



# **BUFFALO CITY METROPOLITAN MUNICIPALITY**

**INTEGRATED WASTE MANAGEMENT PLAN (DRAFT)**

**2021 - 2025**

## FOREWORD

The purpose of this Integrated Waste Management Plan (IWMP) is to ensure provision of efficient and effective waste management services. Also, the manner in which these services are provided must among others be in line with all the City's Metro Growth Development Strategy, Integrated Development Plan and therefore contribute towards a Green City (Waste Economy). The Plan is focused on Waste Minimisation, the diversion of waste from landfill disposal towards the beneficial use of waste, thereby contributing towards waste economy, and overall environmentally sound management of all waste streams.

The Integrated Waste Management Plan for the City has been developed in line with the National Regulatory Framework pertinent to environmentally sound management of waste and other relevant legislation, e.g. National Environmental Management: Waste Act 59 of 2008, Municipal Systems Act, Municipal Financial Management Act etc. The development of the IWMP has among others undertaken the Situation Analysis of the City and looked at among others, the City's Demographics, Population, Settlements (households), current Waste Services, available Waste Management Facilities etc.

Further to this, the "burning issues" or priority waste management challenges of the City have been lifted, the Desired End State (Goals set to address the identified challenges) has been identified, the Implementation Plan developed, Implementation Instruments as well as Reporting on Monitoring of the implementation of the IWMP has been mentioned. In order to address the "burning" issues, a short-term plan in the form of Service Delivery Improvement Plan – Clean City Programme and Service Delivery Fridays has been launched by the City's Executive Mayor in February 2019.

In order to get a "quick" insight into the contents of this Plan, its Summarised Version is attached as an Annexure. In order to ensure implementation of this plan, stakeholder consultations, education and awareness raising programmes will be held timeously with various partners of the City also attached as an Annexure is the BCMM's Integrated Waste Management Bylaw to ensure compliance and enforcement.

This IWMP has been developed in-house, and the support of the National Department of Environmental Affairs, Swedish Environmental Protection Agency and the German Development Agency (GIZ) is highly appreciated.

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# 1. INTRODUCTION

## 1.1 HISTORICAL OVERVIEW IN THE DEVELOPMENT OF INTEGRATED WASTE MANAGEMENT PLAN

South Africa has come a long way with regards to the management of waste. Historically, waste was managed by various pieces of legislation that were governed by different government departments and which were often fragmented in nature resulting in gaps and poor waste management practices. The promulgation of the National Environmental Management Waste Act (Act No. 59 of 2008) on 1 July 2009 was a key milestone in consolidating waste legislation in a bid to have common goals and understanding of how the country's waste should be managed.

The National Environmental Management Waste Act adopts the waste management hierarchy approach to dealing with and addressing waste issues in the country, where the emphasis is on waste reduction, if not possible re-use, recycling and composting, recovery to create energy, with disposal as a last resort as illustrated in Figure 1 below.



Figure 1: Waste Management Hierarchy ( National Waste Management Strategy, 2020)

## 1.2 LEGISLATIVE CONTEXT

### CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996)

The Constitution of the Republic of South Africa (Act 108 of 1996) is the supreme law of the land, of which all law including environmental waste management planning must comply with the Constitution. The Bill of Rights is contained in Chapter 2 of the Constitution Act, No. 108 of 1996 and outlines the provisions of the environmental right. In terms of section 24 of the Act, everyone has the right:

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

The role of municipalities in respect of environmental management is further enhanced in section 152 of the Constitution, which requires municipalities, amongst other things, to ensure the provision of services to communities in a sustainable manner and to promote a safe and healthy environment. The South African National Constitution, 1996 (Act 108 of 1996) Section 156 (1) (a) of the Constitution, read with Schedule 5, assigns responsibility for refuse removal, refuse dumps, solid waste disposal and cleansing to local government. Provincial government has the exclusive responsibility to ensure that local government carries out these functions effectively. In addition to the Constitution, several government policies and statutes are relevant to waste management at the local government

### MUNICIPAL SYSTEMS ACT (ACT NO. 32 OF 2000)

The Municipal Systems Act describes the core principles, mechanisms, and processes that are necessary to enable municipalities to move progressively towards the social and economic up-liftment of communities and ensure access to services that are affordable to all. Its focus is primarily on the internal systems and administration of the municipality.

Section 25 of the MSA states that each municipal council must, within a prescribed period after the start of its elected term, adopt a single, inclusive and strategic plan (IDP) for the development of the

municipality. In relation to waste management, the IDP is required to include sectoral environmental plans which would be in IWMP for waste management. In their IDP's municipalities are required to ensure proper resource allocation to achieve the targets set in the respective plans.

Performance management systems are to be developed to measure and evaluate performance in priority areas, which are to be reported annually to citizens and other spheres of government. The process to be followed in planning, drafting and adopting the Integrated Development Plan is set out.

## **MUNICIPAL FINANCE MANAGEMENT ACT (ACT NO. 32 OF 2000)**

The MFMA is a critical element of the policy framework established by the 1998 White Paper on Local Government, together with the Structures Act and the MSA. As a whole the MFMA is important in that it regulates municipal fiscal and financial management and sets requirements for the efficient and effective management of the revenue, expenditure, assets and liabilities of municipalities.

The MFMA overlaps with the MSA. Prior to entering into a PPP, the municipality must conduct a feasibility study that deals with a wide range of aspects including strategically operational benefits. Once the feasibility study has been completed the accounting officer's report together with all relevant documents must be considered by Council for a decision in principle as to whether it can proceed with such a PPP, or not. The feasibility study content and the processes necessary to ensure that best practice external service delivery relationships such as PPPs are established is provided for in section 120 of the MFMA and the PPP Regulations. Section 120(4) inter alia requires that the feasibility study be made public and the community and other interested parties be invited to comment thereon.

## **NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT NO. 107 OF 1998)**

The National Environmental Management Act (Act No.107 of 1998) (NEMA) is an overarching statute concerned with integrated environmental management and the underlying principles by which environmental management must be undertaken. NEMA provides a legislative framework for all environmental management Acts in South Africa. NEMA key considerations are mainly the following:

- Acts as framework legislation giving effect to section 24 of the Constitution.
- Provides for co-operative environmental governance.
- Ensures public participation in environmental decision-making.
- Seeks to alleviate environmental injustice (inequality and poverty that are the causes and results of environmentally harmful practices).
- Ensures sustainable development.

NEMA places sustainable development at the centre of every development process that has the potential to have an impact on social, economic and environment whereby it requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations. Some of the principles that underpin the Act are among others the following: accountability, affordability, cradle to grave management, equity, integration, open information, polluter pays, waste avoidance and minimisation; co-operative governance; sustainable development; as well as environmental protection and justice.

## **National Environmental Management: Waste Act 59 of 2008 (NEMWA)**

According to Chapter 3, Section 11 of the National Environmental Management Waste Act (Act No. 59 of 2008) (NEMWA) all government spheres must develop IWMP's. Section 12 of the Waste Act outlines what the contents of the IWMP's should be, whilst Section 13 stipulates that reporting mechanisms on the implementation of the IWMP. In terms of section 11 (4) (a) (ii) municipalities must incorporate approved IWMP as called by the Municipal System's Act. The development and implementation of IWMP must be aligned with the IDP taking into consideration the applicable policies and standards listed below including municipal by – laws which should be considered when developing the IWMP:

Regulations in terms of the Waste Act

- National Waste Information Regulations
- National Waste Classification and Management System's Regulations
- National Norms and Standards for Disposal of Waste by Landfill Site
- Remediation of contaminated land
- Standards of soil quality

The contents of the IWMP are set out in Section 12 of NEMWA.

## **National Waste Management Strategy (NWMS) 2020**

The NWMS provides a coherent framework and strategy for the implementation of the Waste Act and outlines government's policy and strategic approach to waste management within the South African government's context and agenda of socio-economic development that is "equitable, inclusive, sustainable and environmentally sound".

This current NWMS 2020, which revises and updates the 2011 strategy, also achieves the following:

- Assimilates our strategic approach to waste management with the commitments and directives of the Sustainable Development Goals 2030 (hereinafter referred to as “the SDG’s”) and South Africa’s National Development Plan: Vision 2030 (hereinafter referred to as “the NDP”);
- Unequivocally locates waste management as one of the key underpinnings of South Africa’s economy and social fabric; and
- Integrates and provides an enabling environment for the DEFF’s 2017 Chemicals and Waste Economy Phakisa and government’s 2019 Good Green Deeds Programme.
- The NWMS provides government policy and strategic interventions for the waste sector and is aligned and responsive to the Sustainable Development Goals (SDGs) of Agenda 2030 adopted by all United Nations (UN) member States. It is also aligned and responsive to South Africa’s National Development Plan (NDP): Vision 2030 which is our country’s specific response to, and integration of the SDGs into our overall socio-economic development plans.

The success of the NWMS 2020 depends on the extent to which it finds a foothold in local and provincial government and the private sector. Therefore, the solutions to the waste management challenges require a concerted effort of the government, nongovernmental organizations, communities including business. Increasing recycling rates to promote the circular economy depends on consumer behaviour change, such as separating waste at source – something which all South Africans should be practising. The revised NWMS seeks to build on existing initiatives in schools and draw on community-based organisations and NGOs to help in cleaning up our communities and reducing the carbon footprint of our economy by correct disposal and recycling of waste.

The NWMS 2020 takes into account applicable and relevant feedback provided during public consultation processes held on the draft version. It also considers progress, challenges and lessons learnt from the implementation of the 2011 NWMS and as stated above, the political, social, environmental, and economic context within which the waste sector operates and impacts on.

In line with the recently adopted Outcomes-Based planning approach of government, the NWMS 2020 is premised on three (3) Outcomes supported by three (3) Strategic Pillars, namely Waste Minimization, Effective and Sustainable Waste Services and Compliance, Enforcement and Awareness. Each Pillar has a strategic thrust, pillar specific focus areas and key actions which will be monitored in terms of performance indicators.

## The IWMP in the context of the BCMM

Buffalo City Metropolitan Municipality has adopted the MGDS which is the vision towards 2030. The MGDS is the primary foundation for BCMM future to work in partnership to achieve goals, programmes, and to encouraging business and investment into the common direction. The strategic focus areas for long term development of the city have been identified in the MGDS. The MGDS is the City's 15-year economic trajectory towards vision 2030. The implementation of the MGDS will crosscut three IDP (5 years each) to 2030. The MGDS will be subject to monitoring and evaluation process throughout the fifteen-year time frame.

A large component of the programs and projects identified require partnerships between the city and its stakeholders in order to achieve vision 2030. The MGDS Vision 2030 Implementation Plans are encapsulated into the five Strategic Outcome Areas and will be aligned to the IDP process.

They entail the following outcomes:

- Maintain inclusive and sustainable economic growth.
- BCMM partners with Business to develop strategies to address the cost of doing business in BCMM.
- Township Businesses are developed and integrated into the main stream economy.

The IWMP is formulated in accordance with the vision of Buffalo City Metropolitan Municipality as formulated in the Integrated Development Plan (IDP) of 2017/ 2018. The long term Vision and Mission of Buffalo City Metropolitan Municipality is to be “well governed connected, green and innovative city “which:

- Promotes a culture of good governance;
- Provides effective and efficient municipal services;
- Invests in the development and retention of human capital to service the City and its community;
- Promotes social and equitable economic development;
- Ensures municipal sustainability and financial viability;
- Creates a safe and healthy environment; and
- Places Batho Pele principles at the centre of service delivery

## The IWMP in the context of BCMM's IEMP

The IEMP Policy acts as a framework and guides local government in its strive to promote sustainable development. The IEMP is based on existing national and international law and legislation and will be implemented through various sector plans and programmes identified in the Integrated Development Plan (IDP). The Policy also outlines the integrated approach for all projects within the municipality, guiding decision-makers at all levels to accessible and adequate information on adverse environmental effects of the activity in question. This approach enables the opportunity to improve, lessen or put a stop to the planned activity. Furthermore, the IEMP promotes public participation.

Sector plans play an important part in the implementation of the IEMP Policy as well as the agreed principles. The IWMP, which is such a Sector Plan, reflects the Vision of Buffalo City Metropolitan Municipality. Emanating from the vision, the Waste Management Vision for the Buffalo City Metropolitan Municipality in the year 2020 is summarised as follows:

- All citizens of Buffalo City Metropolitan Municipality are provided with adequate, affordable and accessible waste management services.
- The amounts of general waste as well as hazardous waste are reduced by waste minimization and recycling (incorporating sorting-at-source), limiting the amounts of waste going to landfill.
- The proper handling, treatment and disposal of all kinds of waste ensure that the adverse impact on the environment and human health and well-being can be minimized or tolerated. All waste treatment and disposal facilities are legally permitted and properly operated.
- Informal recycling at landfills has been phased out and replaced with formal employment opportunities in a thriving recycling industry, which promotes local economic development.
- The people living in Buffalo City Metropolitan Municipality will be environmentally aware and conscious with a significant knowledge of proper waste management, which they enthusiastically exercise.

## **Review of National and Provincial Legislation**

The Municipal Systems Act describes the core principles, mechanisms, and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of communities and ensure access to services that are affordable to all. Its focus is primarily on the internal systems and administration of the municipality.

The Act enables the process of de-centralisation of functions through assigning powers of general competence to local Government. Municipal by-laws are regulated to achieve harmony with national and

provincial legislation. As service authorities, municipalities remain responsible for the effective delivery of services and must provide an appropriate policy and regulatory framework. This can be achieved through the most appropriate service provider, ranging from internal departmental delivery to corporatisation and joint ventures to private sector delivery options. Performance management systems are to be developed to measure and evaluate performance in priority areas, which are to be reported annually to citizens and other spheres of government. The process to be followed in planning, drafting and adopting the Integrated Development Plan is set out.

## **Municipal Demarcation Act 27 of 1998**

The Municipal Demarcation Act 27 of 1998 provides criteria and procedures for the determination of municipal boundaries by an independent authority. In terms of the Act, the Municipal Demarcation Board is established to determine municipal boundaries.

Section 24 provides that when demarcating a municipal boundary, the Board must aim to establish an area that would enable the municipality to fulfil its Constitutional obligations, including the provision of services in an equitable and sustainable manner, the promotion of social and economic development and the promotion of a safe and healthy environment. The tax base must also be as inclusive, as possible users of municipal services in the municipality.

## **National Environmental Management: Waste Act 59 of 2008**

This Act defines the laws for the regulation of waste management as well as to ensure the promotion of the waste management hierarchy. This Act adopts an internationally recognized waste management hierarchy which states that waste must firstly be reduced, then re-used/recycled or recovered and finally as a last resort disposed of appropriately. The Act also promotes the effective delivery of waste services and designates the duty of the State or organs of states to implement measures to endorse waste minimization as well as the effective and environmentally friendly removal and disposal of waste.

Chapter 2 of the Act stipulates that the Minister must establish a National Waste Management Strategy for achieving the objects outlined in the Act. This Chapter also specifies that the Minister must set National Norms and Standards for various waste management issues such as Classification of Waste. Section 9 of this Act states that the Municipality must exercise its executive authority to provide waste management services in a manner that complies with the National and Provincial Norms and Standards drawn up by the Minister.



Chapter 3 of the Act states that an Integrated Waste Management Plan (IWMP) must be drawn up and this Chapter also outlines the contents of the IWMP. Certain waste management measures have been outlined in Chapter 4 of the Act.

Chapter 4 is fragmented into different Parts, each focusing on certain waste management measures as mentioned below:

- **Part 1** stipulates that the Minister must declare a certain waste to be a priority given that the associated waste poses a threat to the environment.
- **Part 2** designates the duties for all holders of waste to try to minimize the quantity of waste generated and should adopt recycling initiatives.
- **Part 3** focuses on the measures that can be implemented in order to promote the recycling and reuse of waste.
- **Part 4** provides the listing of waste management activities that potentially pose a detrimental effect to the environment.
- **Part 5** outlines and defines the duties of the waste holder as well as the waste collection service provider in order to achieve efficient and effective waste storage, collection and transportation. Section 23 of the Act stipulates that it is the responsibility of the Municipality to provide within their financial capacity receptacles and containers for the collection of recyclable waste that is accessible to the public.
- **Part 6** deals with the measures that need to be taken in terms of treatment, processing and disposal of waste.

Chapter 5 designates the Minister as the Licensing Authority with respect to all waste management activities that involve obligations or other contractual agreements.

Emphasis on the establishment of a National Waste Information System (NWIS) is outlined in Chapter 6 of this Act. This NWIS should comprise of all waste management information such as the quantity of waste generated, waste management activities that are licensed etc. The functionality of this NWIS is to quantify waste management activities, so that it will facilitate the overall understanding and management of the waste management process as well as identifying areas of concern.

In terms of Chapter 7, Compliance and Enforcement of the rules and regulations underlined in this Act is defined. It also stipulates the penalties for those who are convicted for undermining the laws stipulated in this Act.

## **National Environmental Management: Air Quality Act 39 of 2004 and all its amendments**

This Act aims to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air as well as for the prevention of air pollution and ecological degradation. Chapter 2 of the Act stipulates the establishment of a National Framework to achieve the objects of the Act. This National Framework will contain aspects of ambient Air Quality Standards as well as National Norms and Standards on Air Quality Management. This Act also outlines the contents of Air Quality Management Plans and also the procedure to be followed for the application of atmospheric emission license.

Section 21(1)a of this Act stipulates that the Minister must publish a list of activities that have potentially significant detrimental effects on the environment. This list was published in the following document:

List of Activities Which Result In Atmospheric Emissions Which Have Or May Have A Significant Detrimental Effect On The Environment, Including Health, Social Conditions, Economic Conditions, Ecological Conditions Or Cultural Heritage (GNR 248, March 2010). This document contains the emission standards for cement production using alternative fuels and/or resources (AFR). This is an important aspect in terms of waste management because thermal waste treatment can be implemented during cement production. This involves the use of waste as an AFR in the cement production process.

## **SPATIAL PLANNING AND LAND USE MANAGEMENT ACT (ACT NO.16 OF 2013)**

The Spatial Planning and Land Use Management Act (ACT NO.16 of 2013) (SPLUMA) aims:

- to provide a framework for spatial planning and land use management in the Republic.
- to specify the relationship between the spatial planning and the land use management system and other kinds of planning.
- to provide for the inclusive, developmental, equitable and efficient spatial planning at the different spheres of government.
- to provide a framework for the monitoring, coordination and review of the spatial planning and land use management system;

- to provide a framework for policies, principles, norms and standards for spatial development planning and land use management.
- to address past spatial and regulatory imbalances.
- to promote greater consistency and uniformity in the application procedures and decision-making by authorities responsible for land use decisions and development applications.
- to provide for the establishment, functions and operations of Municipal Planning Tribunals.
- to provide for the facilitation and enforcement of land use and development measures; and
- to provide for matters connected therewith.

The Development Facilitation Act 67 of 1995 sets out a planning and land development system, which ensures that national, provincial, and local government policies are implemented. Section 28 describes the requirements for Land Development Objectives, which must be developed by each local authority. One of the objectives of Land Development Objectives is to create a new system of planning that encourages sustained utilization of the environment, particularly with regard to the environmental consequences of developments. Municipalities are encouraged to co-operate in order to develop the capacity of each municipality to exercise its powers and duties and manage its affairs.

### **National Water Act 36 of 1998**

The National Water Act contains a number of provisions that impact on waste management, including the disposing of waste in a manner, which detrimentally impacts on a water resource and the discharge of waste into a water resource. The Act allows the Minister to make regulations for:

- Prescribing waste standards, which specify the quantity, quality and temperature of waste that may be discharged or deposited into or allowed to enter a water resource.
  - Prescribe the outcome or effect, which must be achieved through management practices for the treatment of waste before it is discharged or deposited into or allowed to enter a water resource.
- The Act requires that waste discharged or deposited into or allowed to enter a water resource be monitored and analysed according to prescribed mechanisms.

### **National Health Act, (Act 61 of 2003) as amended**

Section 20 of this Act requires that 'every local authority shall take all lawful, necessary and reasonably practicable measures to maintain its district at all times in a hygienic and clean condition by ensuring the following:

To prevent occurrences within its district if:

- a. Any nuisance
- b. Any unhygienic conditions
- c. Any offensive condition
- d. Any other condition which will or could be harmful or dangerous to the health of any person within its district of any other local authority or where nuisance or conditions as prescribed in this act.

## **Hazardous Substances Act 15 of 1973**

This legislation aims to address substances that are deemed hazardous, in order to regulate and prohibit the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances. In terms of waste management, Section 29 of the Hazardous Substances Act stipulates that the Minister has the designated authority to authorize, regulate or prohibit the dumping of hazardous substances. Industries that generate hazardous waste must produce an Industrial Waste Management Plan.

## **Polokwane Declaration on Waste Management**

The Polokwane Declaration on Waste Management emerged from the first National Waste Summit of 2001. The vision affirmed in this declaration is to implement a waste management system which contributes to sustainable development and a measurable improvement in the quality of life, by harnessing the energy and commitment of all South Africans for the effective reduction of waste. An important goal is to stabilize waste generation and reduce waste disposal by 50% by 2012 and develop a plan for zero waste by 2022. As a requirement of National, Provincial and Local Government, targets set in the Polokwane Declaration are as follows:

- To develop and implement a comprehensive and regulatory framework by June 2002;
- Implement the NWMS;
- To build capacity within all spheres of government;
- Promote strong intergovernmental coordination and cooperation;
- To develop an Information Management System by April 2002;
- Explore and support appropriate economic instruments to support NWMS;
- To set up a Multi Stakeholder forum consisting of national, provincial, local government, business and civil society;

- Promote and Implement sustainable poverty relief projects;
- To provide comprehensive waste management services;
- To explore the establishment of a National Waste Fund;
- To develop compliance monitoring mechanisms;
- To develop comprehensive communication strategies, include awareness campaigns.

## **Framework for Sustainable Post Consumer Recycling in South Africa Final Draft**

The aim of this document is to provide a framework on the approach used for implementing sustainable post-consumer waste recycling in South Africa. This framework is intended to present realistic and practical approaches towards recycling within South Africa and also to set guidelines for all relevant stakeholders on how to promote effective recycling practices. These stakeholders are defined as:

- Government at all levels,
- Product and Packaging Manufacturers, Recyclers, Collectors of Recyclable Material and
- The relevant Public entities.

Section 3 of this Framework outlines the status quo in terms of Waste Recycling in South Africa. Waste Recycling in South Africa is minimal due to the limited amount of recycling mechanisms present. With accordance with certain waste management legislation there are certain principles that need to be adhered to for recycling initiatives.

Section 4 of this framework outlines these principles. The objections of recycling set out in this document are job creation, reduction of pollution and conservation of natural resources; conservation of energy and reduction of costs in manufacturing sectors; litter abatement; reduction of the waste stream itself and a reduction of the waste stream itself.

Section 5 outlines measures that can be taken in order to enhance and promote recycling in South Africa. Measures that can be implemented are as follows, setting and defining targets, government procurement policy, registration of recyclers, market-based instruments and education initiatives. This section also stipulates that government policy on recycling should be to enhance the market conditions for recycling by finding an appropriate balance between securing the supply of recyclable materials and promoting demand for products made from these materials.

## **National Domestic Waste Collection Standards**

The National Domestic Waste Collection Standards (NDWCS) aims to standardize waste service delivery to ensure that this service be available to all while complying with current health and safety legislations as well as minimally changing those waste collection processes that function effective and efficiently. The standards which are defined in this document are based on the principles outlined in Section 2. The NDWCS also specifies that recyclables which are not collected at households should be deposited at drop-off centres which must be easily accessible to households. These drop-off centres must promote recycling, ensure user friendliness and also collection must be done at regular intervals so that it does not cause a nuisance.

The standards and regulations aimed for ensuring Health and Safety of Waste Collection Personnel are addressed in Section 7 of this document. The NDWCS defines that there should be mechanisms in place to ensure that there be transparent communication between different stakeholders.

Section 8 of this document stipulates that the service provider must create awareness amongst households about waste collection services offered, source separation, composting and the consequences of illegal dumping.



## National Policy for the Provision of Basic Refuse Removal Services to Indigent Households

This Policy aims to ensure that poor (indigent) households have access to at least basic refuse removal services. The National Policy for the Provision of Basic Refuse Removal Services to Indigent Households is aligned with existing legislation such as The Constitution of the Republic of South Africa Act, Local Government: Municipal Systems Act and Municipal Finance Management Act. This Policy underlines the criteria for determining who qualifies for Free Basic Refuse Removal (FBRR).

Section 8 of this Policy defines the level of FBRR service to be provided based on site specific circumstances. Under this Section, aspects such as collection frequency (determined by the composition and volumes of waste generated) and issuance of free receptacles is dealt with. This Policy stipulates that the Municipality must provide free receptacles for refuse storage and that the number of receptacles provided per household should be calculated based on the number of individuals residing in the household.

Section 9 of this Policy deals with the financing mechanisms for FBRR to indigent households. The municipal financing of FBRR to indigent households must be sourced internally (within municipal tariffs) and/or externally (from the national fiscus).

The National Policy for the Provision of Basic Refuse Removal Services to Indigent Households also provides implementation strategies for the implementation of FBRR. Examples of such strategies include the establishment of an indigent register as well as declaration of certain localities for FBRR. This policy also lists various strategies for the monitoring and evaluation policy implementation with a municipality. Section 12 stipulates that the municipality must prepare an implementation plan for the FBRR services, and must contain aspects such as monitoring, targets and evaluation.

## **National Policy on the Thermal Treatment of General and Hazardous Waste**

This Policy outlines the use of thermal waste treatment as an acceptable waste management option. The document also provides the framework which must be followed in order to implement waste treatment technologies within South Africa. Section 4 outlines the policy objectives such as the implementation of an integrated waste management system for South Africa in line with the waste management hierarchy.

Section 6 of this document addresses the manner in which the Policy will be implemented. It stipulates that facilities wishing to utilize thermal waste treatment technologies must comply with existing and even future environmental legislation.



## 1.3 HISTORICAL OVERVIEW IN THE DEVELOPMENT OF BUFFALO CITY METROPOLITAN MUNICIPALITY IWMP

As a requirement of the National Environmental Management Waste Act 59 of 2008(NEMWA), all municipalities are obliged to compile an Integrated Waste Management Plan (IWMP). The reason for developing an IWMP is to provide the municipality with a sustainable long-term waste management system. The IWMP is a planning document, which includes comprehensive background information on the current waste situation in the Municipality as well as the current regulatory framework. Based on an analysis of the current situation, objectives, strategies and projects are formulated that address the priority issues. NEMWA specifically requires IWMPs to:

- Set out priorities and objectives for waste management
- Establish targets for the collection, minimisation, re-use and recycling of waste
- Set out the approach to planning any new facilities for disposal and decommissioning existing waste disposal facilities
- Indicate the financial resources required for the IWMP
- Describe the implementation mechanisms for the IWMP

Currently the City is reviewing its IWMP in accordance with newly promulgated Waste Legislation, National Waste Management Strategy,2020, National Norms and Standards and Guidelines in an effort to ensure compliance, adequate waste service provision and diversion of waste from landfill disposal. ( Kindly provide a summary of successes of the IWMP under review and how it has encouraged Council in prioritizing this review.)

The IWMP under review has produced the following successes:

- The current collection schedule was reviewed resulting in a revised waste collection schedule that is optimizing efficiencies has already been implemented in the Midland region. This new collection schedule must still be rolled out in the Coastal and Inland regions.
- An integrated rapid response program (IRRP) has been launched in May 2021 in the Coastal and Midlands regions. This program is still to be rolled out in the Inland region in August 2021
- Mapping out illegal dumping hotspots has been concluded in the Coastal region. The Department is in the process, together with its social partners is in the process of establishing five drop-off zones as per identified hotspot dumping areas.
- Partnering with the Border Kei Chamber of Business in the establishment of waste separation at source, cost recovery centers and programs to curb illegal dumping resulting in a cleaner city.

The purpose of developing this IWMP is to:

The development of this IWMP is significant as it will ultimately illustrate the effective delivery of waste services and designates the duty of City to implement measures to endorse waste minimization as well as the effective and environmentally friendly removal and disposal of waste effective overall progress or even limitations of current waste management activities within BCMM. ( In this review can you verify whether the above statement has been realized or not?

## **CHAPTER 2**

### **DEFINING THE GEOGRAPHICAL AREA**

## 2. DEFINING THE GEOGRAPHICAL AREA

### 2.1 LOCATION

Buffalo City is a Metropolitan Municipality situated on the east coast of the Eastern Cape Province, South Africa. It includes the towns of East London, Bhisho and King William's Town, as well as the large townships of Mdantsane and Zwelitsha. It is surrounded by the Great Kei, Amahlati, Raymond Mhlaba and Ngqushwa Local Municipalities. It is bounded to the south-east by the long coastline along the Indian Ocean. The municipality was established as a local municipality in 2000 after South Africa's reorganization of municipal areas, and is named after the Buffalo River, at whose mouth lies the only river port in South Africa. On 18 May 2011 it was separated from the Amathole District Municipality and converted into a Metropolitan Municipality.

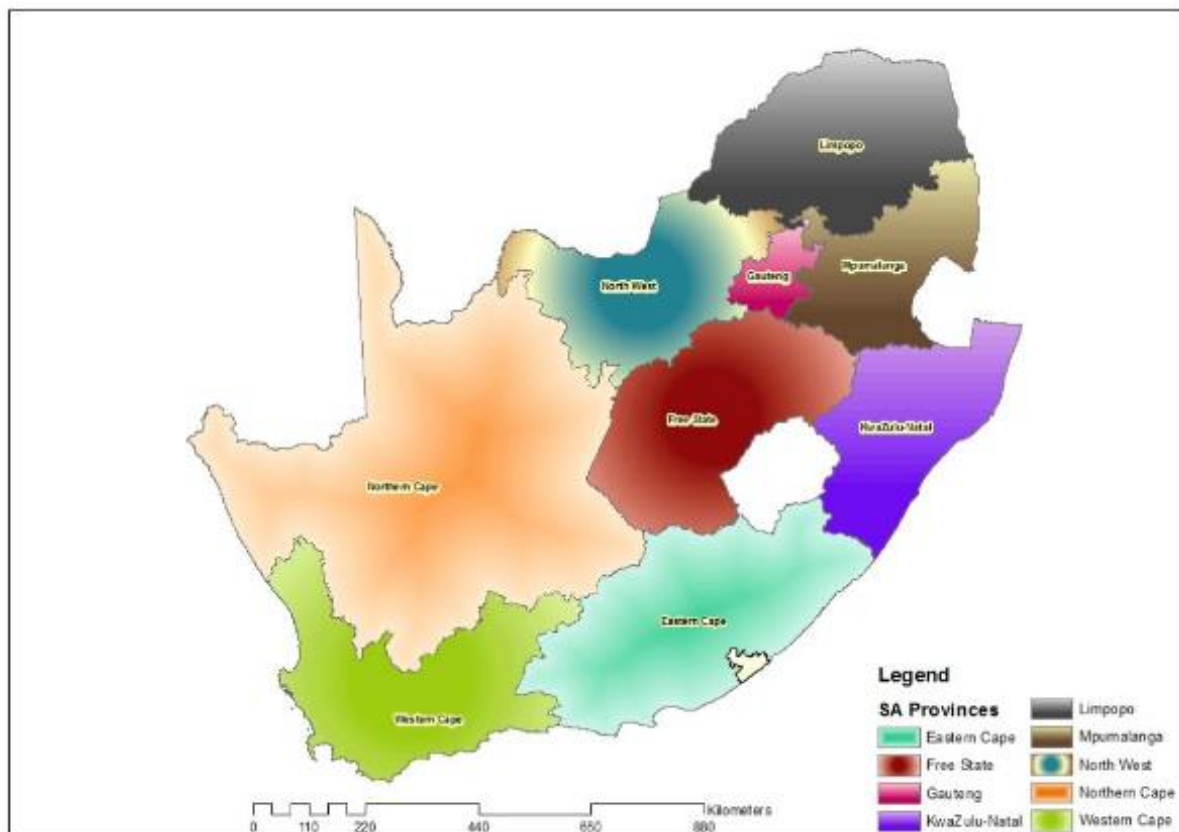


Figure 2: BCMM Locality in South Africa (Source: BCMM IDP 2017-18)

### 2.2 AREA EXTENT AND POPULATION DYNAMICS

Buffalo City Metropolitan Municipality is the seat of the Eastern Cape Provincial Government. The Eastern Cape Province is the second largest province in land area in South Africa, and covers 169, 580 square kilometers, which is 12.7% of South Africa's total land area. The province has the third largest population

of South Africa's Provinces, approximately 6,996 976 million people (Community Survey 2016), which is about 12, 8% of South Africa's people.

The province is generally seen as one of the two poorest in South Africa. There are two major urban metropolitan areas within the Province, Nelson Mandela Bay Metropolitan and Buffalo City Metropolitan Municipality. The Eastern Cape population has reduced from 14% (Census 2001) to 12,8% (Community Survey 2016) of the country's population. The area has a well-developed manufacturing base, with the auto industry playing a major role. Mercedes-Benz South Africa (MBSA) has a large assembly plant located next to the port of East London, which produces a variety of vehicles for export.

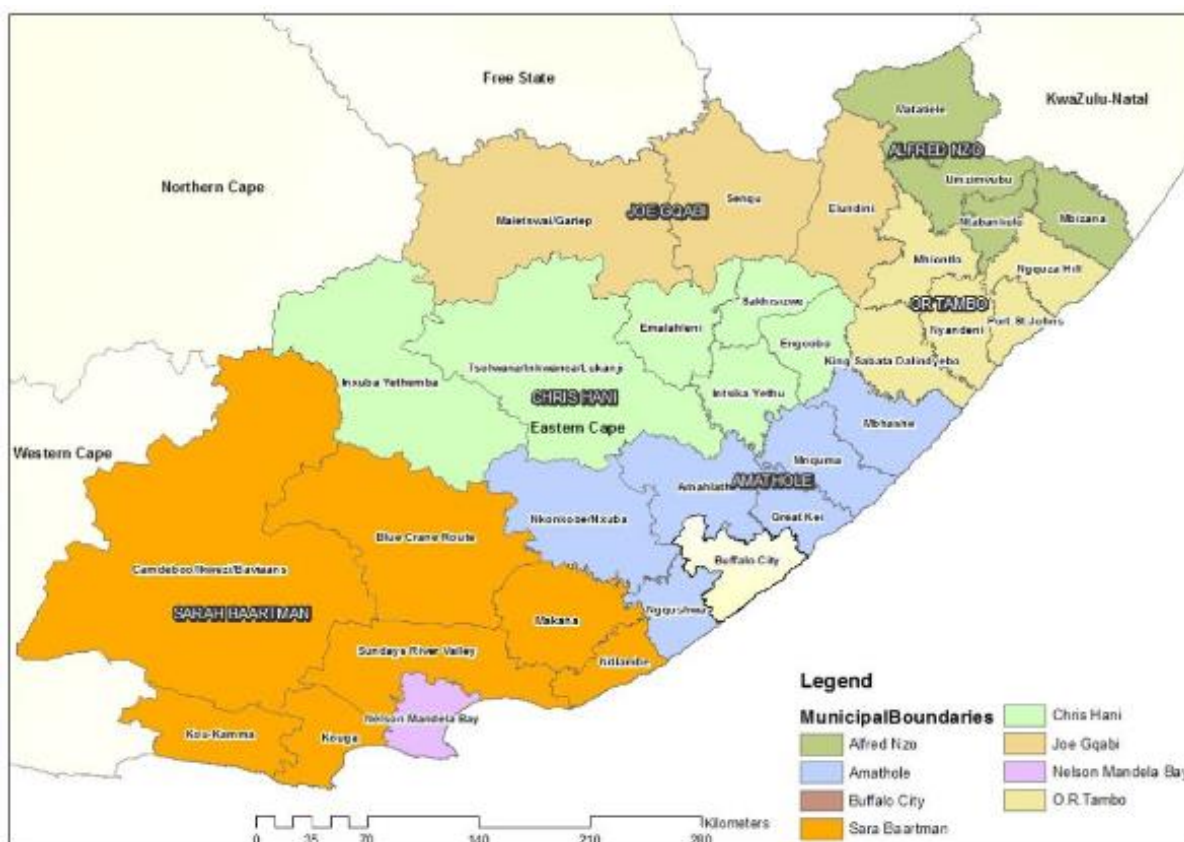


Figure 3: BCMM location in the Province and Region (Source: BCMM IDP 2017-18)

## 2.3 NEW WARDS

Following the local government elections held on the 3rd August 2016 new areas from the surrounding local municipalities were incorporated into Buffalo City Metropolitan Municipality, thus impacting on both the size of the population and land area. New areas that have been incorporated into BCMM from Great Kei, Amahlathi and Ngqushwa Local Municipalities are shown by a red colour in the figure below. In total 24 269 people and 6567 households were incorporated into BCMM. The newly incorporated wards are mainly rural areas and include farms within the jurisdiction of BCMM. These wards are currently not receiving the waste management service and therefore reflect as the City's backlog in terms of the waste

service provision. The City is awaiting finalization in terms of demarcation before services can be rendered in these demarcated areas.

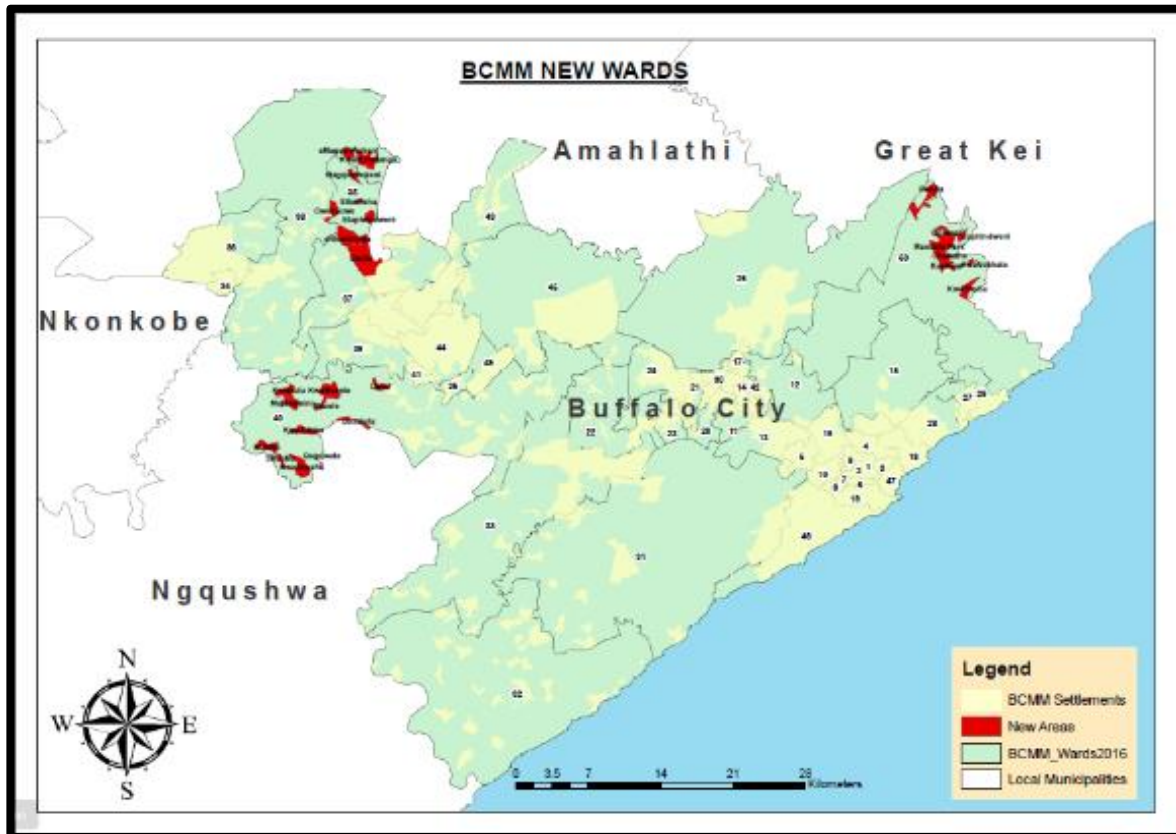


Figure 4: New areas that have been incorporated into BCMM from Great Kei, Amahlathi and Ngqushwa Local Municipalities shown in red colour (Source: BCMM IDP 2017-18)

## 2.4 SETTLEMENT PATTERNS

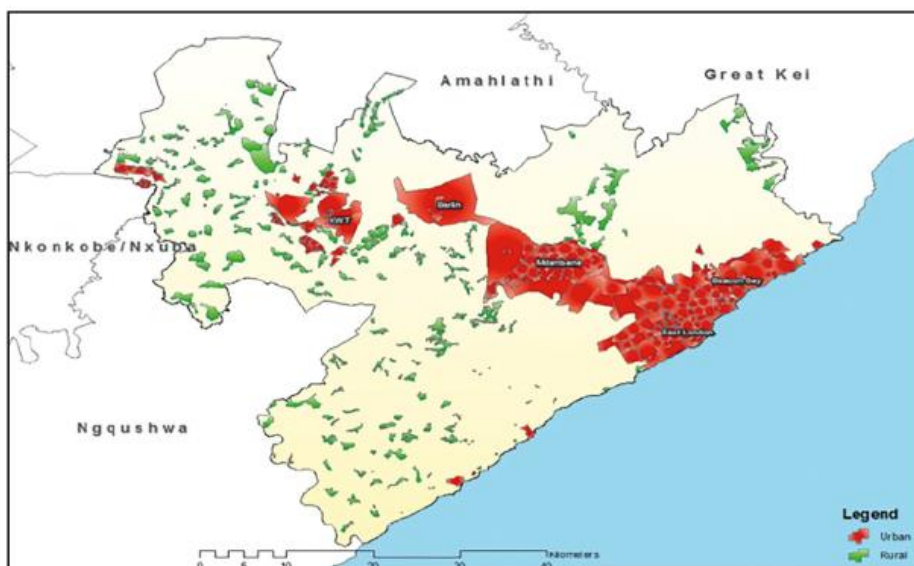


Figure 5: BCMM Urban and Rural Settlements

BCMM is characterised by a composite settlement and land use pattern, incorporating urban, peri-urban and rural components, which were previously administered as separate local government entities. Buffalo City is the key urban centre of the eastern part of the Eastern Cape. It consists of a corridor of urban areas, stretching from the “port city” of East London to the east, through to Mdantsane and reaching Dimbaza in the west. Buffalo City’s land area is approximately 2,515km<sup>2</sup>, with 68km of coastline. The existing urban areas and settlements in Buffalo City are spatially fragmented, which is a feature of the entire municipality. The spatial fragmentation creates a negative urban dimension. In Buffalo City, the following three main identifiable land use and land need patterns are identified:

## **2.5 PHYSICAL CHARACTERISTICS**

The physical shape, environmental character and configuration of the municipality have an important part to play in influencing the way people have chosen to reside in the area. This section provides a general overview of the state of the physical environment within BCMM.

## **2.6 TOPOGRAPHY**

The BCMM area extends from sea level along the coastal belt increasing in north-westerly direction to a plateau of elevation between 450m and 850m above sea level. This plateau extends from Maclean Town and Berlin, through to Dimbaza. The elevation in the most north-westerly portion of the BCMM occurs in the Amatole Mountains and reaches 2100m above sea level. The topography of the region is characterized by a number of incised river valleys, which run nearly parallel to each other in a south easterly direction through the municipality and which dissect the municipality at regular intervals. This terrain, which lacks large tracts of flat land, impacts significantly on settlement patterns as well as the cost of provision of services within the region.

## **2.7 GEOLOGY AND SOILS**

The geological strata of the region are typical of the Karoo system and consist mainly of mudstones and sandstones intruded by dolerite dykes and sills. In general, the dolerite dykes trend east to west. Much of the geology is of marine origin, giving rise to the high salinity of the ground water in the area. The soils are generally moderate to deep clayey loams and the erodibility index of the soils in the region is recorded as being medium to low.

## **2.8 CLIMATE**

The climate of BCMM is moderate for most of the year, but with hot spells from December to February, particularly in the inland areas. Although the region does receive rainfall all year round, it is primarily a



summer rainfall region, with the months of June and July generally being the driest months of the year. Rainfall within BCMM varies from approximately 1000mm along the coastal belt between East London and Kwelera, gradually decreasing in a westerly direction to 500mm in the areas of the upper reaches of the Tyolomnqa, Keiskamma and Umkhangiso Rivers. In the northwestern portion of the region, in the vicinity of the Amatole Mountain Range, the mean annual precipitation again increases to between 1000 to 1500mm. The city is very mindful of the impact of solid waste on climate change and as a result the City has partnered with the Border Kei Chamber of Business and Buffalo City Development to pursue separation of waste at source at both Duncan Village and other identified areas as a strategy to reduce the quantities of waste going to our Landfill sites. Secondly, the operationalization of the Landfill sites in terms of compacting, cover material and reduction of fires is a positive contribution that the City has embarked on to combat the effects of climate change.

## **2.9 DRAINAGE SYSTEM**

Buffalo City Metro Municipality has 10 major river systems. Of these, 9 are considered “Endangered” and the Buffalo River system is considered “Vulnerable” (SANBI, 2004). In terms of aquatic systems, the National Wetlands Inventory identifies a total of 2064 wetlands areas. The ground water potential in the region is generally not good, resulting in low borehole yields (generally below 2l/s) and high salinity waters. The north-western portion of the region has the greater groundwater potential (i.e. Peelton villages), with the potential reducing in a south-easterly direction towards the coast.

## **2.10 VEGETATION**

Four Biomes are represented in Buffalo City Municipality (Albany Thicket 66.82%; Savanna 29.24%; Forest 2.73% and Grassland 1.14%) of which 12 vegetation types have been classified by Mucina & Rutherford (2006). There is an estimated 26.8% of the municipality where no natural habitat remains. The South African National Biodiversity Institute (SANBI) identifies no critically endangered or vulnerable terrestrial ecosystems within the Municipality.



# **CHAPTER 3**

## **SITUATION ANALYSIS**

### 3. SITUATION ANALYSIS

#### 3.1 GROWTH & DEMOGRAPHIC PROFILE

The population of the City is detailed in the table and graphs below. The current population is drawn from the community survey of 2016 stating that the City has 834 997 people living within its boundaries. The projected growth rate is estimated at 1%. This implies that the population of the City in 2025 (at the end of the IWMP period) will be 842542.

The level of literacy in Buffalo City ranges from highly literate to less literate depending on socio-economic stratification. These varying levels of literacy do affect the marketing and awareness strategy of the City in that certain areas, signage may be more applicable and in other areas may be less applicable. The population growth coupled with urbanization leads to an increased demand of Solid Waste services and as a result the City is in constant consultation with Spatial Development Planning as to the changing demands and need for Solid Waste service as reflected by the demographics of the City.

The table below depicts the projected demographic profile and population growth as these components have a bearing on the provision of Solid Waste services in the City.

Table 1: Growth and Demographic Profile of BCMM

Growth estimates	
Municipality Population (as per Community Survey 2016):	834 997
Estimated Population Growth (%) as per Community Survey 2016):	1%
Estimated population in 2025 (year is a parameter):	842542
Demographic profile	
Age:	
Youth	472723
Middle age	215606
Old age	66869
Gender:	
Male	358557
Female	396644
Education:	
Primary	494 318
Secondary	163 659

Tertiary	71 809
Employment:	
Employed	185215
Unemployed	376065

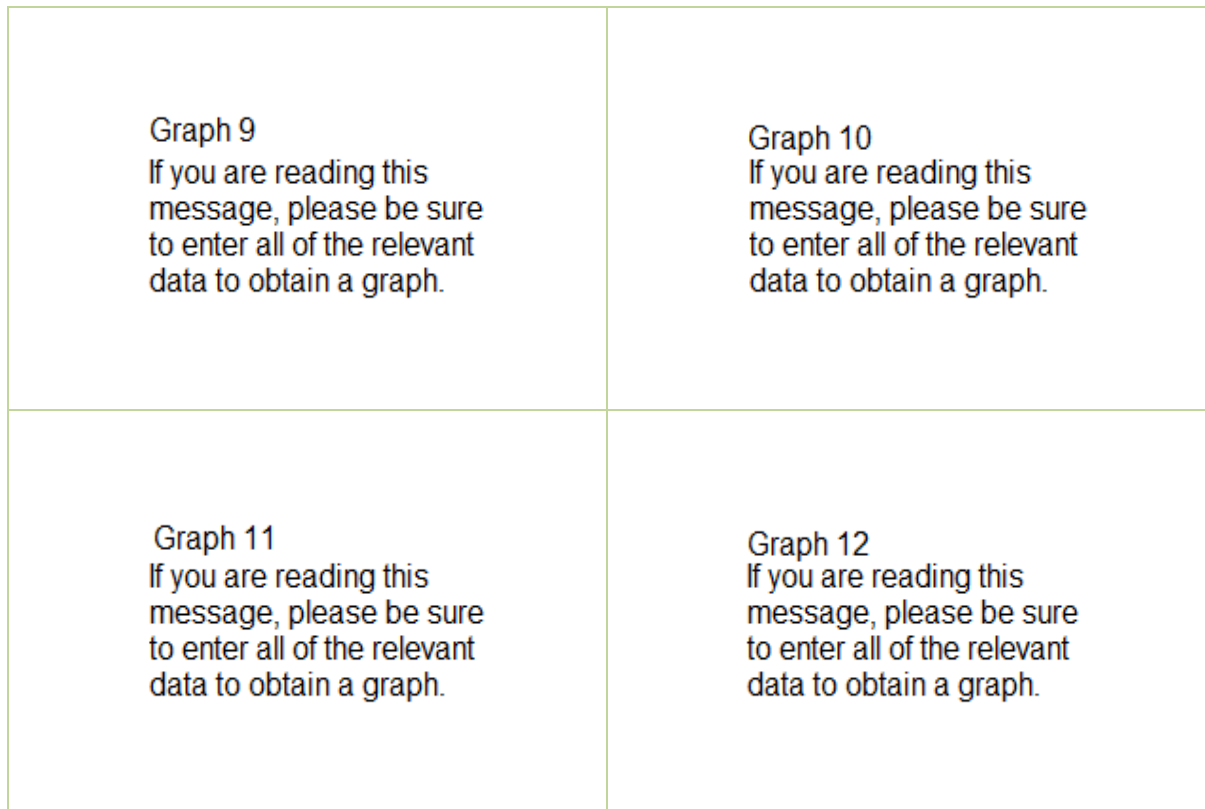


Figure 6: Population distribution graphs

### 3.2 DWELLING TYPES

According to CS 2016, the total number of households in BCMM currently stand at 253 477 up from 223 568 stated in Census 2011. This is an increase of about 29 909 households in the 5year period, which translates to a 13.4% increase. Of these 253 477 households, 70.2% are formal dwellings, 24.9% are informal dwellings and the remainder consist of traditional dwellings as illustrated in Figure 7 below.

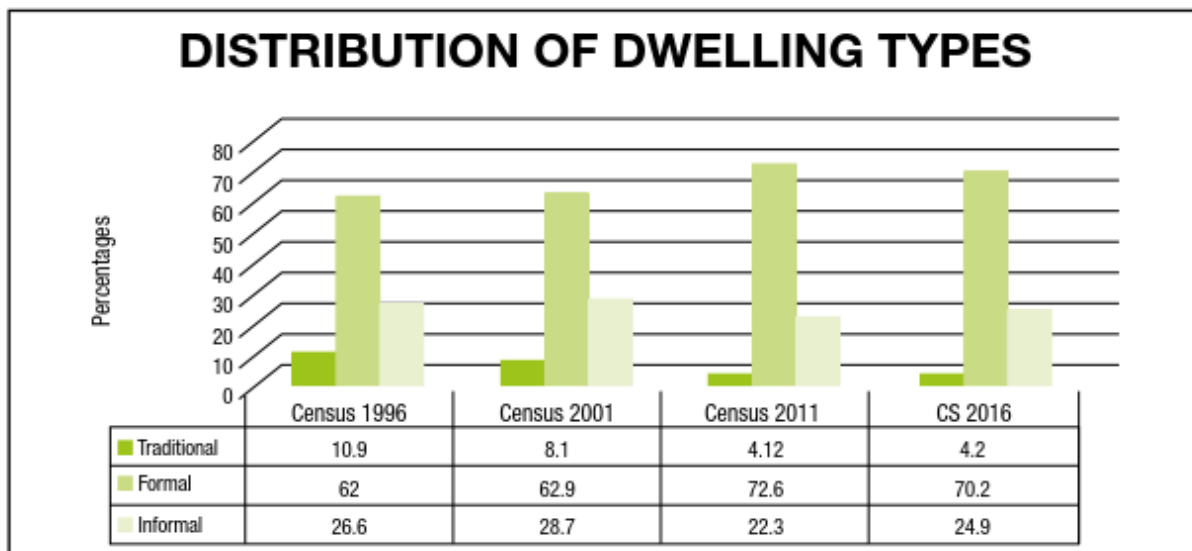


Figure 7: Distribution of Dwelling Types in BCMM

The majority of the dwellings in BCMM are all formal at about 71% and 25% are informal as shown in Figure 7 below.

### Dwelling Types

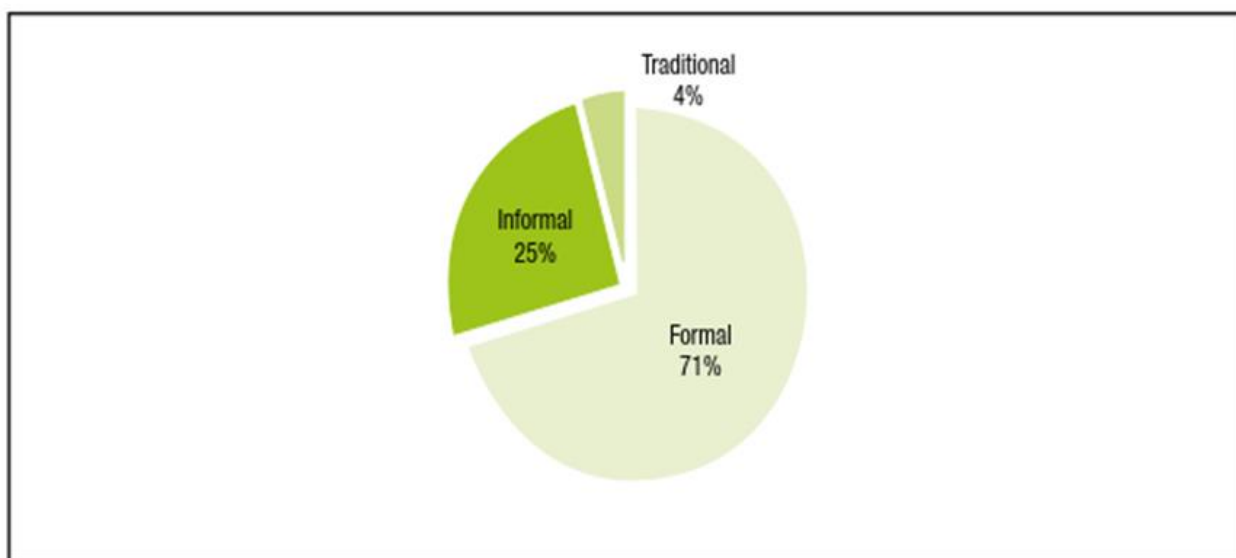


Figure 8: Dwelling Types

The dwelling patterns of the BCMM are illustrated in figure 8 above. 71% of the dwelling types are formalized with the other 4% being traditional dwelling types. A quarter of the households are informal in nature. Table 2 below provides much more detailed types of dwellings. In the BCMM most of the households are made of brick or concrete block structure.

Table 2: Dwelling distribution in BCMM

Dwelling Type	Number of Households
House or brick/concrete block structure on a separate stand or yard or on a farm:	139897
Traditional dwelling/hut/structure made of traditional materials:	10157

Flat or apartment in a block of flats:	11045
Cluster house in complex:	1095
Townhouse (semi-detached house in a complex):	2311
Semi-detached house:	2091
House/flat/room in backyard:	4444
Informal dwelling (shack in backyard):	10896
Informal dwelling (shack not in backyard e.g. in a informal/squatter settlement or on a farm):	38894
Room / flatlet on a property or larger dwelling/servants quarters/granny flat:	1121
Caravan/tent:	202
Other:	1415

### 3.3 ESTIMATING OF CURRENT WASTE GENERATION AND FUTURE WASTE GENERATION RATES AND QUANTITIES

#### 3.3.1 WASTE GENERATION

Waste generation at source is seldom quantifiable due to inherent complexities and difficulties in recording the waste which a population generates. Estimations are therefore introduced, which are based on several assumptions. The most commonly used, is that of linking individual income with waste generation. By the accepted standards by DEFF, higher income earning groups generate more waste than lower income groups. Table 3-5 presents the assumed generation rates of the three income groups used in all theoretical estimations. The calculated estimated generation rate for BCMM is 0.59 kg per capita per day (kg/c/d).

Table 3: Waste Generation per Income Group

Income Group	Waste Generation Rate
High Income	1.52 kg/capita/day
Middle income	0.78 kg/capita/day
Low Income	0.37 kg/capita/day
Therefore, Calc Est. Av Generation Rate per person is 0.59 (kg/capita/day)	
Calc Est. Av Generation Rate per household (1.98 kg/Household/day)	

Applying the estimated waste generation rates in Table 2 to the population figures, waste generation and disposal quantities can be estimated and compared with actual weighbridge data from the Landfill Sites.

Generation rates used, have been calculated using an average of previous studies undertaken. There are several other studies which quote generation rates; however, those in Table 3 were selected as a representative sample.

Applying the estimated waste generation rates in Table 2 to the project population figures, waste generation and disposal quantities can be estimated and compared with actual weighbridge data from the Landfill Sites. Generation rates used, have been calculated using an average of previous studies undertaken. There are several other studies which quote generation rates; however, those in Table 2 were selected as a representative sample. The stratification of our City is a reflection of the pre-Democracy era. As a result, population densities are significantly higher in the less formal areas, such as Duncan Village, Scenery Park and Nompumemlo. This results in a unique service delivery model in that Solid Waste services are rendered on a more regular basis than in the formal areas where curbside collection is rendered once a week.

In areas such as the Quigney and Southernwood where there is a mix of student accommodation, tourism and high density accommodation necessitates a unique service delivery model in that curbside collection is undertaken but on a more regular basis than in the traditional suburban areas.

The advent of informal settlements and the high population density of these areas results in more illegal dumping as well as illegal dumping that results from both formal households and businesses due to the proximity of the Landfill site to the city

Table 4: Waste Generation Comparative Studies

<b>Waste Generation per Income Group</b>	<b>Avg. Select</b>	<b>S Municipal Waste Sector Plan</b>	<b>A NW Province IWMP</b>	<b>EThekwini Metro IWMP</b>	<b>City of Joburg IWMP</b>
High Income	1.52	1.29	1.85	1.47	1.45
Middle Income	0.78	0.74	1.1	0.41	0.85
Low Income	0.37	0.41	0.45	0.13	0.48

The discrepancy between estimated generation, the collection and disposal thereof, and the actual quantum entering the landfill site is evident (Table 3).

**Table 5: Projected Waste Generation Statistics (2017 – 2030)**

	<b>2017</b>	<b>2020</b>	<b>2030</b>
Population	787 010	803 413	860 602
Households	282 985	237 841	254 771
Municipal Solid Waste Overview			
Est. MSW generation in 2017	168 504	172 017	184 261
Est. Collection / Disposal in 2017 (Tons/Year)	118 627	121 100	129 720
Est. Daily disposal rate in 2017 (Tons/Day)	456	466	499
Actual current year disposal	138 799	141 692	151 778
Difference between weighbridge and projected	-20 172	-20 592	-22 058

## 3.4 WASTE QUANTITIES AND TYPES

### 3.4.1 WEIGHBRIDGE INFORMATION

Table 6: BCMM Total Composition of General Waste disposed of at City's Landfill

Waste Types	Percentage type (%)
<b>ORGANICS</b>	10%
Food waste	12%
Garden waste	22%
<b>PACKAGING</b>	20%
Plastics	16%
Paper & Paperboard	1%
Metal	3%
Glass	41%
<b>C &amp; D</b>	2%
<b>RESIDUAL</b>	5%
Textiles	8%
Special Care Waste	2%
Other Waste	14%

Noting the character of the MSW waste stream received at the Municipal landfill in Figure 9 highlights the predominance of packaging waste within the household collected waste, with a large volume of food waste. Table 6-7 also demonstrates and highlights the predominance of packaging waste within the household collected waste, with a large volume of food waste.

Table 7: Mixed Household MSW disposed

Waste Type	Waste Type percentage (%)
<b>ORGANICS</b>	
Food waste	15%
Garden	2%
<b>TOTAL</b>	<b>17%</b>
<b>PACKAGING</b>	
Plastic	30%
Paper & Paperboard	25%



Metal	2%
Glass	5%
<b>TOTAL</b>	<b>61%</b>
C&D	0%
<b>RESIDUAL</b>	
Textile	8%
Special Care Waste	12%
Other	2%
<b>TOTAL</b>	<b>22%</b>

### 3.5 WASTE STREAM ANALYSIS

The waste characterisation surveys of the various selected municipalities form an essential part of the project. Due to the project's timeframe, it would not be possible to conduct comprehensive characterisation surveys covering more than one season. Low confidence surveys were undertaken in all municipalities during the summer season only (December/January). Due to local variability in climate and socio-demographics, it would not be possible to extrapolate the data into other seasons.

As a result, a mini waste characterisation studies were undertaken in all 6 municipalities, following a simplified version of the American Society for Testing and Materials (ASTM) - *Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste - D5231-92-2008*. The project team identified all existing waste management facilities within the greater municipality and sampled the "primary" landfill site, as a representative landfill site whereby the waste analysis and composition study (WACS) would be conducted.

The waste characterisation study was conducted for 2-3 days at each municipality's "primary/representative landfill site" focusing on Municipal Solid Waste (MSW) fraction only. The on-site WACS were led by competent members of the project team (JG Afrika) with assistance from municipality's Extended Public Works Programme (EPWP) staff or informal waste reclaimers in some instances. The WACS also included active participation of representatives from GIZ, DEA and Municipality.

The Waste Characterisation study undertaken on 6 and 7 December 2017, at Roundhill Landfill Site (LFS), Berlin was used as the main source of information for the character of waste generated in BCMM. Roundhill LFS was selected for the characterisation as it is the main site used for disposal in the BCMM

and it was assumed that it would provide the best information with regards to waste composition. King William Town receives much smaller volumes and mainly from King Williams Town and surrounds.

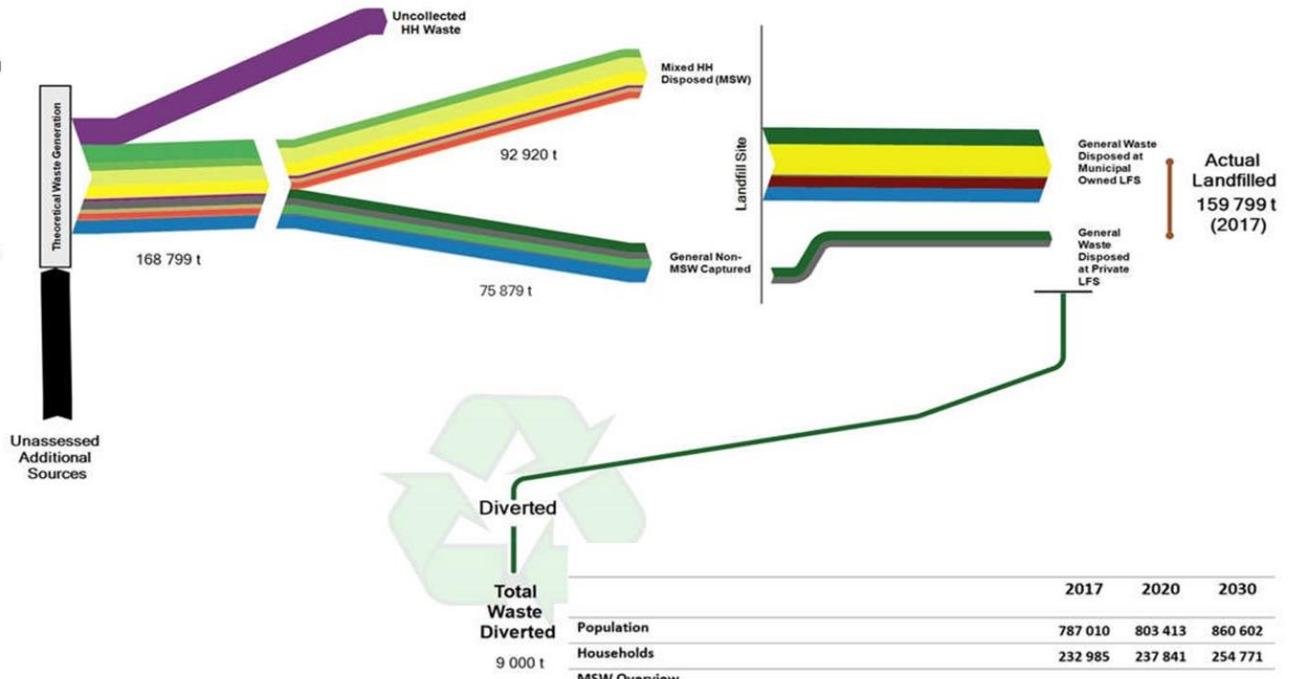
Over the two days, thirty samples were selected from waste vehicles originating in areas collecting commercial and domestic waste ranging from high to low income. Sample varied in size and where possible, bags were selected from different parts of the vehicle to get a varied sample. In order to make informed decisions on sound waste management approach and to identify opportunities for waste diversion and GHG emission reduction, Waste Stream Analysis for understanding the waste character within the Municipal system is essential.

Under this task, an extensive baseline review was undertaken. All data reports and information relevant to the project were sourced and reviewed. A Request for Information (RFI) was distributed to allow the wider municipal team to understand the information that is needed for this report and future opportunities to be assessed. A full list of reviewed documents is included in the References section of this report. The baseline review involved review of key available documents.

# Waste Character and Volume

## Buffalo City

- Organics
- Food
- Garden
- Packaging
- Glass
- Metal
- Paper & Paperboard
- Plastic
- Cover Material
- C&I
- Residual
- Other
- Special Care
- Textiles
- Uncollected
- Unassessed Source
- General Waste
- Unaccounted for



	2017	2020	2030
Population	787 010	803 413	860 602
Households	232 985	237 841	254 771
<b>MSW Overview</b>			
Est. MSW generation in 2017	168 504	172 017	184 261
Est. Collection / Disposal in 2017 (t/yr)	118 627	121 100	129 720
Est. daily disposal rate in 2017 (t/d)	456	466	499
Actual Current Yr disposal (tpa) (2017)	138 799	141 692	151 778
Difference between Weighbridge and Projected	-20 172	-20 592	-22 058

Figure 9: Estimate Waste Generation Character (2017)

Table 8: BCMM Waste Generation and Types

Waste Stream	2017	2020	2030
<b>ORGANICS</b>	<b>37 829</b>	<b>38 618</b>	<b>41 367</b>
Food	17 470	17 834	19 104
Garden	20 359	20 783	22 263
<b>PACKAGING</b>	<b>69 196</b>	<b>70 639</b>	<b>75 667</b>
Plastic	33 411	34 108	36 536
Paper & Paperboard	27 769	28 348	30 366
Metal	2 331	2 380	2 549
Glass	5 685	5 804	6 217
<b>C&amp;D</b>	<b>6 658</b>	<b>6 797</b>	<b>7 280</b>
<b>RESIDUAL</b>	<b>54 821</b>	<b>55 963</b>	<b>59 947</b>
Textiles	8 607	8 787	9 412
Special Care Waste	13 070	13 342	14 292
Other Waste	33 143	33 834	36 243

The projection of the waste into 2030 shown in the table 8 above shows that the waste generation pattern are unlikely to change with packaging waste stream still expected to be predominant in both 2020 and in 2030. The quantum of waste produced in the BCMM is projected to be increasing by about 10% more waste.

## 3.6 WASTE RECYCLING, TREATMENT AND DISPOSAL

### 3.6.1 STATUS QUO OF WASTE DISPOSAL FACILITIES

Landfilling is the most commonly used disposal method in South Africa and DWA estimates that in excess of 95% of waste generated in South Africa is disposed of in landfills. It has been conceived as the most economical method of waste disposal and can be considered an environmentally acceptable practice, provided it is properly carried out and alternative methods of treatment are proven non-viable.

BCMM is serviced by two General Waste Landfill Sites and has no Hazardous Waste Landfill Site, however some hazardous waste is illegally disposed in the general waste landfill facilities. Further to this the City's Annual Financial Statements (AFS) indicates that BCMM has nine (9) other old (pre-NEMWA) Waste Management Facilities. These sites are of various categories in terms of compliance to the waste

Regulatory Framework. In addition to this, there is a Garden Refuse Site in Gonubie that is privately owned site receives Garden waste and Builders rubble for use as backfill material in the Roundhill Landfill Site.

**Table 9: SWM Facilities (Source: DEA, 2018)**

*SWM Facilities*

Facility Type	Facility Name	Permitted / Licenced	Operational Status	Sector Operated
Landfill Site	King Williams Town LFS		Operational	Municipal
	Roundhill LFS	Yes		Municipal
Green Waste Disposal / Transfer / Composting	Riegers Garden Refuse (and builder's rubble) Tip - Gonubie	Yes		Privately owned and operated, with permit issued to BCMM/Municipality
	Beacon Bay (new) Garden Refuse Site	Yes		Municipal
Buy-Back Centre	Oriental Plaza BBC	Yes		Private on behalf of Municipality
Material Recovery Facility	Collect-All MRF at the IDZ			Private
Depot & Maintenance Facility	Coastal Region - East London Cambridge Depot			Municipal Operated (Transnet owned)
	Inland Region - King Williams Town Botanical Gardens depot			Municipal
Depot (garaging)	HOD SWM Office compound			Municipal
	Midland Region - Mdantsane NU6 Depot			Municipal
Green Waste Transfer Station	Beacon Bay (old) Garden Refuse Site		Municipal	
	Stony Drift (Amalinda)		Municipal	
	Industrial Development Zone		Municipal	
Closed Landfill Site	Berlin Battery	No	Closed	Municipal
	Dimbaza	No		Municipal
	Ducats - rehabilitated	Yes		Municipal
	Kayser's Beach	No		Communal
	Kidd's Beach	No		Communal
	KWT (Tannery Site)	No		Private / Municipal
	Macleane town	No		Communal
	NU12	No		Municipal
	NU II, Mdantsane	Yes		Municipal
	Old Everite	No		Municipal
	Old Selbornian	No		Municipal
	Port Rex	No		Municipal
	Second Creek LFS	Yes		Municipal
	Westbank	No		Municipal

## Roundhill Landfill

Roundhill Landfill Site, located near Berlin on the border of Inland and Midland waste collection regions, is a GLB+ permitted site (General Waste only). This site has been operating since 2002. The airspace of this site is between 15 and 20 years. At the current rate of waste generation there's a need that the city fast tracks the waste minimization program and in this regard this will result in the extension of the lifespan of the two Solid Waste sites in the city. For a long time, this site has been noncompliant to its permit conditions under the Waste Act of 2008 and the Environment Conservation Act of 1989. The Consulting Engineers, Envitech Solutions appointed by the City in 2014 assessed the level of non-compliance of this site and was found to be about 84% non-compliant. Internal and external audits are done on this site on an annual basis and the outcomes of this have been more than 80% compliant. The non-compliances at this stage are mainly due to presence of informal recyclers and inadequate security measures at the landfill sites resulting in the presence of informal recyclers on the operational face of the landfill site.

The City together with the department of Department of Economic Development, Environmental Affairs and Tourism have undertaken to reestablish a bi-monthly monitoring committee that will ensure moving towards 100% compliance in all landfill and garden transfer stations in the city

Following this, a turn-around strategy to rectify the non-compliances was developed and implementation thereof was initiated in 2015 and completion is anticipated by May 2019. Works for construction of two new cells (Cell 3 and 4) and upgrade and refurbishment of the existing Leachate Management System, are currently underway. The site was designed to have six (6 Cells) with each cell designed to have a life span of two to five years. It is estimated that this site will be in operation at least for the next 25 to 30 years from now.

Further to this, in 2017 Gas Wells and a Test Flare were installed in Cell 1 to assess the potential for Landfill Gas Extraction, it was found that there was limited gas and a constant flare could not be established. This is among others due to non-covering and non-compaction of waste in the site, which then resulted in spontaneous fires.

The site layout is illustrated in Figure 3-13.



Figure 10: Roundhill Landfill Site - Leachate pond right, followed left to right by Cell 1 (covered), Cell 2 (current), Cell 3 under construction, cell 4 will join Cells 1 and 2. Railway line in foreground, highway in background with weighbridge and





Figure 11: Working face of Roundhill Landfill. Green Waste "cover material" from Beacon Bay Green Waste Transfer Station deposited in far ground; cage truck unloading of MSW in foreground; landfill compactor left upper-middle.

Weighbridge data is collected for every truck (municipal and non-municipal) entering the site. Non-municipal vehicles are required to pay a tipping fee (currently 161 ZAR / ton) to dispose of waste at Roundhill Landfill Site. No money is collected at the landfill. Established private waste management companies establish a contract with BCMM and are invoiced monthly for the waste delivered. Individual and small operators are required to purchase a token (each token = 1 tonne) from the BCMM waste management department at their Cambridge depot in East London.

Currently, BCMM hires landfill operating equipment and machinery from the private sector. These include:

- Landfill Compactor,
- Bull dozer,
- an Excavator,
- two dump trucks (for cover material) and;
- 16000-litre water tanker used to recirculate Leachate.

Garden waste (without pre-treatment) is currently imported from the Beacon Bay Garden Waste Transfer Station ( $\pm$ six 20m<sup>3</sup> tipper trucks / day) and used as cover material in the Roundhill Landfill Site. It is estimated that more than 100 informal waste pickers are active on this site, harvesting materials from the waste. Main materials are cardboard, paper, aluminium cans, ferrous metal, PET and HDPE plastic. These are collected and manually removed from site through a gap in the perimeter fence (not via main gate), amassed beside the main entrance, and collected periodically by a recycling middle-man company (e.g. "Reclaim") which purchases and removes the materials. Due to this being conducted informally at

the side of the site, no details are recorded or available on the quantities of material being recovered and removed from the landfill.

### **King William's Town Landfill Site**

The King William's Town Landfill Site, a GLB +Site (permitted to accept general waste only), is situated close to King William's Town. This site has been operating since 1986. About 3000 - 4000 tonnes/month of mixed commercial and municipal waste collected from the Inland Region is disposed of in this site. The airspace of this site is between 15 and 20 years.



**Figure 12: King William's Town Landfill Site: Entrance and Weigh bridge bottom left, Leachate pond centre, waste mass upper right quarter, working face in centre of waste mass**

This site is still to be upgraded so that it can be put to a compliance state in line with its permit conditions. The site has been assessed and a recommended Turn-around Strategy has been developed in 2014. Due to financial constraints, the City started by attending to the Roundhill Landfill Site's non-compliance. In the meantime, an updated weighbridge system has been installed in this site. The Works to upgrade the King Williams Town Landfill Site is set to commence in the 2021/2022 Financial Year.

The access to the site is controlled with a weighbridge in operation. Informal recycling is taking place with 20 – 30 waste pickers active on the site, some materials removed from site are recorded on the weighbridge. The site has a lined leachate collection sump and pipes are installed in the waste mass that direct the leachate towards the sump. The leachate is reportedly pumped into tankers and removed to the sewer system, sprayed onto the on-site road network for dust control, or returned to waste mass. However, during heavy rains the leachate pond tends to overflow.



None of the existing sites in Buffalo City Metropolitan Municipality should be receiving any hazardous waste and should only accept general waste. This is, however, not being effectively controlled which results in that an unknown amount of hazardous wastes (such as medical waste, animal carcasses and unknown substances discharged by private companies) are being illegally disposed of on the sites. The co-ordinates of the operational landfill sites in the City are outlined in the Table below:

Table 10: Permitted Operational landfill disposal sites

Site	Latitude	Longitude
King William's Town	32° 51' 06" S	27° 23' 27" E
Roundhill (Regional site)	32° 53' 30" S	27° 37' 33" E

## Unpermitted landfill sites in Buffalo City Metropolitan Municipality

The status and co-ordinates of the unpermitted disposal sites are as outlined in the table below. These sites need to be legally closed, rehabilitated and their possible future use determined.

A number of sites in Buffalo City Metropolitan Municipality are no longer operational. Only the Ducats landfill site has been closed in accordance with the National Norms and Standards for the Assessment of Waste for Landfill Disposal 2013.

Currently the City is upgrading and permitting Kaysers Beach and Kidds Beach Garden Transfer Sites.

The City is conducting environmental assessment of the King Williams Town Tannery Site with the intention of possible rehabilitation.

Table 11: Unpermitted disposal sites

Site	Status	Latitude	Longitude
Beacon Bay	Operational	32° 57' 16" S	27° 57' 00" E
Berlin Battery	Closed	32° 53' 37" S	27° 35' 52" E
Dimbaza	Closed	32° 50' 35" S	27° 12' 45" E
Ducats	Rehabilitated	32° 55' 45" S	27° 54' 30" E
Kaysers Beach	Communal	33° 12' 20" S	27° 35' 56" E
Kidd's Beach	Communal	33° 08' 22" S	27° 41' 08" E
KWT (Tannery Site)	Closed	32° 53' 20" S	27° 24' 10" E
Macleantown	Communal	32° 46' 28" S	27° 45' 21" E
NU12	Closed	32° 55' 21" S	27° 42' 27" E
NU2	Closed	32° 57' 31" S	27° 45' 20" E
Old Everite	Closed	32° 53' 23" S	27° 24' 18" E
Old Selbornian	Closed	32° 59' 42" S	27° 55' 15" E
Port Rex	Closed	32° 59' 14" S	27° 54' 46" E
Second Creek	Closed	33° 01' 15" S	27° 53' 18" E
Westbank	Closed	33° 02' 26" S	27° 52' 36" E
Stony Drift (Amalinda)	Garden Waste Closed		

Note: Most of these sites were developed prior the promulgation of the NEMWA.

## **Hazardous Waste Disposal Sites**

There are no hazardous waste disposal sites in Buffalo City Metropolitan Municipality. The legal understanding is that hazardous waste is not a competency of Municipalities. However, this poses a challenge because there are some amounts of hazardous waste generated at household level. As a result of this, generators are encouraged to use the services of private service providers in terms of the collection, removal and disposal of hazard waste. Hazardous waste collected in Buffalo City Metropolitan Municipality by private operators is taken to hazardous facilities in the Nelson Mandela Metro (Aloes site), or Cape Town (Vissers Hoek site). BCMM is preparing to implement a pilot project in partnership with DEFF and Swedish Environment Protection Agency to develop a suitable option for collection and management of hazardous waste in BCMM. The launch of the pilot has been delayed due to the advent of Covid-19 and may delay the launch date of October 2021 even further.

## **Transfer Stations - Central Transfer Station**

The Transnet Premises that BCMM is currently leasing for Solid Waste Management Staff and Refuse Removal Fleet was also meant to function as a Central Transfer Station. This has also been considered in the Waste Flagship Programme for Diversion of Waste from Landfill Disposal that the City has been conducting with National Department of Environmental Affairs and GIZ. The Waste Flagship Programme has thus far recommended this site for redesigning in order to function as a Waste Management Complex with a MRF, Transfer Station etc. Also, the Feasibility Study that was conducted prior commissioning of Roundhill Landfill Site, proposed the Cambridge Site for establishment of a Central Transfer Station. The report of the study that has been finalized in June 2021 has found the site to be no longer suitable for this purpose as there are new residential and shopping center developments that were not present previously. The department is working with Spatial Development to identify possible alternative sites.

## **Garden Transfer Station**

There is currently only one operational Garden Transfer Station in the City. This is a privately-owned site situated in Gonubie, East London. The Riegers Garden Transfer Station was permitted by the DWAF. This site is permitted to accept garden waste and builder's rubble. The tonnage collected at the transfer

stations is a rough estimate of the waste collected as no records are kept. ( Provide a summary of the operational plan and the challenges that may require the City's intervention)



Figure 13: Beacon Bay Green Waste TS (with large accumulation of green waste)

## Buy Back Centre

BCMM had two Buy Back Centre (BBC); one was situated in Oriental Plaza, East London and the other in Fort Jackson, Mdantsane. Currently both BBC experienced challenges and as a result are currently not functioning. A cost recovery centre in Duncan Village is operational. This is operated and managed by the Buffalo City Metro Development Agency (BCMDA).



Figure 14: The old before its operational challenges East London Buy Back Centre



Figure 15: Information Poster of wastes accepted at the Cost Recovery Centre in Duncan Village

## Collect-All MRF at the IDZ

The Material Recovery Facility (MRF) at the IDZ is privately operated by Collect-All. It services the commercial and industrial sectors and is predominantly a clean MRF, but there is some sorting of dirty recyclables. Services provided include the rental and management of skips (two different sizes) placed at commercial or industrial locations and the sorting, treatment/processing of various recyclable materials for market (baling and granulation). Large quantities of the materials processed are from packaging of imported parts from the motor vehicle industry. The materials managed are predominantly plastics (many different types), cardboard and paper.

The main market for cardboard is Sappi in Durban and paper goes to Johannesburg. The material that has no market value is transported by truck to the Roundhill LFS. The transportation cost (as a result of the distance) to landfill is regarded as a challenge. Collect-All currently only owns 1 truck that takes waste to landfill which adds to the challenge as they previously had two and is therefore considering purchasing a Compactor truck as a more efficient means of taking waste to the landfill.





Figure 16: Baled cardboard at the Collect-All facility



Figure 17: Collect-All's Granulator to process plastics into chips for sale to market

## Miscellaneous Recycling

A significant proportion of food wastes generated at the larger retail outlets and institutions is being sold as pigswill. The Municipality is, however, not specifically coordinating or controlling this activity. Some control is however provided through the normal health regulations and health inspection processes that are applicable to businesses producing or handling putrescible foodstuffs.

## **Informal Recycling Industry**

There is an extensive informal recycling industry operating in Buffalo City Metropolitan Municipality. Informal recyclers collect materials from either landfill sites or commercial/residential areas. At the landfill sites Roundhill and King William's Town, informal recyclers recover recyclable materials from amongst the waste. However, this is non-compliance for our landfill sites as the permits of these sites do not allow entry of unauthorized persons on these sites.

In commercial and residential areas, informal recyclers open plastic bags of waste that have been put out for collection and recover the recyclables. The informal recyclers deliver the materials to central pick-up points at scheduled times and sell them to the formal recycling industry within the city. This informal recycling also results in a degree of re-use where re-usable waste is recovered and sold to individuals or retained for re-use by the recycler. The opportunities for the informal recycling in the city minimizes the travelling by the recycling companies to extract recyclables from the Landfill sites therefore the informal recycling industry is an important stakeholder in the recycling value chain. As a result, the City is working with the DEFF to explore possible means of formalizing the informal recyclers.

## **Waste Treatment**

Waste treatment is the process of minimizing the environmental impacts of waste by changing the physical properties of waste or separating out or destroying toxic components of waste (NWMS, 2009). There are various waste treatment methodologies which are landfilling, composting, incineration, gasification and pyrolysis. Of the waste generated in South Africa, it is estimated that more the 95 % is landfilled (with eventual decomposition and stabilization) and this generally remains the most economical means of waste treatment. Alternative methods of treating municipal general wastes attempted in South Africa in the past have generally been low technology options such as composting and incineration.

## **Incineration in Buffalo City Metropolitan Municipality**

There is no incineration in Buffalo City Metropolitan Municipality. All reported medical waste (waste that is usually incinerated) is collected by a private waste collection company and transported to either Port Elizabeth or Cape Town. It is also suspected that some of the rural clinics may be inadequately burning and disposing of medical waste and sharps on-site due to inefficiencies or lack of services to these clinics.

The East London SPCA incinerates all small carcasses generated under its control in its own incinerator on its premises. Larger carcasses are given to the Zoo. In addition, some carcasses are incinerated for vets and members of the public on request for an incineration fee. Incineration capacity is, however, limited and not capable of dealing with much more than their own needs. In King William's Town SPCA disposes of animal carcasses in plastic bags in special pits on the KWT landfill.

## **Industrial waste treatment in Buffalo City Metropolitan Municipality**

There is a number of industries in Buffalo City Metropolitan Municipality that treat their industrial wastes before disposal. These treatments are industry specific and are normally associated with liquid effluents resulting from production processes. Whilst it is not a municipal responsibility to treat these wastes, the Municipality does have a legal responsibility to play a regulatory role in this regard.

### **3.7 STATUS OF WASTE COLLECTION**

The Department of Solid Waste Management Services provides waste collection service to the three regions of the City. This service is currently rendered to the urban areas of the City. It is planned in the outer years to extend the service to the un-serviced areas. However, in order to extend the service to these areas, the City has to develop adequate waste management models that would cater for the various settlements of the City. This will ensure improvement of the service in the areas that are currently serviced and that the new areas to be serviced will obtain an efficient and effective services. The City has various kinds of settlements e.g. informal settlements, formal settlements, student villages, CBDs, organizations, including businesses. Each of these need to have waste collection services that is specific and in line with their circumstances and conditions. The City will in this financial year initiate pilot projects in different areas of the three regions in order to develop suitable waste management models that would be rolled out to the different settlement / areas and regions of the City.

### **3.8 NATIONAL DOMESTIC WASTE COLLECTION STANDARDS**

The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) stipulates that standards are required to "give effect to the right to an environment that is not harmful to health and well-being," and that this right have to be applied "uniformly throughout the Republic".

It is recognized that South Africa is a developing country and the purpose of setting of standards is to ensure a service to all, while complying with health and safety regulations without unnecessarily changing



current creative collection processes as long as they function well and deliver a service of acceptable standard to all households. These National Domestic Waste Collection Standards are therefore applicable to all domestic waste collection services throughout the country. The setting of National Domestic Waste Collection Standards was informed by the Constitution of the Republic of South Africa, 1996, the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

The National Domestic Waste Collection Standard will be used as guideline on the acceptable waste collection standards for the different settlement types in the City. Buffalo City Metropolitan Municipality will also develop various Waste Service Delivery Models that will enhance the efficiency of waste collection services in the different settlement types. The different methods will be implemented to deliver the service such as making use of the Community-Based Waste Collection Model in areas that are densely populated using local labour, private- public partnerships and etc.

BCMM is currently servicing three Regions which are Coastal, Midlands and Inland. BCMM waste collection services are categorized into levels mentioned below. **Domestic waste collection service**, because of different access conditions requires different approaches in the formal and informal communities. The most commonly used collection services in South Africa can be described briefly as follows:

- Curbside collection services incorporate the collection of waste placed in either bags or bins outside properties on scheduled collection days. This type of service can only be provided to residential areas where street networks are sufficiently developed to allow reasonable access to individual properties and, as such, are only applicable in the formally developed residential areas. In general, Regions use compactors for residential and commercial waste collection, Load lugs for skip removal and a combination of compactor trucks, side tippers and LDV's for street cleaning.
- Collection services incorporating the collection of waste in bulk from central collection points to which either the residents themselves, or the municipality or contractors working for the municipality take the refuse for removal in bulk. The areas are either enclosed or open. A number of drop off points enclosed with palisade fencing have been constructed in high density areas. Occasionally, six cubic meter steel refuse containers, called skips, are placed at these central points for the purposes of storing the refuse until its removal. This type of service is commonly referred to as a "skip" service and is most applicable in the informal areas where there is limited access to individual properties.

### 3.8.1 WASTE SERVICE ACCESS SITUATION

StatsSA’s General Household Survey Report of 2017, as published on the 21 June 2018 provides a comparative analysis of metropolitan municipalities with regards to the households that have access to refuse removal Services. In that report, the BCMM rates the lowest in the provision of refuse removal service when compared to other Metropolitan Municipalities (see Figure 18 below). This is by-en-large contributed to a number of factors including the urban/ rural household split. Whereas the City provides 100% refuse removal services in the urban areas; the rural, semi-rural, farming areas as well as remote areas remain unserved.

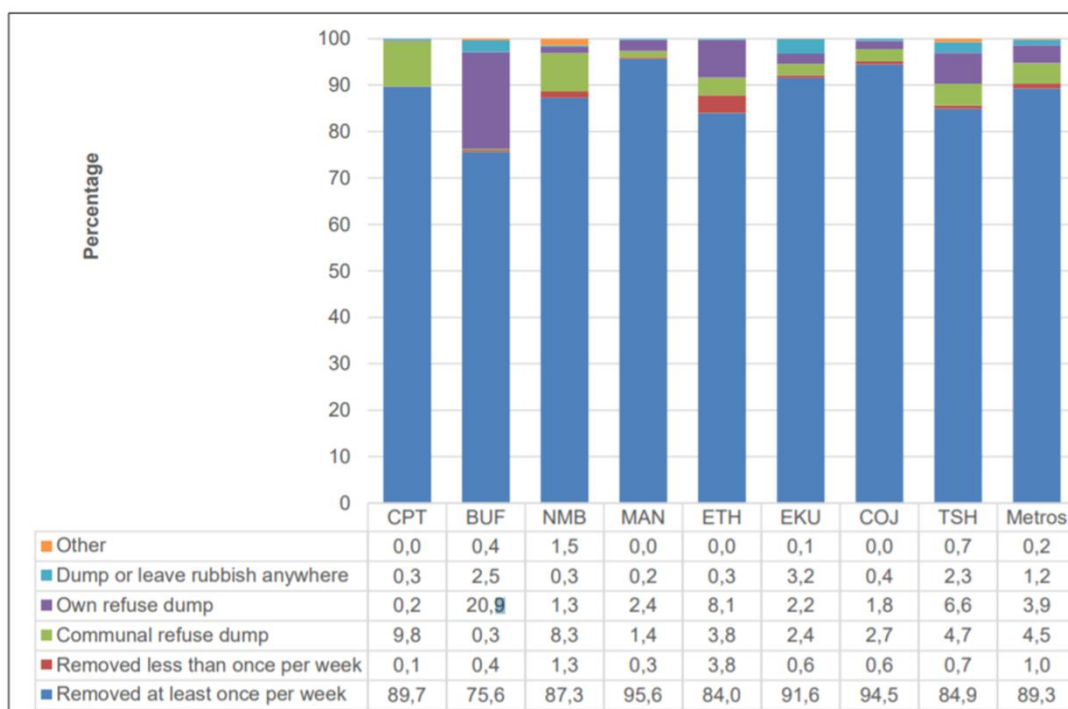


Figure 18: Comparative Access to Refuse Collection (Source: GHS 2017)

The city seems to be using one size fit all waste collection services model that seeks to mimic what the other metropolitan municipalities, whereas its settlement patterns are completely different than those of the metros. BCMM has a larger proportion of rural households comparative to the other metropolitan municipalities. This has a negative impact on the reportable number of total households that access to the refuse removal services. Currently the City provides waste management services in the three regions as outlined figure 19 below.

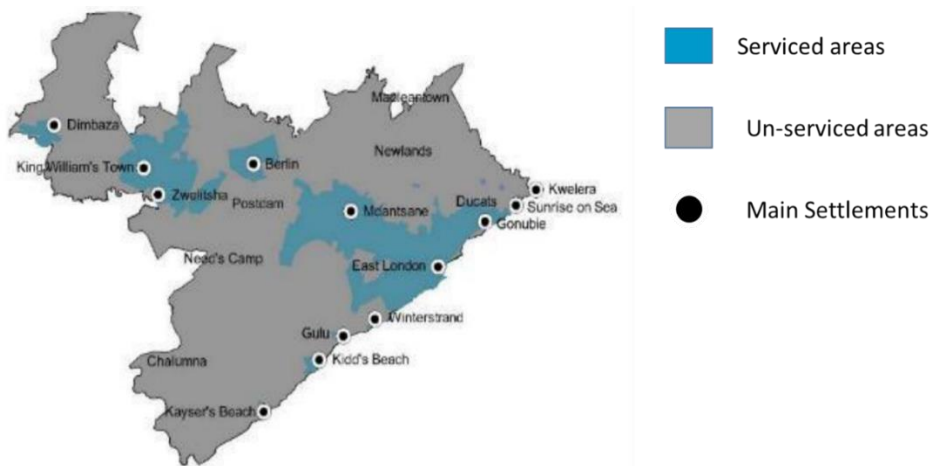


Figure 19: Areas of BCMM receiving public waste collection services

Table 12: BCMM Waste Collection Statistics

Item	Total number
Households	253 477
Serviced households	149 551
Unserviced households	40 556
Indigent households	61 252
Unserviced indigent households	63 369
<b>Service Level A: On-site appropriate and regularly supervised disposal</b>	0
<b>Service Level B: Community transfer to central collection point:</b>	0
<b>Service Level C: Organised transfer to central collection points and/or curbside collection:</b>	0
<b>Service Level D: Mixture of Service Level B and Service Level C:</b>	149 551
<b>Total Serviced households as per the National Domestic Waste Collection Standards:</b>	0

### 3.8.2 UNSERVICED AREAS IN THE BCMM

According to the Community Survey report of 2016, 39% of the BCMM households are currently not serviced.

#### Refuse disposal

**60.4%**

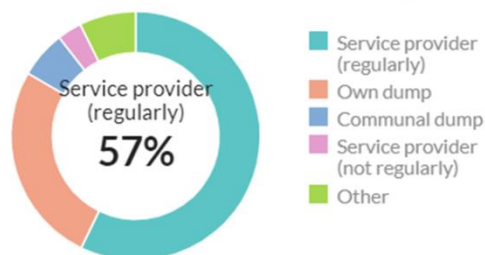
Are getting refuse disposal from a local authority, private company or community members

about 1.5 times the rate in Eastern Cape: 38.61%

about the same as the rate in South Africa: 59.37%

#### Population by refuse disposal

Chart Options



Source: Community Survey 2016

Figure 20: Serviced and Unserviced population in BCMM (Source: Community Survey, 2016)

Currently the waste services are provided in urban centres of the municipality. The quality of these services is however not completely satisfactory and need to be improved. Rural and Semi-Rural areas, small scale and other commercial farming areas are currently not provided with refuse removal services.

### 3.9 OTHER SERVICES

In addition to the household Refuse Collection Services, the City is also providing collection service as listed below:

- *Industrial/commercial waste collection services, which incorporate the collection of general waste (i.e. not hazardous or special waste) from industries and businesses.*
- *Garden waste collection services incorporating collection of bagged waste from outside properties, provision of garden waste transfer facilities to which residents bring their own waste and the provision of a bulk collection service on request and normally for a specific charge.*
- *Street cleaning services, which involves litter picking of main road reserves and entrances, provision of litter bins, street sweeping and servicing of street litterbins.*
- *Sundry services such as the removal of illegal dumps, bulk collection services and animal carcasses.*

Currently (2017), Buffalo City Metropolitan Municipality provides for the collection of general waste in the following areas (divided according to the operational entities).

#### Industrial /commercial waste collection

Industrial/commercial waste is generated by businesses, industries and institutions (e.g. churches, sports clubs). The Municipality provides only for the collection of general (i.e. non-hazardous) industrial/commercial waste.

Businesses are required to submit an application to the Solid Waste Management Services with a description of type of waste generated, number of containers requested, and the frequency of service required. The Solid Waste Management Services will assess the waste and will only provide the service if it falls within the general waste category. Businesses requiring collection and removal of any special or hazardous wastes are required to use approved, specialist private waste contracting companies. BCMM follows a planned schedule on a weekly basis depending on the requests/requirement of the business. The following receptacles are utilized depending on the request submitted by the business:

- 1.1 m<sup>3</sup> “Sprico” container rented from the Municipality
- 6 m<sup>3</sup> skip rented from the Municipality
- 0,8 m<sup>3</sup> wheeled containers rented from the Municipality
- 240 litre wheel bins

Waste is collected from outside the premises or from designated and approved storage areas within the premises, particularly in the case of businesses using the larger containers.

Private waste management companies are used quite extensively by businesses in Buffalo City Metropolitan Municipality. A relatively large portion of the industrial/commercial waste collected in Buffalo City Metropolitan Municipality and taken to the municipal disposal sites is handled by these contractors due to capacity constraints within BCMM. Currently Solid Waste Department is reviewing the contractual obligations with the Waste Generators in order to ensure that the service provided is congruent to the tariff agreed initially. This study will assist the City to ensure proper costing of providing the service and also revenue enhancement as a result of proper billing.

## **Garden waste collection**

Garden waste is a non-hazardous waste that falls under the broader category of general organic waste. Due to the large quantities of garden waste that are generated it is normally classified and dealt with (from a service provision perspective) separately from the other collection services. Garden waste services offered are described below.

The Coastal Division offers two types of garden waste collection to the public viz: Transfer Station Deliverance and Bulk Collection. The public is encouraged to deliver their garden waste to transfer stations at Beacon Bay. In Gonubie, the private company Riegers receives garden waste from the public at their garden waste disposal facility.

Alternatively, the public may request bulk collection of their garden waste for which the Municipality may provide skips, at a cost to the resident requesting the service. Although the Municipality offers specific garden waste collection services, the majority of Buffalo City Metropolitan Municipality residents bag their garden waste and leave it for collection together with their domestic waste. The Municipality collects this waste at no extra cost, as long as it is within reason (2 bags per household)

Illegal dumping of garden waste and builder's rubble also occurs, which is consequently removed by the municipality. Although the Municipality is implementing awareness raising programmes and "Adopt a Spot" programme, illegal dumping of waste continues to grow.

Garden waste collection services are also provided by a number of private companies in Buffalo City Metropolitan Municipality. In general, 200-litre drums are provided and cleared on a regular basis for a fixed monthly fee.

## **Hazardous waste collection**

Although there is no data on volumes of hazardous waste generated in BCMM, significant amounts of hazardous waste are generated in the City viz: pharmaceutical waste, electronic waste, electrical waste, expired pesticides, paint residual and etc. These hazardous waste streams are generated even at household level while the City does not have facilities to manage hazardous waste. Hazardous waste collected at household level is collected and disposed of with general waste in disposal sites meant for general waste and this is a noncompliance. The City will before the end of the current financial year, launch a pilot project that will assist in identifying the best practices including the collection of this type of waste from households. Hazardous Waste from Industries is currently managed by the generator or registered hazardous waste collectors.

## **Medical waste collection**

Currently the environmental health department is responsible for the registration of generators of medical waste within the BCMM. The generators of medical waste are required to comply with the National Health Act. The provincial department of health has appointed a service provider to provide storage facilities, collection and disposal of medical waste. Generators of medical waste need to get into contract with the registered medical waste transporters and disposal companies.

## **Street cleaning and litter-picking services**

The City is faced with a challenge of high littering rate in Public Spaces, Residential area and CBDs. The main streets and entrances in East London CBD, KWT CBD, Mdantsane and the various substantial commercial nodes in Buffalo City Metropolitan Municipality are litter picked and swept on a daily basis by Solid Waste Department. The cleaners place waste in bags and leave these for collection by the collection teams at accessible points. The public private partnership with BKCOB and EPWP and COGTA seeks to

address the afore-mentioned challenge. The activities of the partnership include litter picking, street cleaning, and clearance of illegal dumps, adopt a spot and awareness and education programmes and clean-up campaigns.

Commercial nodes and other communal areas where there are high levels of litter generation are also provided with litter-bins into which the general public can place litter. These litter-bins are generally serviced by the street cleaning crews. In other significant decentralized commercial and communal nodes/centers and areas where there is a high volume of people and litter generation, street cleaning and litter-picking services are provided on a day and night shift basis. Street sweeping machines are used to sweep high litter volume areas.



Figure 21 BCMM's Sweeper Truck:

Other municipal departments are responsible for maintaining public open spaces (Beaches, picnic areas, parks etc.) in Buffalo City Metropolitan Municipality. These other departments clean the public spaces that they are responsible for and dispose the waste in different disposal facilities owned and run by the waste management unit.

## Sundry Solid Waste Management services

Currently a significant amount of garden waste is left in open areas. Effective clearing of this requires a front-end loader which is not available. In addition, illegal dumps occur randomly as a result of inadequate



waste drop off receptacles, which further results to high rate of illegal dumps. The Solid Waste Management Services also provide the following sundry Solid Waste Management services:

- Removal of illegal dumps, when these are reported or discovered by line managers.
- Removal of bulk wastes on request and for a tariff-based charge.
- Litter-picking and removal services at crowd events.
- Removal of motor wrecks for a tariff-based charge.
- Destruction of wastes such as condemned food-stuffs, confidential documents and other wastes demanding immediate destruction for a tariff-based charge.
- In-house recycling initiative

### 3.10 VEHICLES AND DEPOTS



Municipal waste collection is performed by a variety of vehicles including 12 and 20 m<sup>3</sup> waste compaction trucks, caged 4 tonnes trucks, load-luger, skip trucks, and bakkies. The majority of collection vehicles are owned and operated by the municipality. These vehicles are garaged at the respective depots in Inland, Midland and Coastal Regions. These vehicles are augmented with hired collection vehicles, mainly compactors and load-lugers which cover the collection capacity experienced by the municipality due to own vehicle frequent breakdowns among others.

In the urban areas of all three regions, where road networks are good, REL compactor trucks or caged trucks collecting door-to-door once a week is the most common method. Residents leave their waste in black bags on the curbside according to a published collection schedule. In areas where larger collection vehicles can't access, bakkies are utilised to provide a primary collection, collecting door to door and



taking to the large caged collection trucks at pre-arranged strategic points. Alternatively, community skips are provided, and residents are required to take their own waste to these skips.

BCMM's own refuse collection fleet and supporting vehicles amounts to a total of 171 different types of vehicles. Whereas in the past the general approach was that smaller sized vehicles were used in CBD-areas, due to traffic congestion and the number of pedestrians and larger unit were mainly used either in industrial or certain residential areas that generate large amounts of waste. This is however changing due to demand driven by volumes.

The distance to Roundhill landfill site affects the vehicles servicing the coastal area, and that results to disruption of services provided because of significant turnaround times. A central transfer station was envisaged for waste collected from the East London area prior to Roundhill disposal. The Coastal region is serviced by 26 compactor trucks. Midland region is currently serviced by 11 compactor trucks. This region utilises the Roundhill Landfill Site. Inland Region utilises the King Williams Towns landfill Site, which is near and as such the service is not affected by frequent breakdowns. There are 41 vehicles in the fleet of which 13 motorised vehicle are older than ten years, and a Front-End loader of 16 years age.

Vehicles are serviced at a centralised workshop at Braelyn for Coastal and Midland region and Westbank Mechanical for KWT. These centralised workshops are however unable to keep with the pace and the growth of the BCMM and as a result significant downtime of vehicles occurs when servicing and repairs are required for solid waste. The following are the major functioning depots and satellite facilities:

**Table 13: Buffalo City Metropolitan Municipality's Solid Waste Depots and Satellite Facilities**

Botanical Gardens Depot	The main KWT Depot for all staff and vehicles utilised in the KWT Solid Waste Management unit
Bisho Civic Centre	The Administrative Staff and Management is housed at the Centre
Cambridge	The Staff, Administrators and Management is housed at the Centre and vehicles utilized at the Coastal Region
Mdantsane NU6	The Staff, Administrators and Management is housed at the Centre and vehicles utilized at the Coastal Region



Figure 22: Rear End Loader waste compactor in KWT



Figure 23: Private Company haulage of Commercial / Industrial Waste

Currently no segregated waste collection is conducted by the municipality except for informal segregation by collection crews who may place items of value on the side for their own resale. Transport distances between for collection vehicles operating in Inland and Midland regions are relatively closer to KWT Landfill and Roundhill Landfill Sites as they are located in the respective regions. The landfills are however located at substantial distances from the Coastal Region and collection vehicles from this region require travelling in excess of 65km each way from collection from service points to Roundhill Landfill

Site. This represents a substantial demand on resources in terms of fuel, staff costs, wear and tear on vehicles, and overall service delivery efficiency and effectiveness. (Please include wear and tear related to the long haulage and cost per km per load i.e. fuel usage per km per vehicles)

Whilst the municipality provides waste collection and transportation for commercial and industrial waste, this service is however also provided by private companies (at a cost) operating a variety of vehicles and transport mechanisms from individual bakkies to bulk haulers. These private service providers are required to register with the City as authorized transporters.

### 3.11 FINANCING OF WASTE MANAGEMENT

#### 3.11.1 BUDGET/EXPENDITURE: INCOME AND EXPENDITURE

Item	Amount
<b>Collection</b>	
Transportation	R 23 262 688
Capex-purchase (vehicles)	R 28 758 409
Maintenance	R 22 064 377
Fuel	R 88 620 482
Receptacles	R 7 662 999
General	R 159 883 098
	R 0
<b>Subtotal</b>	<b>R 250 252 053</b>
<b>Governance</b>	
Staff (remuneration)	R 130 572 808
Education and awareness	R 954 500
IWMPS	R 0
By-laws	R 0
	R 0
<b>Subtotal</b>	<b>R 131 527 308</b>
<b>Disposal</b>	
Transfer station	R 23 195 440
Disposal sites	R 50 626 200
Acquisition of land, equipment	R 0
Regulatory compliance, EIA's and licence	R 0
Other	R500 000
<b>Subtotal</b>	<b>R 74 321 640</b>
<b>Total</b>	<b>R 456 101 001</b>

### 3.11.2 REVENUE SOURCES

Source	Amount
Funding sources / Own Funding	R 54 460 000
USDG Funding	R 21 161 640
Equitable share funding	R 37 479 079
Revenue from waste disposal fees	R 6 234 506
Revenue from Refuse Removal	R 336 765 776
<b>Total</b>	<b>R 456 101 001</b>

### 3.12 ORGANISATIONAL AND INSTITUTIONAL MATTERS

Organogram:

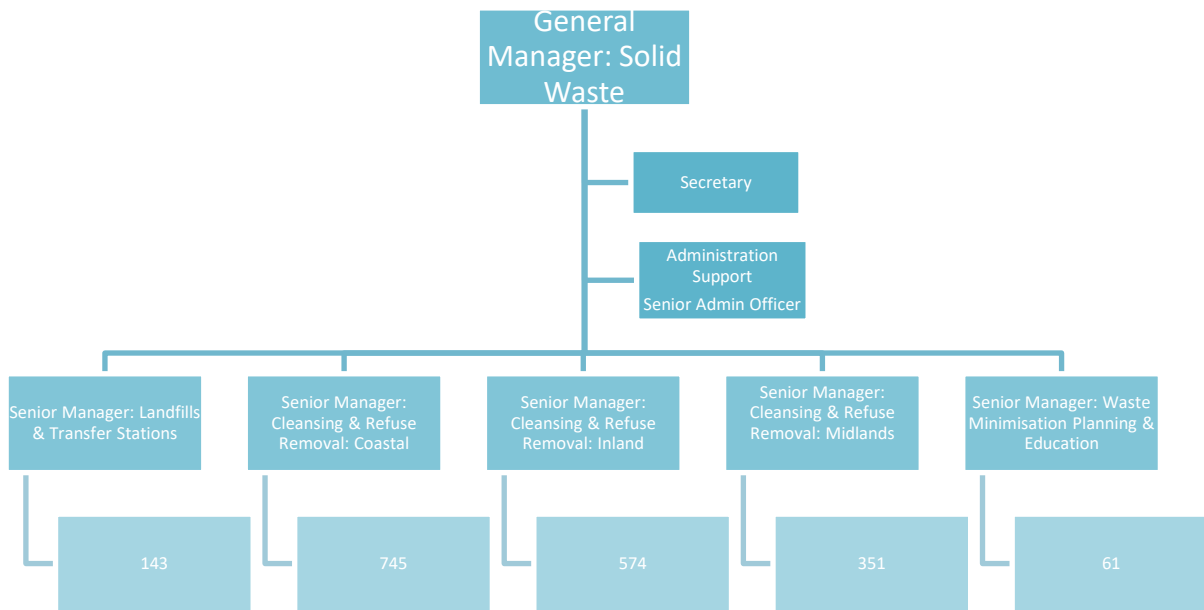


Figure 24: Organizational structure of BCMM

BCMM had 837 vacant funded posts in respect of its management contingent in January 2016 and 713 of these posts had been vacant for longer than 3 months. The current organogram or structure of the Department of Solid Waste Management Services is based on the traditional manner of management of waste that involves: Street Sweeping, Refuse Removal, Area Cleaning (Clearance of illegal dumps & Litter Picking) including Disposal of Waste. The National Environmental Management Waste Act of 2008 has taken a global approach towards waste management that puts emphasis on Waste Diversion from landfill disposal towards beneficial use of waste as well as contribution towards the Economy. This therefore means the Department of Solid Waste Management Services must have the necessary skills and capacity to meet this demand.

Also, in order to extend to un-serviced areas and to improve the quality of the waste management service provision, the institution needs to consider other acceptable means to complement and review the current Departmental Staff, e.g. application of Waste Management Service provision Model that uses a Public-Private Partnership, Community based approach, etc.

## Priority Issues

The Situation Analysis provided a detailed description of the current situation of waste management in the BCMM. In its efforts to improve the management of waste in the Metro area towards the long-term goals set out by the IWM Planning Principles, the following priority issues were identified:

### 1. Access to refuse removal services.

The comparative analysis of the 2017 General Household Survey (GHS) has demonstrated that the BCMM's number of households that have access to refuse removal services in accordance and in line with the National Domestic Waste Collection Standard is lagging behind all the other Metropolitan Municipalities. This has by-en-large contributed to a number of factors including the urban/ rural household split.

The City seems to be using a "one size fits all" waste collection services model that seeks to mimic what the other metropolitan municipalities, whereas its settlement patterns are completely different than those of the Metros. BCMM has a larger proportion of rural households comparative to the other Metropolitan Municipalities. This has a negative impact on the reportable number of total households that access to the refuse removal services. Currently, there are households that do not receive a proper service and no service is provided to the rural areas.

The most desirable approach to address this challenge is to implement to promote the full implementation of the NDWCS and to ensure that all the levels of service are accounted for. The Municipality needs to develop appropriate waste management services models that will respond to the demand of the city. A practical example will entail that the City to ensure all its communities are provided with the services that are suitable to their situations.

Whilst most formalized settlements and communities are intrinsically provided with curbside collection, informal, rural, semi-rural and remote communities need to be serviced according to their situation and condition. To this end the Municipality needs to develop a waste service provision model that will cater for the various kinds of settlements. In this financial year the Department is piloting three respective and distinct models. In the Coastal region the model will focus on tourist attraction areas with mixed high residential components such as the Quigney and Southernwood, in the Midlands region it will focus on informal settlements and in Inland it will focus on the CBD precinct. The intention is to learn from these respective pilots and roll them out within all three regions.

## **2. State of Cleanliness of the BCMM**

The perception of BCMM's state of cleanliness is an important concern that needs to be attended to. This is perpetuated by a number of negative sentiments from different sectors of the BCMM's community regarding the level of littering and increasing number of visible illegal dumping sites. The City need to urgently put in place within its waste service delivery improvement plan approaches that will drive awareness and street cleaning programmes. The City recently launched the IRRT in May 2021 as a strategy to address and clean up areas of high profile and high visibility in all three regions as well as the partnership with the BKCOB in terms of the Call 2 Action project whereby a strategy will be developed to curb illegal dumping that has proliferated in the Coastal region of the City.

## **3. Insufficient levels of Waste Diversion from Landfill Disposal and Recycling**

The BCMM is part of the DEA's project of Waste Diversion Flagship Study. This study has indicated that the city is currently disposing in its two landfill sites lots of materials that could easily be diverted. Out of the +/- 170 000 tonnes of waste generated within the boundaries of the City, only 9000 tonnes is diverted. This translates to an estimated 4-5% of diversion. There is however a huge potential for accelerated programme of waste diversion. The DEA's study indicated that at best the City's waste diversion potential

could reach close to 64 000 tonnes per annum. The study presented a scenario with a number of projects that the City can undertake to achieve the desired diversion.

In this regard the city has an MOU with the BKCOB and its affiliates to highlight and focus on separation of waste at source, cost recovery and in so doing limit both illegal dumping and disposal of recyclable waste at the respective landfill sites.

It is against the above background that the city needs to engage in the implementation of the programme for diversion. This includes the construction of a Material Recovery Facility at the Central transfer in Cambridge Depot. This project is projected to not only drive diversion of waste, but it is envisaged that once fully implemented the project will lead to a creation of 90 sustainable job opportunities.

#### **4. Compliance Issues**

The City is working to ensure compliance of its sites. In this financial year work is underway at the Kaysers Beach, Kidds Beach Garden Transfer stations. The city is also attending to the compliance issues of the King Williams Town Tannery Site and the Stoney Drift landfill site. The city is also reviewing its integrated waste management by-laws so as to ensure alignment with the IWMP currently under consultation. The city is advocating an inclusive approach in terms of transgression of waste by-laws in the pursuing of empowerment and visibility of peace officers in areas of concern such as illegal dumping and hotspot areas such as Southernwood and Quigney.

#### **5. Improvement of staff morale**

The human resource is one of the most important resources of the Solid Waste Management Services Department. Therefore, in order to achieve optimum performance, it is necessary to ensure that staff development and morale within the staff cadre is promoted commencing with the most junior staff and cascading upwards. In this regard the Solid Waste Management Services Department is undertaking to become an employer of choice within the Metro. The City is therefore wanting to use the strengths of our partners in ensuring that this is achieved through benchmarking and information sharing.

#### **6. Waste Fleet**

The management of the municipal waste management fleet is currently one of the key disabling factors in the management of waste. The current waste management fleet is serviced and maintained in central



fleet management workshops. The assumption is that waste management vehicles are not adequately prioritised and hence face extended periods of down-time thus affecting service delivery and increased reliance on plant hire. The intention is to prioritize solid waste fleet as an operational core function of the Metro and this will be done through bilaterals between Solid Waste and Fleet Management. Through the use of partnerships with stakeholders like BKCOB, the intention is to provide programmes for advanced driver training for the fleet drivers of Solid Waste management Services as well as transport logistics training for the transport coordinators for all three regions. The Municipality needs to ensure the prioritisation of the Solid Waste Management Services Department fleet to ensure that necessary efficiencies and effectiveness is achieved.

# **CHAPTER 4**

## **DESIRED END STATE**

## 4. DESIRED END STATE

### 4.1 SETTING STRATEGIC GOALS, TARGETS AND INDICATORS

The desired end state entails identifying priorities and goals that BCMM wishes to attain with regards to Waste Management. The information collected on the historical and present waste management situation as well as the desired end state for the environmentally sound management of waste will be the basis of the Strategic Goals for the City's IWMP to be developed. The Strategic Goals will also be based on the relevant waste legislation, regulations, policies including the National Waste Management Strategy 2020 taking into consideration the waste management hierarchy principles that put emphasis on Diversion of waste from Landfill Disposal as much as possible, towards its use where possible. An implementation plan for the City's IWMP will also be developed. The waste management Strategic Goals and objectives formulated for the Buffalo City Metropolitan Municipality will be aligned to the National Waste Management Strategy 2020 pillars which are a consolidation of the goals that were in the 2011 NWMS. The BCMM IWMP strategic goals will concentrate on the areas of concern mentioned below:

- Waste Service Delivery Operations (e.g. Street sweeping, Refuse Removal, clearance and prevention of illegal dumping and littering of waste). This is aligned to the second strategic pillar of 2020 NWMS which requires effective and sustainable waste services. This strategic pillar focuses among others on waste management planning, integrate IWMPs and implementation of the EPR and the circular economy in identified waste streams like the packaging industry. This strategic pillar also emphasizes safe management of hazardous household wastes, waste collection including separation at source.
- Ensure proper and environmentally sound Waste Disposal. This is aligned to the third strategic pillar of the 2020 NWMS whose focus is reduction of littering and illegal dumping, awareness and community participation as well as ensuring municipal landfill sites and all other waste management facilities comply with the licensing requirements. This pillar also focuses on promotion of compliance and awareness.
- Provision of mechanisms and infrastructure to encourage Waste Minimisation and Diversion from landfills (Transfer Stations, Material Recovery Facilities etc.). **This is in line with the NWMS Pillar 1, which is waste minimization. The intention of this strategic pillar is among others to minimize waste impact by diverting waste away from landfills, increase reuse, recycling, recovery including maximizing the role of the waste sector in the circular economy. Among others, the focus areas are creation of a conducive environment for waste minimization**

programmes, building sustainable partnerships with government and non-government role-players including advancing waste as a resource.

- Encourage participation of various stakeholders including the Communities in ensuring proper management of waste. This is also in line with pillar 3 of the 2020 NWMS whose focus area is awareness and community participation. In addressing this priority, awareness campaigns through various means e.g. media, outreach and cleanup campaigns in communities and schools including building stakeholder partnerships to raise awareness on waste management issues.

These goals are also aligned with the BCMM Municipality IDP Objectives, MGDS Pillars and the Mayoral Lekgotla outcomes. The situation analysis of the current solid waste management in Buffalo City Metropolitan Municipality provides a basis for the Municipality to formulate objectives and subsequently strategies that address the prioritised needs identified in the IWMP.

The following objectives are meant to give answers to what Buffalo City Metropolitan Municipality intends to achieve with its management of solid waste. The strategies outline how this is to be achieved, what means will be used and what methods will be applied.

<b>Pillar 1 of 2020 NWMS: Waste Minimisation</b>			
<b>Goal 1: Promote recycling and recovery of waste (Waste Diversion)</b>			
Divert recyclable packaging waste and hazardous waste from landfill disposal.			
<b>Objectives</b>	<b>Short Term (Immediate to 2 years)</b>	<b>Medium Term (2-3 years)</b>	<b>Long term (3-5 years)</b>
40% of the waste generated diverted from landfill disposal.	Identify appropriate measures to achieve the diversion of recyclable packaging waste and hazardous waste from landfill disposal ( Where and How i.e. Is the municipality planning to have another documents or policy to list those measures)	Establish mechanisms for promoting separation of waste at source, e.g. Pilot project for Waste Separation at Source ( This Goal is older and it was in the first National Waste Management Strategy since this is review or second generation IWMP what is lesson learned)	Provide facilities to enhance waste separation at source ( This should be short term goal )  Provide facilities, tools, equipment and infrastructure to enhance waste diversion from landfill disposal (MRFs, Receptacles, Transfer Stations, Buy-Back Centres etc.)
	Conduct Waste Characterisation studies	Mobile HHH Waste Facility	
	Establish partnerships with stakeholders e.g. Communities, Business, Waste Management companies, academic and research institutions, potential funding institutions etc.	Develop a programme to formalise waste pickers.	
	Establish mechanisms for promoting separation of waste at source, e.g. Pilot project for Waste Separation at Source		

**2020 NWMS Pillar 2: Effective and sustainable waste services**

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

Objectives	Short Term (Immediate to 2 years)	Medium Term (2-3 years)	Long term (3-5 years)
<p>A comprehensive system for provision of waste services (within the urban node) that includes area cleaning and refuse removal</p> <p><b>- 100% (within the urban node)</b></p>	<p>Develop Service Delivery Improvement Plan that includes: Integrated Rapid Response Programme, clustering of service delivery areas, implement illegal dump prevention strategy and develop community drop-off points.</p>	<p>Pilot to develop suitable waste management models suitable for the various areas of operation / settlements (within the urban node).</p>	<p>Implementation of waste management models for provision of waste services in urban areas</p>
	<p>Develop Standard Operations Procedures (SOP) for provision of waste services</p>		
<p>A system for provision of waste services (currently un-serviced and rural areas within the periphery of the urban node).</p> <p><b>80% (unserviced)</b></p>	<p>Situation Analysis of the current status quo for waste service provision which includes area cleaning, and refuse removal. <b>(Please revisit the sentence)</b></p>	<p>Develop a Waste Management Model suitable for the rural and un-serviced areas.</p>	<p>Implementation of waste management models for provision of waste services in unserviced areas</p>
		<p>Develop Standard Operations Procedures (SOP) for provision of waste services (Rural Node)</p>	
		<p>Develop Waste Service Provision monitoring systems.</p>	

**2020 NWMS Pillar 3: Compliance, Enforcement and Awareness**

**Goal 3: Ensure that legislative tools are developed to deliver on the Waste Act and other applicable legislation**

<b>Objectives</b>	<b>Short Term (Immediate to 2 year)</b>	<b>Medium Term (2-3 years)</b>	<b>Long term (3-5 years)</b>
BCMM Waste By-Law reviewed	Review of the BCMM Waste By- Law	Approval and Adoption of Revised By-laws	Implementation
		Develop a Guideline for Registration of Waste Generators, Transporters and Processes within the City.	
		Build capacity for peace officers to enforce by-laws	Enforce by-laws
		Appointment of Environmental Management Inspectors (EMIs) for BCMM to monitor compliance and ensure enforcement of by – laws and other environmental related transgressions	

**2020 NWMS Pillar 2: Effective and sustainable waste services**

**Goal 4: Sound budgeting and financing of waste management services**

<b>Objectives</b>	<b>Short Term (Immediate to 1 year)</b>	<b>Medium Term (2-3 years)</b>	<b>Long term (3-5 years)</b>
To conduct full cost accounting for the entire waste services.	Set and implement tariffs for waste collection and disposal	Review and implement tariffs for waste collection and disposal	Review and implement tariffs for waste collection and disposal
Allocate budget for waste services from equitable share funding and other sources of funding.	Allocate budget for waste services from equitable share funding and other sources of funding.	Allocate budget for waste services from equitable share funding and other sources of funding.	Allocate budget for waste services from equitable share funding and other sources of funding.

**2020 NWMS Pillar 3: Compliance, Enforcement and Awareness**

**Goal 5: Ensure the safe and proper disposal of waste**

Objectives	Short Term (Immediate to 1 year)	Medium Term (2-3 years)	Long term (3-5 years)
Existing waste management (disposal) facilities are managed and monitored to achieve more than 80% compliance with authorisation conditions.)	<ul style="list-style-type: none"> <li>● Environmental Assessment and all planning studies completed for KWT and Roundhill LFS.</li> <li>● Implementation of turnaround strategy to ensure that Roundhill LFS is compliant with the authorisation conditions.</li> <li>● Upgrade KWT LFS by installing weighbridge</li> <li>● Conversion of KWT and Roundhill ECA Permits to NEMWA Licences</li> </ul>	<ul style="list-style-type: none"> <li>● Implementation of turnaround strategy to ensure that KWT LFS is compliant with the authorisation conditions.</li> <li>● Development of Standard Operating Procedures (SOPs) for the existing waste disposal facilities</li> <li>● Determine possibility of constructing a hazardous waste cell in the existing Regional waste disposal facility.</li> </ul>	Constructing a hazardous waste cell in the existing Regional waste disposal facility.
Assessment of old waste management sites for possible use in waste management	<ul style="list-style-type: none"> <li>● Conduct an environmental assessment of active and closed waste disposal sites</li> </ul>	<ul style="list-style-type: none"> <li>● Land acquisition and planning and construction of transfer stations</li> </ul>	Construction of additional waste disposal facilities



2020 NWMS Pillar 3: Compliance, Enforcement and Awareness			
Goal 6: Improve participation by the public and other stakeholders			
Objectives	Short Term (Immediate to 1 year)	Medium Term (2-3 years)	Long term (3-5 years)
Maintain inclusive and sustainable economic growth	Establish Waste Management Forum		
	Quarterly Waste Management Meetings	Quarterly Waste Management Meetings	Quarterly Waste Management Meetings
	Develop Communication Strategy for all interested and affected parties.		
	Implement partnership with institutions involved in products and packaging manufactures	Implement partnership with institutions involved in products and packaging manufactures	Implement partnership with institutions involved in products and packaging manufactures
	Technical cooperation with other municipalities on waste management issues	Technical cooperation with other municipalities on waste management issues	Technical cooperation with other municipalities on waste management issues
	To ensure institutions of higher learning and innovation centres assist in research to identify best practises in the waste sector	Ensure institutions of higher learning and innovation centres assist in research to identify best practises in the waste sector	To ensure institutions of higher learning and innovation centres assist in research to identify best practises in the waste sector

**2020 NWMS Pillar 3: Compliance, Enforcement and Awareness****Goal 7: Education and Awareness**

<b>Objectives</b>	<b>Short Term (Immediate to 1 year)</b>	<b>Medium Term (2-3 years)</b>	<b>Long term (3-5 years)</b>
Education and Awareness raising programmes for internal and external stakeholders developed.	Develop an Education and Awareness Raising Strategy, internally		
	Appoint Waste Education and Awareness raising technical specialist		
	Roll out the education and awareness campaigns i.e. schools competition	Roll out the education and awareness campaigns i.e. schools competition	Roll out the education and awareness campaigns i.e. schools competition

# **CHAPTER 5**

## **COMMUNICATION AND STAKEHOLDER PARTICIPATION**

## 5. COMMUNICATION AND STAKEHOLDER PARTICIPATION

### 5.1 COMMUNICATION AND STAKEHOLDER PARTICIPATION

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

Apart from the Waste Act calling for community/stakeholder participation, Chapter 4 of the Municipal Systems Act encourages municipalities to conduct community participation when developing their IWMP and it provides different mechanisms by which this could be done. The BCMM stakeholders are very key and important in the development and implementation of the IWMP. Whilst the BCMM Waste Indaba was initially used as a platform to initiate the consultation on the IWMP, the development of this IWMP will also be informed by a number of consultation sessions including BCMM IDP Forums and Public Engagement Forums

The municipality intends to further extend its communication and stakeholder participation through distributing the draft IWMP to the following committees:

1. Landfill Monitoring Committee
2. Top Management of the City
3. Portfolio Committee of Municipal Services
4. Mayoral Committee
5. Council for approval; and
6. DEDEA for endorsement.

The comments/issues raised during consultations will be recorded and responses will be communicated using the table below.

Table 14: Issues Register Sample

Stakeholder	Issues raised/ Concerns	Municipality's response	General comments

## 5.2 AWARENESS CAMPAIGNS AND COMMUNICATION

The Waste Act requires the development of an IWMP to follow a public participation and consultation process (Section 72 and Section 73). Awareness programs were developed in order to keep stakeholders abreast on issues pertaining to the development and implementation of the IWMP. The Waste Management Indaba was used a platform to set the scene and to inform the citizens of BCMM about the waste challenges that the City is faced with. The platform was also meant to identify potential stakeholders that the City needs to partner with in the development and ultimately the implementation of the IWMP. In order to ensure that this IWMP takes into account the major challenges of waste management in BCMM, the City intends to extensively engage its stakeholders in various platforms such as:

- Waste management forums,
- Workshops with interested and/or affected parties (including youth environmental groups, community based organisations, taxi associations, religious groups, businesses operating in the area, schools etc.)

Furthermore, as part of the development of an IWMP awareness campaign BCMM will publish information about the IWMP process and will communicate this in local media such as newspapers, local radio stations, print the information and post it on community notice boards and libraries.

# **CHAPTER 6**

## **IMPLEMENTATION INSTRUMENTS**

## **6. IMPLEMENTATION INSTRUMENTS**

To ensure that the BCMM IWMP is effectively implemented, the partnerships, legislative instruments, economic instruments and a financial plan appropriate for the IWMP need to be established. The identification and commitment to particular approaches of implementing the IWMP will be done in consultation with BCMM stakeholders.

### **6.1 PARTNERSHIPS**

Amongst the resolutions of the Waste Indaba that was held in May 2018, establishment of partnerships was emphasized. The establishment of partnerships is critical to ensure that the burden of implementation of the IWMP is not only lying with the municipality, but it becomes a collective effort. Partnerships with communities, business fraternity, waste management industry, international organizations will ensure that there is scope for information sharing, support, capacity development, as well as leveraging from resources that each partner may bring to the table. These may among other things include the sharing of human capital, equipment and tools and also financial resources.

#### **6.1.1 SCHOOLS PARTNERSHIP**

It is worth noting that the city is currently involved in partnerships with some schools in Buffalo City Metropolitan Municipality that were part of the Eco-Schools program, as it requires dedicated leadership and mentorship to run them. Some of the schools are registered as Eco-Schools with WESSA, although there are other schools where similar environmental clubs may exist. There is however still scope for this kind of collaboration to be extended and stretched to reach even other schools.

The involvement of the schools is of strategic importance, particularly because through the school programmes information is disseminated to reach the households and the communities. In an attempt to change the mindset and to drive behavioral change; schools presents a pivotal platform that will ensure that these altruistic ambitions are achieved.

#### **6.1.2 BCMM PARTNERSHIP WITH BKCOB**

The BCMM has partnered with the Border Kei Chamber of Business in a Call 2 Action programme for street cleaning. A memorandum of understanding between Border Kei Chamber of Business, Energy Forum and Buffalo City Metropolitan Municipality was signed in 2016. The MoU established a basis upon which partners shall be involved in the clean BCMM initiative. The following waste related activities are being undertaken in the following areas under the mentioned Call2Action programme:

Table 15: BCMM-BKCOB Call to Action Programme

Area	Activities	Benefits
<b>Settlers way</b> <b>Quigney</b> <b>Southernwood</b>	Street Cleaning Litter Clearance Litter Picking Refuse Collections Separation at Source	Integrated approach to ensure the following areas are cleaned on a daily basis utilizing EPWP funded by BCMM and Border Kei funded participants which resulted to an improved level of cleanliness. Due to the success of the project BCMM Solid Waste Dept. will source EPWP participants that will be provided with equipment, tools and protective clothing.

### 6.1.3 SEPA – HOUSEHOLD HAZARDOUS WASTE

The Government of South Africa in partnership with the Swedish Government through the National Environmental Affairs and the Swedish Environment Protection Agency are jointly implementing a project for environmentally sound management of hazardous waste. The BCMM was identified by the DEA to participate in the piloting of this project. The ultimate aim of this project is to identify suitable means of waste separation options that suitable for various types of settlements for proper management of household hazardous waste.

It is envisaged that through this project the municipality will identify best applicable household hazardous waste management models for various settlements. A pilot project has been conceived that is potentially going to be rolled out within the BCMM, from which valuable lesson will be drawn to guide the approach of dealing with household hazardous waste.

Under the SEPA/ BCMM partnership there is also an intention to develop a general household waste management model that will inform waste service provision in the informal settlement.

### 6.1.4 GIZ – WASTE FLAGSHIP PROGRAMME

The Government of South Africa, in partnership with the German Government, has embarked upon the Waste Management Near-Term Priority Climate Change Flagship Programme, which includes identifying areas for strategic interventions that advance the objectives of both the National Climate Change



Response Policy and the National Waste Management Strategy. BCMM was identified as part of the second phase of implementation of the waste flagship programme. The main aim of the flagship:

- **diverting waste away from landfills**, and subsequently
- **reducing Greenhouse Gas emissions (climate change mitigation)** within the framework of an integrated waste management system (IWMS) and a specific focus on diversion of the biodegradable “organic” fraction of municipal solid waste away from landfills. The project partner is the National Department of Environmental Affairs (**DEA**),
- aligning the Project opportunity with the **local conditions and local governance**,
- **sustainable job creation** opportunities and,
- **sustainable** development
- Implementation of the **waste hierarchy** supports:
  - climate change response;
  - good waste management practice and;
  - sustainable development simultaneously.

Through this partnership waste diversion scenario was developed for the City and a project was subsequently selected for the municipality. The selected project was then assessed and the development of the business and implementation plan was conducted. The ultimate goal of this project is to prepare the municipality for funding ready projects that could be taken to various funding entities with greater prospects of success. The DEA has also expressed its intentions to include the BCMM in the waste diversion programme that is currently being developed through the Green Climate Fund.

### 6.1.5 COGTA / EPWP / CWP FOR AREA CLEANING

This partnership leverages from the COGTA’s Community’s Work Programme (CWP). The CWP is a government’s offering to provide a job safety net for unemployed people of working age. It provides a bridging opportunity for unemployed youth and others who are actively looking for employment opportunities. BCMM has teamed up with COGTA to ensure that about 1500 mostly youth benefit from this programme.

The programme provides them with extra cash to support them in their search for full-time or part-time employment. Programme participants do community work thereby contributing to improvements that benefit all community members. The BCMM CWP focuses on street cleaning and litter picking.

## 6.2 LEGISLATIVE INSTRUMENTS

The implementation of this IWMP will require BCMM to review its by-laws to give effect to the right contained in section 24 of the Constitution by regulating waste management within the area of its jurisdiction. These by-laws will provide, in conjunction with any other applicable law, an effective legal and administrative framework, within which the BCMM can manage and regulate waste management activities; ensure that waste is avoided, or where it cannot be altogether avoided, minimised, re-used, recycled, recovered, and disposed of in an environmental sound manner; and promote and ensure an effective delivery of waste services. The by-laws are also review to ensure alignment with the Integrated Waste Management Plan and among others to ensure that littering and illegal dumping of waste is discouraged.

In this IWMP the BCMM has identified the enforcement of the waste by-laws through designated EMI's from the internal existing staff in the Solid Waste Management Department, e.g. Supervisors and Superintendents. In order to ensure that the staff is equal to the tasks, like identifying transgressions and issue fines accordingly and enforce the waste management by-laws they will need to be capacitated. The Environmental Health Practitioners (EHP's) from Municipal Health Services can also be capacitated in order that they can administer the enforcement of waste by-laws.

## 6.3 FUNDING MECHANISMS

Financing of waste management services is dependent on accurate costing of the required services. The full cost of waste service provision is seldom understood by both municipal officials as well as the general public. This results in waste management services often being under budgeted and/or communities' reluctance to pay the rightful cost of the service. Tariffs should cover the costs of providing the services, but the charges are often set below actual costs.

Currently the BCMM tariffs provides opportunities for cross subsidisation between different waste management functions but disregards the actual costs of providing a specific service. Below are some of the interventions that can be implemented:

- Undertake on a full cost accounting exercise for waste management services to include aspects of collection, transportation, landfill, street cleansing, fee collection, debt payment and depreciation.
- Implementing recycling programmes will reduce the disposal costs and generate revenue for the municipality. The cost accounting exercise referred to above could include the costs of these

recycling programmes against their gains in terms of real monetary returns as well as cost savings relating to increased landfill life span through saved air space.

- Increasing the service charges to correlate with the actual costs maybe a challenge to low income groups, given the current backlog specifically to those areas. The concept of Pay-as-you-throw may then be a better approach, where the service charge is proportional to the waste produced per household.
- The implementation of this IWMP can necessitate both capital and operational costs which can be funded through potential avenues listed below:

Table 16: Potential Funding Sources

Capex	Opex
Own funding Tariffs	Equitable share
USDG	Extended Public Works Programme (EPWP)
Rates	Donor funding
Consolidated Municipal Infrastructure Programme (CMIP)	
Equitable share	
Donor funding Carbon credits	
Financial institution (e.g. DBSA) Product revenue	
Public-private partnerships	
Provincial and National government allocations	

# CHAPTER 7

## IMPLEMENTATION PLAN ( Align the Implementation Plan with the NWMS,2020)

## 7. IMPLEMENTATION PLAN

### 7.1 IMPLEMENTATION PLAN (SUMMARY OF AN IWMP PLANNING PROCESS)

An implementation plan detailing how the targets set in the goals which are also supported by the 2020 NWMS strategic pillars will be attained, as well as the resources required to attain the targets in the next five years is tabulated below. This plan attempts to summarize the entire IWMP planning process in order to demonstrate how each of the steps talks to each other.

Desired end state (Goals)	Key Objective (Target)	Situational Analysis	Activities	Y	Y	Y	Y	Y	Human Resources	Equipment/ Infrastructure
				1	2	3	4	5		
<b>Goal1: Promote recycling and recovery of waste supported by the 2020 NWMS Pillar 1 on Waste Minimisation</b>	40% of waste diverted from landfill by 2025	About 95% of BCMM waste is going to landfill disposal	Identify appropriate measures to achieve the diversion of recyclable packaging waste and hazardous waste from landfill disposal	√					Waste Specialist	N/A
			Conduct waste characterisation studies	√	√	√	√	√	BCMM Waste Staff	Bags, Scales, PPE
			Establish partnerships with stakeholders e.g. Communities, Business, Waste Management companies, academic and research institutions, potential funding institutions etc.	√	√	√	√	√	BCMM Legal support	None
			Establish mechanisms for promoting separation of waste at source, e.g. Pilot project for Waste Separation at Source	√	√				Waste Specialist Stakeholder cooperation	
			Implement a pilot project to divert household hazardous (HHH) waste from landfill disposal.		√				In-house	Mobile HHH waste collection unit Capex Opex
			Develop a programme to formalize /		√				In-house	

			incorporate waste pickers into the waste system.							
			Provide facilities to enhance waste separation at source			√	√	√	BCMM Staff Community based EPWP	3 Transfer stations in region 3 waste drop-off points in each ward 1 Buy-Back Centre in each region Colour-coded receptacles
			Provide facilities, tools, equipment and infrastructure to enhance waste diversion from landfill disposal (MRFs, Receptacles, Transfer Stations, Buy-Back Centres etc.)			√	√	√	90 Permanent Personnel	Integrated waste management facility / central transfer station and associated infrastructure, equipment OPEX CAPEX
<b>Goal 2:</b> Ensure the effective and efficient delivery of waste services supported by Pillar 2 of the 2020 NWMS regarding effective and sustainable waste services	<b>A</b> comprehensive system for provision of waste services within the BCMM	<b>Waste Services are currently provided in the urban centers and rural, semi-rural and remote areas not serviced</b>	Develop Service Delivery Improvement Plan for the more rural areas / un-serviced areas. (Illegal dump clearance and prevention strategy)				√		In house	
			Situation Analysis of the status quo for waste service provision which includes area cleaning, and refuse	√					Waste Specialist	

			removal (Urban and Rural Area).							
			Pilot project to determine suitable Waste Management Models for waste service provision	√	√					
			Develop Waste Management Models suitable for the various areas of operation / settlements (urban, informal and Rural).		√	√				
			Develop Standard Operations Procedures (SOP) for provision of waste services all areas.		√	√				
			Develop Waste Service Provision monitoring systems.		√	√				
			Implementation of waste management models for provision of waste services in all areas.			√	√	√		
<b>Goal 3: Ensure that legislative tools are developed to deliver on the Waste Act and other applicable legislation</b>	<b>BCMM By-Laws Reviewed and updated</b>	The current by-laws are outdated since they were developed pre-NEMWA	Review of the BCMM Waste By- Law	√					In house	
			Approval and Adoption of Revised By-laws		√				Stakeholder Consultation	Meeting venues Logistics Facilitation
			Develop a Guideline for Registration of Waste Generators, Transporters and		√				In house	

			Processors within the City.								
			Designation of peace officers	√						In house	
			Build capacity for peace officers to enforce by-laws		√					In-house	Training Material
			Designated peace officers to monitor compliance and ensure enforcement of by – laws and other environmental related transgressions		√					In-house	Capacity Development Tools
			Implementation/Enforcement of By-laws	√	√	√	√	√		In-house	Capacity Development
<b>Goal 4: Sound budgeting and financing of waste management services</b>	<b>Ensuring that the budget of providing the waste management service is reflective of the cost</b>	Waste service is not prioritized and not cost reflective	Review the tariffs for waste collection and disposal each financial year	√	√	√	√	√		In-house Finance Dept Cooperation	Tariff Model training
			Allocate budget for waste services from equitable share funding and other sources of funding.	√	√	√	√	√		In-house Finance Dept Cooperation	
<b>Goal 5: Ensure the safe and proper disposal of waste</b>	<b>Achieve compliance with authorization for all BCMM's disposal facilities</b>	There are a number of unlicensed disposal facilities	Environmental Assessment and all planning studies completed for KWT and Roundhill LFS	√						EIA Specialist	
			Implementation of turnaround strategy to ensure that Roundhill LFS is compliant with the authorisation conditions.	√						Waste Specialist	Landfill site Operation Equipment
			Upgrade KWT LFS by installing weighbridge	√						Waste Specialist	Weighbridge and associate equipment
			Conversion of KWT and Roundhill ECA Permits to NEMWA Licences	√						EIA Specialist	
			Conduct an environmental assessment of active	√						EIA Specialist	



			and closed waste disposal sites								
			Implementation of turnaround strategy to ensure that KWT LFS is compliant with the authorisation conditions.		√					Waste Specialist	
			Development of Standard Operating Procedures (SOPs) for the existing waste disposal facilities		√					Waste Specialist	
			Determine possibility of constructing a hazardous waste cell in the existing Regional waste disposal facility.		√	√				Waste Specialist	
			Land acquisition and planning and construction of transfer stations		√					Development Planning Cooperation	Land for 5 transfer stations
			Establishment of strategic mini transfer station/ drop off points in the wards	√						In house and annual contractors	
			Constructing a hazardous waste cell in the existing Regional waste disposal facility.			√	√			Waste Specialist	
			Construction of additional waste disposal facilities			√	√	√		Waste Specialist	5 Transfer Stations
<b>Goal 6: Improve participation by the public and other stakeholders</b>	<b>Maintain inclusive and sustainable participation of all stakeholders in waste management issues</b>	<b>No formal platform and framework stakeholder engagement</b>	Establish Waste Management Forum		√					In-House Stakeholders Management Unit	Forum hosting cost
			Quarterly Waste Management Forum Meetings	√	√	√	√	√		In-House Stakeholders	Venue Logistical Costs

									Managem ent Unit	
			Develop Communication Strategy for all interested and affected parties	√					Stakehold er managem ent specialist	
			Implement partnership with institutions involved in products and packaging manufactures	√	√	√	√	√	In-house	
			Technical cooperation with other municipalities on waste management issues	√	√	√	√	√	In-house	
			Ensure institutions of higher learning and innovate centres assist in research to identify best practices in the waste sector	√	√	√	√	√	In-house	
			Waste Indaba to be held every 2 year		√		√		Support from Exco	Venue Logistics
<b>Goal 7: Education and awareness (Ensure the developme nt of waste minimizati on education and awareness strategy in BCMM</b>	<b>To ensure behavior change of stakehold ers towards waste managem ent initiatives</b>	Illegal dumping of waste, negative perceptio n of waste managem ent	Develop an education and awareness strategy, internally	√					Waste Education and Awarenes s Specialist	
			Appoint waste education and awareness technical specialist	√						
			Conduct awareness raising campaigns, education programmes about waste “no littering”, “no dumping” as well	√	√	√	√	√	50 Waste Ambassa dors (Linked to Wards)  EPWP	Receptacles  Educational Materials  Separation Bags

			as waste separation at source.							
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**CHAPTER 8**

**REPORT ON IMPLEMENTATION, MONITORING AND  
REVIEW**

## 8. REPORTING ON MONITORING

The reporting on the implementation of the IWMP is a requirement that is encapsulated in Section 13 (3) of the Waste Act which states that annual performance reports prepared in terms section 46 of the Municipal Systems Act must contain information on the implementation of the municipal IWMP. In line with this requirement, the information set out in paragraphs (a) to (j) is as follows:

- 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;
- in the case of a province, the extent to which municipalities comply with the plan and, in the event of any non-compliance with the plan, the reasons for such non-compliance: and
- any other requirements as may be prescribed by the Minister.

Therefore, the BCMM will report on the following issues annually to meet the requirements of s13 on NEMWA:

- Resource situation: budget allocations
- Human resources: Vacancies, skills and training;
- Payment for services: Tariff setting and collection thereof
- Rates of generation of waste, verified by the waste information system
- Registering of facilities on WIS and reporting.
- Reporting to provincial and national environmental departments.
- Illegal dumping and littering: amounts cleared and the costs involved.
- Legislation, regulations and by-laws are in place.
- Complaints regarding poor waste management

## 8.1 MONITORING OF IWMP

This chapter sets out the framework by which this IWMP will be monitored and clearly identifying tasks/ targets and roles and responsibilities in order to ensure implementation happens as envisaged.

### A. STRATEGIC ISSUES

The strategic elements of this plan are encapsulated in the goals set out by this plan. The BCMM has identified 7 key goals that will be pivotal in the achievement of the city's waste management ambitions. For each and every goal BCMM is required to develop follow up and feedback mechanisms. The following reporting requirements should be developed by the municipality to track progress in the implementation of the plan:

#### Goal 1: Promote recycling and recovery of waste (Waste Diversion)

-

Reporting Requirement	Reporting Timeline	Responsibility
<ul style="list-style-type: none"> <li>• Diversion measures</li> <li>• Waste Diversion Communication Strategy</li> <li>• Waste Characterization</li> <li>• Campaigns (reach and impact)</li> <li>• Projects to facilitate Separation at Source</li> <li>• Mobile HHH Waste Facility</li> <li>• Facilities, tools, equipment and infrastructure to enhance waste diversion</li> <li>• Partnerships</li> </ul>	<b>1-5 Years from July 2021</b>	<b>BCMM Waste Management Unit</b>

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

Reporting Requirement	Reporting Timeline	Responsibility
<ul style="list-style-type: none"> <li>• Service Delivery Improvement Plan. Specifically focusing on illegal dump clearance and prevention strategy.</li> <li>• Situation Analysis of the status quo for waste service provision which includes area cleaning and refuse removal (Urban and Rural Area).</li> </ul>	<b>1-5 Years from July 2021</b>	<b>BCMM Waste Management Unit</b>

<ul style="list-style-type: none"> <li>● Pilot project to determine suitable Waste Management Models for waste service provision</li> <li>● Waste Management Models suitable for the various areas of operation / settlements (urban and Rural).Service Delivery Improvement Plan</li> <li>● Standard Operations Procedures (SOP) for provision of waste services all areas.</li> <li>● Waste Service Provision monitoring systems.</li> <li>● Implementation of waste management models for provision of waste services in all areas.</li> </ul>		
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### Goal 3: Ensure that legislative tools are developed to deliver on the Waste Act and other applicable legislation

Reporting Requirement	Reporting Timeline	Responsibility
<ul style="list-style-type: none"> <li>● Review of the BCMM Waste By- Law</li> <li>● Approval and Adoption of Revised By-laws</li> <li>● Develop a Guideline for Registration of Waste Generators, Transporters and Processors within the City.</li> <li>● Capacity building for peace officers to enforce by-laws</li> <li>● Appointment of Environmental Management Inspectors (EMIs) for BCMM to monitor compliance and ensure enforcement of by – laws and other environmental related transgressions</li> <li>● Implementation/Enforcement of By-laws</li> </ul>	<b>1-5 years from July 2021</b>	<b>BCMM Waste Management Unit</b>

## Goal 4: Sound budgeting and financing of waste management services

Reporting Requirement	Reporting Timeline	Responsibility
<ul style="list-style-type: none"> <li>The review of tariffs for waste collection and disposal each financial year</li> </ul>	1-5 years from July 2021	BCMM Waste Management Unit
<ul style="list-style-type: none"> <li>Budget allocated for waste services from equitable share funding and other sources of funding.</li> </ul>	1-5 years from July 2021	

## Goal 5: Ensure the safe and proper disposal of waste

Reporting Requirement	Reporting Timeline	Responsibility
Environmental assessment of active and closed waste disposal sites	1-5 years from July 2021	BCMM Waste Management Unit
Implementation of turnaround strategy to ensure that KWT LFS is compliant with the authorisation conditions.	1-5 years from July 2021	
The Development of Standard Operating Procedures (SOPs) for the existing waste disposal facilities	1-5 years from July 2021	
Possibility of constructing a hazardous waste cell in the existing Regional waste disposal facility.	1-5 years from July 2021	
Land acquisition and planning and construction of transfer stations	1-5 years from July 2021	
Constructing a hazardous waste cell in the existing Regional waste disposal facility.	1-5 years from July 2021	
Construction of additional waste disposal facilities	1-5 years from July 2021	



## Goal 6: Improve participation by the public and other stakeholders

Reporting Requirement	Reporting Timeline	Responsibility
Establishment of Waste Management Forum	Quarterly from July 2021 (Work in progress)	BCMM Waste Management Unit
Quarterly Waste Management Forum Meetings	Quarterly from July 2021	
Communication Strategy for all interested and affected parties	1-5 years from July 2021 (Work in progress)	
Implementation of partnership with institutions involved in products and packaging manufacturers	1-5 years from July 2021 (Work in progress)	
Technical cooperation with other municipalities on waste management issues	1-5 years from July 2021 (Work in progress)	
Partnerships with institutions of higher learning and innovate centres assisting in research to identify best practices in the waste sector	1-5 years from July 2021 (Work in progress)	
Waste Indaba	1-5 years from July 2021 (Work in progress)	

## Goal 7: Education and awareness (Ensure the development of waste minimization education and awareness strategy in BCMM)

Reporting Requirement	Reporting Timeline	Responsibility
Education and awareness strategy, internally	1-5 years from July 2021 (Work in progress)	BCMM Waste Management Unit
Appoint waste Education and Awareness technical specialist	1-5 years from July 2021 (Work in progress)	
Awareness raising Campaigns, Education programmes about waste “No Littering”, “No Dumping” as well as waste separation at source.	1-5 years from July 2021 (Work in progress)	

### Public Participation

The Waste Act requires the development of an IWMP to follow a public participation and consultation process (Section 72 and Section 73). Awareness programs were developed in order to keep stakeholders abreast on issues pertaining to the development and implementation of the IWMP. The Waste Management Indaba was used as a platform to set the scene and to inform the citizens of BCMM about the waste challenges that the City is faced with. The platform was also meant to identify potential stakeholders that the City needs to partner with in the development and ultimately the implementation of the IWMP. In order to ensure that this IWMP takes into account the major challenges of waste management in BCMM, the City intends to extensively engage its stakeholders in various platforms such as:

- Waste management forums,
- Workshops with interested and/or affected parties (including youth environmental groups, community-based organizations, taxi associations, religious groups, businesses operating in the area, schools etc.)

Furthermore, as part of the development of an IWMP awareness campaign BCMM will publish information about the IWMP process and will communicate this in local media such as newspapers, local radio stations, print the information and post it on community notice boards and libraries. The draft IWMP will be made available to the general public for their inputs by advertising in the local newspaper two weeks before the date of the public meeting: Draft copies of the IWMP's will be placed for information purposes at places such as libraries and municipal offices for perusal by the public and give comments

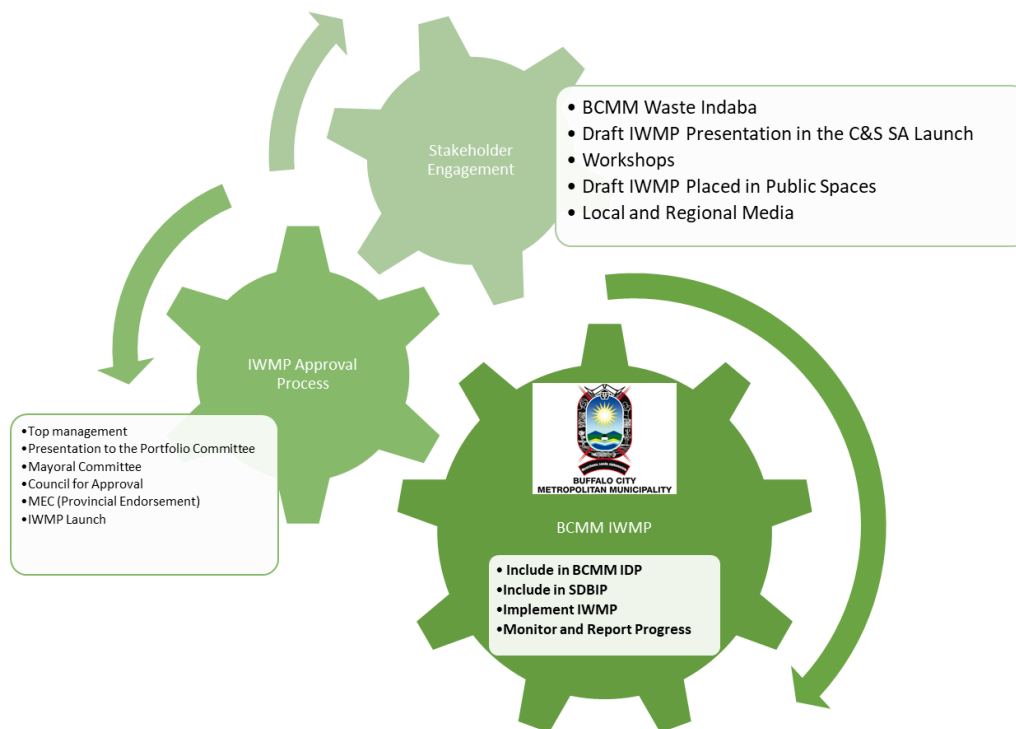


Figure 25: BCMM IWMP Public Engagement and Approval Process

## Public Engagement Schedule

Platform	Target Stakeholder	Date/ Proposed Date	Status
Council Meeting	Council	August 2021	Completed
Councilors Workshops	Councilors	April 2021	Pending
Waste Management Forum	All Stakeholders (Directorates, Community Based Organisations, Business, Institutions, etc.)	13 August 2021	Pending
BCMM and SAWIS Online Publication	All stakeholders	September 2021	Pending
Consultation During IDP Review Process and IDP Road Shows	Communities	September 2021	Pending
Consultation During the IGR Forum, Business Forum	IGR and Business	August 2021	Pending

## Approval of the BCMM IWMP

The approval of the BCMM IWMP's will follow the BCMM internal channels of accounting for the municipality. Figure 26 below graphically illustrates the process of approval of the IWMP. The draft IWMP will be presented to the management of the City before it is sent out for public participation. Once the management has approved, the draft will be taken out for stakeholder consultation where the people of BCMM will be accorded an opportunity as detailed above to make their input. The internal approval processes will include a step-by-step consultation where the final draft (incorporating stakeholder consultation inputs) will be presented to the Portfolio Committee of Municipal Services where the function of waste management is located. This will be followed by presentation to the Mayoral committee and the Council.

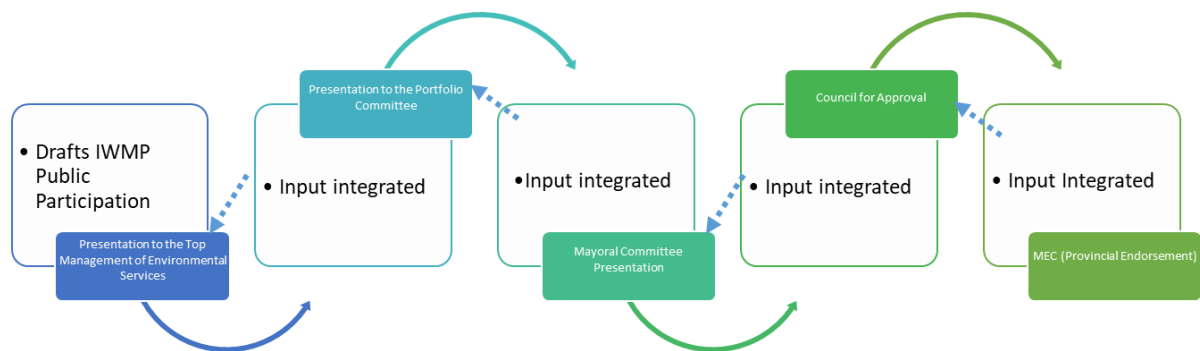


Figure 26: BCMM IWMP Internal Approval Process

At each stage of consultation there will be a feedback mechanism that will ensure that the input that has been incorporated is presented and signed off for the next committee level to approve. The document will ultimately be sent to the Provincial Department of Environmental Affairs (DEDEAT) for approval for MEC endorsement and approval.

## 8.3 FINANCIAL PLAN

The Financial Plan of this IWMP is linked to the Implementation Plan in Chapter 7. This plan attempts to summarize the entire IWMP implementation- how it is going to be implemented in order to demonstrate how each of the steps talk to each other.

Desired end state (Goals)	Activities	Y1	Y2	Y3	Y4	Y5
<b>Goal1: Promote recycling and recovery of waste (Waste Diversion)</b>	Identify appropriate measures to achieve the diversion of recyclable packaging waste and hazardous waste from landfill disposal	√				
	Conduct waste characterisation studies	√	√	√	√	√
	Establish partnerships with stakeholders e.g. Communities, Business, Waste Management companies, academic and research institutions, potential funding institutions etc.	√	√	√	√	√
	Establish mechanisms for promoting separation of waste at source, e.g. Pilot project for Waste Separation at Source	√	√			
	Mobile HHH Waste Facility		√			
	Develop a programme to formalise waste pickers.		√			
	Provide facilities to enhance waste separation at source			√	√	√
	Provide facilities, tools, equipment and infrastructure to enhance waste diversion from landfill disposal (MRFs, Receptacles, Transfer Stations, Buy-Back Centres etc.)			√	√	√
<b>Goal 2: Ensure the effective and efficient delivery of waste services</b>	Develop Service Delivery Improvement Plan. (Illegal dump clearance and prevention strategy)	√				
	Situation Analysis of the status quo for waste service provision which includes area cleaning, and refuse removal (Urban and Rural Area).	√				

	Pilot project to determine suitable Waste Management Models for waste service provision	√	√			
	Develop Waste Management Models suitable for the various areas of operation / settlements (urban and Rural).		√	√		
	Develop Standard Operations Procedures (SOP) for provision of waste services all areas.		√	√		
	Develop Waste Service Provision monitoring systems.		√	√		
	Implementation of waste management models for provision of waste services in all areas.			√	√	√
<b>Goal 3: Ensure that legislative tools are developed to deliver on the Waste Act and other applicable legislation</b>	Review of the BCMM Waste By-Law	√				
	Approval and Adoption of Revised By-laws		√			
	Develop a Guideline for Registration of Waste Generators, Transporters and Processors within the City.		√			
	Build capacity for peace officers to enforce by-laws		√			
	Appointment of Environmental Management Inspectors (EMIs) for BCMM to monitor compliance and ensure enforcement of by – laws and other environmental related transgressions		√			
	Implementation/Enforcement of By-laws		√	√	√	√
<b>Goal 4: Sound budgeting and financing of waste management services</b>	Review the tariffs for waste collection and disposal each financial year	√	√	√	√	√
	Allocate budget for waste services from equitable share funding and other sources of funding.	√	√	√	√	√

<b>Goal 5: Ensure the safe and proper disposal of waste</b>	Environmental Assessment and all planning studies completed for KWT and Roundhill LFS	√				
	Implementation of turnaround strategy to ensure that Roundhill LFS is compliant with the authorisation conditions.	√				
	Upgrade KWT LFS by installing weighbridge	√				
	Conversion of KWT and Roundhill ECA Permits to NEMWA Licences	√				
	Conduct an environmental assessment of active and closed waste disposal sites	√				
	Implementation of turnaround strategy to ensure that KWT LFS is compliant with the authorisation conditions.		√			
	Development of Standard Operating Procedures (SOPs) for the existing waste disposal facilities		√			
	Determine possibility of constructing a hazardous waste cell in the existing Regional waste disposal facility.		√	√		
	Land acquisition and planning and construction of transfer stations		√			
	Constructing a hazardous waste cell in the existing Regional waste disposal facility.			√	√	
	Construction of additional waste disposal facilities			√	√	√
<b>Goal 6: Improve participation by the public and other stakeholders</b>	Establish Waste Management Forum	√				
	Quarterly Waste Management Forum Meetings	√	√	√	√	√
	Develop Communication Strategy for all interested and affected parties	√				

	Implement partnership with institutions involved in products and packaging manufactures	√	√	√	√	√
	Technical cooperation with other municipalities on waste management issues	√	√	√	√	√
	Ensure institutions of higher learning and innovate centres assist in research to identify best practises in the waste sector	√	√	√	√	√
	Waste Indaba to be held every 3 years		√		√	
<b>Goal 7: Education and awareness (Ensure the development of waste minimization education and awareness strategy in BCMM)</b>	Develop an education and awareness strategy, internally	√				
	Appoint waste Education and Awareness technical specialist	√				
	Conduct Awareness raising Campaigns, Education programmes about waste “No Littering”, “No Dumping” as well as Waste Separation at Source.	√	√	√	√	√



## 9. ANNEXURES OR REFERENCES (OPTIONAL)

- 1 BCMM Integrated Waste Management Bylaw
- 2 Solid Waste Tariffs (See BCMM Website)
- 3 Solid Waste Standard Operating Procedures
  - Registration of Waste Transporter
  - Customer Relations Management – Complaints Management
  - Solid Waste Management Programmes
- 4 Refuse Collection Schedule

## 10. ABBREVIATIONS

BCMM:	Buffalo City Metropolitan Municipality
IDP:	Integrated Development Plan
IWMP:	Integrated Waste Management Plan
MSA:	Municipal Systems Act
MGDS:	Metro Growth Development Strategy
NEMA:	National Environmental Management Act
NEMWA:	National Environmental Management Act: Waste Act
MFMA:	Municipal Financial Management Act
PPP:	Public-private Partnerships
NWMS:	National Waste Management Strategy
NGO:	Non-governmental organisation
DFFE:	Department of Forestry, Fisheries and Environment
DEFF:	Department of Environments, Forestry and Fisheries
NDP:	National Development Plan
SDG:	Sustainable Development Goals
NWIS:	National Waste Information System
AFR:	Alternative Fuel Replacement
SPLUMA:	Spatial Planning and Land Use Management Act
GNR:	
NDWCS:	National Domestic Waste Collection Standards
BKCOB:	Border Kei Chamber of Business
IRRP:	Integrated Rapid Response Programme
MBSA:	Mercedes-Benz South Africa
BCMDA:	Buffalo City Metropolitan Development Agency
DEDEAT:	Department of Economic Development, Environmental Affairs and Tourism
LDVs:	Light delivery vehicle
PET:	Polyethylene terephthalate
HDPE:	High-density polyethylene
GLB+:	
MRF:	Materials recovery facility
GHS:	Globally Harmonized System of Classification and Labelling of Chemicals

BBC: Buy Back Centre  
SOP: Standard operating procedure  
EMI: Electromagnetic interference  
SAWIS: South African Waste Information System