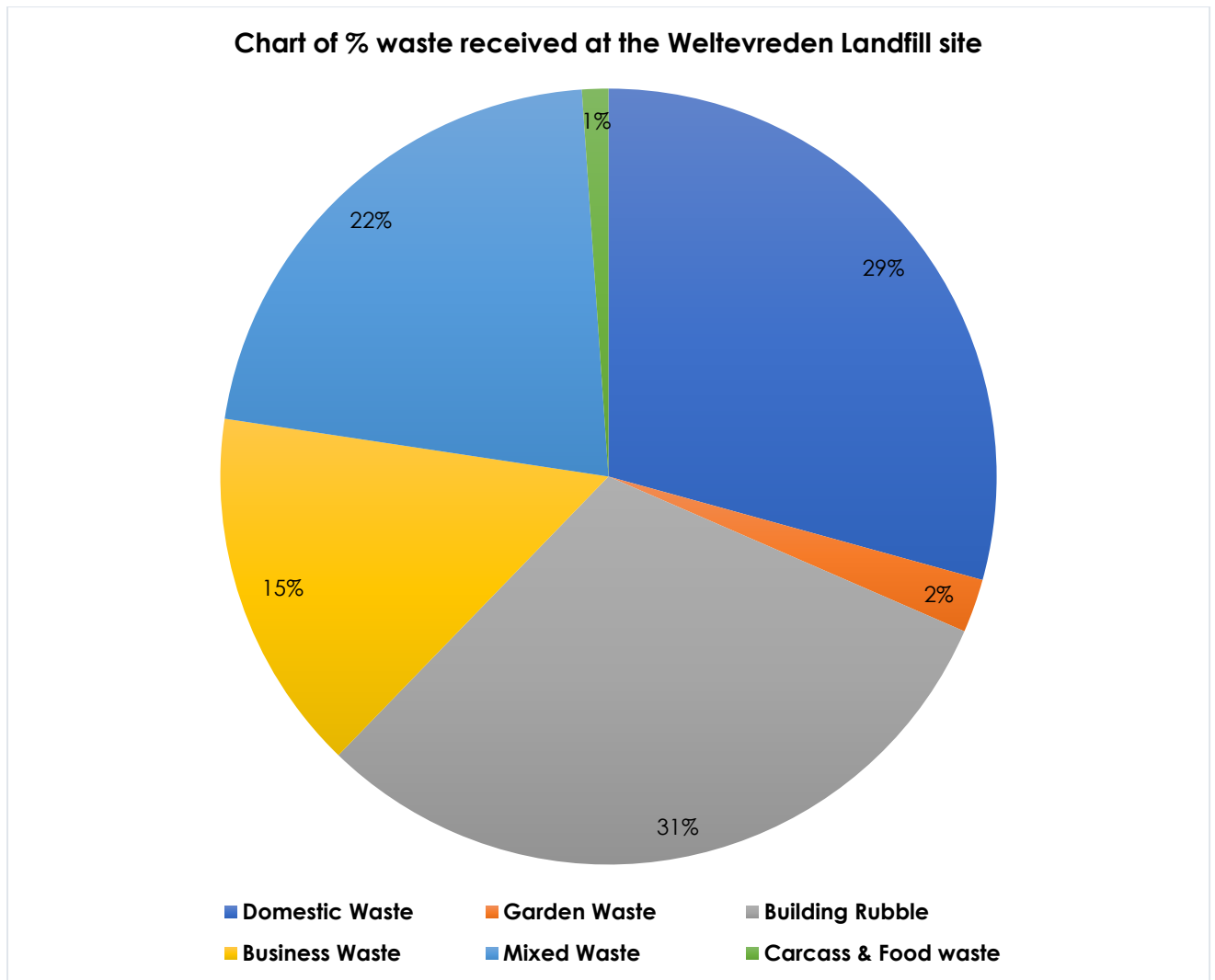


Figure 6: Waste characterisation chart- masses received at the Weltevreden landfill site

Table 12: Mass of recycled waste steam – at the Weltevreden landfill

Waste Stream	tonnage	%
Boxes	128,29	37,46
Paper	8,29	2,42
Loose Plastic	54,93	16,04
Plastic Bottles	52,79	15,42
Scrap Metal	24,56	7,17
Glass Bottles	12,46	3,64
Bricks	25,48	7,44
Aluminium cans	9,12	2,66
Hard Plastic (PP)	16,74	4,89
Fuel wood	9,78	2,86
Total	342,45	100,00

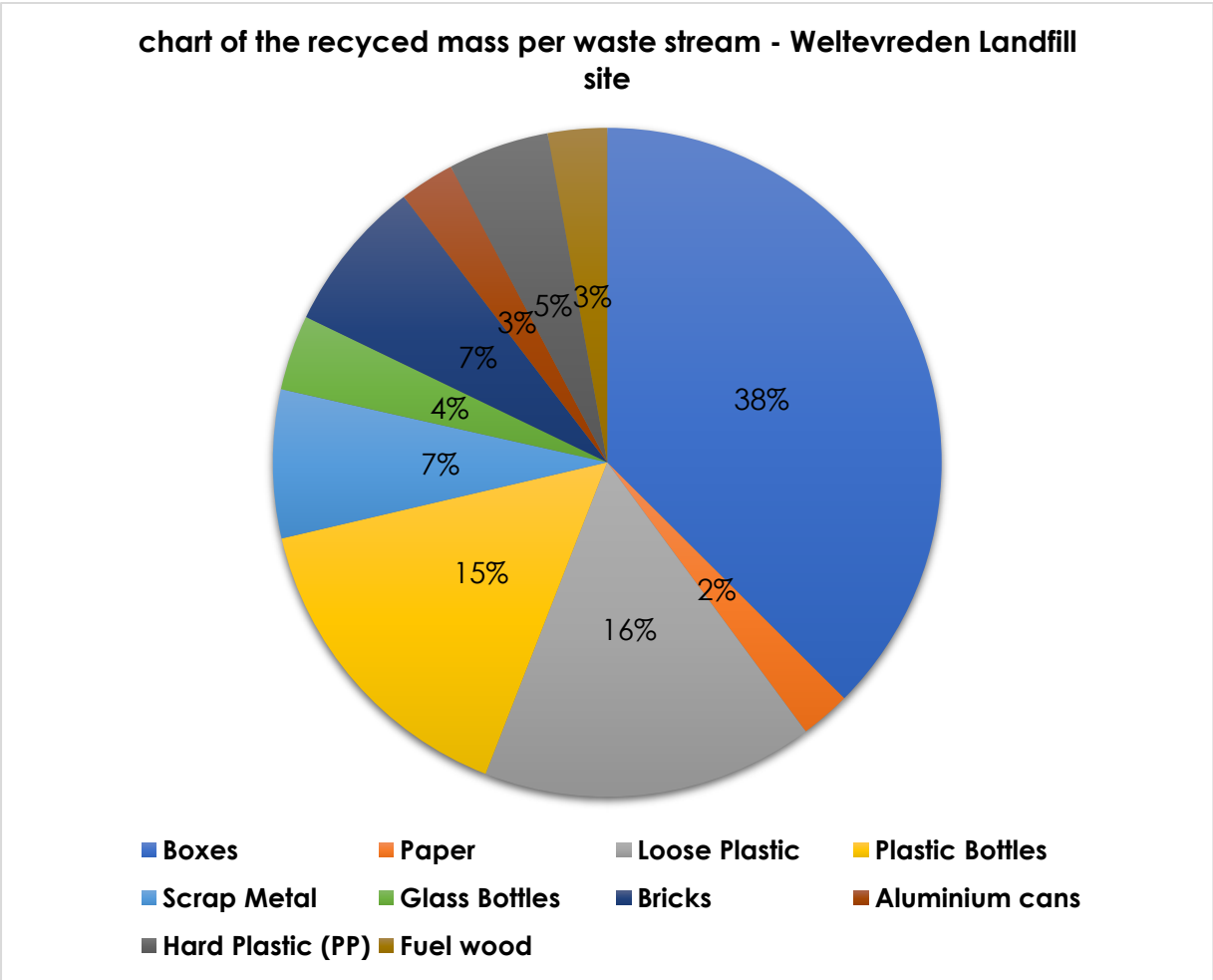
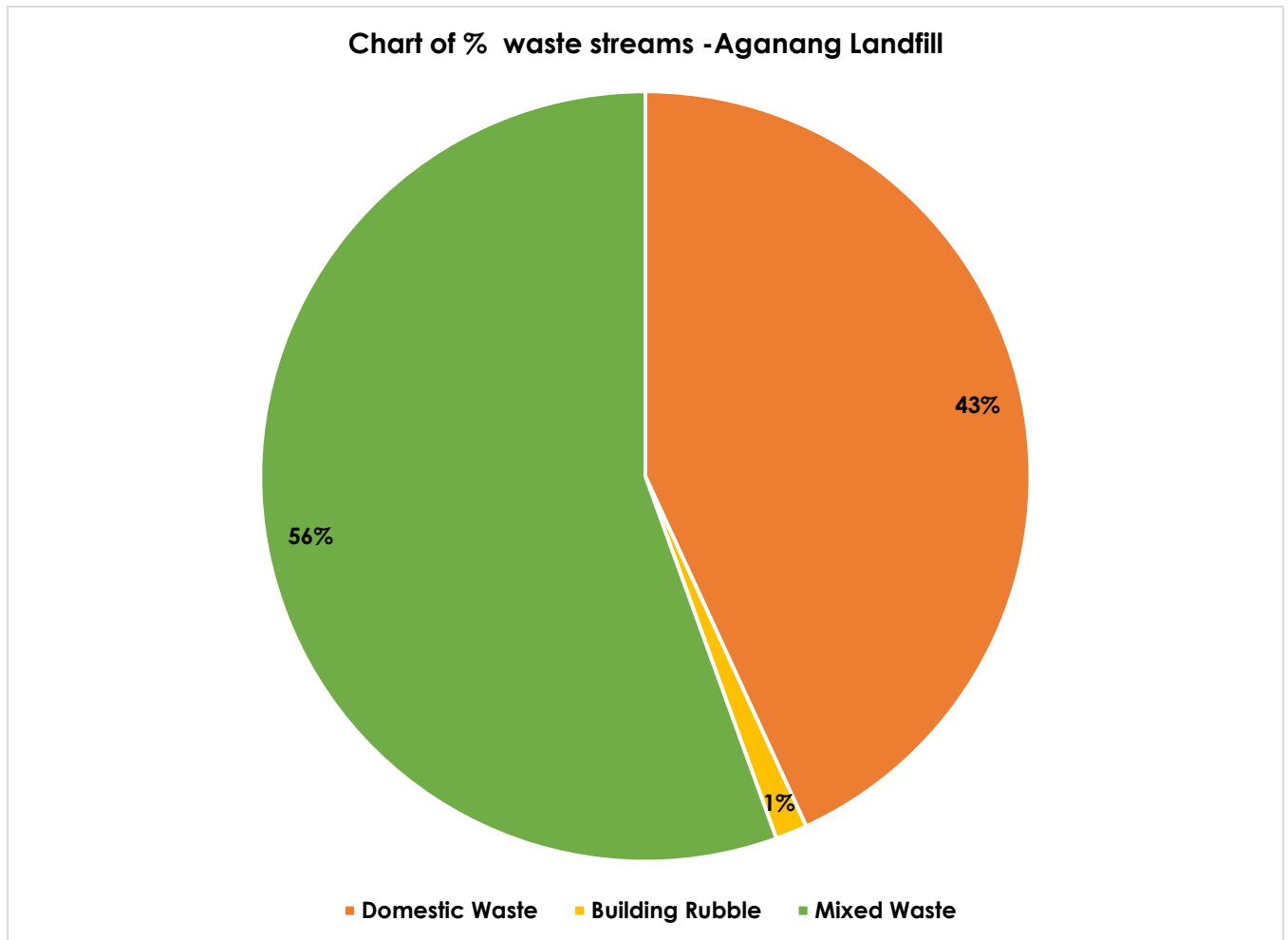


Figure 7: Waste characterisation – recycled mass – Weltevreden landfill site

Table 13: Masses of waste received at Aganang landfill

Waste Category	tonnage	%
Domestic Waste	24,24	43
Building Rubble	0,75	1
Mixed Waste	31,2	56
Total	56,19	100,00

**Figure 8: Waste characterisation – recycled mass – Aganang landfill site**

4.1.3. WASTE CHARACTERISATION DATA ANALYSIS

4.1.3.1. WELTEVREDEN LANDFILL - WASTE CHARACTERISATION DATA ANALYSIS

Table 11 and figure 6, show the waste received at the Weltevreden landfill site. On average about 19145,29 tonnes of total waste is received at this landfill site per month. The waste composition data reveals that Building Rubble is the largest contributor at 30.71%, followed closely by Domestic Waste at 29.30%, together making up nearly 60% of the total waste. Mixed Waste constitutes a significant portion at 21.52%, while business waste is at 15,14 % highlighting the impact of commercial activities. In contrast, Garden Waste and Carcass & Food Waste collectively account for only 3.34%, indicating limited organic waste contribution.

Table 12 and figure 7 shows the composition of the recycled waste streams at the Weltevreden landfill site. The waste stream analysis reveals that Boxes are the most significant contributor at 37.46%, far outweighing other materials. Loose Plastic (16.04%) and Plastic Bottles (15.42%) together form a substantial portion of plastic waste at over 31%, indicating the need for targeted plastic recycling initiatives. Scrap Metal (7.17%) and Hard Plastic (4.89%) also represent notable recyclable materials. In contrast, smaller contributions from Glass Bottles (3.64%), Aluminium Cans (2.66%), Bricks (2.66%), and Fuel Wood (2.86%) highlight opportunities for focused recovery programs. Overall, the data demonstrates the dominance of cardboard and plastic waste,

To preserve landfill space and reduce the environmental impact of waste disposal, a zero waste to landfill strategy must be implemented. This strategy focuses on minimizing waste generation, maximizing recycling and reuse, and ensuring that nothing ends up in landfills unless absolutely necessary. These include promoting waste reduction at the source, enhancing recycling systems such as efficient recycling/collector management , extended producer responsibility programs, and adopting closed-loop recycling practices. By implementing these strategies, recycling rates can be improved, waste can be minimized, and a more sustainable, circular approach to waste management can be achieved, ultimately working towards a zero-waste future.

4.1.3.2. AGANANG LANDFILL - WASTE CHARACTERISATION DATA ANALYSIS

Table 13 and Figure 8 above represents the waste streams found in Aganang landfill . The waste analysis reveals that Mixed Waste constitutes the majority at 56 ,00%, pointing to significant challenges in waste segregation at the source. Domestic Waste, at 43.00%, is the second-largest contributor, while Building Rubble represents only 1.00 %, indicating minimal construction-related activity. Importantly, there are no records of recycling efforts and at the site, which highlights a critical opportunity to introduce recycling programs and waste management improvements.

4.2. WASTE GENERATION

4.2.1. DETERMINING THE CURRENT DOMESTIC WASTE GENERATION PER CAPITA

This section presents a theoretical calculation of the likely total quantity of waste generated in the PLM using population data and published “per capita” waste generation rates.

Waste generation quantities can be calculated using the following three methods:

- Option 1: Weighbridge - Using a weighbridge the municipality must record the amounts of waste entering its waste disposal facility, by weighing the vehicles at the point of entry and again on the way out. The difference in the mass of the vehicle between the 'in' and 'out' provides the mass of the waste.
- Option 2: Without a weighbridge - municipality can estimate the amount of waste generated by using a volume density-based estimation. This requires accurate records.
- Option 3: The Waste Calculator Estimation technique can be used to calculate waste generation. This technique derived from the South African Waste Information System Guideline which governed by the R.625 National Environmental Management: Waste Act (59 of 2008) and National Waste Information Regulations, 2013. The municipality must record waste quantities that are being disposed of at the landfill site according to the National Waste Information Regulations.

The South Africa State of Environmental Report, 2006 (SOER) calculates waste generation volumes per income level as follows, estimating that each individual person generates about 0,7 kg of waste a day. This is further categorised into different income brackets as follows:

Estimations on the amount of waste generated can be calculated per week, per month or per year. The 2006 State of the Environment Report (SOER) indicated that South Africa generated 42 million m³ of solid waste per year. This amounted to 0,7kg's per person per day. The generation rates were further broken down into generation rates per income category and the results were as follows:

- Low income= 0.41kg/per person/day or (0.41kgx365 days)=149.65kg/person/year
- Middle income=0.74kg/per person/day or (0.74kgx 365days) = 270.1kg/person/year
- High income= 1.29kg/person/day or (1.29kgx365days) = 470.85kg/person/year

The PLM SOER figures for waste generation are also used in the Department of Environmental Affairs Guideline for the Development of Integrated Waste Management Plans (IWMPs). The DEA IWMP guideline also presents the following income brackets:

- Low income R 0 – R74,999 per year;
- Middle income R 75,000 – R 999,000 per year; and
- High income R 1 million + per year.

The PLM income profile was determined based on STATs SA records (Census 2022) A population of 843 459 persons was used to calculate the waste tonnages presented in the table below.

Table 14: Estimation of waste volumes produced per household

waste generation/income group	Income group	% of population	No. person	waste generation kg/day	waste generation kg/annum	Waste generation, tonnes/annum
low income R 0 – R74,999 (0,41 kg/person/day) (149.65kg/person/year_	no income	24,25	204564	83871,24	30613002,6	30613,00
	R1 - R4,800	1,01	8544	3503,04	1278609,6	1278,61
	R4,801 - R9,600	1,79	15130	6203,3	2264204,5	2264,20
		27,06	228238	93577,58	34155816,7	34155,82
Middle income R 75,000 – R 999,000 per year; (0,74 Kg/person/day) (270.1kg/person/year)	R9,601 - R19,600	37,27	314354	232621,96	84907015,4	84907,02
	R19,601 - R38,200	4,16	35066	25948,84	9471326,6	9471,33
	R38,201 - R76,4000	1,71	14418	10669,32	3894301,8	3894,30
	R153,801 - R307,600	1,52	12816	9483,84	3461601,6	3461,60
	R307,601 - R614,400	0,97	8188	6059,12	2211578,8	2211,58
subtotal		45,63	384842	275299,24	100484222,6	100484,22
High income R 1 million ion + per year(1,29 kg/person/day) (470.85kg/person/year)	R614,001 - R1,228,800	0,08	712	918,48	335245,2	335,25
	R2,457,601+	0,06	534	688,86	251433,9	251,43
subtotal		0,15	1246	1607,34	586679,1	586,68
Total		72,83	614326,00	370484,16	135226718,40	135226,72

In light of the analysis presented in Table 14, a conservative estimate suggests that the annual domestic waste generation in amounts to 135226,72 tonnes estimation takes into account individuals falling within various income brackets, providing a comprehensive overview of the anticipated domestic waste output in the specified area.

4.3. ESTIMATING FUTURE WASTE GENERATION RATES AND QUANTITIES

4.3.1 FUTURE DOMESTIC WASTE GENERATION

Anticipating future waste generation is crucial for effective waste planning and should be a key consideration in an Integrated Waste Management Plan (IWMP). The table provided below offers estimates for waste generation over both a five and ten-year timeframe. Projections for waste generation rates take into account historical data as well as expected population growth.

The planning of waste management in PLM will be significantly impacted by factors such as population growth and new industrial developments in the province. Currently the population growth of Polokwane Local Municipality is at 15,75 % as per census (2011 & 2022). A notable shift in the waste collection landscape within municipality is expected due to the growth and expansion of urban centres, driven by rural-to-urban migration and the development of these areas. This transformation also necessitates careful consideration in the overall waste management planning process.

To estimate the future waste generated per capita, the following guidelines by the DFFE were used:

- Assuming that the population growth rates will remain constant for the next 10 years
- Assuming that the per capita waste generation rates would be according to the 2006 State of the Environment Report for all income categories:
 - Low income=0.41kg/person/day
 - Middle income=0.74kg/person/day,
 - High income=1.29kg/person/day

Considering a population growth rate of 2.17% over the next 10 years, the conservative estimate presented in Table 15 below suggests that the future domestic waste in PLM is projected to increase by approximately 64428,27 tonnes across all income groups. These projections account for the expected changes in population size and offer insights into the potential waste generation trends within different income brackets in the PLM region over the specified period.

Table 15: Future waste volumes estimates produced per capita

Type of settlement	Base population	Future Population estimates	Current domestic waste generation rates per capita (In Kg)	Future domestic waste generation rates per capita (in 10 years) (tonnes)	Future domestic waste generation rates per capita (in 10 years) (In tonnes)
Low Income	228235	233188	34155367,75	34896539,23	34896,54
Middle income	104842	107117	28317824,2	28932320,99	28932,32
High Income	1246	1273,0382	586679,1	599410,0365	599,41

4.4. WASTE RECYCLING, TREATMENT AND DISPOSAL

4.4.1. WASTE RECYCLING

Recycling of waste is located above recovery, treatment and disposal in the waste management hierarchy in terms of best practise waste management. Over the last five years, the South African Government has enacted several waste-related legislations , such as the National Waste Management Strategy 2020. This updated strategy, the NWMS 2020, is a revision and enhancement of the 2011 strategy. It draws upon the achievements and insights gained from implementing the previous strategy. The NWMS 2020 has a comprehensive emphasis on waste prevention and diverting waste from landfills. It utilizes the Circular Economy concept as a driving force to foster sustainable and inclusive economic growth and development within the waste sector. Concurrently, it aims to mitigate the social and environmental impacts associated with waste.

In South Africa, the term "waste recycling" is frequently misapplied. True waste recycling involves a comprehensive process encompassing material collection, sorting, transportation, and the subsequent transformation into a new material. To illustrate, the act of the public depositing cardboard boxes at a recycling centre does not constitute recycling. The boxes are considered recycled only when they undergo the process of being converted into a new product, such as new boxes or packaging.

Currently, the Polokwane Local Municipality lacks recycling facilities or an established recycling industry. The municipality only has collection and storage infrastructure for waste, and this situation is mirrored across the entire Limpopo Province. This significant gap highlights the urgent need for the development of recycling infrastructure and industry within the region. Addressing this gap is crucial for promoting sustainable waste management, reducing environmental impact, and creating opportunities for economic growth.

At present, fourteen (14) companies participate in the ""recycling process, primarily focusing on collecting recyclables sourced from local waste pickers. These entities function as local and independent buy-back centres. Subsequent to acquiring the materials, they typically transport them to Johannesburg, where the materials undergo conversion into new products, thereby finalizing the recycling process.

This report employs the term "facilities" to encompass organizations involved in one or more stages of the recycling process, such as recycling companies engaged in sorting recyclables, recycling drop-off facilities where recyclables can be deposited, and buy-back centres. Buy-back centres are locations where individuals can exchange recyclable materials for compensation.

4.4.2. MATERIAL RECOVERY FACILITIES

Within the Polokwane Local Municipality (PLM), waste management activities are currently limited to collection and the selling of waste, with no other waste treatment processes in place. Waste collection involves both formal and informal sectors. The formal sector includes traders, dealers, and other entities involved in the buying and selling of collected waste, which is made up of 14 recycling companies registered in the PLM. The informal sector is predominantly made up of waste reclaimers, with approximately 150 individuals operating at the Weltevreden landfill. Furthermore, there are approximately 10 waste reclaimers operating at the Makgaga transfer station and 23 waste reclaimers operating at the Mankweng transfer station.

4.4.3. TREATMENT AND DISPOSAL – STATUS-QUO ON LANDFILLS

The Polokwane Local Municipality operates two landfill sites namely, the Weltevreden Landfill and the Aganang Landfill. The Weltevreden Landfill manages all waste streams from Polokwane, Seshego, Mankweng, and surrounding areas, while the Aganang Landfill serves Ga-Ramotlokana, Rapitsi, Ga-Ramoshwane, Ga-Rametlwana, Ga-Matlala and Mashashane and other nearby communities.

4.4.3.1. WELTEVREDEN LANDFILL SITE

The Weltevreden landfill site is located approximately 3km southeast of the Polokwane city's southern suburbs. The estimated footprint size of the site is approximately 40 Ha. The landfill has a remaining life span of approximately 7 months.

The landfill license was issued by the LEDET with licence number: 12/4/10/8-B/8/C5, in June 2023, in terms of the section 49 (1) (a) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) as amended.

The landfill profile is outlined in table 16 below. The landfill receives waste from the Households in all urban areas: City, Seshego, Mankweng and Sebayeng, as well as

the surrounding villages. The landfill also receives from businesses in the city of Polokwane. Table 16 summarizes the landfill profile of the Weltevreden landfill site, with visual references provided in Figure 9.

Table 16: Weltevreden landfill profile

Item	Landfill specific information
Location	Portion 4 of the farm Weltevreden 746 LS The facility is Accessible from Silicon Road.
Coordinates	A: 23°56' 39,07''S 29° 29' 52,97''E B: 23°56' 31,25''S 29° 29' 56,63''E C: 23°56' 28,97''S 29° 29' 57,70''E D: 23°56' 08,58''S 29° 29' 40,18''E
Site classification ed	Class B
License number	12/4/10/8-B/8/C5
Date issued	June 2023
Estimated remaining life and anticipated closure date	0,6 years (Approx. 7 months)
Estimated size of facility	Approx. 40 Ha
Access control and signage	There is adequate access control. Signage, gate and a fence present
Surrounding land use	Formal settlements , outside/ away from the buffer zone
Ablution Facilities	Inadequate
Security facilities/ guard house	Yes
Storm water	Yes
Record keeping	Yes
Plant used on site	Compactor, Tipper truck, TLB, Water tanker and excavator

Item	Landfill specific information
Description of waste management	Waste transported & public directed to drop off area. Each type of waste has it's dedicated drop off section e.g. building rubble, caucus, solid waste etc
Permissible waste	The site may be utilized for the disposal of all waste types, except those specified in Annexure II and those regulated under the provisions of the Nuclear Energy Act, 1993 (Act 131 of 1993), the Minerals Act, 1991 (Act 50 of 1991), and the Electricity Act, 1987 (Act 41 of 1987).
Use of cover material	Waste is compacted regularly, and daily cover is applied.
Storm water management & drainage system	A storm water management is in place & filed
Recycling	Yes , there are 14 recyclers
Informal reclaimers present?	Yes , there are approximately 150 reclaimers
Operating hours	<ul style="list-style-type: none"> • 07h00 – 17h00: Weekdays • 08h00 – 17:00: Weekends & Public holidays
Estimated cost for closure	There is currently no estimated costs for closure
Waste volume received per month (Tonnes)	14 659,00
Water quality Monitoring	Water monitoring is performed and samples are sent to accredited laboratory
Internal audits	Internal audits are performed quarterly
External audits	External audits are performed annually – last audit was done June 2023
Challenges	<ul style="list-style-type: none"> • There is quite a high number of recyclables sent to the landfills, i.e. lack of separation at source in the households and other facilities

Item	Landfill specific information
	<ul style="list-style-type: none"> Recycling activities within the landfill can be improved, to ensure all collection of all recyclables.

4.4.3.1.1. Compliance with license conditions (assessment of the level of compliance)

An external environmental audit on the Weltevreden Landfill site. The audit, held on 10 June 2023.

Key findings:

- Compliance with 97% of 13 main permit conditions (50 sub-conditions).
- Airspace calculations suggest the landfill's remaining lifespan requires either an extension or identification of an alternative site.
- The permit should be updated to align with current environmental and socio-economic conditions.

The landfill site was found to be compliant with the score of 97%.

1. Weltevreden Land Fill site – landfill signage



2. Weltevreden Land Fill site – entrance



3. Weltevreden Land Fill site – weighbridge



4. Landfill equipments



5. Landfill



6. Reclaiming activities at the landfill



Figure 9: Weltevreden landfill site images

4.4.3.2. AGANANG LANDFILL SITE

Aganang landfill site is situated on the Farm Vulcanus 584LS within Polokwane Local Municipality. The estimated footprint size of the site is approximately 30Ha and the cell currently being utilized is 2.24Ha. This landfill site receives waste from Ga-Ramotlokana, Rapitsi, Ga-Ramoshwane, Ga-Rametwana, Ga- Matlala, Mashashane and other surrounding areas. The waste is brought in by municipality-operated refuse trucks and private individuals and local businesses. A weighbridge is installed at the landfill site to measure incoming and recycled waste. Table 17 summarizes the landfill profile of the Aganang landfill site, with visual references provided in Figure 10.

Table 17: Aganang landfill profile

Item	Landfill specific information
Location	Farm Vulcanus 584LS
Coordinates	A: 23°37' 01,8''S 29° 07' 51.3''E B: 23°36' 54,0''S 29° 07' 37.0''E C: 23°37' 03,0''S 29° 07' 21,1''E D: 23°37' 16,9''S 29° 07' 30,2''E
Site classification	Class B
License number	12/4/10-B/10 C3
Date issued	November 2011
Estimated remaining life and anticipated closure date	The landfill has +/- 48 years life span
Estimated size of facility	Approx. 30 Ha (cell space is estimated at 2.2 Ha)
Access control and signage	There is adequate access control. Signage, gate and a fence present
Surrounding land use	Formal settlements , outside/ away from the buffer zone
Ablution Facilities	Yes
Security facilities/ guard house	Yes
Storm water	A storm water management is in place & filed

Item	Landfill specific information
Plant used on site	Compactor, Tipper, Truck, TLB, Water tanker and excavator
Description of waste management	The municipal compactors drop off waste from the surrounding villages into the cell
Permissible waste	The site may be utilized for the disposal of all waste types, except those specified in Annexure II and those regulated under the provisions of the Nuclear Energy Act, 1993 (Act 131 of 1993), the Minerals Act, 1991 (Act 50 of 1991), and the Electricity Act, 1987 (Act 41 of 1987).
Use of cover material	Waste is compacted regularly, and daily cover is applied.
Storm water management & drainage system	Available
Recycling	No
Informal reclaimers present?	No
Operating hours	Monday – Friday: 07h00 – 17h00 Weekends & Public Holidays: 08h00 – 13h00
Estimated cost for closure	There is currently no estimated costs for closure
Waste volume received per month (Tonnes)	286
Water quality Monitoring	Water monitoring is performed and samples are sent to accredited laboratory
Internal audits	Internal audits are performed quarterly
External audits	Yes

4.4.3.2.1. Compliance to licence conditions (assessments of the level of compliance)

An independent environmental audit of the Aganang Waste Landfill on 14 June 2023.

Key findings:

- 31 main conditions with 129 sub-conditions were audited. The license holder scored 96,5%.
- The site is in compliance with the license conditions.
- Airspace and footprint calculations indicate landfill lifespan, determined using DWA Minimum Requirements (1998).

The site was found to be compliant with a score of 96,5%.

Aganang Land Fill site – landfill signage



Aganang Land Fill site – weighbridge



Aganag Landfill equipments - TLB & recycling Shed



Landfill



Figure 10: Aganang landfill site images

4.4.3.3. TRANSFER STATIONS

PLM currently operates seven (07) functional transfer stations. At each facility, waste is directly deposited into skip containers. The Mankweng and Makgakga transfer station are equipped with skip containers that are 30m³, while the Vaalkop, Dikgale, and Makotopong are equipped with 6 m³ skip containers. Once the containers reach capacity, they are transported to the Weltevreden Landfill Site for disposal. Table 18 presents an overview of the transfer stations in PLM, detailing the types of waste handled at each station and their respective distances from the Weltevreden Landfill Site.

The distance between the Weltevreden landfill site and transfer stations like Mankweng, Dikgale, and Makotopong, combined with the projected growth rate and plans for the Polokwane Local Municipality (PLM), highlights several concerns. First, the current location of the Weltevreden landfill is increasingly inefficient and may not be economically viable due to its distance from these areas. Second, the available space at the landfill is expected to become insufficient in the near future, further emphasizing the need for strategic planning and potential expansion of waste management infrastructure, which may include construction of additional landfill near the Sebayeng, Mankweng, or Dikgale clusters. This would help reduce transportation costs, improve operational efficiency, and better align with the projected growth and waste management needs of the municipality.

Table 18: List of transfer stations within Polokwane Local Municipality

Area	Type of waste	Distance from Weltevreden landfill site
1. Mankweng	General	33, 4km
2. City: Webster	Garden	6,1 km
3. City: Ladanna	Garden	13,1 km
4. Dikgale	General	97,0 km
5. Makotopong	General	32,0 km
6. Makgakga	General	35 km
7. Vaalkop	General	29,0 km

4.4.3.4. MUNICIPAL BUY-BACK CENTRE

The PLM owns only 1 buy-back centre located in Mankweng. This facility was established to serve as a recycling hub, allowing the public to sell recyclable waste. Initially, the Municipality planned to lease the facility to a local recycling company to manage its operations. However, the centre has been inactive and unoccupied since 2022. Figure 11 below depicts the current state of the Mankweng recycling facility. The other buy-back centres in the municipality are privately owned.





Figure 11: Mankweng buy-back centre

4.4.4. ILLEGAL DUMPING

Illegal dumping remains a persistent and critical challenge for the Polokwane Local Municipality, even with efforts to enhance waste management through contracted services in designated areas, the environmental awareness programmes

implemented by the municipality, as well as the placement of skip bins . Table 19 highlights some of the identified hotspots and their monitoring mechanisms, as outlined in the IDP 2023/24. Figure 12, on the other hand, illustrates some of the illegal dumping hotspots identified In various areas around the Polokwane Local Municipality.

The predominant waste found at these illegal dump sites consists of domestic and garden waste. PLM encourages communities to utilize plastic refuse bags for proper waste disposal. The causes of illegal dumping differ from individual to individual , apart from the individual's insufficient waste management awareness, the illegal dumping may be caused by factors such as the unavailability of skip bins in certain areas, the distance from household/business to transfer stations etc.

Table 19:List of illegal dumping sites (IDP 2023/2024)

List of illegal dumping in the City and Westernburg	Current status in terms of Removal	Monitoring Schedule	Plan to address the illegal dumping identified
List of areas with illegal dumping challenge in City and Westernburg			
Ster park	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	On a weekly basis	Education and awareness, planting of No dumping boards and Law enforcement
Dewet and R71	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	On weekly basis	Education and awareness, planting of No dumping boards and Law enforcement
Mall of the north on	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	On weekly basis	Education and awareness, planting of No dumping

List of illegal dumping in the City and Westernburg	Current status in terms of Removal	Monitoring Schedule	Plan to address the illegal dumping identified
R81 (Behind Farm Yard)			boards and Law enforcement
RSA	EPWP litter pickers utilised once a month	On weekly basis	Education and awareness, planting of No dumping boards and Law enforcement
N1 South	monthly with TLB and tipper truck EPWP litter pickers utilised once a month	On monthly basis	Education and awareness, planting of No dumping boards and Law enforcement
Buite street taxi holding area	weekly with TLB and tipper truck, EPWP litter pickers utilised once a month	On daily basis	Education and awareness, planting of No dumping boards and Law enforcement
Lawton street	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	On weekly basis	Education and awareness, planting of No dumping boards and Law enforcement
Saphire street Nirvana	monthly with TLB and tipper truck EPWP litter pickers utilised once a month	On monthly basis	Education and awareness, planting of No dumping boards and Law enforcement

List of illegal dumping in the City and Westernburg	Current status in terms of Removal	Monitoring Schedule	Plan to address the illegal dumping identified
Coverdale & Buys street	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	Westernburg transfer station(temporary) to be cleaned each Tuesdays and operated for closure.	Two skips in coydale street shifted further from the residents. New Westenburg transfer station planned & allocated capital project with a budget of R 556 098
List of areas with illegal dumping challenge in Seshego			
Emdo Park, Legae la batho, Madiba Park,	Monthly with TLB and tipper truck	on monthly basis	New Seshego transfer station is allocated with a budget of R 906 098. Education and awareness, planting of No dumping boards and Law enforcement
Phase 3, extension 76, 71 and 73	EPWP litter pickers utilised once a month	on weekly basis	
Zone 1 next to Biko park, Zone 2 next to Moletji drive	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	on weekly basis	
Bridge between hospital view and Madibapark	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	on weekly basis	
Alf Makaleng street	weekly with TLB and tipper truck EPWP litter pickers utilised once a month	on weekly basis	

Silicon Road, Polokwane: -23,95321° S, 29,48880° E



Westernburg, Polokwane: -23,89623° S, 29,43139° E



6 Beril Street, Polokwane : -23,87475° S, 29,47317° E



Ga Makanye ,Mankweng : -23,8976278° S, 29,7292078° E



Figure 12: Illegal dumping around Polokwane Local Municipality

4.5. STATUS OF WASTE COLLECTION SERVICES

According to the 2022 Census, the Municipality is home to an estimated 249,443 households, with 116,741 of these households receiving waste collection services from PLM. This leaves 132,702 households without access to such services. This section outlines the current status of collections in various areas within the municipality.

4.5.1. URBAN AREAS

The Municipality provides waste management services in urban areas, which are divided into three service regions: Polokwane City, Seshego, and Mankweng, along with their surrounding areas. Households are responsible for managing their own waste bags and are required to place filled bags at the kerbside for collection, following a designated refuse collection schedule. Waste is then collected using compactors.

Waste collected from the main urban area of Polokwane and Seshego is disposed of at the Weltevreden Landfill Site.

Additionally, there are two garden refuse sites within the Polokwane CBD that are available for public use, although garden waste can also be disposed of at the landfill. The management of builder's rubble is not formally addressed; it is either illegally dumped by the public or taken to the waste disposal site. Mankweng has an operational transfer station, where the public are encouraged to dispose their waste at the transfer station, which has about six skip bins. The skip trucks from the PLM then come to collect the bins when they are full or on a set schedule.

4.5.2. RURAL SETTLEMENTS

Polokwane municipality is made up of Forty-Five (45) wards. The 45 wards constitute 7 clusters and clusters. Table 20 below outlines PLM clusters and wards. Mankweng, Seshego and city are considered as urban while the other clusters are rural settlements.

In rural areas such as Chuene, and Molepo, households are responsible for managing their own waste bags and are required to place filled bags along the street for collection. There are also skip bins located in some rural areas. The areas have designated schedule for collection by the municipality, where the waste is collected by the compactor trucks and transferred for disposal at either the Weltevreden or the Aganang Landfill site. Currently there are plans and allocated budget in place to

construct transfer stations in Westenburg, Seshego, Molepo and Chuene areas. There are also Dikgale, Makotopong and Makgaga transfer stations available for the surrounding households.

The Municipality also operates a litter picking programme that is provided under the Expanded Public Works Programme (EPWP) incentive grant, which operates across all municipal wards. EPWP employees carry out litter-picking services three days a week, and the collected waste is removed by municipal trucks and disposed of at the two landfill sites.

Table 20: Polokwane clusters and wards

	Clusters	Ward no.	Urban/rural
1	Mankweng Cluster	06,07,25,26,27,28, 34	Urban
2	Moletjie Cluster	09,10,15,16,18,35, 36,38	Rural
3	Molepo / Chuene / Maja Cluster	1,2,3,4,5	Rural
4	Sebayeng / Dikgale Cluster	24,29,32,33,30,31	Rural
5	Aganang Cluster	40,41,42,43,44,45	Rural
6	City Cluster	08,19,20,21,22,23,39	Urban
7	Seshego cluster	11, 12, 13, 14, 17,37	Urban

4.5.3. BUSINESS

Businesses and industries within the Polokwane Local Municipality (PLM) do not benefit from free door-to-door waste collection services. Instead, their waste disposal fees are calculated based on the total square meterage of their premises. To support waste management, skips and containers are strategically placed across the CBD and industrial zones. Some businesses, such as skip hire operators, transport their waste directly to the landfill. Details of the current landfill fee structure and associated business tariffs are provided in Table 25, which outlines the tariff structure for waste management services and solid waste removal charges.

5. WASTE COLLECTION TRANSPORT /FLEET (CITY, SESHEGO, MANKWENG)

Ensuring efficient waste service delivery within the municipality relies on the availability, maintenance, and operational readiness of the waste management fleet. However, a significant portion of vehicles remain non-functional, affecting service reliability.

Key challenges contributing to vehicle downtime include mechanical failures such as Power Take-Off (PTO) malfunctions, fire damage, and wear-and-tear on critical components like clutches and brake pads. These issues underscore the need for a proactive and structured approach to fleet management.

To address these concerns, improving fleet availability and functionality is essential. Implementing a rapid breakdown response plan can minimize downtime, while effective inventory management of essential spare parts can reduce repair delays. Additionally, budget allocations should be reviewed to support the procurement of new vehicles, decreasing reliance on aging fleets and enhancing overall service efficiency.

Proactive maintenance strategies, including regular inspections and preventive servicing, are crucial for sustaining fleet performance. Investing in staff training for vehicle operation and maintenance will further enhance fleet longevity and reliability, ensuring uninterrupted and efficient waste collection services. Additionally, allocating funds for fleet upgrades and maintenance is essential for long-term serviceability, while leveraging fleet performance analytics can help monitor trends and anticipate future needs.

Table 21: City depot (waste management SBU fleet report: December 2024)

Type	No.	Common issues (Overview)	Required action
Bakkie	5	<ul style="list-style-type: none"> Mechanical Failures: Common issues include gearbox malfunctions, clutch failures, and front differential breakdowns, affecting the mobility and reliability of various vehicles. Operational Limitations: missing keys, certificate of fitness (CoF) expirations, and fuel contamination (mixing diesel and water), preventing their immediate use. Specialized vehicles, including sweepers and grab trucks, faced crane and engine failures, restricting their functionality. 	<ul style="list-style-type: none"> Implement a Preventive Maintenance Program – Regular servicing schedules will minimize unexpected breakdowns. Improve Spare Parts Procurement – Ensure critical components are readily available to reduce vehicle downtime. Enhance Fleet Replacement Planning – Identify vehicles at the end of their lifespan and budget for phased replacements. Strengthen Compliance & Certification Processes – Streamline vehicle testing and regulatory approvals to avoid delays.
Quantum	1		
Compactor	6		
Tipper truck	2		
4-ton truck	4		
TLB	1		
RoRo	1		
Sweepers	2		
Load Luggers	2		
Grab	1		
Front Loader	1		

Table 22: Mankweng depot (waste management SBU fleet report: December 2024)

Type	No.	Common issues (Overview)	Required action
Bakkie	2	<ul style="list-style-type: none"> Mechanical Failures: Gearbox malfunctions, crane/bucket breakdowns, and dashboard cluster failures were common across different vehicle types. Brake & Clutch Problems: Several vehicles were reported to have brake and clutch-related failures, impacting operational efficiency. Regulatory Compliance: Downtime due to pending CoF and license renewals. 	<ul style="list-style-type: none"> Implement a Preventive Maintenance Program – Regular servicing schedules will minimize unexpected breakdowns. Improve Spare Parts Procurement – Ensure critical components are readily available to reduce vehicle downtime. Enhance Fleet Replacement Planning – Identify vehicles at the end of their lifespan and budget for phased replacements.
Quantum	1		
Compactor	4		
Tipper truck	2		
TLB	1		
Grab	2		

Table 23: Seshego depot (waste management SBU fleet report: December 2024)

Type	No.	Common issues (Overview)	Required action
Bakkie	2	<ul style="list-style-type: none"> Mechanical Failures: Common issues include gearbox malfunctions, clutch failures, and front differential breakdowns, affecting the mobility and reliability of various vehicles. Operational Limitations: missing keys, certificate of fitness (CoF) expirations, and fuel contamination (mixing diesel and water), preventing their immediate use. Specialized vehicles, including sweepers and grab trucks, faced crane and engine failures, restricting their functionality. 	<ul style="list-style-type: none"> Implement a Preventive Maintenance Program – Regular servicing schedules will minimize unexpected breakdowns. Improve Spare Parts Procurement – Ensure critical components are readily available to reduce vehicle downtime. Enhance Fleet Replacement Planning – Identify vehicles at the end of their lifespan and budget for phased replacements. Strengthen Compliance & Certification Processes – Streamline vehicle testing and regulatory approvals to avoid delays.
Front End Loaders	1		
Compactor	8		
Tipper truck	1		
4-ton truck	2		
TLB	1		
RoRo	1		
Load Luggers	1		
Grab	2		
Iveco	1		

6. FINANCING OF WASTE MANAGEMENT

6.1. BUDGETING FOR WASTE SERVICES AND TARIFF SYSTEM

One of the fundamental principles for sustainable waste management in a municipality is the aim for services to be financially self-sustaining. While this poses a significant challenge for PLM given the prevalent high levels of poverty and a low-income base, it remains imperative to establish a systematic process for accurate accounting of waste services.

A detailed understanding of both operational and capital costs in waste management is crucial for ensuring accurate financial planning. When delving into the financing of waste management, it is necessary to account for operational costs, capital costs, recapitalization costs, and rehabilitation costs.

The Municipal Systems Act, Act no. 32 of 2000 (Chapter 8, s73-86A), mandates that municipalities ensure proper budgeting to fulfil their constitutional obligations regarding waste services provision. For successful implementation of an Integrated Waste Management Plan (IWMP), a municipality must assess its current available resources, encompassing finances, human resources, and technical skills to meet the municipality's mandate. This includes the execution of goals and targets outlined in the plan, such as the development of by-laws, as well as securing funding for operational and maintenance costs for effective waste service delivery and the establishment of waste disposal facilities. Effective financial management and budgeting are crucial, aiding in the identification of future resource needs, especially in scenarios like an increase in households requiring waste collection services, necessitating additional resources for service delivery.

PLM's Integrated Development Plans (IDPs) outline various sources of revenue and income, including proper rates, service charges, investment revenue, transfers recognized as operational, and other own revenue. It is strongly recommended that PLM adopts key financial management guidelines when contemplating a tariff review, such as the Municipal Solid Waste Tariff Strategy (2012) and the National Pricing Strategy for Waste Management Charges (2014).

Table 24: PLM revenue & operational expenses for waste management services (IDP)

Activity	2023/2024
Revenue	R 193 092 917,00
Operational expenses	R 196 256 246,00
Surplus/Deficit	- R 3 163 329,00

Table 24 illustrates the financial performance of the PLM Waste Management Department for the year 2023/2024. The Municipality reported total revenue of R193,092,917.00, against operational expenses of R196,256,246.00, resulting in a deficit of R3,163,329.00. This indicates that the municipality's expenditure slightly exceeded its income, creating a shortfall of over R3 million. The revenue, generated from taxes, service charges, and grants, may have been impacted by external economic factors or inefficiencies in collection, and the municipality must address these challenges moving forward.

On the expense side, operational costs have been higher than anticipated, signaling a need for careful cost management and the identification of areas where savings could be made. The current deficit puts additional pressure on the municipality's financial resources, and unless corrective measures are taken, there may be a risk of depleting reserves. To mitigate this, the municipality must focus on improving operational efficiency and reducing unnecessary expenses, while prioritizing essential services to the community.

In terms of revenue enhancement, the municipality should explore strategies to improve revenue collection and possibly expand the tax base. This could include better tax compliance measures, more effective billing systems, and increasing service delivery charges where appropriate. Additionally, seeking grants and funding from higher levels of government, or investing in income-generating projects, could provide a valuable source of additional revenue. Looking ahead, Polokwane Local Municipality must focus on achieving financial sustainability by carefully balancing the budget and ensuring that expenditures do not exceed revenues. Regular monitoring and reporting on financial performance will be crucial in identifying potential issues early and taking corrective action. With a focus on both cost

reduction and revenue optimization, the municipality can work towards stabilizing its financial position and ensuring the continued delivery of essential services to its residents.

6.2. Current waste projects

The table 25 below outlines the waste management projects and their corresponding budget allocations across the Medium-Term Revenue and Expenditure Framework (MTREF). These projects aim to enhance waste collection, treatment, and disposal infrastructure within Polokwane Local Municipality.

Key initiatives include the expansion and rehabilitation of landfill sites, the establishment of new transfer stations, and the refurbishment of existing waste management facilities. While some projects are already in progress, others are yet to commence, with their implementation timelines still being finalized.

Table 25: Polokwane local municipality's waste department capital projects allocations

Project Name	2025/26 Medium Term Revenue & Expenditure Framework				Operation status
	Budget Year 2024/25	Budget Year 2025/26	Budget Year +1 2026/27	Budget Year +2 2027/28	
Waste Management - Community Services					
Extension of landfill site (Weltevreden)	3 043 478,30	8 434 783	9 086 957	6 200 000	Under the process
Seshego transfer station	4 347 826,10	2 869 565	1 739 130	-	Under the process
Westernburg Transfer Station	5 217 391,30	1 739 130	1 626 304	-	Under the process
Molepo Transfer Station	2 608 695,70	5 217 391	2 608 696	-	Under the process
Ga- Maja transfer station	1 277 484,30	6 086 957	-	-	Under the process
Ga- Chuene transfer station	1 228 807,70	6 086 957	-	-	Under the process
Refurbishment of Webster transfer station	-	1 500 000	-	-	Not yet started
Rehabilitation of Weltevreden landfill site	-	30 000 000	40 000 000	30 000 000	Not yet started
Construction of rural waste transfer stations	-	-	-	4 000 000	Not yet started
Ladanna waste Management office refurbishment	-	2 000 000	-	-	Not yet started

6.3. Tariff structure

The tariff structure for waste management services is outlined in Table 26. This structure must be regulated in accordance with municipal By-laws. It is essential that these By-laws are enforced effectively to ensure compliance. Greater focus and proactive efforts are required to enhance the compliance of waste disposal by businesses, particularly those contributing to the Weltevreden site. Ensuring stricter adherence to disposal charges will significantly improve cost recovery and revenue generation, thereby fostering a more sustainable financial model for the service.

Table 26: Tariff structure for waste management services, solid waste removal charges: 2024/2025 (IDP 2024/2025)

Refuse removal charges 2024/2025		
The owner of any erf/stand, premises or other area where municipality collects solid waste shall monthly pay to the Council the following solid waste removal charges, which, unless otherwise stated, shall be levied per calendar month.		
		Approved tariffs
		Per calendar month or part thereof
1.	BASIC CHARGE Basic charge per month on any erf, stand premises or other area per month	R69.12
2.	ADDITIONAL CHARGES: RESIDENTIAL	
	Dwelling houses and flats	
	a) On an erf with a surface area not exceeding 500m ²	R55.29
	(b) All erven with a surface area in excess of 500m ² :	
	(i) For the first 500m ² of the surface area of the erf	R88.48
	(ii) Thereafter, for the following 500m ² or part thereof, of the surface area of the erf	R59.43
	(iii) Thereafter, per 500m ² or part thereof, of the surface area of the erf	R30.40
	Provided that where more than one dwelling-unit is erected on an erf, the area of such erf shall be divided	

Refuse removal charges 2024/2025		
	by the number of dwelling-units thereon, and the charge, for each portion so obtained, shall be calculated in terms of the above formula as if such portion constitutes a separate erf.	
	(iv) Maximum charge (11 000 m ²)	R756.30
2.2.	Flats	
	PER UNIT	
	(a) On an erf with a surface area not exceeding 500m ²	R55.29
	(b) Up to and including 500 m ² of the surface area of the erf	R88.48
	(c) Thereafter, for the following 500 m ² or part thereof, of the surface area of the erf	R59.43
	(d) Thereafter, per 500 m ² or part thereof, of the surface area of the erf	R30.40
3.	ADDITIONAL CHARGES: NON-RESIDENTIAL	
	This charge shall apply to non-residential properties, with improvements	
	(i) For the first 300 m ² or part thereof, of surface area of the erf:	R468.06
	(ii) Thereafter, per 300 m ² or part thereof, up to 9300m ² of the surface area of the erf:	R130.00
	(iii) Thereafter, per 1 000 m ² or part thereof, of the surface area of the erf:	R92.22
	This charge shall apply to non-residential properties, with or without improvements	
3.1.	REBATE FOR IMPLEMENTATION OF NEW TARIFF	
	Customer who are experiencing an increase of more than 10% (2021/2022) as result of implementation of the new tariff shall receive 25% discount in 2024/2025 financial year	
4.	MASS CONTAINER	R947.12
5.	Garden Refuse Removal:	

Refuse removal charges 2024/2025		
	(i) For the removal of garden refuse in plastic bags on the day which refuse removal normally takes place	
	(ii) For the removal of garden refuse other than placed in plastic bags, per removal	R947.12
6.	For the removal of non-perishable refuse, excluding garden refuse:	
1	Per removal	Estimated cost + 10%
11	Occasional Services:	
	Per removal	R1,023.15
7.	Weltevreden Landfill Site	
	Weighbridge fees per ton or part thereof	R67.74
8.	Grass cutting of private stands per square meter (M ²) or part thereof	R6.91
9.	Cleaning of illegal dumping on private stands per ton	R305.31
10.	Re-issuing of 240 litre refuse containers per bin	R912.55
11.	Re-issuing of 770 litre refuse containers per bin	R7,148.39
12.	Emptying of 30, m3 skip containers per removal	R2,281.40
13.	CARCASS REMOVAL AND DISPOSAL OF SUCH	
	Calf, foal, sheep, goat, lamb, pig, dog, cat or poultry, per carcass	R135.39
	Any other animal, per carcass	R271.00
	Maximum charge, per removal	R813.00
14.	GENERAL	
1.	The expiry date for payment in respect of services rendered, shall be the first working day after the 24th day of the month, following the month during which such service was rendered, and shall be recoverable from the owner of the premises in respect of which services were rendered or otherwise as determined under Section 49 of the Local Government Ordinance, 1939.	
2.	Any amount due in respect of sanitary services rendered by the Council shall be paid on or before the first working day after the 24th of the month following on the month in respect whereof levies were raised.	

7. INSTITUTIONAL MATTERS

The organizational structure is instrumental in assessing the human resources available for delivering waste services. This structured representation delineates the number of staff allocated to specific sections, encompassing management responsibilities, planning, waste collection, recycling, disposal, and enforcement. This organizational framework serves as a valuable tool for identifying gaps, particularly in areas necessitating new functions to meet the requirements stipulated by the Waste Act. Through the organogram, it becomes evident that additional capacity is imperative for the comprehensive fulfilment of waste management and enforcement mandates. It is emphasized that the waste management staff must undergo proper training to proficiently execute their duties. Periodic monitoring of their performances is also essential to ensure the effective and compliant functioning of the waste management system.

Tables 27 and Figures 13 to 17 below provide a visual depiction of the organizational structure for waste management services within Polokwane Local Municipality (PLM).

Table 27: Personnel working in the Polokwane local municipality waste management department

Position	Number of positions	Status of position
Manager	01	Filled
Assistant Manager Operations	01	Filled
Assistant Manager Awareness	01	Filled
Admin Assistant	01	Filled
Senior superintendents.	02	Filled
Supervisor	03	Filled
Acting Supervisors.	04	Vacant
Operators	19	Filled
Acting operators	04	Vacant
Drivers	02	Filled
Acting drivers	07	Vacant

Position	Number of positions	Status of position
Labourers	112	Filled
Temps working as loading labourers	75	Vacant
Temps street cleaning	175	Vacant
Temps for street sweeping	24	Vacant
Waste education officer	02	Filled

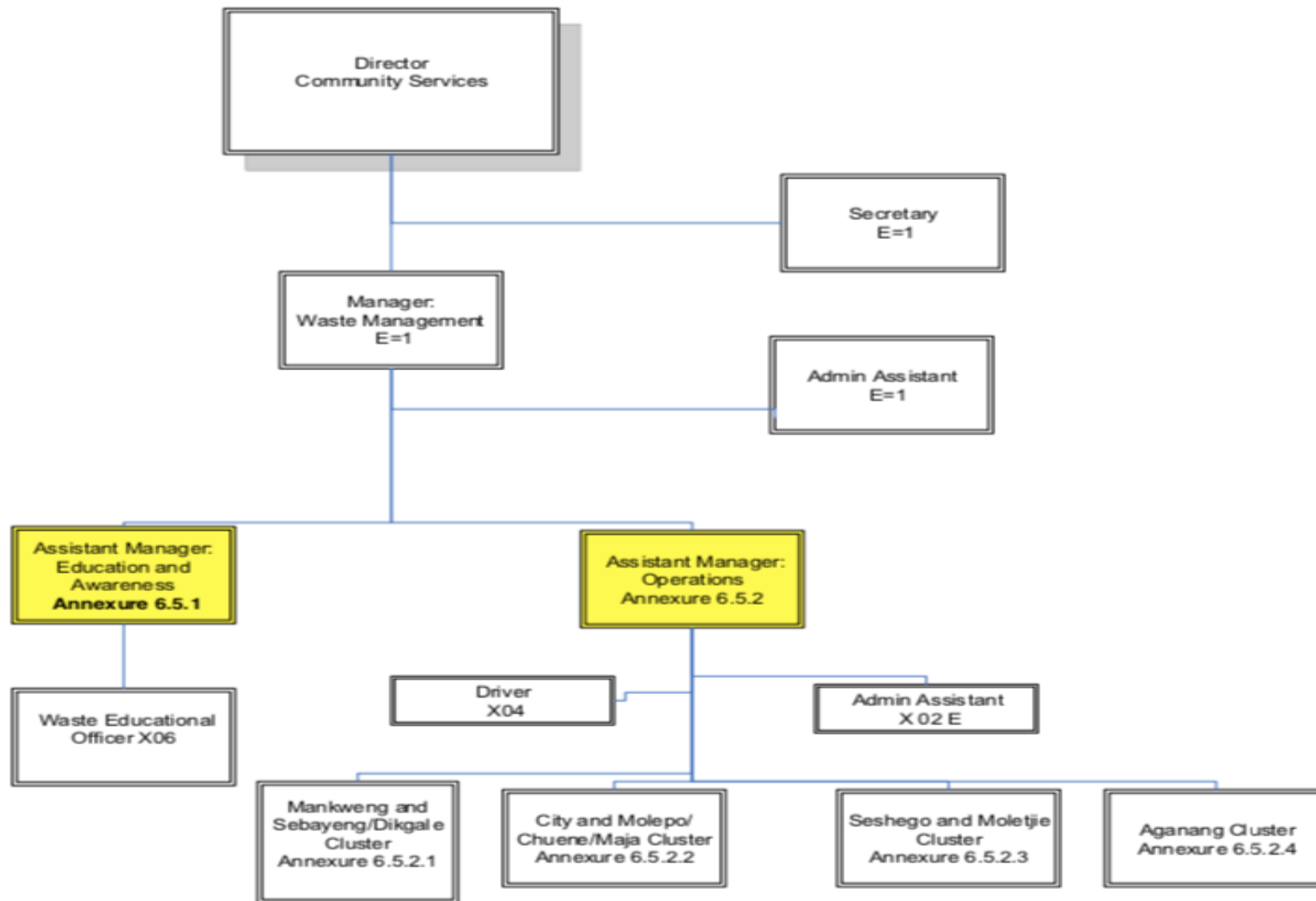


Figure 13: Organogram - community services: waste management

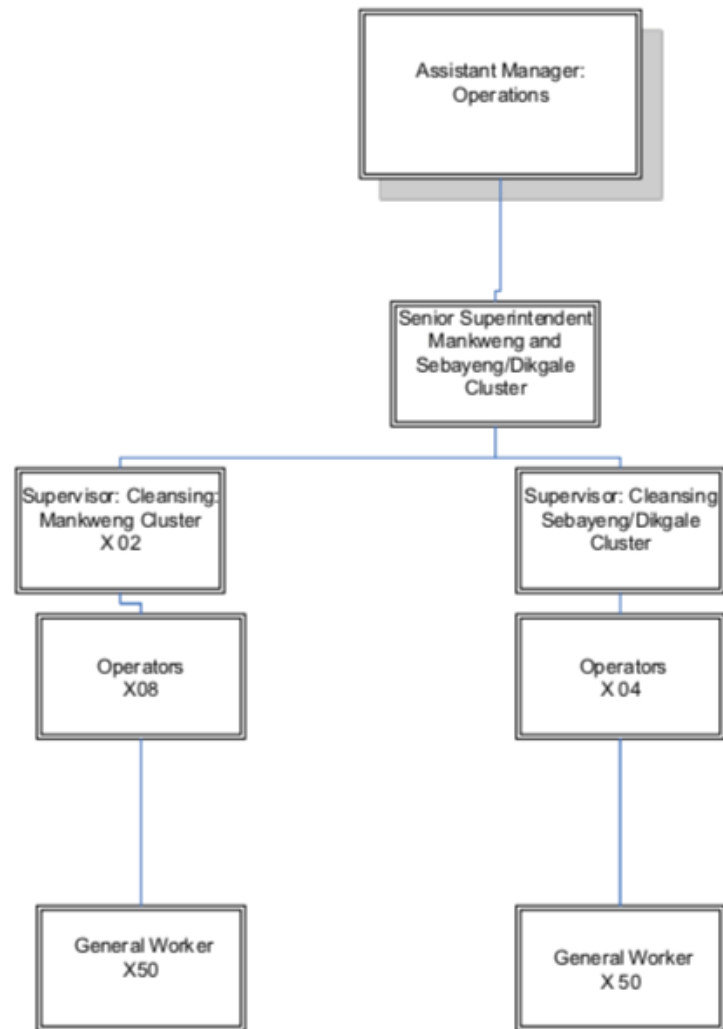


Figure 14: Organogram: community service - waste management-operations (Mankweng & Sebayeng/Dikgale clusters-annexure 6.5.2.1)

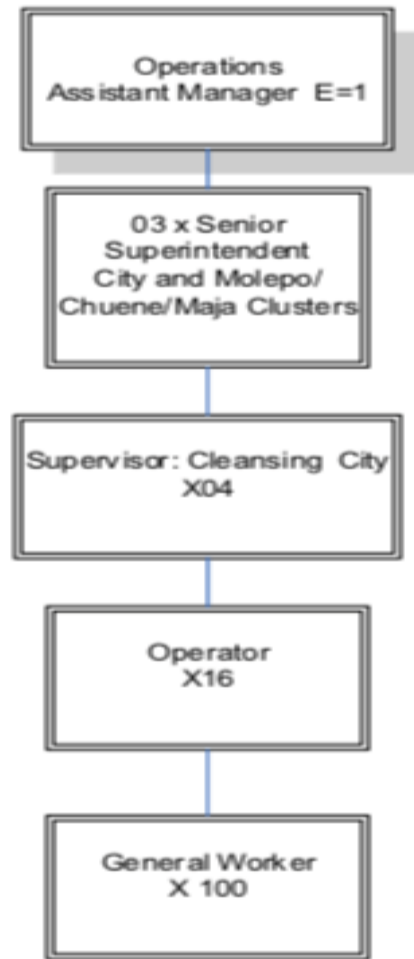


Figure 15: Organogram- waste management-operations: City & Molepo clusters(annexure6.4.2.2)

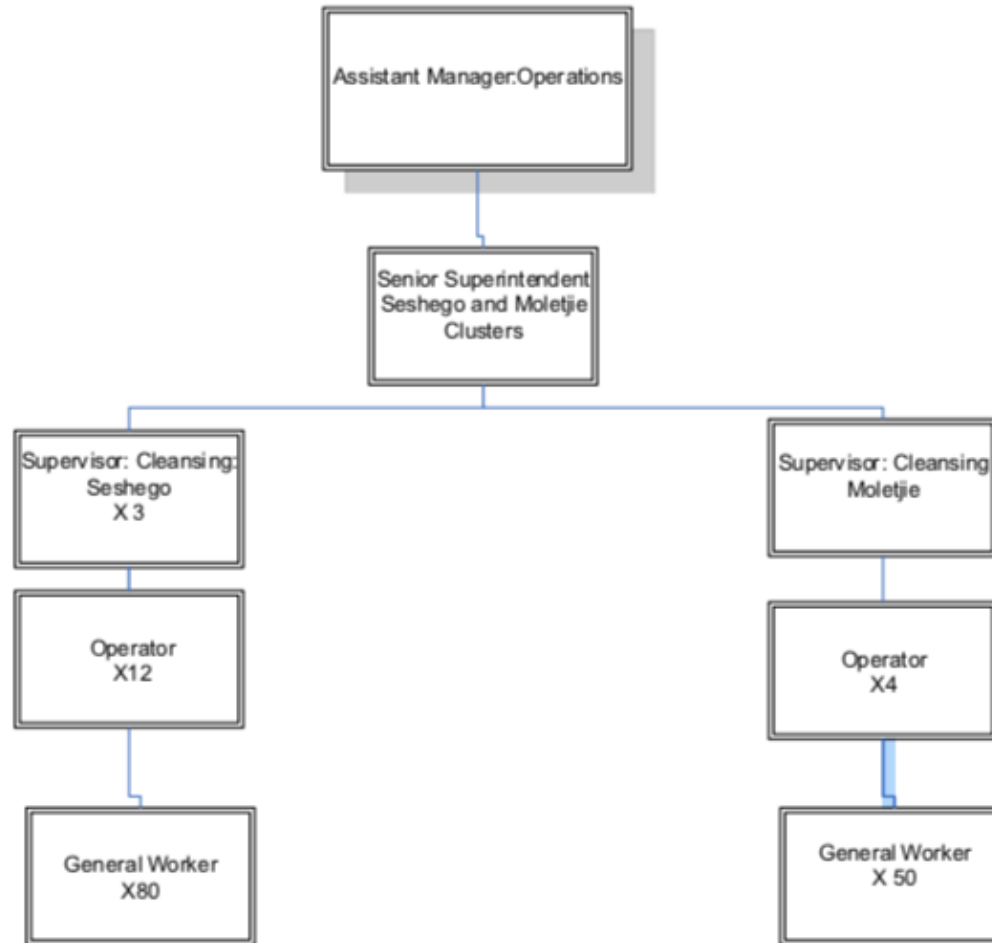


Figure 16: Organogram-waste management: Seshego & Moletjie clusters(annexure6.4.2.3)

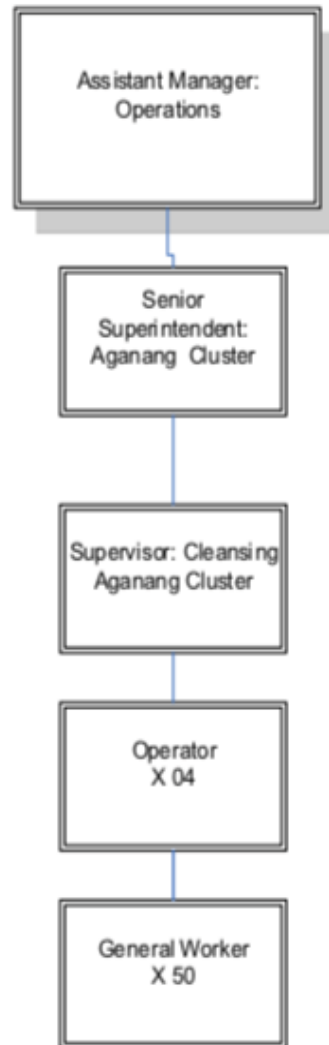


Figure 17: Organogram-waste management -operations: Aganang cluster (6.4.2.4)

7.1. ROLES AND RESPONSIBILITIES OF A WASTE MANAGEMENT OFFICER

Chapter 3, Section 10(3) of the Waste Act mandates that the National Department, Provinces, and Municipalities formally designate municipal Waste Management Officers (WMOs) in writing. A Waste Management Officer plays a crucial role in managing and implementing waste management programs to ensure proper disposal and recycling of waste materials.

The Polokwane local municipality has appointed a designated waste management officer in line with section 10 (3) of the National Environmental management :Waste Act 2008 9Act No. 59 of 2008) , see Appendix A for the copy of the appointment letter Waste Management officer.

The specific duties and responsibilities may vary depending on the organization and the scope of the position, but generally, the role involves the following:

- **Manage stakeholders in Waste Act implementation:** This involves actively engaging and collaborating with key stakeholders, including local government authorities, waste management service providers, community organizations, and environmental groups, to ensure effective implementation of the Waste Act. The role requires coordinating meetings, sharing information, addressing concerns, and fostering a collaborative approach to waste management. Additionally, it includes managing relationships with regulatory bodies, such as the Department of Environmental Affairs (DEA), to ensure alignment with national policies and regulations, while supporting the stakeholders in adhering to legislative requirements. Effective stakeholder management also entails resolving conflicts, ensuring transparency, and facilitating public participation in decision-making processes related to waste management.
- **Liaise with EMI compliance monitoring activities in the municipality:** This responsibility involves establishing and maintaining communication channels with the Environmental Management Inspectorate (EMI) and overseeing compliance monitoring activities within the municipality. It includes ensuring that municipal waste management practices align with the requirements set out in the Waste Act and related regulations. The role entails facilitating site inspections, audits, and assessments of waste management facilities to verify compliance with

environmental standards. Furthermore, it requires acting as a point of contact between municipal departments and EMI officials, ensuring any non-compliance issues are addressed promptly, and supporting the municipality in developing corrective action plans to rectify any deficiencies identified through inspections.

- **Municipal IWMP: planning and reporting cycles:** This role requires the development, implementation, and periodic review of the Integrated Waste Management Plan (IWMP) for the municipality. It involves coordinating the planning cycle by identifying key waste management objectives, setting measurable goals, and ensuring that the IWMP is aligned with both local and national waste management strategies. The role also includes overseeing the data collection and analysis processes for effective reporting, ensuring that progress against the IWMP is documented accurately and communicated to relevant authorities. Additionally, this responsibility entails ensuring that the IWMP is updated in response to changes in local waste management practices, evolving environmental standards, and shifting legislative requirements. This function is critical for ensuring that the municipality's waste management practices are sustainable, legally compliant, and continuously improving.
- **Build capacity in relation to Waste Act implementation:** Building capacity involves providing training, resources, and support to municipal staff, stakeholders, and service providers to enhance their understanding and ability to implement the Waste Act effectively. This may include organizing workshops, seminars, and awareness campaigns to foster knowledge of the Waste Act's provisions, waste minimization strategies, recycling initiatives, and waste disposal regulations. The role also entails the development and distribution of educational materials and tools to help stakeholders understand their responsibilities under the Act. Additionally, capacity building may involve the creation of mentorship or support programs to assist staff in developing the necessary technical skills to manage waste systems, ensure compliance, and contribute to long-term waste management solutions in the municipality.

- Monitor adherence to norms and standards in the delivery of waste services: This responsibility focuses on ensuring that all waste management services in the municipality adhere to established norms, standards, and best practices in waste collection, disposal, recycling, and treatment. It involves regularly monitoring the performance of waste management contractors and in-house service teams to assess compliance with quality standards, operational protocols, and safety regulations. The role also includes conducting inspections and audits of waste management facilities, reviewing waste collection schedules, and ensuring that waste disposal sites operate within regulatory frameworks. Monitoring also entails evaluating the environmental impact of waste services and recommending improvements to enhance efficiency, reduce contamination, and mitigate negative environmental consequences. Furthermore, it requires preparing compliance reports and liaising with regulatory agencies to ensure that any breaches of standards are promptly addressed.

8. GAPS AND NEEDS ANALYSIS

This section presents the gaps and needs identified through the situational analysis review. The gap and needs analysis aim to identify gaps and needs arising from the current waste management practices within the Municipality, and a review of the legislative and best practice guidelines. The gaps and needs are presented in table 28 below.

Identifying the waste management priorities and goals that the Municipality wants to achieve includes the following:

- Identifying key waste management gaps;
- Developing strategic goals for the Integrated Waste Management Plan (IWMP);
- Developing an implementation plan; and
- Identifying the different alternatives that can be employed to achieve the desired end state which should indicate the different approaches to achieve the targets.

Gaps and needs have been listed under the following headings:

1. Waste collection & management services.
2. Waste minimisation, recycling, and re-use initiatives.
3. Waste management facilities.
4. Organic waste management.
5. Waste management collection fleet and equipment.
6. Waste management information system.
7. Waste education and awareness.
8. Institutional functioning; Human & Financial Resources Management.
9. By-laws and enforcement of by-laws; - Legal compliance.
10. Integrated management of hazardous waste.

Table 28: Waste management gaps and needs identified at Polokwane Local Municipality

Legislated requirement/ best practice	Gaps	Needs
1. Waste collection & management services		
<ul style="list-style-type: none"> The NWMS 2020 requires 95% of urban and 75% of rural households to have access to adequate levels of waste collection services. Non-recyclable waste must be collected weekly from households, as a minimum. The National Policy for Provision of Basic Refuse Removal Services to Indigent Households (GN 413 of 2011) requires municipalities to provide free receptacles for waste storage to indigent houses. 	<p>There is a gap in the number of households that receives waste management services</p> <p>Number of un-serviced households : 53.2% of households do not received waste collection services, according to the CENSUS 2022 report.</p>	<ul style="list-style-type: none"> Ensure that a minimum of 50% households receive waste management collection services. The households which are not receiving a service need to be identified to determine the best possible, feasible and sustainable waste collection provision services

Legislated requirement/ best practice	Gaps	Needs
	There is illegal dumping in certain areas	<ul style="list-style-type: none"> • There needs to be community awareness on best waste management practices to ensure that the transfer station are used to their full potential. • There needs to be awareness son efficient sustainable waste minimisation.
2. Waste minimisation, recycling, and re-use initiatives;		
<ul style="list-style-type: none"> • The draft 2018 NMWS sets a target of 50% diversion of waste by 2023 and 80% diversion by 2028. 	<ul style="list-style-type: none"> • Separation at source only takes place in the major shopping centres. Here is a gap to enable and ensure that there is separation at source In the households and other applicable areas. 	The Municipality must implement separation-at-source initiatives to promote the separation of waste. This will further promote waste diversion from landfills.

Legislated requirement/ best practice	Gaps	Needs
<ul style="list-style-type: none"> • Operation Phakisa sets a target of 50% diversion of municipal waste by 2023. • The Waste Act requires municipalities to put in place measures that seek to reduce the amount of waste generated, and where generated, measures to ensure that it is re-used, recycled and recovered, treated and disposed of. • The PIWMP require municipalities to provide an enabling environment for recycling. 	<ul style="list-style-type: none"> • PLM only has one (01) buy-back centre located in Mankweng. This facility was established to serve as a recycling hub, allowing the public to sell recyclable waste. Initially, the Municipality planned to lease the facility to a local recycling company to manage its operations. However, the centre has been inactive and unoccupied since 2022. 	<ul style="list-style-type: none"> • The Mankweng buy back centre needs to be refurbished and be taken back to operational use , • PLM needs to put a programme for the implementation and management of operational buy-back centres, this may also ensure more participation of reclaimers in the municipality.
2. Waste Management facilities		
The National Norms and Standards for Disposal of Waste to Landfill (GN 636 of 2013)	The Weltevreden landfill site is nearing its life-span, and there is not adequate space.	<p>A landfill cell must be constructed at the Weltevreden landfill site.</p> <p>NB: The landfill is planned to be construed in a phased method, the first cell is</p>

Legislated requirement/ best practice	Gaps	Needs
	<p>NB: The landfill is planned to be constructed in a phased method, the first cell is planned to be constructed in 2025, with a life s-span of 20 years</p>	<p>planned to be constructed in 2025, with a life s-span of 20 years</p>
	<p>the Mankweng/ Sebayeng clusters are situated far from the Weltevreden landfill site. This may ca</p>	<p>There must be plans to construct a new landfill site I the Mankweng/ Sebayeng cluster</p>
<p>3. Waste management fleet and transportation</p>		
<p>The National Domestic Waste Collection Standards (GN 21 of 2011) requires that all vehicles in the waste management fleet are roadworthy and that waste is transported in closed vehicles.</p>	<p>There is a high number of non- operational vehicles in the municipality</p> <p>NOTE:</p> <ul style="list-style-type: none"> • City: 27 vehicles allocated (14 operational & 13 non-operational) • Mankweng 12 vehicles allocated (5 operational & 7 non-operational) • Seshego: 21 vehicles allocated (6 operational & 15 non-operational) 	<ul style="list-style-type: none"> • PLM must review their fleet and allocate and plan for replacement to meet the required standards. • Regular maintenance services must be implemented

Legislated requirement/ best practice	Gaps	Needs
	There is No vehicle replacement plan	The Municipality must develop a replacement plan that will monitor the lifespan of all waste vehicles, replace them when they are nearing their end-of-service life as they will be too costly to repair in comparison to their book value at the time.
4. Organic waste management		
<ul style="list-style-type: none"> • The National waste composting strategy • Limpopo Provincial IWMP and National Medium Term Strategic Framework– 50% diversion of organic waste by 2022 and 100% diversion rate by 2027. 	<ul style="list-style-type: none"> • There is no facilities for composting organic waste • There is no organic waste diversion plan PLM . 	<ul style="list-style-type: none"> • Establish regional composting strategy and implementation plan, in line the national and provincial plans - • An organic waste diversion plan needs to be developed for the PLM landfills NB: The PLM must establish the bankability of organic waste beneficiation business / project
5. Waste Management information system		

Legislated requirement/ best practice	Gaps	Needs
The National Waste Information Records require information to be uploaded onto SAWIS on a quarterly basis.	All relevant waste records must be Reported on SAWIS .	All waste logs, for both landfills, must be uploaded onto SAWIS quarterly.
6. Waste education and awareness		
<ul style="list-style-type: none"> The NWMS, 2016 & 2020, sets a target that 80% of schools must undertake waste awareness campaigns. The municipality must provide guidelines on how to separate waste. 	There is an insufficient/ Lack of public awareness concerning good waste management practises. – (based on the illegal dumping's)	The municipality must improve and expand on their current waste awareness campaigns. This must involve households, schools, Municipal personnel, and the public.
	Insufficient information on Recycling systems and drop-off facilities in and around the towns	Information on the recycling drop of facilities, must be made available to the public and businesses
7. Institutional functioning; Human & Financial Resources Management		
<ul style="list-style-type: none"> The section 10 of waste Act requires that a WMO is designated for each municipality. The Waste Act requires municipalities to keep separate 	<ul style="list-style-type: none"> Additional staff is needed – waste awareness, admin and support staff. 	The municipality need to review the organogram and prioritise portions which need to be filled – where there is insufficient staff members, the municipality must make provision.

Legislated requirement/ best practice	Gaps	Needs
financial statements including a balance sheet of services provided. <ul style="list-style-type: none"> Full-cost accounting for waste services are to be undertaken and cost reflective tariffs implemented (NWMS, 2020) 	PLM financial & capacity resources are adequate but can improve (the revenue is higher than the budget for the past financial year), but more resources still need to be allocated for waste services	The municipality must ensure that there is sufficient provision made for the effective management of all waste management facilities.
	The budget for education and awareness is not adequate	The municipality must allocate adequate budget for education and awareness.
8. By-laws and enforcement of by-laws; - Legal compliance		
<ul style="list-style-type: none"> Legal frameworks established by local governments to govern specific areas within their jurisdictions. 	There are no dedicated team to enforce waste management by-laws.	Specific waste personnel must be appointed to enforce the by-laws, particularly around litter and illegal dumping.
<ul style="list-style-type: none"> Local Government: Municipal Systems Act ,No 32 of 2000 publishes the Waste Management By-Laws. 	Once the IWMP has been finalised and adopted , the municipality by-laws must be aligned to the IWMP.	The municipality needs to update the by-laws and they must be aligned with the Waste Act and IWMP.
9. Strategic Planning & IWMP development, implementation & monitoring		

Legislated requirement/ best practice	Gaps	Needs
<ul style="list-style-type: none"> The Waste Act requires that the IWMP is submitted to DFFE&DP for endorsement, it is incorporated into the IDP that annual reports of the IWMP implementation are undertaken. 	<p>The IWMP must be finalised, it must first be approved by the council and then endorsed by the MEC.</p>	<p>Once the IWMP is finalised, the municipality must ensure that annual reports are prepared and submitted in line with the Municipal Systems Act (Act 32 of 2000).</p>
10. Integrated management of hazardous waste		
<ul style="list-style-type: none"> Hazardous Substances Act, Act 15 of 1973 	<p>Lack of knowledge by residents regarding hazardous waste.</p>	<p>The municipality should conduct awareness campaigns around hazardous waste in order to educate the public about this type of waste and the different forms that it comes in. These campaigns should encourage households to return medical waste to medical centres instead of disposing them as domestic waste. Households should also be made aware of e-waste and how to properly dispose of it.</p>

Legislated requirement/ best practice	Gaps	Needs
	Lack of traceability with regards to hazardous & medical waste produced by private companies & medical facilities.	There need to be a database of hazardous waste , safe disposal certification n or proof, for the private & medical companies.

9. DESIRED END STATE

Considering the gaps and needs identified in the PLM IWMP, a desired outcome is established. This involves defining priorities and strategic objectives that PLM aims to achieve in relation to the IWMP. The strategic goals are aligned with pertinent waste legislation and policies, adhering to the waste management hierarchy. The formulation of these strategic goals is guided by the National Waste Management Strategy (NWMS) 2020, as well as the Provincial Integrated Waste Management Plan (PIWMP) 2020-2025 which has been developed and revised to fulfil the objectives outlined in the Waste Act.

In an Integrated Waste Management Plan (IWMP), goals and objectives serve to tackle identified shortcomings or improvements needed in the existing waste management system. Goals represent long-term aspirations, while objectives are specific, measurable targets. When implemented effectively, objectives contribute to the municipality achieving its overarching goals. The terminology employed in formulating the goals, objectives, and implementation plan aligns with the Integrated Waste Management Planning Guideline for Waste Management Planning provided by the Department of Environmental Affairs and Development Planning (DFFE&DP).

9.1 ALIGNMENT WITH NATIONAL AND PROVINCIAL GOALS

9.1.1 THE NATIONAL WASTE MANAGEMENT STRATEGY 2020

The National Waste Management Strategy (NWMS) 2011 was developed to align with the objectives of the NEM: WA, focusing on eight goals with related targets. However, in 2018, the NWMS was revised and updated to emphasize three key goals that better reflect the core objectives of the NEM: WA. This revision led to the establishment of the NWMS 2020, which offers a more simplified structure based on three overarching goals. These goals are informed by global trends in waste management and are now supported by strategic objectives instead of specific targets, with performance monitored through indicators.

The justification for NWMS 2020 is as follows:

The management of waste in South Africa falls within the mandate of the Department of Environment, Forestry and Fisheries (DEFF). This mandate is derived from Section 24 (Environment) of the Constitution of the Republic of South Africa (Act 108 of 1996) which states:

“Everyone has the right –

- a) to an environment that is not harmful to their health or wellbeing; and
- b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –
 - i. prevent pollution and other degradation;
 - ii. promote conservation; and
 - iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

To implement its mandate, the Department of Environment, Forestry and Fisheries (DEFF) has formulated various policies, legislation, strategies, and programs. Notably, the National Environmental Management: Waste Act 59, 2008 (referred to as "the Waste Act") and the National Waste Management Strategy of 2011 (NWMS) are key components. The NWMS is a mandatory requirement under the Waste Act.

The NWMS serves as a comprehensive framework for executing the Waste Act, outlining the government's policy and strategic approach to waste management in alignment with South Africa's socio-economic development goals of being "equitable, inclusive, sustainable, and environmentally sound."

The current NWMS 2020, which updates the 2011 strategy, accomplishes the following:

- Aligns the strategic waste management approach with the commitments of the Sustainable Development Goals 2030 (referred to as "the SDGs") and South Africa's National Development Plan: Vision 2030 (referred to as "the NDP").
- Emphasizes waste management as a crucial element of South Africa's economy and societal framework.

- Incorporates and creates a supportive environment for the DEFF's 2017 Chemicals and Waste Economy Phakisa and the government's 2019 Good Green Deeds Programme.

The NWMS 2020 considers relevant feedback from public consultation processes on the draft version. It also reflects progress, challenges, and lessons learned from the implementation of the 2011 NWMS, taking into account the political, social, environmental, and economic context influencing the waste sector.

The three goals of the NWMS 2020 that will be used to align this IWMP are as follows:

- **Goal 1:** Waste Minimisation - the aim is to prevent waste and where waste cannot be prevented, 40% should be diverted from landfill within 5 years through reuse, recycling, recovery, and alternative waste treatment: 25% of waste reduction in waste generation and 20% waste reused in the economic value chain.
- **Goal 2:** Effective and Sustainable Waste Services - this would see all South Africans living in clean communities with waste services that are well-managed and financially sustainable.
- **Goal 3:** Waste Awareness and Compliance - the aim is to create a culture of compliance with zero tolerance for pollution, litter, and illegal dumping.

The NWMS is based on a framework consisting of three goals, normally called strategic pillars, which are outlined in Table 29 below.

Table 29: Summary of 2020 NMWS goals

Strategic pillar	Outcome	Key intervention
Waste minimisation	45% of waste from diverted from landfill within 5 years; 55% within 10 years; and at least 70% within 15 years leading to Zero - Waste going to landfill.	<ul style="list-style-type: none"> • Prevent waste generation through cleaner production, industrial symbiosis and extended producer responsibility; • Prevent Food Waste; • Increase re -use, recycling and recovery rates; • Divert organic waste from landfill through composting and the recovery of energy; • Divert construction and demolition waste from landfill through beneficiation; and • Increase technical capacity and innovation for beneficiation of waste.
Effective and Sustainable Services	All South Africans live in clean communities with waste services that are well managed and financially sustainable.	<ul style="list-style-type: none"> • Separate waste at source; • Safe and environmentally sustainable disposal of hazardous household waste; • Cities Support Programme Implementation; and • Effective integrated waste management planning.

Strategic pillar	Outcome	Key intervention
Compliance, Enforcement and Awareness	Mainstreaming of waste awareness and a culture of compliance resulting in zero tolerance of pollution, litter and illegal dumping.	<ul style="list-style-type: none">• Reduce Pollution, littering and illegal dumping;• Enhance capacity to monitor compliance and enforce the Waste Act and International Agreements; and• Ensure municipal landfill sites and waste management facilities comply with licensing requirements.

9.1.2 ALIGNMENT OF NATIONAL AND PROVINCIAL GOALS

The NWMS is based on a framework consisting of three goals, which are outlined in Table 29 above. The 2020 NWMS, along with the Limpopo PIWMP (2020-2025) and the current state of waste management in the PLM, were used to guide the development of the PLM IWMP.

9.1.3 PROVINCIAL INTEGRATED WASTE MANAGEMENT PLAN FOR LIMPOPO PROVINCE: 2020 - 2025

In the year 2020, the Limpopo province formulated the Provincial Integrated Waste Management Plan (PIWMP) spanning the period from 2020 to 2025. The Implementation Plan of the Integrated Waste Management Plan (IWMP) delineates the objectives, indicators, and responsibilities of Local Municipalities (LM), District Municipalities (DM), and the Department. This document provides a detailed breakdown of their respective roles in attaining the goals outlined in the IWMP. Table 31 highlights the key focus areas and proposed actions, placing emphasis on the specific duties assigned to Local Municipalities in the realm of waste management. Furthermore, it is imperative for Local Municipalities to comprehend the roles and responsibilities of the Province, particularly regarding initiatives that support waste management at the local level, such as offering training programs or specifying reporting requirements.

The goals from the Limpopo PIWMP that will be used to align this IWMP are as follows:

- Goal 1: Expansion of Waste Services and Cost Recovery
- Goal 2: Establishment of Licensed and Well-Managed Waste
- Goal 3: Encourage Waste Minimization and Promoting Recycling Initiatives.
- Goal 4: Hazardous Waste Management
- Goal 5: Strengthening Institutional Capacity for Waste Management
- Goal 6: By-Law Development and Strengthening Enforcement Capacity
- Goal 7: Education and Awareness on Waste Issues
- Goal 8: Facilitate and guide Regionalization
- Goal 9: Risk Assessment, Monitoring and Evaluation
- Goal 10: Research and Development into Emerging Issues

Table 30 below further states the Priority Areas & Proposed Implementation of The Limpopo PIWMP.

Table 30: Priority Areas & Proposed Implementation of The Limpopo PIWMP

#	Activities	Indicators	Name of implementing state or organisation
Goal 1: Expansion of Waste Services and Cost Recovery			
1.1.	Expand waste collection services (Supply of refuse bags, bins, Contracts with transporters)	Collection route networks and frequency	DM & LM
1.2.	Develop a plan to establish a rural collection system (Improve infrastructure and transportation)	Rural refuse removal plan	DM & LM
1.3.	Identify hotspots and un-serviced areas and develop programme for clean-up and monitoring	New service points	LM
1.4.	Develop minimum service standards	Waste collection standards	DM, LM & LEDET
1.5.	Conduct survey on willingness to pay for services and develop a plan for cost recovery	Survey Report Cost & recovery plan	DM, LM & LEDET
Goal 2: Encourage waste minimization initiatives and promote recycling project			
2.1.	Reduce the number of dumpsites by 50%	List of closed dumpsites	DM, LM & LEDET
2.1.1.	Prioritize dumpsites to be closed and rehabilitated	Rehabilitated Sites	DM, LM & LEDET
2.2.	Register all landfill sites and waste storage facilities	List of licensed landfills and transfer stations	DM, LM & LEDET
2.2.1.	Rehabilitate dumpsites and convert to fully licensed transfer stations and landfills		

#	Activities	Indicators	Name of implementing state or organisation
Goal 3: Establishment of licensed and well-managed waste disposal facilities			
3.1.	Encourage/train separation at source	Reduced waste volumes collected	DM, LM & LEDET
3.2.	Establish minimum recycling standards at source and transfer stations	Operational standards	LEDET & LM
3.3.	Develop recycling guidelines for all waste streams	Recycling Guidelines	LEDET & LM
3.4.	Establish 3 Pilot Project on recycling 3.4.1. Establish an Integrated Waste Exchange system (IWEX)	Recycling Pilot Project operational IWEX system operational	LEDET, DM, LM & Civil society
3.5.	Conduct survey of all recycling projects	Survey report, GIS and mapping	LEDET, DM, LM
Goal 4: Ensure safe and integrated hazardous waste management			
4.1.	Conduct Baseline Study on hazardous waste	Baseline Study report	LEDET & LM
4.1.1.	List hotspots and waste generators	List of waste sources mapped	LEDET & LM
4.2.	Develop hazardous waste cell	Hazardous waste disposal receptacle	LEDET, DM, DFFE & LM
4.3.	Encourage/train sorting at source	Hazardous domestic/ industrial waste sorted	LM, LEDET, & Industry,

#	Activities	Indicators	Name of implementing state or organisation
4.3.1.	Household hazardous waste sorting practiced	Hazardous domestic/ industrial waste sorted	LM, LEDET, & Industry,
4.4.	<ul style="list-style-type: none"> Establish provincial health care waste management plan (including facilities like home-based care and hospices) Increase number of operational incinerators, Decommission obsolete incinerators 	<ul style="list-style-type: none"> HCW Implementation Plan. Licensed and compliant incinerators. List of decommissioned incinerators. 	LEDET /Dept of Health & LM
4.5.	Establish Pilot Project for agricultural waste recycling for compost development	Agricultural Waste Recycling Pilot Compost site established Compost market established	LEDET, Dept of Agriculture & LM
4.6.	Identify hazardous waste of concern and develop management plan	Hazardous waste stream management plan.	LEDET/Industry, Civil society, DFFE & LM
Goal 5: Strengthening institutional capacity for waste management			
5.1.	Increase number of waste management staff, align posts in all spheres of government	Increased number of waste management staff	DM, LM & LEDET
5.2.	Training/ skills transfer	Skilled staff	LEDET, DM, LMD PLG & LM
5.3.	Develop Waste Information System	Waste Database	DM, LM, LEDET, & DFFE

#	Activities	Indicators	Name of implementing state or organisation
5.4.	Develop Green Procurement Policy and Cleaner Production Strategy	Green Procurement Policy Cleaner Production Strategy	LEDET, NCPC, DME, DFFE & LM
5.5.	Establish Pilot Project for Cleaner Production and Clean Development Mechanism (Climate Change Mitigation)	Pilot project as a learning tool Trained Staff	LEDET, LM, NCPC, DMRE, DM, DFFE & Industry
Goal 6: Develop waste regulations and by-laws and strengthening enforcement capacity			
6.1.	Develop by-laws for waste management in line with Waste Management Act, 2008	By-laws	DM, LM & LEDET
6.2.	Training of Environmental Management Inspectors	Number of trained staff for inspection, audits and enforcement	DM, LM, LEDET & Health sector
6.3.	Develop database of environmental cases	Database	LEDET, & LM
6.4.	Develop guideline and electronic data capture system for case management	Guideline, data capture system	LEDET & LM
6.5.	Implement Waste management System Education and awareness on the system	Data on waste generated, transported and disposed:	LEDET, Industry, Health sector & LM
6.5.1.	Develop information brochure on procedure	WIS Information brochure	
Goal 7: Promote education and awareness on waste issues			
7.1.	Develop an education and awareness plan which includes all crosscutting issues	Education and awareness plan	LEDET, Civil society & LM

#	Activities	Indicators	Name of implementing state or organisation
7.2.	Develop posters and awareness brochures	Education materials	DM, LM & LEDET
7.3.	Establish Environmental Clubs and Forum	Environmental clubs in each municipality	DM, LM, LEDET,
Goal 8: Facilitate and guide regionalization of disposal facilities			
8.1.	Conduct Feasibility study of possible regional facility development	Feasibility study report, GIS and Mapping	DM, LM & LEDET
8.2.	Establish regional facility	Regional facility operational	DM, LM & LEDET, Construction company
Goal 9: Develop tools for risk assessment, monitoring and evaluation			
9.1.	Development of an Interdepartmental Committee for IWMP review and monitoring Develop monitoring programme	Interdepartmental Monitoring Committee Monitoring Programme	LEDET, SECTOR DEPT, Industry Civil society & LM
9.2.	Auditing of all waste programmes and projects (Recycling, training, transfer stations, landfills etc, waste minimization clubs)	Auditing Report	LEDET & LM
9.3.	Increase number of environmental Indicators included in the State of Environment Reporting	State of Environment Report Annual Report	DM, LM & LEDET

9.2 GOALS IDENTIFIED FOR POLOKWANE LOCAL MUNICIPALITY

Alignment of Polokwane Local Municipality Goals with National and Provincial Goals

The determination and identification the of PLM goals was guided by insights from the 2020 National Waste Management Strategy (NMWS), the Limpopo Provincial Integrated Waste Management Plan (PIWMP) covering the period 2020 to 2025, and the PLM situational analysis report completed.

Based on this integrated information, a total of eight (08) goals were identified for the PLM, as detailed below. Additionally, table 31 below provides a comprehensive overview, highlighting the alignment of PLM goals with both national and provincial objectives.

The goals identified for Polokwane local Municipality are as follows:

- Goal 1 : Waste collection provision services – Ensure the effective and efficient delivery of waste services
- Goal 2 : Waste recycling - Increased waste minimisation and recycling
- Goal 3: Waste management facilities - Ensure Effective Management of Landfill Sites
- Goal 4 : Waste management information systems - Effective waste information management and reporting
- Goal 5: IWMP implementation and monitoring
- Goal 6: Waste education and awareness - Improved waste education and awareness,
- Goal 7: Institutional functioning- Improve institutional functioning and capacity
- Goal 8: By-laws and enforcement of by-laws - Establish effective compliance with and enforcement of the Waste Act.

Table 31 : Alignment of PLM goals With The National & Provincial Goals

PLM goal	2020 NMWS	Limpopo -PIWMP(2020-2025)
Goal 1 : Waste collection provision services – Ensure the effective and efficient delivery of waste services	<p>Goal 2: Effective and Sustainable Services</p> <p>Outcome: All South Africans live in clean communities with waste services that are well managed and financially sustainable.</p> <p>Key intervention:</p> <ul style="list-style-type: none"> • Separate waste at source; • Safe and environmentally sustainable disposal of hazardous household waste; 	<ul style="list-style-type: none"> • Goal 1: Expansion of Waste Services and Cost Recovery • Goal 5: Strengthening institutional capacity for waste management
Goal 2 : Waste recycling - Increased waste minimisation and recycling	<p>Goal 1 : Waste minimisation</p> <p>Outcome: 45% of waste from diverted from landfill within 5 years; 55% within 10 years; and at least 70% within 15 years leading to Zero - Waste going to landfill.</p> <p>Key intervention:</p>	Goal 2: Encourage waste minimization initiatives and promote recycling project

PLM goal	2020 NMWS	Limpopo -PIWMP(2020-2025)
	<ul style="list-style-type: none"> Increase re -use, recycling and recovery rates; 	
Goal 3: Waste management facilities - Ensure Effective Management of Landfill Sites	<p>Goal 3: Compliance, Enforcement and Awareness</p> <p>Outcome: Mainstreaming of waste awareness and a culture of compliance resulting in zero tolerance of pollution, litter and illegal dumping.</p> <p>Key intervention:</p> <ul style="list-style-type: none"> Ensure municipal landfill sites and waste management facilities comply with licensing requirements. 	Goal 3: Establishment of licensed and well-managed waste disposal facilities
Goal 4 : Waste management information systems - Effective waste information management and reporting	<p>Goal 2: Effective and Sustainable Services</p> <p>Outcome: All South Africans live in clean communities with waste services that are well managed and financially sustainable.</p>	Goal 5: Strengthening institutional capacity for waste management.

PLM goal	2020 NMWS	Limpopo -PIWMP(2020-2025)
	<p>Key intervention:</p> <ul style="list-style-type: none"> • Effective integrated waste management planning. 	
Goal 5: IWMP implementation and monitoring	<p>Goal 2: Effective and Sustainable Services</p> <p>Outcome: All South Africans live in clean communities with waste services that are well managed and financially sustainable.</p> <p>Key intervention:</p> <ul style="list-style-type: none"> • Effective integrated waste management planning. 	Goal 9: Develop tools for risk assessment, monitoring and evaluation
Goal 6: Waste education and awareness - Improved waste education and awareness,	<p>Goal 3: Compliance, Enforcement and Awareness</p> <p>Outcome: Mainstreaming of waste awareness and a culture of compliance resulting in zero</p>	Goal 7: Promote education and awareness on waste issues

PLM goal	2020 NMWS	Limpopo -PIWMP(2020-2025)
	<p>tolerance of pollution, litter and illegal dumping.</p> <p>Key intervention:</p> <ul style="list-style-type: none"> • Reduce Pollution, littering and illegal dumping; • Enhance capacity to monitor compliance and enforce the Waste Act and International Agreements; and 	
<p>Goal 7: Institutional functioning- Improve institutional functioning and capacity</p>	<p>Goal 2: Effective and Sustainable Services</p> <p>Outcome: All South Africans live in clean communities with waste services that are well managed and financially sustainable.</p> <p>Key intervention:</p> <ul style="list-style-type: none"> • Effective integrated waste management planning. 	<p>Goal 5: Strengthening institutional capacity for waste management.</p>

PLM goal	2020 NMWS	Limpopo -PIWMP(2020-2025)
	<ul style="list-style-type: none"> Enhance capacity to monitor compliance and enforce the Waste Act and International Agreements; and 	
<p>Goal 8 : By-laws and enforcement of by-laws - Establish effective compliance with and enforcement of the Waste Act.</p>	<p>Goal 3: Compliance, Enforcement and Awareness</p> <p>Outcome: Mainstreaming of waste awareness and a culture of compliance resulting in zero tolerance of pollution, litter and illegal dumping.</p> <p>Key intervention:</p> <ul style="list-style-type: none"> Reduce Pollution, littering and illegal dumping; Enhance capacity to monitor compliance and enforce the Waste Act and International Agreements; and 	<p>Goal 6: Develop waste regulations and by-laws and strengthening enforcement capacity</p>

10. SETTING STRATEGIC GOALS, OBJECTIVES, TARGETS, INDICATORS AND INSTRUMENTS FOR IMPLEMENTATION

The successful achievement of the strategic goals and targets within the specified timeframes, starting from the approval date of the IWMP, must be accompanied by a measurable target date and a clear timeline. Each strategic goal can be assigned to one of the following three broad timeframes:

- Immediate 1 year
- Short Term: 2 to 3 years
- Medium Term: 3 to 5 years
- Long Term: 5 to 10 years

These goals aim to address the gaps and needs of the municipality and more importantly respond to the requirements of the Waste Act as well as the eight Goals of the NWMS and the Provincial goals. Further to this, other general strategic objectives to augment the above objective were considered. Such objectives included but were not limited to:

- Waste awareness campaigns, training, and capacity building of municipal officials and councillors responsible for waste management;
- Defining institutional requirements and organisational structures at various levels of waste management;
- Compliance monitoring and enforcement; and
- Defining the relevant policy and legislative framework for achieving the goals and objectives set. This will include national, provincial and local government policies and legislation.

The strategic goals that must be accomplished are listed in Table 33. The strategic goals are informed by waste management issues and observations identified during the status quo analysis. The waste management hierarchy serves as a guide for the established strategic goals, which are based on waste legislation and policies. To assess the achievement of accomplishing a goal, key performance indicators are also included for the relevant goals. The instruments to be utilized are given, and the sphere of government responsible for implementation is identified and listed, given the fact that responsibilities pertaining to waste management differ throughout

government structures. Lastly, an estimated budget is provided to allow for appropriate financial planning. Table 32 below is presenting the goals and objectives terminology as per the DFFE & DP guide for waste management planning.

Table 32: Goals And Objectives Terminology As Per DFFE & DP Guide For Waste Management Planning

Term	Description	Example
Goal	Long term desired result which can be accomplished through various projects. Goals are not necessarily measurable but instead present a long term desired end state for the municipality. The goals will be aligned to the NWMS and the Limpopo PIWMP.	Increased waste diversion from landfill
Objective	Measurable outputs which, once completed, will contribute to the accomplishment of a goal. Objectives will have deadlines to drive their implementation.	An increase of diversion of recyclable waste from landfill by 5% to 10%.
Policy (target)	Smaller projects which when combined will fulfil the requirement of an objective. As with the objectives, the policies will also have deadlines for implementation.	<p>Expand the two bag system to new areas</p> <p>Develop two buy back centres in low income areas</p> <p>Place drop-off facilities for recyclables at all existing municipal waste management facilities.</p>

10.1 STRATEGIC GOALS, TARGETS, INDICATORS, AND INSTRUMENTS FOR IMPLEMENTATION

The primary objective of the Integrated Waste Management Plan (IWMP) is to tackle identified goals by offering multiple solutions. The preliminary actions and targets detailed in the table propose various alternatives to achieve these objectives. The following section will delve into alternative actions, emphasizing the significance of taking into account social, economic, and environmental impacts during decision-making.

In alignment with the aforementioned goals, specific objectives and corresponding timeframes and resources required have been pinpointed for the PLM. The selected goals & targets emphasized in this section, will be seamlessly incorporated into the implementation plan, ensuring a holistic and comprehensive approach.

The goals identified for Polokwane local Municipality are as follows:

- Goal 1 : Waste collection provision services – Ensure the effective and efficient delivery of waste services
- Goal 2 : Waste recycling - Increased waste minimisation and recycling
- Goal 3: Waste management facilities - Ensure Effective Management of Landfill Sites
- Goal 4 : Waste management information systems - Effective waste information management and reporting
- Goal 5: IWMP implementation and monitoring
- Goal 6: Waste education and awareness - Improved waste education and awareness,
- Goal 7: Institutional functioning; Human & Financial Resources Management- Improve institutional functioning and capacity
- Goal 8: By-laws and enforcement of by-laws - Establish effective compliance with and enforcement of the Waste Act.

Table 33: Strategic Goals, Targets, Indicators, and Instruments For Implementation

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Goal 1 : Waste collection provision services – Ensure the effective and efficient delivery of waste services						
Objective 1.1:Expand waste collection services (Supply of refuse bags, bins, Contracts with transporters.)						
1.1.1.	Develop programme to expand services to other areas within the municipality.	Implement collection routes and frequency , and allocate budget.	Revised collection schedule which improves efficiency.	PLM	Annually	OPEX
Objective 1.2: Provision of efficient and functional Waste management fleet and equipment- Ensure the effective and efficient delivery of waste services. The waste management fleet is sufficient to continue to provide a good waste collection service and there are backup vehicles available when required						
1.2.1.	Develop and implement a waste management fleet replacement plan in order to ensure that vehicles are	A fleet replacement policy which considers age, kilometres, and maintenance, repair and fuel costs.	A fleet replacement plan	PLM	Annually	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	timeously replaced and operate efficiently.	NB: The fleet management and scheduling is not under the management of PLM waste department				
1.2.2.	Review level agreements with sub- contractors and establish waste service level agreement policy for the PLM and for sub- contractors.	Updated service level agreements	Updated service level agreement	PLM	Annually	OPEX
Objective 1.3: increase and improve the collection of waste In rural areas,						
1.3.1.	Undertake a route planning exercise in order to ensure that the most economic collection route is followed by the waste collection fleet.	Implement collection routes and frequency , and allocate budget	Collection route plan	PLM	1 – 3	

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
1.3.2.	Develop buy-back centres or transfer stations in rural areas, (or areas that are a long distance from the landfill site)	Operational transfer centres	Construction of the Molepo, Ga-Maja and Chuene Transfer stations	PLM	1-3	A capital Budget has already been set(IDP 24/25)
		Operational Buy-back centre ,	A plan for Rehabilitation/ re-commissioning of the Mankweng Buy-back centre plan	PLM	1-3	R2 000 000
Goal 2 : Waste recycling - Increased waste minimisation and recycling						
Objective 2.1: . Increased diversion of waste from landfills.						
2.1.1.	Promote a greater participation of households in the separation at source	<ul style="list-style-type: none"> At least 50% of the residential & business must have a waste 	Develop a circular economy, (including a	PLM, CDM, LEDET &	1-3	

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	programme and should raise awareness around what materials can be recycled in order to minimise contamination.	management plan, with a specific focus on separation at source	Separation at sources) master plan	private sector		
2.1.2.	Implement drop-off zones , for recyclables in public places	<ul style="list-style-type: none"> • Have a minimum of 1 drop off zone, in public spaces • Colour coded bins in public places to ensure separation of waste at source 	<ul style="list-style-type: none"> • Drop -off zone database • Increased number of skip bin in public drop off places 	PLM	0-1 years	R 1 000 000
2.1.3	Enable an environment for local recyclers to participate and grow in the Recycling / circular economy sector	<ul style="list-style-type: none"> • Increase in number of local recyclers • Decrease in number of waste sent to landfill 	A revised list of registered formal recyclers and informal ,in all the landfills & transfer stations under PLM	PLM, CDM, LEDET		OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Objective 2.2 : Increased diversion of organic waste from landfills						
2.2.1	Increase the diversion of organic waste from the landfill	Develop an organic waste plan and align it with National organic waste composting strategy.	An organic waste composting plan	PLM , LEDET & private sector	1-3	OPEX
2.2.2.	Awareness Programme For Household And School Composting Programmes.	Education & awareness plan , that includes organic waste recycling	Education & awareness plan , that includes organic waste recycling	PLM	1-3	To be undertaken internally
Goal 3: Waste Management Facilities: Ensure Effective Management of Landfill Sites						
Objective 3.1.: sufficient landfill space for Weltevreden landfill						
3.1.1.	Ensure there is sufficient landfill space for Weltevreden landfill	An extension of the landfill.	An extended landfill	PLM	0-1	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Objective 3.2: Plans are in place to address the municipality 's growth rate as well as accommodate the clusters that are far from the Weltevreden landfill site ,						
3.2.1	Ensure there are plans in place to construct a new landfill site , that's economically vale for the	A new landfill site for the Mankweng/ Sebayeng/ Dikgale cluster	Documented plans to construct new landfill, with allocated budget	PLM	5-10	OPEX
Objective 3.3.: Decreased land-fill waste by 30% volume within 5 years through the 3R 's (waste reduction, re- use, recycling) and alternative treatment						
3.3.1.	Implementation of a separation at source programme in households	<ul style="list-style-type: none"> A circular economy (including Separation at source) master plan Awareness campaigns 	Separation at source plan	PLM , LEDET & private sector	1-3	EPR schemes (PRO's)
Goal 4: Waste management information systems - Effective waste information management and reporting						
Objective 4.1 Effective internal management of waste related data						

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
4.1.1.	All municipal landfill sites are registered and reported on the SAWIS	Available SAWIS data	Updated SAWIS data	PLM	0-1	To be done internally
4.1.2.	Ensure that the waste information system feeds into the government WIS (waste information system) and meets the requirements of the National waste management strategy	Available SAWIs data	Updated SAWIS data	PLM	0-1	To be done internally
Goal 5: IWMP implementation and monitoring						
Objective 5.1: Develop IWMP to include guidelines on implementation, recommendations, Key performance indicators and responsibilities						
5.1.1.	Development of an IWMP, which will firstly be approved by council and thereafter endorsed by the MEC,	An endorsed IWMP	An endorsed IWMP	PLM & LEDET	0-1	Budget by LEDET

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Objective 5.2.: Promote Integrated Waste Management Planning.						
5.2.1	Identify waste types within the PLM that require dedicated waste management protocols (e.g. diapers, Hazardous waste).	A hazardous waste database , and monitoring plan	hazardous waste management database	PLM & LEDET	0-1	OPEX
5.2.2.	Public- Private Partnerships – Explore opportunities for public-private partnerships to enhance waste management services. Collaborate with private entities for waste collection, recycling, and other related activities, leveraging	Integration of the private sector (and other industries) into the implementation of the IWMP ,(and other master plans that will be developed by the municipality or the province)	Public- Private Partnerships in the IWMP	PLM. CDM & LEDET	0-1	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	external expertise and resources					
Objective 5.3. Establish a Local Municipal Environmental Forum and participate in the District Municipal Environmental Forum.						
5.3.1.	WMO to continue participating in the Local and District Environmental Forum: Waste Sub-Committee quarterly meetings.	Attendance of district or regional Waste management meetings	Waste committee proof of attendance & minutes	PLM	On-going	OPEX
5.3.2.	Establish environmental community clean-up clubs in the municipality	Active Environmental club in the municipality	Awareness plan/ schedule	PLM	0 -1	OPEX
Objective 5.4. Plans are in place to guide the development of waste management infrastructure which is required to meet national and provincial waste diversion targets						
5.4.1	The PLM is to develop a waste infrastructure masterplan to guide the	Waste Infrastructure Master Plan	Waste Infrastructure Master Plan	PLM	10-20	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	development of waste facilities over the next 10 – 15 years					
Goal 6: Waste education and awareness – Improved waste education and awareness						
6.1.1.	Develop an annual waste awareness calendar and maintain a record of all waste awareness activities undertaken	Twelve (12) waste awareness calendar ,	Number of waste awareness campaigns	PLM	Annual	To be done internally
6.1.2.	<ul style="list-style-type: none"> Adequate & relevant Waste awareness campaigns are to be undertaken by trained and experienced personnel. Undertake clean-up campaigns in areas 	A dedicated & Trained/ skilled municipal personnel	Number of waste awareness campaigns	PLM	0-1	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	where litter and illegal dumping is prevalent. These can be undertaken in association with local schools, environmental organisations or communities and used as waste awareness campaign					
Goal 7: Institutional functioning; Human & Financial Resources Management						
Objective 7.1. The Waste Management Department has sufficient well capacitated employees to allow for the waste management function to be actioned effectively and for the IWMP to be implemented						
7.1.1.	The PLM 's Waste Management Department's organogram is to be	Reviewed organogram, with sufficient personnel	Organogram with completed positions	PLM	Annually	N/A

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	reviewed to determine whether sufficient positions are listed to allow implementation of this IWMP. All key positions are to be filled					
7.1.2.	Dedicated employees for waste education and awareness to be appointed. Key performance indicators (KPIs) to be included in their formal job descriptions	Training schedule developed with training needs for employees at different levels identified.	Skilled employees	PLM	1-3	N/A
7.1.3	Implementation of the IWMP to be added as KPIs to the Waste Manager or supervisors performance evaluation criteria.	Waste Management Officer – KPI has IWMP implementation	Updated KPI's	PLM	Annually	N/A

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Objective 7.2.: Continuous Improvement financial sustainability of waste management in PLM						
7.2.1.	<ul style="list-style-type: none"> • Allocate more resources for waste management from existing budget and other sources of funding. • Identify funding sources for capital projects (e.g. Integrated Development Grant (IDG) and motivation of waste projects in IDP and other budgeting processes. • Engage with DFFE / LEDET concerning funding model. Capital projects (e.g. Municipal Infrastructure Grant 	<ul style="list-style-type: none"> • To have a budget that address all the equipment required by 2025/2026 • Establish a funding database and develop proposals to attract potential funders and partners for IWMP implementation. 	Relevant Budgets & proposals	PLM	1-3	To be done internally

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	(MIG) and motivation of waste projects in IDP and other budgeting processes					
Goal 8: By-laws and enforcement of by-laws – Establish effective compliance with and enforcement of the Waste Act.						
Objective 8.1.: Review and develop appropriate waste management by- laws based on proposed new goals & objectives						
8.1.1.	<ul style="list-style-type: none"> Develop appropriate and enforceable waste management by-laws that will protect the environment and enhance the municipality's waste management practices. Approve, publish, and implement the by-laws. 	Approved Waste by-laws	Reviewed, updated and Gazetted Waste by-laws	PLM	0 – 1	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
8.1.2.	Ensure that sufficient, dedicated staff are in place to enforce the by-laws	Appoint dedicated staff to enforce the by-laws	A dedicated team for the enforcement of buy-laws	PLM	1 – 3	OPEX

11. IMPLEMENTATION PLAN

The following section contains an implementation plan. The implementation plan outlines the following per project:

- Goal and objective
- Action requires
- Indicator / target
- Project priority;
- Timeframes;
- Anticipated budget;

Waste Management Officer

The successful execution of the IWMP will heavily depend on the municipality to formally designating a competent, well-equipped, and suitably qualified Waste Management Officer (WMO), and a supporting team. As previously mentioned in this document, according to the Waste Act, it is obligatory for Local Municipalities (LMs) to designate a WMO, and it is a key priority for the municipality to comply with this requirement. The responsibilities and duties of a WMO are also outlined within the report.

Moreover, it is believed that a sufficiently skilled WMO could effectively address many of the identified issues and tasks without the need to resort to outsourcing to external service providers or consultants.

The proposed implementation plan is outlined in Table 34.

Table 34 : Implementation plan

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Goal 1 : Waste collection provision services – Ensure the effective and efficient delivery of waste services						
Objective 1.1:Expand waste collection services (Supply of refuse bags, bins, Contracts with transporters.)						
1.1.2.	Develop programme to expand services to other areas within the municipality.	Implement collection routes and frequency , and allocate budget.	Revised collection schedule which improves efficiency.	PLM	Annually	OPEX
Objective 1.2: Provision of efficient and functional Waste management fleet and equipment- Ensure the effective and efficient delivery of waste services. The waste management fleet is sufficient to continue to provide a good waste collection service and there are backup vehicles available when required						
1.2.1.	Develop and implement a waste management fleet replacement plan in order to ensure that vehicles are	A fleet replacement policy which considers age, kilometres, and	A fleet replacement plan	PLM	Annually	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	timeously replaced and operate efficiently.	maintenance, repair and fuel costs. NB: The fleet management and scheduling is not under the management of PLM waste department				
1.2.2.	Review level agreements with sub- contractors and establish waste service level agreement policy for the PLM and for sub- contractors.	Updated service level agreements	Updated service level agreement	PLM	Annually	OPEX
Objective 1.3: increase and improve the collection of waste In rural areas,						
1.3.1.	Undertake a route planning exercise in order to ensure that the most economic	Implement collection routes and frequency , and allocate budget	Collection route plan	PLM	1 – 3	

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	collection route is followed by the waste collection fleet.					
1.3.2.	Develop buy-back centres or transfer stations in rural areas, (or areas that are a long distance from the landfill site)	Operational transfer centres	Construction of the Molepo, Ga-Maja and Chuene Transfer stations	PLM	1-3	A capital Budget has already been set (IDP 24/25)
		Operational Buy-back centre ,	A plan for Rehabilitation/ re-commissioning of the Mankweng Buy-back centre plan	PLM	1-3	R2 000 000
Goal 2 : Waste recycling - Increased waste minimisation and recycling						
Objective 2.1: . Increased diversion of waste from landfills.						

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
2.1.1.	Promote a greater participation of households in the separation at source programme and should raise awareness around what materials can be recycled in order to minimise contamination.	<ul style="list-style-type: none"> At least 50% of the residential & business must have a waste management plan, with a specific focus on separation at source 	Develop a circular economy, (including a Separation at sources) master plan	PLM, CDM, LEDET & private sector	1-3	
2.1.2.	Implement drop-off zones , for recyclables in public places	<ul style="list-style-type: none"> Have a minimum of 1 drop off zone, in public spaces Colour coded bins in public places to ensure separation of waste at source 	<ul style="list-style-type: none"> Drop -off zone database Increased number of skip bin in public drop off places 	PLM	0-1 years	R 1 000 000
2.1.3	Enable an environment for local recyclers to participate and grow in the	<ul style="list-style-type: none"> Increase in number of local recyclers 	A revised list of registered formal recyclers and	PLM, CDM, LEDET		OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	Recycling / circular economy sector	<ul style="list-style-type: none"> Decrease in number of waste sent to landfill 	informal ,in all the landfills & transfer stations under PLM			
Objective 2.2 : Increased diversion of organic waste from landfills						
2.2.1	Increase the diversion of organic waste from the landfill	Develop an organic waste plan and align it with National organic waste composting strategy.	An organic waste composting plan	PLM , LEDET & private sector	1-3	OPEX
2.2.2.	Awareness Programme For Household And School Composting Programmes.	Education & awareness plan , that includes organic waste recycling	Education & awareness plan , that includes organic waste recycling	PLM	1-3	To be undertaken internally
Goal 3: Waste Management Facilities: Ensure Effective Management of Landfill Sites						
Objective 3.1.: sufficient landfill space for Weltevreden landfill						

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
3.1.1.	Ensure there is sufficient landfill space for Weltevreden landfill	An extension of the landfill.	An extended landfill	PLM	0-1	OPEX
Objective 3.2: Plans are in place to address the municipality 's growth rate as well as accommodate the clusters that are far from the Weltevreden landfill site ,						
3.2.1	Ensure there are plans in place to construct a new landfill site , that's economically viable for the	A new landfill site for the Mankweng/ Sebayeng/ Dikgale cluster	Documented plans to construct new landfill, with allocated budget	PLM	5-10	OPEX
Objective 3.3.: Decreased land-fill waste by 30% volume within 5 years through the 3R's (waste reduction, re- use, recycling) and alternative treatment						
3.3.1.	Implementation of a separation at source programme in households	<ul style="list-style-type: none"> A circular economy (including Separation at source) master plan Awareness campaigns 	Separation at source plan	PLM , LEDET & private sector	1-3	EPR schemes (PRO's)
Goal 4: Waste management information systems - Effective waste information management and reporting						

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Objective 4.1 Effective internal management of waste related data						
4.1.1.	All municipal landfill sites are registered and reported on the SAWIS	Available SAWIS data	Updated SAWIS data	PLM	0-1	To be done internally
4.1.3.	Ensure that the waste information system feeds into the government WIS (waste information system) and meets the requirements of the National waste management strategy	Available SAWIs data	Updated SAWIS data	PLM	0-1	To be done internally
Goal 5: IWMP implementation and monitoring						
Objective 5.1: Develop IWMP to include guidelines on implementation, recommendations, Key performance indicators and responsibilities						
5.1.1.	Development of an IWMP, which will firstly be approved by council and	An endorsed IWMP	An endorsed IWMP	PLM & LEDET	0-1	Budget by LEDET

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	thereafter endorsed by the MEC,					
Objective 5.2.: Promote Integrated Waste Management Planning.						
5.2.2	Identify waste types within the PLM that require dedicated waste management protocols (e.g. diapers, Hazardous waste).	A hazardous waste data-base , and monitoring plan	hazardous waste management database	PLM & LEDET	0-1	OPEX
5.2.2.	Public- Private Partnerships – Explore opportunities for public-private partnerships to enhance waste management services. Collaborate with private entities for waste collection, recycling, and other related	Integration of the private sector (and other industries) into the implementation of the IWMP ,(and other master plans that will be developed by the	Public- Private Partnerships in the IWMP	PLM. CDM & LEDET	0-1	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	activities, leveraging external expertise and resources	municipality or the province)				
Objective 5.3. Establish a Local Municipal Environmental Forum and participate in the District Municipal Environmental Forum.						
5.3.1.	WMO to continue participating in the Local and District Environmental Forum: Waste Sub-Committee quarterly meetings.	Attendance of district or regional Waste management meetings	Waste committee proof of attendance & minutes	PLM	On-going	OPEX
5.3.2.	Establish environmental community clean-up clubs in the municipality	Active Environmental club in the municipality	Awareness plan/ schedule	PLM	0 -1	OPEX
Objective 5.4. Plans are in place to guide the development of waste management infrastructure which is required to meet national and provincial waste diversion targets						

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
5.4.1	The PLM is to develop a waste infrastructure masterplan to guide the development of waste facilities over the next 10 – 15 years	Waste Infrastructure Master Plan	Waste Infrastructure Master Plan	PLM	10-20	OPEX
Goal 6: Waste education and awareness – Improved waste education and awareness						
6.1.1.	Develop an annual waste awareness calendar and maintain a record of all waste awareness activities undertaken	Twelve (12) waste awareness calendar ,	Number of waste awareness campaigns	PLM	Annual	To be done internally
6.1.2.	<ul style="list-style-type: none"> Adequate & relevant Waste awareness campaigns are to be undertaken by trained 	A dedicated & Trained/ skilled municipal personnel	Number of waste awareness campaigns	PLM	0-1	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	<p>and experienced personnel.</p> <ul style="list-style-type: none"> Undertake clean-up campaigns in areas where litter and illegal dumping is prevalent. These can be undertaken in association with local schools, environmental organisations or communities and used as waste awareness campaign 					
Goal 7: Institutional functioning; Human & Financial Resources Management						

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
Objective 7.1. The Waste Management Department has sufficient well capacitated employees to allow for the waste management function to be actioned effectively and for the IWMP to be implemented						
7.1.1.	The PLM 's Waste Management Department's organogram is to be reviewed to determine whether sufficient positions are listed to allow implementation of this IWMP. All key positions are to be filled	Reviewed organogram, with sufficient personnel	Organogram with completed positions	PLM	Annually	N/A
7.1.2.	Dedicated employees for waste education and awareness to be appointed. Key performance indicators (KPIs) to be included in their formal job descriptions	Training schedule developed with training needs for employees at different levels identified.	Skilled employees	PLM	1-3	N/A

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
7.1.3	Implementation of the IWMP to be added as KPIs to the Waste Manager or supervisors performance evaluation criteria.	Waste Management Officer – KPI has IWMP implementation	Updated KPI's	PLM	Annually	N/A
Objective 7.2.: Continuous Improvement financial sustainability of waste management in PLM						
7.2.1.	<ul style="list-style-type: none"> Allocate more resources for waste management from existing budget and other sources of funding. Identify funding sources for capital projects (e.g. Integrated Development Grant (IDG) and motivation of waste 	<ul style="list-style-type: none"> To have a budget that address all the equipment required by 2025/2026 Establish a funding database and develop proposals to attract potential funders and partners for IWMP implementation. 	Relevant Budgets & proposals	PLM	1-3	To be done internally

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	<p>projects in IDP and other budgeting processes.</p> <ul style="list-style-type: none"> Engage with DFFE / LEDET concerning funding model. Capital projects (e.g. Municipal Infrastructure Grant (MIG) and motivation of waste projects in IDP and other budgeting processes 					
Goal 8: By-laws and enforcement of by-laws – Establish effective compliance with and enforcement of the Waste Act.						
Objective 8.1.: Review and develop appropriate waste management by- laws based on proposed new goals & objectives						
8.1.1.	<ul style="list-style-type: none"> Develop appropriate and enforceable waste management by-laws that will protect the 	Approved Waste by-laws	Reviewed, updated and Gazetted Waste by-laws	PLM	0 – 1	OPEX

No.	Action / objective	Target	Key performance indicator	Responsible department	Time frame (years)	Budget
	environment and enhance the municipality's waste management practices. <ul style="list-style-type: none"> • Approve, publish, and implement the by-laws. 					
8.1.2.	Ensure that sufficient, dedicated staff are in place to enforce the by-laws	Appoint dedicated staff to enforce the by-laws	A dedicated team for the enforcement of buy-laws	PLM	1 – 3	OPEX

12. IMPLEMENTATION INSTRUMENTS

Implementation instruments, refer to the practical tools and mechanisms employed to execute and realize the strategic goals and objectives defined in the plan. These instruments encompass a range of elements such as partnerships with relevant entities, formulation of legislative frameworks, development of economic measures, and establishment of a financial plan. Each of these instruments plays a pivotal role in translating the IWMP from a conceptual framework into tangible actions on the ground. The collaborative involvement of stakeholders ensures that these instruments are tailored to the specific needs and dynamics of the municipality, thereby facilitating effective and sustainable waste management practices.

The implementation instruments encompass several key components vital for the successful execution of the Integrated Waste Management Plan (IWMP). These include:

- 1. Partnerships:** Involves collaborations and alliances with external entities, organizations, or community stakeholders to enhance the collective effectiveness of waste management initiatives.
- 2. Legislative Instruments:** Involves the development and enforcement of by-laws and regulations to establish a legal framework for waste management practices, ensuring compliance and accountability.
- 3. Funding Mechanisms:** Entails the identification and establishment of financial resources and mechanisms to support the implementation of the IWMP. This includes budget allocations, grants, and other financial instruments.
- 4. Implementation Plan:** Comprises a detailed and comprehensive roadmap outlining specific actions, responsibilities, and timelines for achieving the goals and objectives set forth in the IWMP. It serves as a guiding document for the step-by-step execution of the waste management plan.

These implementation instruments collectively form an integrated strategy for addressing waste management challenges, ensuring a systematic and coordinated approach to achieve the desired outcomes outlined in the IWMP. They play a crucial role in facilitating effective waste management practices and promoting sustainable solutions within the community.

12.1. PARTNERSHIPS

Establishing partnerships is recognized as a crucial mechanism for delivering the necessary services and facilities integral to the Municipal Integrated Waste Management Plan (PLM IWMP). The expenses and requisites associated with a sustainable waste management system are substantial, necessitating contributions and engagement from diverse stakeholders. Therefore, it becomes imperative for municipalities to foster collaborations with various stakeholders, aiming to sustain and advocate for sound waste management practices among all community members. A spectrum of partnerships, encompassing Public-Public Partnership, Public-Private Partnership, and Public-Community Partnership, can be forged to achieve these objectives. Descriptions of these partnerships are detailed below.

12.1.1. PUBLIC-PUBLIC PARTNERSHIPS

Public-Public Partnerships (PUP) refer to collaborations and alliances formed between public entities, such as government agencies, local authorities, or public institutions. In the context of waste management, this type of partnership involves cooperation between different public bodies at various levels, such as municipal, regional, or national, to collectively address and manage waste-related challenges. Public-Public Partnerships aim to leverage shared resources, knowledge, and expertise to enhance the efficiency and effectiveness of waste management practices and initiatives. These partnerships often contribute to the development of comprehensive and coordinated strategies for waste reduction, recycling, and disposal, ensuring a unified approach to address community needs and environmental concerns.

Collaboration and support can be sought through established connections with public institutions. Instances of such existing relationships include:

- LEDET - compliance with environmental legislation and EIA regulations, licensing of landfills and other waste activities, quarterly Environmental Forum (EQM)
- DWS – compliance with water legislation and regulations including sewage treatment facilities, cemeteries, catchment management etc.
- DFFE – Extended Public Work Programme (EPWP).
- DFFE- Chemicals and Waste Management.

- Waste Bureau - One of its functions is to support and advice on the development and implementation of Industry Waste Management Plans.

Additional prospects for collaboration and knowledge-sharing could involve partnering with other municipalities in Limpopo that have operational waste management departments.

12.1.2.PUBLIC-PRIVATE PARTNERSHIPS

A Public-Private Partnership (PPP) is a collaborative arrangement between a public-sector institution or organization and a private company or party. In this partnership, the private entity assumes the financial risks associated with the project, covering capital costs, facility design and construction, as well as operational expenses. While the public entity typically retains ownership of the land, the fixed assets are funded and sponsored by the private entity, eventually transitioning into state property. This arrangement allows for shared responsibilities and resources, leveraging the strengths of both sectors to achieve project success.

Few existing public-private partnerships are currently in place that are pertinent to waste management in PLM. Recognized partners include:

- Private Waste management and Recycling companies

Establishing partnerships with the private sector is crucial for the effective implementation, especially in waste minimization, reuse, and recycling initiatives. Numerous commercial entities in Limpopo are involved in the recycling or reclamation of various types of waste.

The following solutions must be implemented to ensure to strengthen effective private partnerships :

- Continuous roll-out and implementations of public interventions such as operation Phakisa, the DFFE's Recycling Enterprise Support Programme, and the Waste Bureau This programmes must also have a monitoring and evaluation element to ensure progress and growth of the organisations supported

- PRO's and EPR schemes - PROs and EPR schemes play vital roles in supporting the public sector in waste management by shifting the responsibility for waste from municipalities to producers and manufacturers. PROs and EPR schemes alleviate the financial and operational burdens on the public sector by shifting responsibility to producers. By promoting sustainable practices, investing in infrastructure, and encouraging waste reduction, these initiatives contribute significantly to effective waste management. Examples of PRO's that must participate include:
 - PETCO
 - The glass recycling company
 - SAPPI
 - Polyco
 - Consol
- Local recyclers need enhanced empowerment to ensure the establishment and maintenance of effective systems.
- Other recycling organisations include:
 - PRO Alliance
 - National Recycling Forum
 - Glass recycling association of South Africa
 - Paper recycling Association of South Africa
 - National Oil Recycling Association of South Africa
 - Rose Foundation

12.1.3.PUBLIC-COMMUNITY (NGO/CBO) PARTNERSHIPS

This collaboration involves community members receiving the service actively participating in the partnership with the public entity providing the service. A common illustration in waste management is the involvement of community-based contractors in recycling programs. This includes tasks such as collecting recyclables separated at the source. Opportunities for collaboration regarding community-based waste management programs are potential with the following organizations:

1. South African Local Government Association (SALGA):

- SALGA offers support across various disciplines, including waste management. PLM can actively engage with SALGA to participate in and derive benefits from their extensive programs.

2. Clean City Campaign (CCC):

- CCC encompasses the Recycling Forum and brings together key stakeholders, including councillors, private companies, and NGOs. PLM has the opportunity to collaborate and contribute to this platform, fostering a collective approach to waste management.

3. Institute for Waste Management South Africa (IWMSA):

- PLM can explore collaboration with IWMSA by engaging in various training programs. Joining interest groups within IWMSA, such as Collection and Transport, Landfill and Waste Treatment, and Waste Minimization and Recycling, offers PLM opportunities to stay informed and contribute to industry advancements.

12.2. legislative Instruments: Development And Enforcement Of Waste By-Law

The development and execution of Integrated Waste Management Plans (IWMPs) hinge on the enactment of appropriate municipal legislation. Municipalities possess the authority to institute by-laws, which serve to complement national and provincial regulatory frameworks. The enforcement of these by-laws is vital and can be carried out through municipal channels, such as Peace Officers, or through other designated authorities within the municipality, including Ward Counsellors.

It is strongly recommended that PLM undertakes the revision of existing by-laws (as outlined in Provincial Gazette No.2858 of 20 October 2017) and actively implements and enforces relevant provisions to address the following issues in waste management:

- Domestic waste, littering, and illegal dumping.
- Landfill site reclaimers who are residents.
- Disposal of medical waste generated by private medical institutions, such as General Practitioners (GPs) and private clinics.
- Management of industrial waste.
- Handling of commercial waste, with a specific focus on the disposal of used oils, old vehicle body parts, chassis, etc.

12.3. FUNDING MECHANISMS

The successful implementation of the PLM Integrated Waste Management Plan (IWMP) is contingent upon having adequate funds available to execute the plan. Considering the strategies identified in the gap and analysis chapter, funding will likely be essential for the following priority projects recommended:

1. Waste Management Training and Awareness Programme for Officials and Councillors:

- Funding is needed to facilitate comprehensive training programs for municipal officials and councillors to enhance their understanding and proficiency in waste management practices.

2. Waste Management Awareness Programme for the Public:

- Financial support is required for developing and executing public awareness campaigns to educate and engage the community in effective waste management practices.

3. Waste Management Awareness Initiatives for Informal Settlements and Ward Councillors:

- Funding is necessary to implement targeted awareness initiatives tailored to informal settlements, involving collaboration with ward councillors to ensure effective communication and engagement.

4. Schools Waste Awareness Programmes:

- Financial resources are needed to establish waste awareness programs in schools, fostering a culture of responsible waste management among students.

5. Capacitating Officials for the Implementation of By-Laws:

- Capacitating officials through training programs on the implementation of revised by-laws requires funding support to ensure effective enforcement and compliance.

Securing funds for these priority projects will be instrumental in advancing the PLM IWMP, promoting sustainable waste management practices, and fostering community participation and compliance.

12.3.1. FUNDING INSTRUMENTS

The Municipality will need to explore various funding sources for the proposed goals

and targets within the Integrated Waste Management Plan. Funding mechanisms can be sourced from both internal and external avenues, encompassing operational budgets, government departments, private sector collaboration, and international funders/donors.

Potential donor/ capital funding sources for the Municipality include:

1. Municipal Infrastructure Grant (MIG):

- A funding source aimed at supporting municipal infrastructure projects.

2. Department of Environment, Forestry and Fisheries (DEFF):

- Offers various programs and partnerships related to environmental initiatives.

3. Department of Public Works (DPW):

- Extended Public Works Programme (EPWP) provides funding for labour-intensive construction methods.

4. Department of Trade and Industry (DTI):

- Various programs and schemes that can contribute to waste management goals.

5. Industrial Development Corporation (IDC):

- Green Energy Fund from IDC can be explored for environmentally focused projects.

6. Royal Danish Embassy (DANIDA):

- Represents a potential international donor source.

7. World Bank:

- An international financial institution that may offer support for waste management initiatives.

8. United Nations Development Programme:

- UNDP can be a valuable source for funding projects aligned with sustainable development goals.

9. DBSA- Development bank of Southern Africa

- DBSA can be a valuable source for funding projects aligned with sustainable development goals and the green economy

10. CSIR- Council for Scientific and Industrial Research

- The CSIR can play a role as a source for funding projects aligned with sustainable development goals and the green economy through directed and multidisciplinary research and innovation to accelerate socio-economic prosperity around South Africa.

13. REPORTING ON IMPLEMENTATION, MONITORING AND REVIEW

Section 13 (3) of Waste Act notes the requirement in Section 46 of the Municipal Systems Act (32 of 2000) for municipalities to compile annual performance reports. Section 13 also specifically requires that progress reports must consider implementation of the IWMP including:

- The extent to which the plan has been implemented during the period;
- The waste management initiatives that have been undertaken during the reporting period;
- the delivery of waste management services and measures taken to secure the efficient delivery of waste management services, if applicable;
- The level of compliance with the plan and any applicable waste management standards;
- The measures taken to secure compliance with waste management standards;
- The waste management monitoring activities;
- The actual budget expended on implementing the plan;
- The measures that have been taken to make any necessary amendments to the plan; These annual reviews should culminate in a formal review report which should be made available to the provincial authorities.

A full review of the IWMP should be undertaken in 2030, however intermediate reviews may also be required if the status quo of waste management changes significantly before 2029.

14. CONCLUSION

Integrated Waste Management Plan (IWMP) for Polokwane Local Municipality (PLM) represents a comprehensive and strategic framework designed to address the municipality's waste management challenges while ensuring alignment with provincial and national waste management objectives. A detailed Situational Analysis provided valuable insights into Polokwane's waste landscape, considering factors such as demographic shifts, waste composition, and existing waste management infrastructure.

The key objectives of the IWMP for Polokwane include:

1. Ensuring the efficient and effective delivery of waste services.
2. Expanding waste minimization and recycling initiatives.
3. Strengthening the management and operation of landfill sites.
4. Establishing robust waste information management and reporting systems.
5. Implementing, monitoring, and continuously improving the IWMP.
6. Enhancing waste education and public awareness.
7. Improving institutional capacity and operational efficiency.
8. Ensuring financially viable and sustainable waste management services.
9. Strengthening regulatory compliance and enforcement through effective by-laws.

These objectives are closely aligned with provincial and national waste management strategies, reinforcing Polokwane's commitment to an integrated and coordinated waste management approach. They encompass essential areas such as service delivery optimization, public engagement, institutional development, and legal compliance, ensuring a holistic response to the municipality's waste-related challenges.

A collaborative and participatory approach has been central to the IWMP's development, integrating stakeholder engagement at every stage. This inclusive process fosters community ownership and broad-based support, ultimately enhancing the plan's effectiveness and long-term sustainability.

To bridge existing gaps and advance waste management practices, the IWMP incorporates various implementation mechanisms, including strategic partnerships, legislative interventions, financial sustainability measures, and a structured execution plan. Key recommendations emphasize enhanced public awareness through education and training programs, improved waste management infrastructure, stricter control of illegal dumping, revision of waste tariffs, and the promotion of waste reduction, reuse, and recycling initiatives.

A robust monitoring, evaluation, and review framework is crucial to the IWMP's success. This structured system ensures that prioritized objectives are met efficiently, allowing for adaptive management and effective resource allocation. Given the dynamic nature of waste management, regular evaluations and annual reviews will be conducted to maintain the plan's relevance and responsiveness to emerging challenges. The next scheduled review will be instrumental in refining strategies, sustaining stakeholder confidence, and preventing policy obsolescence.

Ultimately, the IWMP serves as a strategic roadmap for establishing a resilient, sustainable, and well-regulated waste management system within Polokwane. Through collaboration, stakeholder participation, and adherence to regulatory standards, the municipality is committed to achieving an efficient, environmentally responsible, and future-ready waste management framework that benefits both the community and the broader ecosystem.

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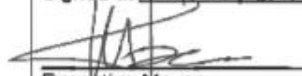
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APPENDIX A: APPOINTMENT LETTER FOR THE DESIGNATED WASTE MANAGEMENT OFFICER



I, MOSEMA JOHN MPE, in my capacity as the Executive Mayor of Polokwane Local Municipality, hereby designate FHATUWANI ADOLF MAMAILA, Acting Assistant Manager: Waste Management as the Municipal Waste Management Officer in terms of section 10(3) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

Signed at Polokwane on the 13 day of July 2023.


Executive Mayor

I, FHATUWANI ADOLF MAMAILA, in my capacity as Acting Assistant Manager: Waste Management accepts the designation as Municipal Waste Management Officer.

Signed at Polokwane on the 13 day of July 2023.


Waste Management Officer

