



MAKHUDUTHAMAGA
LOCAL MUNICIPALITY

Integrated Waste Management Plan

Mmogo re šomela diphetogo!

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DEFINITION OF TERMS

General Waste	<p>“general waste” means waste that does not pose an immediate hazard or threat to health or to the environment, and includes -</p> <ul style="list-style-type: none"> (a) domestic waste; (b) building and demolition waste; (c) business waste; and (d) inert waste; (Waste Act, 2008)
Hazardous Waste	<p>“hazardous waste” means any waste that contains organic or inorganic elements of compounds that may,</p>

	owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment; (Waste Act, 2008)
Landfill site / Waste Disposal Facility	“waste disposal facility” means any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise; (Waste Act, 2008)
Polluter Pays Principle	“Polluter pays principle” means those responsible for environmental damage must pay the remediation costs, both to the environment and to human health, and the costs of preventive measures to reduce or prevent further pollution and environmental damage.
Recycle (External)	"recycle" means a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material; (Waste Act, 2008)
Re-use	“re-use” means to utilize articles from the waste stream again for a similar or different purpose without changing the form or properties of the articles; (Waste Act, 2008)
Waste	"waste" means any substance, whether or not that substance can be reduced, re-used, recycled and recovered - <p>(a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of;</p> <p>(b) which the generator has no further use of for the purposes of production;</p> <p>(c) that must be treated or disposed of; or</p> <p>(d) that is identified as a waste by the Minister by notice in</p>

	<p>the <i>Gazette</i> and includes waste generated by the mining, medical or other sector, but</p> <p>(i) a by-product is not considered waste: and</p> <p>(ii) any portion of waste, once re-used, recycled and recovered,</p> <p>ceases to be waste; (Waste Act, 2008)</p>
Waste Indicator	<p>“waste indicator” allows for consistent reporting of specific activities related to a topic of concern (DEAT, 2002)</p>
Waste Minimisation Programme	<p>“waste minimisation programme” means a programme that is intended to promote the reduced generation and disposal of waste; (Waste Act, 2008)</p>

Waste Minimisation Plan	<p>“waste minimisation plan” means a systematic strategy plan intended to promote the reduced generation and disposal of waste; this will include the re-use, recycle, treatment and reduced disposal of waste</p>
Waste Stream	<p>“Waste Stream” means the total flow of waste falling under a particular waste category from activity areas, businesses units, and operations that is recovered, recycled, reused, or disposed of in landfills e.g. domestic waste, hydrocarbon waste, etc.</p>

1. INTRODUCTION

In terms of the National Environmental Management Act: Waste Act, No: 59 of 2008, Makhuduthamaga Local municipality must develop and implement an Integrated Waste Management Plan (IWMP), which outlines the management of waste generated within its area of jurisdiction. This IWMP describes the current context and overall strategy of municipal waste management for the near future.

1.1 OVERALL AIM AND GOALS

The overall objective of Integrated Waste Management is:

“To integrate and optimise waste management, in order to maximise efficiency and minimise the associated environmental impacts and financial costs, and to improve the quality of life of all South Africans”

The National Waste Management Strategy describes the objectives of IWMPs, as follows:

- I. Identify and plan for future waste management needs and requirements;
- II. Provide an integrated and holistic approach to waste management which ensures that each stage of the waste hierarchy is addressed;
- III. The IWMP with the institutional and financial capacity of the institution preparing it;
- IV. Minimise waste management costs by optimising the efficiency of the waste management system in terms of usage of infrastructure, labour and equipment; and
- V. Minimise adverse social and environmental impacts related to waste management.

In addition to these overall objectives, certain key priorities have been identified for this IWMP. These priorities are:

- I. Sustainable **protection of the environment** and public health;
- II. Provision of adequate **waste collection services for all**;
- III. **Transparency** in conflict resolution;
- IV. Achievement of a municipal **Waste Information System** which feeds information into the National Waste Information System (SAWIS) and that provides an integrated approach to waste management activities and practices;
- V. An integrated approach to **waste management regulations** or by-laws within the municipality;
- VI. Development of a holistic and integrated **environmental planning capability** that takes into account cross-cutting implications;
- VII. Effective **monitoring and enforcement** of waste management measures and regulations;

- VIII. Adherence to the *polluter pays principle*; and
- IX. Achievement of *full cost accounting* for waste services.

2. PREAMBLE:

THE NATIONAL WASTE MANAGEMENT STRATEGY

The National Waste Management Strategy (NWMS) was developed by the Department of Environmental Affairs and Tourism (DEAT) and the Department of Water Affairs and Forestry (DWAF) in 1998-99 and presents National Government's strategy for integrated waste management for South Africa. Among the priority initiatives formulated in the document, Integrated Waste Management Planning was identified as an important tool for improving the current waste situation.

The NWMS allocates responsibilities for planning for different types of waste as follows:

- I. The National Department of Environmental Affairs and Tourism (DEAT) will draft and promulgate regulations and guideline documents for integrated waste management planning of all waste types.
- II. The Provincial environmental departments will develop hazardous waste management plans and prepare provincial environmental and waste management plans that incorporate the integrated waste management plans submitted by local government and industry. These will be submitted to the Committee for Environmental Co-ordination (CEC) for approval, which will facilitate inter-provincial coordination, particularly in relation to planning for facilities for treatment and disposal of waste.
- III. Local Government will develop and submit plans for integrated general waste management to the respective provincial environmental departments. General waste includes domestic and industrial/commercial waste that is not acutely hazardous or dangerous for man or the environment.

- IV. Waste management plans for industrial waste that is disposed of at private and/or dedicated disposal facilities, will be prepared by the developers/owners and submitted to the respective provincial environmental departments.

DEFINING THE GEOGRAPHICAL AREA

1.1 Description of Municipal Area

Makhuduthamaga Local Municipality (MLM) is a Category B4 municipality that is located within the Sekhukhune District Municipality (SDM) of the Limpopo Province. In its State of Local Government in South Africa: overview report, the Department of Cooperative Governance and Traditional Affairs (COGTA 2009) describes **category B4 municipalities as municipalities which are mainly rural with communal tenure and with, at most, one or two small towns in their area.** The municipality is completely rural in nature, dominated by traditional land ownership comprises a land area of approximately 2 096.9 square meters. It is made up of 189 settlements with a population of 274 358 people and 65 217 households, which amounts to more than 24% of the District 1 076 840: Census 2011. Like most rural municipalities in the Republic of South Africa, Makhuduthamaga is **characterized by weak economic base, poor infrastructure, major service delivery backlogs, dispersed human settlements and high poverty levels**

It shares borders with Fetakgomo on the north east, Ephraim Mogale to the west, Elias Motsoaledi on the south and Lepelle Nkumpi municipality in the north. Jane Furse, the head quarter of Makhuduthamaga Local Municipality, is located 347 km North East of Johannesburg, 247km North East of Pretoria, 189km South East of Polokwane, and 70km south west of Burgersfort.

1.2 Environmental Analysis

1.2.1 BIOPHYSICAL ENVIRONMENT

Biophysical environment is inclusive of several variables discussed underneath such as climate, geology, biodiversity and heritage sites. In general, the Sekhukhune climate is highly variable in terms of rainfall intensity, duration and frequency. This exacerbates the water shortage problem, which is a key developmental constraint in the District. Makhuduthamaga municipal area is characterized by a hot climate in the Olifants River valley. The average temperature shows moderate fluctuation with average summer temperatures of 23C, as well as a maximum of 28C and a minimum of 18C. In winter, the average is 13,5C with a maximum of 20C and a minimum of 7C

1.2.2 .CLIMATE

Makhuduthamaga is susceptible to major climate conditions which can oscillate between floods and droughts. Mean average rainfall 500-800mm. Makhuduthamaga is located in the Summer Rainfall Zone of the country, and receives more than 90% of its rainfall between September to March at times extending to

1.2.3. TOPOGRAPHY

- I. The topography varies between flat and undulating slopes interrupted by koppies, a steep slope that makes the area prone to erosion.
- II. **Heritage sites within the municipality that are linked to cultural tourism:**
- III. Hlako Tisane Conservation Camp –Khoi/San Rock Art
- IV. Matjeding Fortress
- V. Manche Masemola heritage site
- VI. Musical stones- Thabampshe
- VII. Mabje Mabedi Maramaga –Leolo Mountains
- VIII. God's Foot print – Molebeledi
- IX. The God's Bed
- X. Archaeological sites
- XI. Borishane
- XII. Rain making pots

The challenge is to develop these cultural sites to increase the contribution of cultural tourism to the MLM's Gross Geographical products

1.2.4. GEOLOGY

The soil types include dolomite, limestone, iron formation, shale and quartzite. Various water sources transverse the municipal area. They flow during rainy seasons and dry out when it does not rain.

1.2.5. WATER RESOURCES

The Municipality has identified wards and villages that have wetlands that need to be preserved. Mashabela in Ward 25 and Phatantswana in Ward 06 their wetlands will be maintained and fenced during the 2013/2014 financial year.

WATER SCARCITY

Water scarcity is huge developmental challenge within the Sekhukhune District, and constraints both economic and social activity in the area. The issue is a manifestation of climate variability. However; it is also the result of a number of other factors, which include insufficient and variable rainfall, inequitable water resources management and the absence of drinking water, bulk water and irrigation infrastructure that would aid the distribution of water to rural villages.

Water scarcity affects arrange of other developmental issues in Makhuduthamaga – municipal service delivery, subsistence farming activities and commercial agriculture.

ENVIRONMENTAL MANAGEMENT

As part of environmental management the MLM has a licensed authorized landfill site, Jane Furse landfill site. However, livestock management and control is a key problem within MLM. There is a lack of fences in some crop farming areas and along main roads, which results in wandering livestock. These livestock damage crops and cause vehicle accidents along Makhuduthamaga main roads. The Municipality has Waste Management By-law which is adopted by Council.

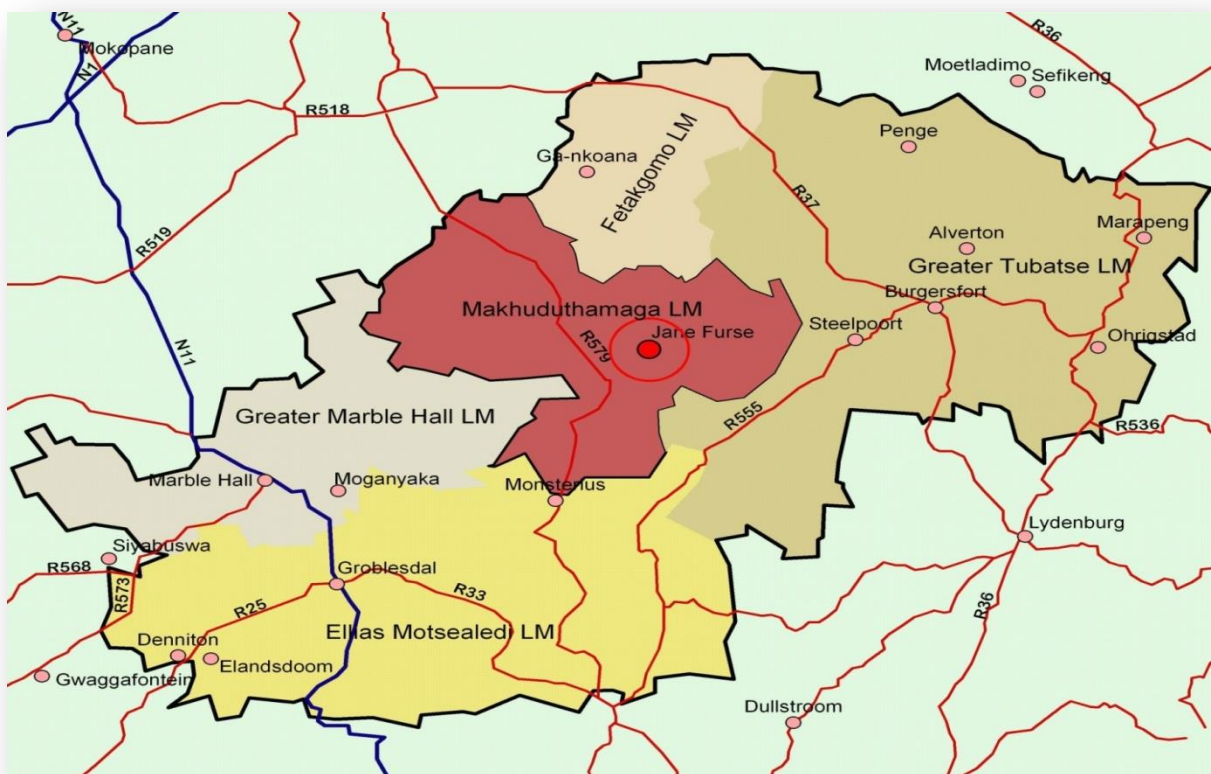


Figure1: Map showing the location of the area.

2. SITUATION ANALYSIS

DETERMINING CURRENT WASTE GENERATION AND ESTIMATING FUTURE WASTE GENERATION RATES AND QUANTITIES

2.1. LOW INCOME, HIGH DENSITY (INCLUDING INFORMAL SETTLEMENT)

Population growth	
Base population	274358
Current growth estimates per annum	0,46%
Future population estimates	274 360,3
Population distribution	
Age:	
Youth	192967
Middle age	59265
Old age	21826
Gender:	
Male	121283
Female	153076
Education:	
Primary	73745
Secondary	77415
Tertiary	35538
No schooling	87661
Employment:	
Employed	19534

Unemployed	32780
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2.2 RURAL SETTLEMENTS

Population growth	
Base population	0.00
Current growth estimates per annum	0.00
Future population estimates	0.00
Current waste generation and estimated future waste generation	
Current domestic waste generation rates per capita	0.00
Future domestic waste generation rates per capita (in 10 years)	0.00

Makhuduthamaga is a rural area with low income

3. WASTE QUANTITIES AND TYPES

WEIGHBRIDGE

Waste generation and estimates

The quantity of general waste generated in the municipality is being estimated. There is possible incorrectness in the data collected and reported from the landfill site. The landfill site has no weighbridge, the incoming waste is estimated based on number of loads/trucks, rather than the actual weighed of waste disposed. Recycled waste is not recorded when taken out from the landfill site.

DISPOSAL

In support of achieving the national goal of Zero Waste by 2022, it is necessary to legislate a ban on the disposal of organic material and recyclables at landfill sites. This will require the implementation of separation of organics from domestic refuse

source. Incineration of waste remains a controversial issue particularly from a perspective of the quality of emissions.

VOLUME DENSITY ESTIMATION SYSTEM

<i>Jane Furse Landfill Site</i>		
Waste type/streams	Waste generated per annum (tons)	Total percentages
Organic waste	400.00	2.86 %
Cans	921.00	6.58 %
Paper	3922.00	28.01 %
Glass	3000.00	21.43 %
Plastic	4000.00	28.57 %
Other	457.00	3.26 %
Total	14000.00	100.00 %

2.3.2. WASTE STREAM ANALYSIS

2.3.3.1 HOUSEHOLD WASTE

Waste generated within the Municipal households is general waste which includes amongst others food waste, tins, paper glass, cardboard, bottles and garden waste. Some medical wastes generated in households are sometimes mixed with general waste due to lack of education in waste handling methods of Health Care Risk Waste (HCRW).

2.3.3.2 BUSINESS

The business sector within the municipality includes both formal and informal traders. They normally generate recyclable waste materials e.g. plastic, cardboard, paper, tins, bottles and perishable waste from restaurants and other hospitality businesses and garden waste. The bulk of the waste is made up of paper and cut boxes which are well known recyclable materials.

2.3.3.3 HEALTH CARE RISK WASTE (HCRW)

The municipality has two hospitals, 21 clinics and private health facilities. Buhle waste is currently been appointed for the collection of HCRW in all public health facilities. Some private health facilities are also contracted with the same company for the collection of medical waste.

WASTE RECYCLING, TREATMENT AND DISPOSAL

1.1.1. STATUS QUO OF WASTE DISPOSAL FACILITIES

Jane Furse Landfill site	
Status	Licensed
Total capacity	50000.00
Used capacity	15000.00
Available airspace	35000.00

The municipality has one licensed landfill site which is situated at Madibong village ward 19. The facility was permitted in terms of section 20(1) of the Environmental Conservation Act, 1989 (Act No 73 of 1989) as a GCB⁻ site with permit number 12/11/9/D1.

I. ACCESS

There are no road signs that indicate the route and distance to the disposal site from the main road. Only one direction sign that point to the entrance of the site. Speed limit signs placed within the site.

The site is well fenced with 2.4m concrete palisade and has a lockable gate with security services that operates twenty four hours (24).

II. INFRASTRUCTURE

An office block, guard room, recycling facility and toilet facilities are available on site. No running water provided. The Service provider has been appointed for the construction of a weighbridge and drilling of boreholes

III. OPERATIONAL CHALLENGES

The site is licensed to accept general waste only but hazardous waste is sometimes illegally disposed. The municipality has appointed an external service provider for the operation of the landfill site.

There is covering and compaction of waste taking place. Internal and external audits are not conducted as per the license conditions.

2.3.2 STATUS QUO OF OTHER TYPES OF FACILITIES

Makhuduthamaga Local Municipality has no other types of facilities like drop off centres and transfer stations.

2.3.3 STATUS QUO OF WASTE RECYCLERS

The recyclers within the municipality have been formalized and the recycling forum is established. There is a database for recyclers which will be used for capacity building through recycling workshops. There are two waste minimization cooperatives which operate within the landfill site. They mainly recycle cardboard, plastic, bottles and cans. They are reclaiming waste from the cells and remove the material to the recycling workshop rather than separation at source.

There are some initiatives by individual and interested groups in the municipality though they are not registered as cooperatives.

2.4 WASTE RECYCLING AND REUSE

“Recycling of waste refers to the separation at source of recyclable materials from the general waste stream and the reuse of these materials. The objectives are to save resources as well as reduce the environmental impact of waste by reducing the amount of waste disposed at landfills. To meet these objectives, waste separation at source is proposed, as the quality of recyclable materials is higher when separated at source. In addition, recycling has the potential for job creation and is a viable alternative to inform salvaging at landfills, which is undesirable due to the problems of health and safety associated with salvaging”(National Waste Management Strategy,1999).

2.4.1 RECYCLING AND WASTE MINIMIZATION

Transformation and re use

This section of waste management requires the most attention in terms of supporting legislation. It is predicted that both national and local by-laws will require widespread

change and the introduction of new legislation that will assist with the implementation of recycling initiatives

2.4.2 WASTE MINIMIZATION

Municipal council has an obligation under the waste management framework to promote waste minimization policy, which are outlined in detail in their Waste Management Plan. The focus is firmly on diverting as much waste from landfill as possible. There are a number of ways in which waste reduction and recycling can be encouraged which includes the following:

- I. By-laws that ban recyclable material including garden waste being disposed in landfill site
- II. Provision of smaller refuse receptacles
- III. User pays refuse collection
- IV. Easily accessible drop off centers
- V. Education and community based social marketing programmes that promote recycling which the Municipality must create a database of existing recycling initiatives increased recycling is important for successful waste minimization. For recycling to succeed, Socio economic factors such as economic growth, population growth and the value, size of recyclables and distance of recycling markets must be considered in a waste minimisation strategy.

Criteria for Makhuduthamaga Municipality adopting waste minimisation policy should be influenced by the Polokwane resolution which advocates "Zero waste to landfill by 2022" The declaration also emphasis the need to reduce generation and disposal by 50% and 25% respectively by 2012.

Development of waste minimisation policy for Makhuduthamaga municipality shall be the key to accurate data on the current generation and recovery of waste which will enable the municipality to make proper assessment on whether it can meet the target set Polokwane declaration on the 28th September 2001.

2.4.3. SMALL AND RURAL COMMUNITIES

Small and rural communities find recycling difficult to carryout successfully due to a range of logistical problems and a lack of skills and initiatives. Recyclers and businesses participating in these communities tend not to be sustainable, which

results in stockpiles of unused recyclables that impact negatively on the aesthetics of their area of operation. The cost of transporting recyclables to the major centers is often very expensive in so much that transportation costs exceed the value of the material transported and making it commercially unviable. Alternative use of recyclables needs to be considered. Makhuduthamaga Municipality is economically growing which requires the appointment of the waste minimization official who will assist with possible and practical waste minimisation activities/initiatives.

2.4.4 SEPARATION

The introduction of separation at source for waste should be considered based on the following:

- I. Development of By-laws, which allow the municipality to implement waste separation at source.
- II. Implementation of education and awareness programmes.
- III. Introduction of tariff reduction incentives to consumers who separate at source

2.4.5 WASTE MINIMISATION PROGRAMS

- I. Drop –off and Buyback centers
- II. Waste exchange
- III. Source reduction
- IV. Cleaner production
- V. Reclaiming at landfill sites
- VI. Composting

2.5 STATUS OF WASTE COLLECTION SERVICES

The waste collection service is performed by Makhuduthamaga Local Municipality. There is a partial formal refuse removal service rendered by the municipality. The waste collection service covers the following villages: Moratiwa shopping complex, Hlalanikahle, Vleschboom, Phokoane, Glen Cowie, Jane Furse, Schoonoord, Apel Cross, Nebo, Masemola, Setlaboswane, Marishane, Mamone, Manganeng, and Malegale. The

following waste collection resources has been purchased: HC250 & M160 Compactor trucks, 2 skip loader trucks, and 35x 6m 3 bulk waste containers, 200 x 240L wheeled bins and 3 years contract for the supply of refuse bags. The skips are distributed in all public areas e.g. taxi ranks, shopping complexes, hospitals and in some illegal dumps. In all shopping areas, collection is conducted on daily basis. There is no house to house collection. These forced private contractors to render house to house collection whereby community members are paying on monthly basis i.e. Glen Cowie & Phokoane Makoshala. At Tjatane and Maila Mapitsane community members are volunteering to do street cleaning and house to house collection without revenue generation. The municipality is supplying the community of Tjatane and Maila Mapitsane with refuse bags and transportation of the collected waste.

LOW INCOME, HIGH DENSITY (INCLUDING INFORMAL SETTLEMENTS)

Item	Total number
Households	65217
Serviced households	6369
Unserviced households	58848
Indigent households	Indigent register still under review
Unserviced indigent households	0

FINANCING OF WASTE MANAGEMENT

2.5.1. BUDGET: INCOME AND EXPENDITURE

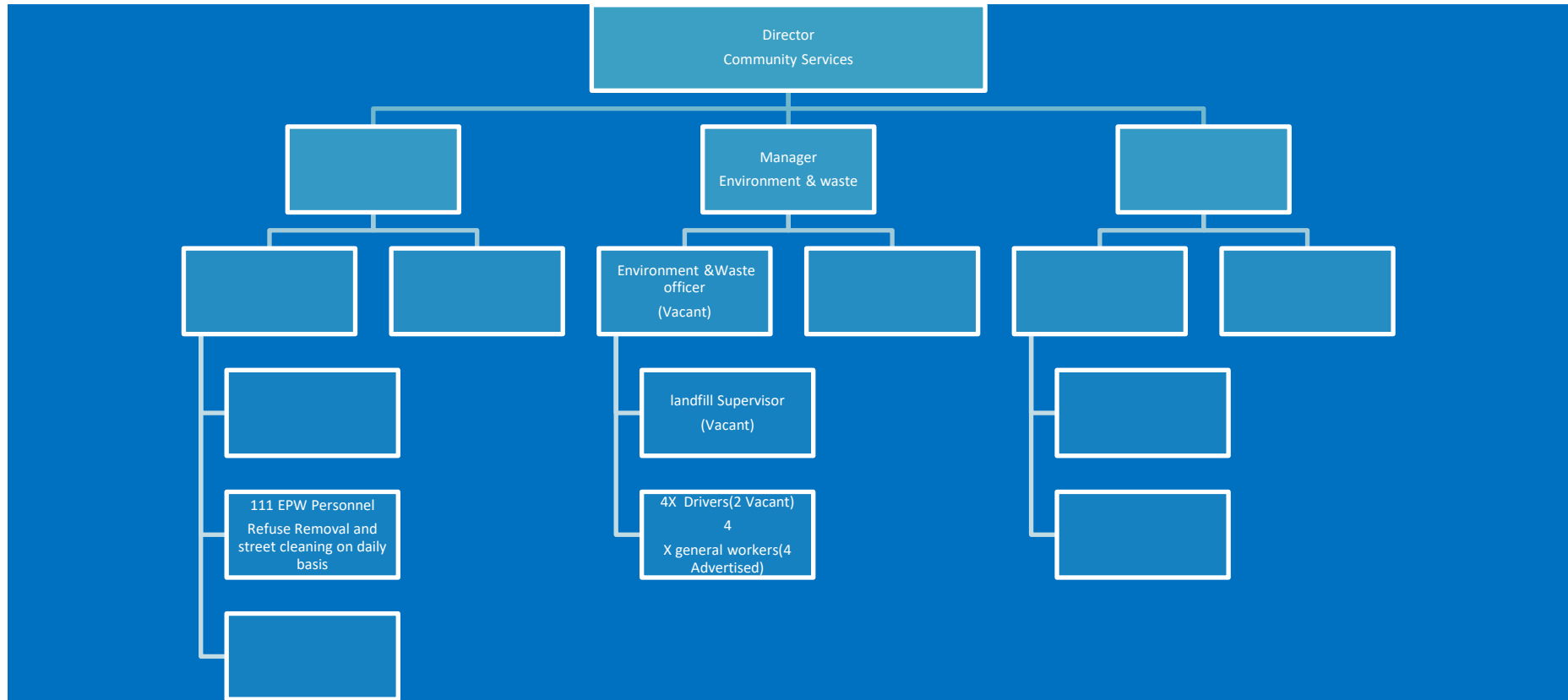
Item	Amount
Collection	
Capex-purchase (vehicles)	R 00
Maintenance	R 0.00
Fuel	R 0.00
Receptacles	R
General	R 0.00
	R 0.00
Subtotal	R 2500000.00
Governance	
Staff (remuneration)	R 793596.00
Education and awareness	R 200 000.00
IWMPS	R 0.00
By-laws	R 0.00
	R 0.00
Subtotal	R 9935.96
Disposal	
Disposal sites	R 3100 000.00
Acquisition of land, equipment	R 0.00
Regulatory compliance, EIA's and licence	R 0.00
Subtotal	R 3100 000.00
Total	R 40935.96

2.6.2. REVENUE SOURCES

Source	Amount
Funding sources	R 0.00
MIG Funding	R 0.00
Equitable share funding	R 40935,96
Revenue from waste disposal fees	R 0.00
Total	R 40935,96

2.6.4. Organisational and institutional matters

Organogram:



EQUIPMENT

The equipment's that are utilized by Makhuduthamaga Local Municipality for waste management are as follows:

COMPACTORS

Vehicle Registration No	Vehicle Type	Driver
CXB 396 L	NISSAN CW 26370	Maloma M.W
DTV 597 L	NISSAN UD 90	

SKIP LOADERS

Vehicle Registration No	Vehicle Type	Driver
DBX 288 L	NISSAN UD 85	Moshabane M.F
DCL 0661	NISSAN UD 85	

3. DESIRED END STATE

3.1 MAKHUDUTHAMAGA LOCAL MUNICIPALITY (MLM) INTEGRATED DEVELOPMENT PLAN (IDP)

The Integrated Development Plan provides the basis for the managed development of the MLM and will be used by the political, business and community leadership to determine activities and operational plans and guide the allocation of resources until and beyond 2019. The IDP is the foremost plan in pursuance of the version 2020.

3.2 THE PLANNING PRINCIPLES FOR INTEGRATED WASTE MANAGEMENT IN THE MLM

The municipality strategic objective is sustainable livelihoods through environmental management. The overall is to set out the vision, principles and strategic goals as well as objectives that Makhuduthamaga Municipality will apply to achieve integrated and environmentally sustainable waste management. The main objective of the Integrated Waste management is to move away from uncontrolled and uncoordinated waste management.

Such a holistic and integrated approach extends over the entire waste hierarchy covering the avoidance, reduction, reuse, recycling, collection, transportation, recovery, treatment and final waste disposal. The municipality supports the development and adoption of appropriate and realistic targets requiring reduction and minimization in waste generation of all forms of waste. These include separation at source.

The municipality recognizes the need for the development and implementation of waste exchange and waste minimization clubs to facilitate the avoidance, substitution, recovery, reuse and recycling of waste between business entities and organizations.

3.3 STRATEGIC INTENT OF MUNICIPALITY'S INTEGRATED WASTE MANAGEMENT PLAN

3.3.1 The objectives of the IWMP include the establishment of waste minimization practices in the municipality and ways of strengthening the following:

- I. Establishment of the current lifespan and air space of general waste landfills with current status quo and setting for improved waste minimization
- II. Establishment of the volumes of waste currently deviated from landfills through formal and informal means; supporting the Strategy for Sustainable Development, motivation, prevention and minimization of general waste generation
- III. Estimate waste quantities and future generation rates with current status quo in waste management; identification of significant general waste streams and innovate ways of prevention and minimization
- IV. Promotion of job creation through various waste minimization initiatives.

3.3.2 THE OBJECTIVES OF THE IWM ARE THE FOLLOWING:

- I. Integrated Waste Management Planning
- II. Roles and Responsibilities
- III. Waste Information Management
- IV. Alignment with National Legislation
- V. Capacity Building
- VI. Institutional development
- VII. Selected Waste Streams
- VIII. Funding

- IX. Avoidance and Substitution
- X. Waste Reduction and Minimization
- XI. Waste Recovery and Recycling
- XII. Waste Collection and Transportation
- XIII. Waste Processing
- XIV. Waste Treatment and Disposal
- XV. Environmental management

3.4 IWMP FIVE YEAR PLAN SET WITH ANNUAL OBJECTIVES

KPA	INDICATOR	OUTPUT	STRATEGY	TARGET	BUDGET
Develop Integrated waste management plan	Integrated waste management plan developed	Improved waste management services	LEDET and the municipality		internal
Review waste management By-laws	Waste Management By-laws reviewed	Improved waste management services			
Develop and implement communication awareness program	Communication and awareness program developed	Improved understanding on environmental management amongst the community	EPWP beneficiaries to conduct awareness		
Conduct waste	Waste minimization	Reduced volume of	Workshop and		

minimization program	program developed	waste within the communities	capacitate local recyclers and promote separation at source		
Poverty alleviation program in waste	Number of work opportunities created	Poverty alleviated from the disadvantaged families	Extension of services to all villages through EPWP		
Industries/Local business to prepare waste minimization plans	Waste minimization plans submitted for approval	Improved sorting, handling and waste storage at source	Local business and industries to be engaged		Stakeholders mobilization
Recyclers to register on municipal database	Recyclers registered	Update register for recyclers	Advert on local newspaper		
Coordination and allocation of recyclers accordingly	Recyclers are coordinated and allocated accordingly	Improved recycling services	Recyclers to be provided with operational permit and allocation with area of operation.		
Establishment of recycling forum	Forum established	Improved waste management	Terms of reference to be developed		
Capacitate waste management unit and appointment of additional	Waste management fully capacitated	Improved waste management systems and enforcement on	Submission for council approval		

staff		non-compliance			
Provision of Personal Protective Equipments(PPE)	Employees provided with PPE	Employee's safety	Identification and procurement of suitable PPE		
Training of employees	Training provided to the employees	Capacity building	Conduct need analysis for skills development		
Install weighbridge	Weighbridge installed	Quality measures of volume on generated	outsource		

Goal 1: Promote recycling and recovery of waste

Objectives	Targets	Activities	Timeframe
Develop an interim strategy to separate at source	Co-ordinate waste minimization and recycling.	Strategy development	2019/2020
Implementation of separation at source	04	Supply recycling bins.	2019/2020

Goal 2: Ensure the effective and efficient delivery of waste services

Objectives	Targets	Activities	Timeframe
Appropriate and sufficient capacity exists to manage skips. Placement of skips properly managed and controlled.	Skips are properly marked for the type of waste. Levels of different settlements/waste generators.	Develop appropriate schedule for collection. Conduct analysis on the needs.	2019/2020
Introduce kerbside collection services	780	Once per week	2019/2020
Develop and implement collection record keeping.	Establish a database regularly.	Develop strategy to maintain and monitor. Carry out regular waste stream	2019/2020

		analysis.	
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Goal 3: Growing the contribution of the waste sector to the green economy			
Objectives	Targets	Activities	Timeframe
Stimulate job creation in the waste sector.	57 new jobs created in the waste sector.		2019/2020
Broaden participation BY SMMEs and marginalised communities in the waste sector	Number of SMMEs and cooperative participating in the waste sector.	Support of SMMEs and cooperatives.	2019/2020

Goal 4: Ensure sound budgeting and financial management for waste services			
Objectives	Targets	Activities	Timeframe
Ensure full cost accounting for waste services.	Analysis of allocation of resources and address Utilisation effective.	Access EPWP grants for labour intensive programmes recycling and collection. Conduct a cost benefit exercise.	2019/2020

Implement cost reflective and volumetric tariffs.	Full cost recovery	Collect revenue	2019/2020
Review and revise rates collection strategy.	Implement the rates collection strategy.	Explore alternative funding streams for infrastructure development.	2019/2020

Goal 6: Education and awareness

Objectives	Targets	Activities	Timeframe
Develop an awareness raising strategy focusing on communication strategy.	Focus on community interested parties involve ward committee.	Use media to inform residents of recycling and waste collection and disposal programs.	2018/2019
Educate communities about the laws	Encourage schools on clean up campaigns.	Explore motivational strategies and system, recognition and wards.	2018/2019

Goal 7: Ensure effective compliance with and enforcement of the waste act

Objectives	Targets	Activities	Timeframe
Review/revise laws to ensure that suitable penalties are imposed for non-compliance.	Educate public about laws.	Dedicate resource/staff to enforce by laws.	2019/2020
Ensure that the laws are comprehensive.	Public is informed about regulations applicable	Provide legal compliance	2019/2020

STRATEGIC GOALS, TARGETS, TIMEFRAME, BUDGET

Inadequate levels of recycling

The amount of waste recycled in the municipality is not adequate. Although certain motivated members of the public recycle their waste and informal recyclers earn a minimal income through recycling, there is still potential increase in recycling. It will reduce the usage of non-renewable natural resources, save valuable airspace in the landfill site and create job opportunities. The municipality have to cooperate with the recycling industry, informal recyclers and the public in order to initiate and support recycling projects and programmes in its jurisdiction. The national target of eliminating informal recycling at landfill sites increases the need to provide additional formal job opportunities within the recycling industry. The recycling initiative should commence from the municipal office and its satellite offices.

Goal 1: Promote recycling and recovery of waste			
Objectives	Targets	Alternatives	Budget
Develop an interim strategy to separate at source	Co-ordinate waste minimization and recycling.	Strategy development	R100, 000. 00
Examine existing best practices elsewhere in the country.		Supply recycling bins.	R250, 000. 00

INSUFFICIENT SERVICE DELIVERY

The rapid growth of Makhuduthamaga and the current financial constraints, the municipality is facing a challenge of providing an acceptable level of services to all communities. There is no house to house collection and refuse removal does not cover all villages. Bulk waste containers (skips) are being placed in public areas and where there is existing illegal dumpings. There are no transfer stations. The current shortage of accessible and properly operated transfer stations has lead to unattractive and illegal dumpings in residential areas. Transfer stations have to be located to be within a reasonable distance from households focussing initially on skip bins. The transfer station should be constructed in a way of assisting the public, be fenced to avoid illegal dumping at night and also the possibilities of collecting recyclables at these stations. Waste collection register is developed to ensure frequent collection in all areas. Regular site visits to collection points will also assist as a monitoring too.

Goal 2: Ensure the effective and efficient delivery of waste services			
Objectives	Targets	Alternatives	Budget
Appropriate and sufficient capacity exists to manage skips. Placement of skips properly managed and controlled.	Skips are properly marked for the type of waste. Levels of different settlements/waste generators.	Develop appropriate schedule for collection. Conduct analysis on the needs.	R 4m

Develop and implement collection record keeping.	Establish a database regular.	Develop strategy for maintain and monitor. Carry out regular waste stream analysis.	R 0,0
Safe disposal in licensed landfill	N		

PUBLIC –PRIVATE PARTNERSHIPS

Makhuduthamaga Local Municipality has partnered with Sekhukhune District Municipality in the management of Jane Furse landfill

Goal 3: Ensure that legislative tools are developed to deliver on the Waste Act and other applicable legislation			
Objectives	Targets	Alternatives	Budget
Review plans in line with national and provincial legislation and amend accordingly.	Policy, new plans developed comply with legal and regulatory conditions.	Develop and implement monitoring system to ensure compliance with regulations and authorisations.	R150, 000. 00
Ensure local IWMP is integrated into and informs IDP.	Participate in IDP process to ensure that IWMP informs IDP and has relevant line items budgets.	Develop and implement a monitoring and evaluation system.	R 0.0

site. The local Municipality will be responsible for operation and maintenance of the landfill site while Sekhukhune District Municipality will provide all assets required in the landfill site in order to comply with the license conditions and other environmental legislations.

Goal 4: Sound budgeting and financing of waste management services			
Objectives	Targets	Alternatives	Budget
Develop budget that address needs and requirements as identify in strategies and plans.	Analysis of allocation of resources and address utilisation effective.	Access EPWP grants for labour intensive programmes recycling and collection. Conduct a cost benefit exercise.	R 0.0
Review and revise rates collection strategy.	Implement the rates collection strategy.	Explore alternative funding streams for infrastructure development.	R100,00.00

There is insufficient funds for waste management services e.g. for landfill management, purchasing of waste collection equipment's and to support other initiatives from the community which are waste related. The collection rates that were adopted by the council in the 2015/2016 financial year are not aligned with the tariff model that was developed by Department of Environmental Affairs (DEA).

DISPOSAL FACILITY/LANDFILL SITE

Landfilling is the last option from the waste hierarchy and it is the common waste treatment option in South Africa. It is crucial that the municipality has access to safe and proper landfill site in future. Operation and maintenance of the Jane Furse landfill site should be according to the permit conditions and the waste act. To establish landfill monitoring committee in order to ensure compliance with the license condition and other Environmental legislations.

Goal 5: Ensure the safe and proper disposal of waste			
Objectives	Targets	Alternatives	Budget
Develop and implement an operational plan monitor landfill performance.	Ensure that the plan meets minimum requirements and permit conditions.	Maintain buffer zone.	R 6m
	Regular contract management.	Ensure that suitable records are kept.	

INSUFFICIENT PUBLIC AWARENESS

The communities of Makhuduthamaga have poor understanding on proper waste management and their adverse environmental effects. It is proved by extreme illegal dumpings, littering and burning of waste in the entire municipal areas. Although it is due to lack of adequate waste management services to the community. In other areas where they are provided with bulk waste containers (skips), illegal dumpings next to the skips still persist due to lack of environmental education. The possibilities of the public sorting their waste at home (separation at source) must be closely observed as this brings the greatest potential for recycling.

Goal 6: Education and awareness			
Objectives	Targets	Alternatives	Budget
Develop an awareness raising strategy focus on communication strategy.	Focus on community interested parties involve ward committee.	Use media to inform residents of recycling and waste collection and disposal programs.	R250, 000.00
Educate communities about the laws	Encourage schools on clean up campaigns.	Explore motivational strategies and system, recognition and wards.	R150, 000.00

ENFORCEMENT AND COMPLIANCE

The Municipality has a designated Grade 2 Environmental Management Inspector (EMI) by the MEC of Limpopo Economic Development, Environment and Tourism to enforce The National Environmental Management act (NEMA) and it's Specific Environmental Management Acts (SEMAs). The municipality has not yet designated the Waste Management Officer according to the National Environmental Management: Waste Act 59 of 2008 (NEM: WA) as amended and to enforce municipal By-laws.

Goal 7: Compliance and enforcement			
Objectives	Targets	Alternatives	Budget
Review/revise laws to ensure that suitable penalties are imposed for non-compliance.	Educate public about laws.	Dedicate resource/staff to enforce by laws.	R 0.0
Ensure that the laws are comprehensive.	Public is informed about regulations applicable	Provide legal compliance	R 0.0

COMMUNICATION AND STAKEHOLDER PARTICIPATION

CONSULTATION PROCESS SUMMARY

COMMUNICATION AND PUBLIC PARTICIPATION PLAN

Communication and Public Participation Plan shall be conducted according to the Municipal Public Participation Policy and Communication Strategy.

Public participation notification

- I. A notice of a public meeting shall be advertised at least once in a newspaper circulating in the municipal area and at least twice in the local radio stations i.e. Sekhukhune and Masemola Community Radio Stations.
- II. Copies of notices for public meetings shall be posted at
 1. The notice board at the Municipal offices
 2. All Municipal libraries and other facilities
 3. All offices of local traditional authorities.
- III. All notifications will be in a language understood by the majority of its recipients that is Sepedi, Isizwati, isiNdebele and English.

The municipality shall call for the community members to submit their inputs or comments in written form and it shall be stated in the invitation together with full contact details of the Municipal official responsible to Waste Management. Other means of communication such as email or fax can be used for submission of comments or inputs.

IV. The following stakeholders are entitled to special invitations to public meetings

1. Traditional Authorities
2. Ward committees
3. Recognised structure e.g. Taxi Associations, Nafcoc, CONTRALESA, Traditional Healers Associations, Church Leaders, SANCO etc.
4. The local media
5. Eco –schools, environmental clubs/forum
6. Waste recyclers

The venues for the public meetings have to be accessible to all different groups of the people. The meetings shall be clustered according to the four Municipal growth points i.e. Apel Cross, Schoonoord, Glen Cowie and Jane Furse.

The community must be made aware of initiatives, waste recycling activities and the advantages of waste minimisation and recycling by the municipality. This can be achieved through advertisements and notices in the local newspapers and in public venues. Involvement of local residents at a ward level is significant in the identification of waste transfer sites as this will ensure that there is support and buy-in for the facility. Several waste transfer facilities should be strategically located in different areas. Education and awareness should play a major role in locating a transfer facility within an area.

Stakeholder	Issues raised/ Concerns	Municipality's response	General comments

4. IMPLEMENTATION INSTRUMENTS

PARTNERSHIPS

Makhuduthamaga Local Municipality has signed the Memorandum of Understanding (MOU) with Sekhukhune District Municipality (SDM) regarding Jane Furse landfill site. Sekhukhune District Municipality (SDM) is in the process of transferring the landfill site back to Makhuduthamaga Local Municipality (MLM). Makhuduthamaga Local Municipality (MLM) has appointed an external service provider for the operation and maintenance of the landfill site for a period of 3 years.

To respond to the deteriorating environment and depleting natural resources in local municipalities, The Department of Environmental Affairs established a programme called the Youth Community Outreach Programme (YCOP). This programme was implemented to expand the existing environmental education and awareness initiatives to reach out at ward level and to empower the youth as well as encouraging sustainable development. The Youth Environmental Coordinator is already deployed at Makhuduthamaga Local Municipality on a 3year contract. The 22 ambassadors will be appointed by the service Provider to come and perform environmental education and ward champions. Additional 11 Environmental Practice Learnership personnel were appointed by Makhuduthamaga Local Municipality (MLM) for a period of 12 months. They perform the following duties on daily basis, waste collection, cleaning campaigns and also land fill management.

The municipality has also partnered with Eco-schools in conducting awareness, environmental campaigns, clean up programs and celebrating environmental calendars. The schools include but not limited to Baropodi Inclusive School, Dikgabje Primary School, Phokoane Mokgoma, Morulana and Hlabje Primary School.

Recyclers database/register has been developed which is assist in identifying the recyclers within the municipality and the types of waste they recycle.

MLM is planning to establish Environmental Forum and Landfill Monitoring Committee to support the Municipal Sub-Directorate Environment and Waste on environmental management issues.

Sekhukhune District Municipality has launched a program called school recycling which is aimed in promoting recycling from schools because schools generate recyclable material like papers which can be recycled and food waste which can be used to make compost. Some schools in Makhuduthamaga do participate in this program.

LEGISLATIVE INSTRUMENTS: DEVELOPMENT AND ENFORCEMENT OF BY-LAWS

The municipality has the following by-laws which are in place and are promulgated

I. WASTE MANAGEMENT BY-LAW

The by law clearly defines what waste is and different types of waste. It outline the local waste plan and its objectives which is establishing a means of ensuring that waste is collected, re used, recycled or disposed of without causing harm to human health or damage to the environment in particular without risk to water, air, soil, plants or animals, causing nuisance through odor .Establishing an integrated network of waste handling and waste disposal facilities to ensure that the disposal of waste occurs at:

- I. Encouraging the minimization of reduction of waste
- II. Promote the recovery of waste by means of recycling or re-use through proven alternative technology.

It states that no person may carry on an activity which may cause special industry, hazardous and health care risk waste without notifying the municipality in writing prior to the generation of such waste which should highlight the composition of such waste, the estimated quantity generated the method of storage, the proposed duration of storage, the manner in which it will be collected and disposed.

Disposal of waste must be disposed of at a permitted waste disposal facility. Transportation of waste shall be conducted by the municipality. The tariffs related to the provision of these services by the municipality shall be adopted by the council.

I. STREET TRADING BY-LAW

The purpose of this by-law is to promote achievement of a safe environment for the benefit of residents within the area of jurisdiction of the municipality.

To provide for the procedures, methods and practices for regulation of the use of public stalls and streets within the Municipal jurisdiction.

The by-law prohibit any person from carrying on the business of a street trader in a garden or a park to which the public has a right to access and a building declared to be a public monument.

In terms of cleanliness a street trader must keep the area or site occupied for the purpose of such business in a clean and sanitary condition. Dispose of litter generated by his or her business in whatever receptacle is provided by the council and ensure that no smoke, fumes or other substance odours or noise emanating from his/her activities causes pollution of any kind.

I. GENERAL PUBLIC NUISANCE CONTROL BY-LAW

No person shall deposit, leave, spills, drop or place any fruit or vegetables peels, broken bottles ,glass, refuse or any objectionable material or thing which is offensive or likely to cause annoyance, danger or injury to persons in or upon any Erf, street or public place.

Bury or dispose of any dead in any unauthorized place

Permit the carcass of any animal, being his property or which he is in charge and which has died on his premises or elsewhere in the Municipal area to remain unburied.

FUNDING MECHANISMS

Waste collection services shall be funded by equitable shares. The waste management services are currently rendered for free. The waste tariffs were developed and adopted by the council. The developed waste tariffs were not aligned with the waste tariff model developed by the Department of Environmental Affairs (DEA). DEA will offer training to the Municipal staff with the tariff model. The municipality is planning to start with revenue collection from the businesses and government institutions after the tariffs are amended.

IMPLEMENTATION PLAN (SUMMARY OF AN IWMP PLANNING PROCESS)

Situation Analysis	Desired end state (Goals)	Targets	Y1	Y2	Y3	Y4	Y5	Selected alternatives	(Implementation mechanisms) Resources		
									Human Resource (HR)	Equipment (EQP)	Finance (HR+EQP)
1. No recycling facility.	1. To have 3 buy back centres. 2. Transfer stations,	Developments of 3 buy back centres. Develop a transfer station	Planning for the development	Develop one buy back centre	2 nd buy back	3 buy back centre	monitoring		Addition al stuff needed		R 1M

	3. Separation at source.	Promote separation at source by implementation of two bag system. Promotion of co operatives	planning	Implementation (Municipal Buildings & All facilities where waste collection service is rendered)	Extension	Extension	Progress review				R 1M
2.No house to house collection, only bulk collection service	All residents to be provided with basic collection	To provide basic waste collection service to ----- house holds	Planning for house to house	Introduction in high density	Extension (meant to house	Extension	Extension and review		Additional staff member		R3M

	service		collecti on	ty area	holds numbe rs)						
3. Insufficient waste plans.	Development of waste plans and policies.	Developed waste minimization strategy	Develop ment and public particip ation	Gaze tting	Imple mentat ion of the plan	impleme ntation	Review of the strategy		Addition al of person nel (EMI's)	Budget	R100,000.00 PPP R700,000.00 Salaries
4. insufficient budget for waste services	To have a budget that properly addresses the needs and requirements as identified in the strategies and plans.	Developed cost reflective tariffs for waste management services.	implem entation	imple ment ation	Imple mentat ion	Impleme ntation	review				

5. Non-compliance of landfill site	Landfill site to comply with the license conditions	Operation of the landfill site according to the license conditions	Conduct Audit for the landfill site	Implementation of the Audit report	Continuous operation of the landfill site according to the license conditions	Continuous operation of the landfill site according to the license conditions			Addition of staff members (spotters)	weighbridge	R 6M
6.Limited Environmental Education and Awareness	Environmentally conscious community	Develop an awareness plan. no of awareness activities	implementation	implementation	Implementation	Review of the awareness plan					

REPORTING ON MONITORING

A performance management framework is built in to the IWMP, with clear indicators that are measurable and realistic. It has understandable time frames and measurement of achievement for the continuous assessment. The set targets as set out provide action in achieving the objectives and the plan should be monitored against these indicators and targets. The plan should be monitored annually and reviewed every five years. During the review if there is a need to develop new objectives, key policies, legislations and targets should be taken into account. The approval of this plan is defined in the National Environmental Management: waste Act, NO: 59 Of 2008 as amended.

PERFORMANCE

The progress on the IWMP shall be submitted to Limpopo Economic Development Environment and Tourism (LEDET) under the Directorate Integrated Pollution and Waste through quarterly reports.

The municipality has already established the Recycling Forum and Landfill monitoring committee whereby officials from LEDET shall form part. The recycling forum and landfill monitoring committee shall meet quarterly. This will support the monitoring progress of the implementation of the IWMP.

PUBLIC ACCOUNTABILITY

The improvement in the IWMP shall be continuously reported to the public. Different methods will be used to inform the public such as:

- I. Through annual reports
- II. Mayoral Imbizos
- III. Reports shall be available on the municipal website
- IV. In the review meetings of the IWMP different stakeholders will form part.
- V. The report can also be found in the municipal offices and the libraries.

SUMMARY OF WASTE MANAGEMENT PERSONNEL

Job Description	Surname	Initial	Post Level
Environment and Waste Manager	Makola	BC	
Waste Management Officer	Vacant		
Landfill supervisor	Vacant		
Truck driver	Moshabane	MF	
Truck driver	Maloma	MW	
Truck driver	Vacant		
Truck driver	Vacant		
General worker			
General Worker			
General Worker	Vacant		
General Worker	Vacant		

ANNEXURE OR REFERENCES

1. DEAT (2007) *National Environmental Management: Waste Management*, Government Gazette, 12 January 2007
2. DEAT (2009) *Draft Framework for the National Waste Management Strategy*, <http://www.wastepolicy.co.za/nwms/book/export/html/34>, 8 April 2009
3. Guidelines for Recycling in local Municipalities of South Africa
4. DEAT (2000) *White Paper on Integrated Pollution and Waste Management for South Africa*, Notice 227 of 2000, Department of Environmental Affairs and Tourism, Pretoria
5. DEAT (2002) *Solid Waste Tariff Setting Guidelines for Local Authorities*, April 2002, Department of Environmental Affairs and Tourism, Pretoria
6. DWAF (1998) *Waste Management Series: Minimum Requirements for Waste Disposal by Landfill*, Second Edition, Department of Water Affairs and Forestry
7. Environmental Conservation Act, Act 73 of 1989
8. Environmental Potential Atlas for South Africa, 1997 Health Act, Act 61 of 2003
9. IDP (2014) *Makhuduthamaga Local Municipality Integrated Development Plan, Integrated Development Plan Review*, and 2014/2015 Financial Year
10. IP&WM (2000) *White Paper on Integrated Pollution and Waste Management for South Africa*, 2000, Department of Environmental Affairs and Tourism, Pretoria
11. Local Government: Municipal Systems Act, Act 32 of 2000
12. Municipal Systems Act, Act 32 of 2000
13. National Environmental Management: Waste Act, Act No. 59 of 2008
14. National Water Act, Act 36 of 1998
15. The Constitution of the Republic of South Africa, Act 108 of 1996

