REPUBLIC OF KENYA

COUNTY GOVERNMENT OF NYANDARUA

2026

ENGINEER MUNICIPALITY

SOLID WASTE MANAGEMENT POLICY

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Foreword

This Solid Waste Management Policy marks a major milestone in the journey toward sustainable development and environmental protection within our Municipality. Poor waste management has long posed challenges to public health, ecological balance, and urban growth. This policy provides a clear, integrated, and participatory roadmap that aligns with the Constitution of Kenya 2010, the Environmental Management and Coordination Act (EMCA), Vision 2030, and the Sustainable Development Goals (SDGs).

It outlines strategies to minimize waste generation, improve collection, transportation, promote recycling, recovery, and ensure safe disposal. By adopting inclusive and innovative approaches, it seeks to transform waste from a burden into an opportunity for green jobs, cleaner cities, and a healthier environment for all.

Tabitha Wambui
Engineer Municipal Board - Chairperson

ACKNOWLEDGEMENTS

On behalf of the Engineer Municipal Board, I extend our heartfelt appreciation to all who contributed to the development of the Engineer Municipality Solid Waste Management Policy.

We are especially grateful to the County Executive and Staff, led by H.E. Governor Dr. Moses Kiarie Badilisha, for their unwavering support and strategic guidance throughout this process.

This milestone reflects the dedication, professionalism, and collaborative spirit of our Board Members, municipal staff, and technical working teams drawn from across departments. Their tireless efforts have strengthened governance and institutional resilience within Engineer Municipality.

Special recognition goes to leadership of Hon. Stephen Kinyanjui Mburu, the CECM for Lands, Physical Planning, Housing and Urban Development, and Josephine Muiru, Chief Officer, Housing and Urban Development, for their guidance throughout the policy formulation process.
The Municipal Board Members, led by the Chairperson, for their guidance throughout the policy formulation process.

We commend the technical contributions of the Municipal manager serving Engineer municipality, Director of Physical Planning Racheal Mugo, Director of Legal Services Beatrice Macharia, Isaac Chege ,County Public Health Officer and Sammy Macharia, Public Health Officer, Engineer Municipality, whose insights and oversight were instrumental in shaping this framework.

Finally, we appreciate all County and Municipal staff who actively participated in consultations, provided data, and shared perspectives that informed the structure and content of this policy.
It is our hope that this policy will serve as a practical tool for management of solid waste within Engineer municipality.

Njoki Gatuhi

Municipal Manager, Engineer Municipality

Acronyms and Abbreviations

i. **CBO** – Community-Based Organization
ii. **CIDP** – County Integrated Development Plan
iii. **CSO** – Civil Society Organization
iv. **EPR** – Extended Producer Responsibility
v. **FBO** – Faith-Based Organization
vi. **GHG** – Greenhouse Gas
vii. **ISWM** – Integrated Solid Waste Management
viii. **ISSWM** – Integrated Sustainable Solid Waste Management
ix. **MRF** – Material Recovery Facility
x. **Municipality** – Engineer Municipality
xi. **NEMA** – National Environment Management Authority
xii. **NGO** – Non-Governmental Organization
xiii. **OHS / OSHA** – Occupational Health and Safety / Occupational Safety and Health Act
xiv. **PPP** – Public-Private Partnership
xv. **SBCC** – Social and Behavior Change Communication
xvi. **SDGs** – Sustainable Development Goals
xvii. **SWM** – Solid Waste Management

Definitions of Key Terms

i. **Municipality:** A town or district that has local government.

ii. **Municipality board:** A municipality board is a governing body or committee established by a municipality (like a city, town, or village) to handle specific issues or administer certain functions

iii. **E-Waste:** Any discarded items with plugs, cords and electronic components.

iv. **Solid Waste**: Any discarded material, whether generated from households, businesses, institutions, or industries that is no longer useful in its current form.

v. **Integrated Solid Waste Management (ISWM)**: A comprehensive approach that promotes waste reduction, segregation, collection, recycling, treatment, and environmentally sound disposal.

vi. **Circular Economy**: An economic model where materials are continuously reused, repaired, recycled, or repurposed to minimize waste and resource extraction.

vii. **Polluter Pays Principle**: The principle that those who generate waste should bear the cost of managing it responsibly.

viii. **Material Recovery Facility (MRF)**: A specialized facility where collected waste is sorted, processed, and prepared for recycling or recovery.

ix. **Hazardous Waste**: Waste that poses risks to human health or the environment, such as biomedical waste, e-waste, or chemical residues.

x. **Waste Segregation at Source**: The practice of separating waste at the point of generation into categories such as organic, recyclable, and hazardous.

xi. **Public Participation**: The involvement of citizens, communities, and stakeholders in decision-making processes regarding SWM planning, implementation, and monitoring.

Executive Summary

The Engineer Municipality Solid Waste Management Policy establishes a comprehensive framework for addressing rising waste generation, environmental degradation, and public health risks within the municipality. Anchored in the Constitution of Kenya (2010), national environmental legislation, county development priorities, and global sustainability commitments, the policy promotes integrated, inclusive, and climate-responsive waste management systems aimed at achieving a clean, healthy, and sustainable urban environment.

Engineer Municipality in Kinangop Sub-County, Nyandarua County, is experiencing steady population growth, expanding economic activity, and rapid urbanization. These trends have increased solid waste generation to an estimated 40 tons per day, composed mainly of organic waste alongside plastics, paper, and emerging electronic waste streams. Existing waste management systems face major constraints, including minimal segregation at source, limited collection coverage, absence of a sanitary landfill and material recovery facility, weak enforcement of regulations, and continued reliance on open dumping and burning. These challenges pose significant environmental and public health risks while limiting opportunities for recycling, composting, and green economic development.

The policy's overall goal is to establish an integrated, sustainable, and financially viable solid waste management system that safeguards human health, protects ecosystems, promotes climate resilience, and generates green employment opportunities. Key objectives include reducing waste at source, strengthening segregation, improving collection and transportation efficiency, expanding recycling and composting initiatives, ensuring environmentally compliant disposal, managing hazardous and special waste streams, enhancing institutional capacity, mobilizing sustainable financing, and promoting public awareness and behavioral change.

Central to the policy is a transition from the traditional "collect-and-dispose" approach toward an Integrated Sustainable Solid Waste Management model grounded in circular economy principles and the 7Rs—reduce, reuse, recycle, rethink, refuse, repair, and refill. Strategic interventions include mandatory segregation at household and institutional levels, expanded service coverage to underserved areas, establishment of material recovery facilities, support for youth- and community-based recycling enterprises, development of engineered sanitary landfills, and environmentally sound treatment of hazardous, biomedical, and electronic waste. These actions aim to reduce landfill dependency, lower greenhouse gas emissions, and transform waste into a productive economic resource.

Effective implementation relies on coordinated governance across national, county, and municipal

levels. National institutions provide legislative direction and regulatory oversight, while Nyandarua County ensures policy alignment, budgeting, and coordination. At the municipal level, the Municipal Board, Municipal Manager, and technical departments oversee operational delivery, infrastructure development, regulation, and stakeholder engagement. Partnerships with private sector actors, civil society, community organizations, and informal waste workers are recognized as essential for innovation, service expansion, and livelihood creation.

Financing will be achieved through diversified mechanisms including municipal service charges, county transfers, public-private partnerships, donor and development partner support, recycling revenues, and emerging green financing instruments such as carbon credits. Cross-cutting priorities—gender and youth inclusion, disability mainstreaming, climate change mitigation and adaptation, occupational health and safety, and the adoption of information and communication technologies—ensure equitable, resilient, and future-ready waste management systems.

Implementation will follow phased, results-based planning supported by measurable performance indicators and a strong Monitoring, Evaluation, Reporting, and Learning framework. Expected outcomes include reduced per-capita waste generation, increased segregation and recycling rates, expanded collection coverage, safe treatment of hazardous waste, closure of open dumpsites, and strengthened public awareness. Continuous review and adaptive learning will maintain policy relevance and effectiveness.

Through this policy, Engineer Municipality affirms its commitment to constitutional environmental rights, sustainable urban development, improved public health, and inclusive green growth. Waste management is positioned not only as a sanitation service but also as a driver of climate action, circular economy innovation, and long-term socio-economic transformation aligned with county priorities, Kenya Vision 2030, and the Sustainable Development Goals.

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CHAPTER ONE

1.0 Introduction

Solid waste management is a critical pillar of public health, environmental sustainability, and community well-being in Engineer Municipality, Nyandarua County. As one of Kenya's rapidly urbanizing centers, the municipality faces increasing pressure to manage solid waste effectively to ensure a clean and healthy environment, as mandated by the Constitution of Kenya 2010 under Articles 42 and 43. The municipality is responsible for delivering essential services, including waste collection, segregation, recycling, and disposal, as outlined in the Fourth Schedule of the Constitution. This chapter provides a framework for solid waste management in Engineer, detailing its background, rationale, situational analysis, and alignment with county, national, and international frameworks to guide the municipality toward sustainable waste management practices and a vision for a cleaner, healthier future by 2030.

1.1 Location and Situation

Engineer Municipality is located in Kinangop Sub-County in Nyandarua County. It's headquartered in Engineer township located along the Ol Kalou-Njabini Road. Engineer Township is primarily an agro-based urban centre mainly supported by horticulture and dairy farming. Its growth can greatly be attributed to its history as the centre where members of the public could access government services such as post office, Cooperatives Union banking services, central government administration, etc. Its location in the Nairobi-Ol Kalou, Nyahururu circuit as well as proximity to Naivasha which is the second largest town in Nakuru County have also contributed to its growth. Engineer is 60 km from Ol Kalou town which is Nyandarua County headquarter and accessible through the Ndudori-Engineer-Njabini road.

1.1.1 County Context

In terms of regional connectivity Nyandarua County is relatively well connected by a number of roads to major cities and towns in Kenya, hence enjoying a regional advantage for investments. Engineer Municipality lies along the Ol Kalou-Njabini and Engineer-Kirima-Naivasha roads. The municipality is well connected to Naivasha, Njabini, Ol Kalou and Nairobi.

1.1.2 Local Context.

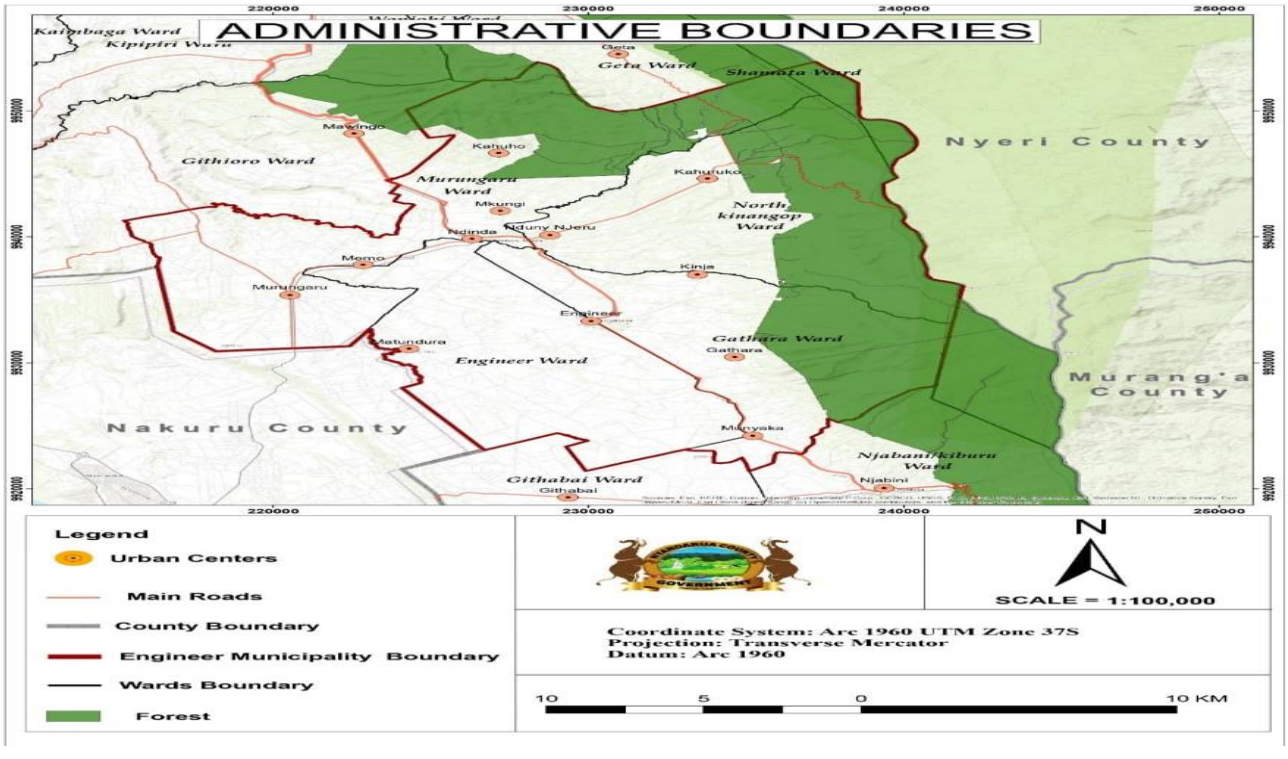
The Municipality lies at latitude 0.0003390°N and longitude 36.4182880°E in the southern part of Nyandarua County. It is located west of Aberdare Ranges and approximately 120km West of Nairobi. The municipality covers an area of 531 sq.km which include four wards namely Gathara, Engineer,

North Kinangop and Murungaru wards. It borders Kipipiri, Aberdare ranges, Nyeri and Nakuru Counties.

Table 1: Administrative wards within Engineer Municipality

Sub County	Constituency	Ward
Kinangop	Kinangop	Engineer
		North Kinangop
		Murungaru
		Gathara

Engineer Municipality map showing the four wards covered by the municipality



1.2 Climate

The Municipality has a cool and temperate climate with reliable rainfall, which is generally well distributed throughout the year. In a typical year, the Municipality experiences two rainy seasons: long rains from March to May with a maximum rainfall of 800 mm and short rains from September to December and with a maximum rainfall of 600 mm. The average annual rainfall of the Municipality is 1,500 mm. It experiences an average temperature of between 8°C in the cold season and 23°C in the hot season. The highest temperatures are recorded in the month of December and the lowest in the month of July (KMD).

Agricultural and livestock productivity is worsened by limited, unreliable and poorly distributed rainfall patterns. In recent years the rains have become erratic and unpredictable hence making it difficult to plan on farming.

1.3 Population

The population distribution within Engineer Municipality varies across different areas (KNBS, 2019). Engineer Township is the most densely populated area, with a total population of 34,671 and a density of 795 persons per square kilometer. In contrast, Murungaru has a population of 16,536 and a density of 326 persons per square kilometer, while Kitiri has 17,363 residents with a density of 313 persons per square kilometer. North Kinangop has a population of 25,300, with a density of 367 persons per square kilometer. Overall, it has a total population of 93,870, composed of 46,157 males and 47,713 females. The average household size is five members, and the municipality's average population density is around 363 persons per square kilometer.

This data highlights the uneven population distribution within the municipality, with Engineer Township being more densely populated than other areas like Murungaru and Kitiri. These differences in density are likely influenced by factors such as land use, infrastructure, and the availability of services, which vary across the municipality. Understanding these variations is essential for planning and resource allocation to meet the diverse needs of the population across different locations. Settlement and growth is also concentrated in trading centers and along major transport routes

1.4 Economic Activities and Growth Drivers

The economic foundation of Engineer Municipality is diverse and dynamic, driven by the following:
a) Agriculture: Potatoes, dairy, and horticulture farming, with high volumes of agricultural produce.
b) Trade: Weekly market days and retail/wholesale trading across the listed centres.
c)Land subdivision: Rapid peri-urban housing and plot development that generates additional waste.

d) Emerging drivers: Recycling ventures, Agri-waste valorisation, and youth-led waste management enterprises.

1.5 Solid Waste Management Situation

The municipality generates an estimated 40tons of waste per day. The waste is predominantly organic, augmented by plastics, paper/cardboard, and a rising stream of e-waste.

Current waste management faces several challenges:

a) Minimal segregation at source, with most recyclables recovered informally.

b) Collection services are limited to major centers, leaving peri-urban areas underserved.

c) The municipality lacks a sanitary landfill and Materials Recovery Facility (MRF).

d) Open dumping and burning are common, creating public health risks.

e)Enforcement of waste management regulations remains weak.

Opportunities exist to establish zoned transfer points, develop PPPs for recycling, and expand SBCC campaigns to increase segregation at source and improve compliance.

Figure 1:Photos of current status of solid waste within the Municipality

1.6 Waste Generation

Waste generation estimates based on an average of 0.65 kg/person/day, distributed evenly across the four wards

Table 2: Waste generation estimates from the major shopping centers across the four wards

TOWN	POPULATION	ESTIMATED	ESTIMATED
		Waste per Week(kg)	Waste Per Month(kg)
Engineer Town	34,671	157,753	631,000
MurungaruTown	7,400	33,670	134,680
NdunyuNjeru Town	12,000	54,600	218,400
Other Shopping Centres	7,600	34,580	138,320
Total	61,671	280,603	1,122,400

Waste classification

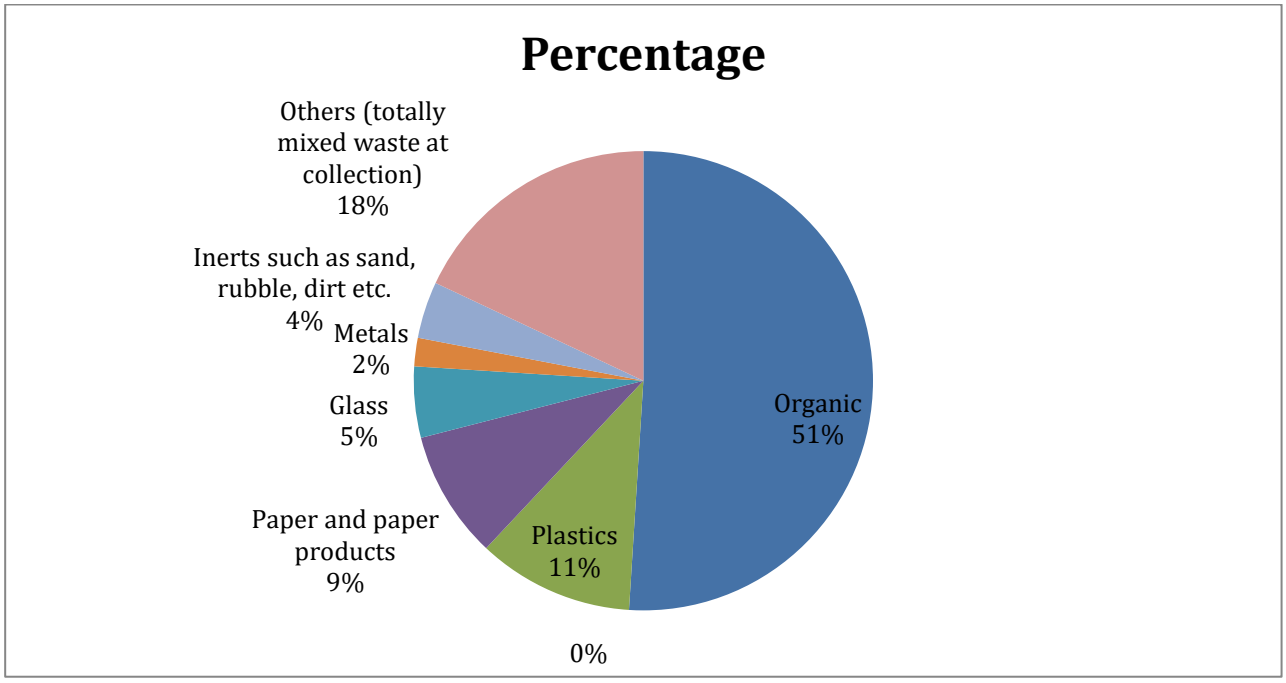


Figure 2: Classification of waste by percentage (Source: Kinangop sub county public health office)

1.7 Human Resources

The municipality currently depends on 13 county government cleaners. This workforce is supported by a limited number of supervisors, drivers, and informal recyclers. As the municipality develops transfer points and MRFs, staffing requirements will need to scale up accordingly.

1.8 Rationale and Justification for Policy Development

The formulation of a comprehensive Solid Waste Management Policy for Engineer Municipality is necessitated by the converging pressures of rapid urbanization and environmental necessity. As population density increases, the volume of waste generated has begun to exceed current systemic capacities, leading to a critical service gap. This strain on resources often results in deleterious practices such as open dumping and unregulated burning. Such methods not only pose immediate public health risks but also stand in direct contravention of the **Public Health Act (Cap 242)**.

Furthermore, the municipality currently faces a significant infrastructure deficit, specifically the absence of Material Recovery Facilities (MRFs) and sanitary landfills. This gap undermines the municipality's ability to comply with the **Sustainable Waste Management Act (2022)** and the **Environmental Management and Coordination Act (EMCA)**, which mandate more sophisticated, resource-oriented handling of refuse. Beyond mere compliance, the current management model overlooks significant economic potential; by failing to formalize waste-to-resource streams such as composting and energy recovery, the municipality misses vital opportunities for local job creation and revenue generation.

Ultimately, this policy serves as a strategic roadmap to catalyze urgent behavior change, incentivizing residents to adopt source segregation and participate in sustainable financing through service fees. By implementing this framework, Engineer Municipality will ensure that waste is managed as a valuable resource, thereby safeguarding public health, preserving environmental quality, and harnessing untapped socio-economic opportunities for the benefit of all residents.

1.9 Link to County, National, and International Frameworks

As a devolved function under the Constitution of Kenya 2010, solid waste management in Engineer aligns with county-level strategies, including unified budgeting and evaluation frameworks to ensure transparency and accountability. Nationally, Kenya's transition to a circular economy is supported by legislation such as the 2017 ban on single-use plastic bags, the Extended Producer Responsibility Regulations 2021, and the Sustainable Waste Management Act 2022, which promote resource efficiency and waste reduction. At the county level, Engineer's strategies emphasize governance, social inclusion, and environmental protection. Internationally, the municipality adopts frameworks

from the United Nations Environment Programme (UNEP) and UN-Habitat, which prioritize waste reduction, reuse, recycling, resource recovery, incineration, and landfilling as a last resort. These frameworks guide the implementation of Integrated Solid Waste Management (ISWM) systems, ensuring alignment with global sustainability goals and Kenya Vision 2030 for a cleaner, healthier, and more sustainable future

CHAPTER TWO: POLICY AND LEGAL FRAMEWORK

Solid Waste Management in Kenya is governed by a multi-layered policy and legal framework that integrates international, national, and county-level policy and legislation. This chapter outlines the key policies and legal framework influencing SWM in the Kenya's urban areas.

2.1 International and Regional Conventions and Treaties

Solid waste management is increasingly recognized as a global development and environmental priority. As such, at the global context, the SWM concern is guided by international conventions, frameworks, and agreements, which Kenya has signed and ratified, making them binding on both the national and county levels of government. As a semi-autonomous County entity, the Municipality is bound to implement these obligations through delegated county functions. They include: -

2.1.1 Rio Declaration on Environment and Development (1992)

Kenya participated in the 1992 Earth Summit in Rio de Janeiro where the Rio Declaration was adopted. Though not legally binding, it sets foundational principles for sustainable development, including the **precautionary principle,** the **polluter-pays principle**, and **public participation** in environmental governance. These principles now inform Kenya's constitutional and legislative framework, and by extension, the Municipality's waste management practices.

2.1.2 United Nations Framework Convention on Climate Change (UNFCCC, 1992)

Kenya signed the Convention in 1992 and ratified it on **30 August 1994**. The UNFCCC obliges Kenya to monitor and reduce greenhouse gas emissions, including those from the waste sector (methane from landfills, carbon dioxide from burning, and nitrous oxide from treatment plants). The Municipality, as part of Kenya's devolved system, is bound to adopt waste management practices that contribute to national climate commitments under the Convention.

2.1.3 Kyoto Protocol (1997)

Kenya signed the Protocol on **25 April 1997** and ratified it on **25 February 2005.** The Protocol introduced legally binding emission reduction targets and mechanisms such as the **Clean Development Mechanism (CDM)**, which allowed waste-to-energy, landfill gas capture, and composting projects to generate carbon credits. The Municipality is expected to design waste projects that can contribute to such emission reduction mechanisms and attract climate financing.

2.1.4 Paris Agreement on Climate Change (2015)

Kenya signed the Agreement on **22 April 2016** and ratified it on **28 December 2016**. The Agreement commits parties to reduce greenhouse gas emissions, including from waste management (landfills, open burning). The Municipality is bound to align its waste management practices with Kenya's Nationally Determined Contributions (NDCs), by promoting waste minimization, recycling, and climate-smart disposal methods.

2.1.5 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989)

Kenya signed the Convention on **22 March 1989** and ratified it on **1 June 2000**. The Convention obliges Kenya to control import, export, and disposal of hazardous wastes in an environmentally sound manner. At the devolved government level, the Municipality is responsible for ensuring environmentally sound management of hazardous and special waste streams within its jurisdiction, in line with national commitments.

2.1.6 Sustainable Development Goals (SDGs, 2015 – 2030)

Adopted by the United Nations in September 2015, Kenya committed to achieving the SDGs, particularly Goal 11 (sustainable cities and communities) and Goal 12 (responsible consumption and production). These goals provide a framework for integrated waste management at municipal level. As a devolved entity, The Municipality contributes to Kenya's reporting and implementation of the SDGs through its waste management systems.

2.1.7 African Union Agenda 2063 (2015)

Kenya is a member of the African Union and therefore a party to Agenda 2063, adopted in January 2015. Aspiration 1 emphasizes environmentally sustainable and climate-resilient economies, encouraging circular economy approaches, including recycling and waste-to-energy. The Municipality, as part of a county within Kenya, must integrate these aspirations into its urban development and waste management initiatives and align its policies with Agenda 2063 through sustainable waste management initiatives.

These global commitments require local governments, including Municipality, to adopt sustainable, climate-sensitive, and inclusive waste management systems.

Policy statements

The Municipality shall:

Align its solid waste management practices with Kenya's international obligations and global sustainable development commitments, including the Sustainable Development Goals (SDGs) and the African Union's Agenda 2063, by promoting waste minimization, environmentally sound disposal, and greenhouse gas emission reduction; fostering circular economy approaches such as recycling, composting, and waste-to-energy while ensuring inclusivity and resilience in urban waste systems;

and applying international principles, including the precautionary principle, the polluter-pays principle, and participatory governance, to translate global environmental standards into effective local action.

2.2 National Policies and Legislation

Kenya's national framework for solid waste management is comprehensive, grounded in constitutional principles, legislative mandates, planning standards, and progressive national policy. These frameworks provide both direction and enforceable obligations and include: -

2.2.1 The Constitution of Kenya (2010)

The Constitution of Kenya (2010) guarantees the right to a clean and healthy environment under Article 42, and the right to sanitation under the right to health under Article 43. Article 69 imposes a duty on both the State and citizens to safeguard the environment. Crucially, the Fourth Schedule designates refuse removal, refuse dumps, and solid waste disposal as exclusive functions of county governments, functions that Municipality are mandated to administer under delegated authority.

2.2.2 Legal Notice No. 137 of 2013

This was issued by the Transition Authority and gave legal effect to devolution of functions under the fourth schedule of the GoK by breaking down SWM functions into actionable tasks, such as waste collection, transport, treatment, and disposal. It thus laid a firm constitutional and operational foundation for local-level SWM governance.

2.2.3 Environmental Management and Coordination Act (EMCA, 1999, as amended)

The Act aims to create a structured, environmentally sound system for waste management that minimizes health risks, reduces environmental pollution, and promotes sustainability in Kenya. Under the Act, counties must regulate SWM through licensing, environmentally sound practices, and penalties for violations.

Key EMCA 1999 provisions on solid waste management include:

a) Adoption of an integrated approach promoting waste reduction, reuse, recycling, and safe disposal.

b) Licensing and regulation of waste handlers, transporters, treatment, and disposal facilities by NEMA.

c) Prohibition of illegal dumping**,** with emphasis on designated sites and sanitary landfills.

d) Promotion of public participation and awareness in waste management.

e) Application of the polluter-pays principle, making waste generators responsible for costs and impacts.

f) Enforcement measures including fines and penalties for non-compliance.

2.2.4 Waste Management Regulations (Legal Notice No. 178 of 2024)

These Regulations, issued under the EMCA1999, strengthen Kenya's legal framework on solid waste. They provide detailed standards on waste storage, segregation at source, collection, transportation, treatment, and final disposal, and classify waste streams including biomedical, industrial, hazardous, and radioactive waste. These regulations place binding obligations on counties and Municipality to ensure waste is managed in an environmentally sound and health-conscious manner, with clear penalties for non-compliance.

2.2.5 Public Health Act (Cap. 242)

The Act gives local authorities the mandate to enforce sanitation and hygiene standards. This ensures that waste facilities, collections, and dumpsites do not pose health risks, especially during outbreaks.

2.2.6 Physical and Land Use Planning Act (2019)

The Act requires that Municipality prepare local physical and land use development plans consistent with broader county and national spatial strategies. These must include zoned areas for waste infrastructure, protective buffer zones, and ensure compliance with development control standards. Additionally, County governments also may develop specific subject plans, such as SWM plans for markets or industrial zones, aligned with national spatial and planning guidelines.

2.2.7 Sustainable Waste Management Act, 2022 (No. 31)

The Act, represents a landmark reform in Kenya's waste governance framework. It establishes the National Waste Management Council which provides policy direction and coordination and the National Sustainable Waste Management Authority which serves as the implementing and enforcement agency. The Act anchors modern principles of segregation at source, extended producer responsibility (EPR), circular economy, zero-waste, public participation, and incentives for recycling and recovery.

For devolved governments, the Act places clear obligations on counties and Municipality, including:

a) Enacting local waste management legislation and by-laws within one year.

b) Developing infrastructure for material recovery, recycling, and sanitary landfills.

c) Promoting segregation at source, managing waste within county boundaries (unless otherwise agreed), and submitting regular reports to the national Authority.

2.2.8 Extended Producer Responsibility (EPR) Regulations (2024)

The Regulations were enacted under the Sustainable Waste Management Act, 2022 (No. 31) to operationalize the principle that producers are accountable for the full lifecycle of their products and packaging. The Regulations establish clear obligations for producers, importers, and brand owners to ensure environmentally sound management of waste arising from their products.

Key provisions include:

a) EPR Schemes: Producers must establish or join collective EPR schemes registered with the National Sustainable Waste Management Authority, covering collection, segregation, transport, recycling, and safe disposal.

b) Take-Back Mechanisms: Producers are obligated to put in place take-back and buy-back systems for products such as plastics, electronics (e-waste), tires, and batteries.

c) Circular Economy Measures: The Regulations promote product redesign, eco-labeling, use of recyclable materials, and investment in recycling infrastructure to reduce waste at source.

d) Reporting and Compliance: Producers must submit periodic reports on quantities placed in the market, recovery rates, and waste management measures, with non-compliance attracting penalties.

e) Support to Counties and Municipality: EPR schemes are required to collaborate with counties and Municipality by financing waste collection, recycling, and awareness campaigns, ensuring that the cost burden of waste management does not fall solely on local governments.

2.2.9 The County Government Act 2012

The Act decentralizes waste management, giving counties the mandate to manage waste within their boundaries. Counties are responsible for the collection, transportation, treatment, and disposal of waste, and must develop supporting policies, plans, and infrastructure.

The Act places obligations and mandates on Counties to:

a) Integrate solid waste management into urban planning and development strategies, including zoning for landfills, recycling centers, and disposal sites.

b) Conduct public participation in planning and implementation to ensure accountability and responsiveness to community needs.

c) Adopt sustainable waste management practices such as recycling, waste reduction, and proper disposal, in line with EMCA 1999 to protect ecosystems and public health.

d) Engage in public-private partnerships (PPPs) and to outsource services such as waste collection and recycling, to improve efficiency.

e) Levy fees and charges for waste management services, with revenues ring-fenced to maintain and expand SWM systems.

2.2.10 Urban Areas and Cities Act, Cap 275

Provides for integrated development planning in urban areas. The Act provides for development of urban integrated development plans for urban areas and cities which includes planning for solid waste management

2.2.11 Public Finance Management Act, Cap 412 C

Provides for financial planning and management at the national and county levels including linkage of development planning, budgeting and public expenditure.

Key provisions for Counties and Municipality include:

a) Empowers counties to allocate resources to Municipality for delegated functions, ensuring that funds follow functions as required by the Constitution.

b) All revenues, including waste management fees and charges, must be paid into the County Revenue Fund and appropriated through the County Assembly.

c) Operationalizes the principles of fiscal responsibility and transparency, requiring that counties and Municipality demonstrate efficient use of public resources in service delivery. In practice, this means that when solid waste management functions are transferred from a county department to a municipal board, the accompanying budgets, staff, and assets must also be transferred to enable effective implementation.

d) Encourages Municipality to explore diversified financing mechanisms, including user charges, conditional grants, and partnerships with the private sector and development partners, to ensure sustainability of waste management systems.

2.2.12 Occupation Safety and Health Act, Cap 514

The Act provides for safety, health and welfare of workers and persons lawfully present at workplaces. It obligates workplaces that manipulate chemicals or toxic substances, such as the solid waste management unit, to develop a suitable system for the safe collection, recycling and disposal of chemical wastes, obsolete chemicals and empty containers of chemicals. This ensures that the employer avoid risks to safety, health of employees and the environment.

2.2.13 National Environment Policy, 2013

The policy provides for governance framework for environment management. Regarding solid waste management, the policy recognizes inefficient production processes, low durability of goods and unsustainable consumption and production patterns lead to excessive waste generation. To address these challenges, the policy provides for development of an integrated national waste management strategy, promotion of use of economic incentives to manage waste and promotion of establishment of facilities and incentives for cleaner production waste recovery, recycling and re-use.

2.2.14 Kenya Environment, Sanitation and Hygiene Policy 2016-2030.

This policy provides a national framework for achieving universal access to adequate sanitation and a clean, healthy environment. It emphasizes expanded access to rural and urban sanitation, elimination of public health nuisances, and private sector participation in service delivery. It further promotes strong governance, sustainable financing, enabling laws and regulations, research and innovation, and effective monitoring and evaluation systems.

For counties and Municipality, the Policy requires integration of sanitation and hygiene into local development plans, investment in waste and sanitation infrastructure, and collaboration with communities and private actors to ensure public health protection and environmental sustainability.

2.2.15 National Climate Change Action Plan (NCCAP) (2018 – 2022)

It is Kenya's first climate change action plan developed to implement the National Climate Change Response Strategy (NCCRS). The action plan encourages proper management of solid waste which contribute to improved ground water quality, local air quality and safety as well as hygienic conditions. It is also aimed at reducing emissions through mitigation and adaptation strategies.

2.2.16 National Waste Management Strategy (2015)

The Strategy provides Kenya's roadmap for transitioning to sustainable and resource-efficient waste systems. It set an ambitious target of achieving 80% waste recovery by 2030, primarily through segregation at source, recycling, composting, and energy recovery, thereby reducing reliance on landfills. The Strategy emphasizes Integrated Solid Waste Management (ISWM), which combines waste minimization, resource recovery, safe disposal, and stakeholder participation.

For counties and Municipality, the Strategy provides both direction and benchmarks, requiring them to develop localized waste management plans, strengthen public-private partnerships, and adopt circular economy practices that align with the national recovery target.

2.2.17 Vision 2030

Vision 2030 highlights SWM as essential in urban infrastructure investments supporting sustainable urban growth. It recognizes the need for efficient and sustainable waste management systems to be

established as the country develops into a newly industrialized state by 2030. It aligns solid waste management with the broader agenda of industrialization, infrastructure development, and environmental sustainability. Municipal solid waste management is an essential aspect of achieving the country's goals of sustainable urban development, environmental conservation, and improved public health. As Kenya experiences rapid urbanization, effective waste management is seen as a critical factor in transforming urban areas into clean, healthy, and livable environments.

These National policies and legislation are binding on County governments and Municipality with regard to sustainable, climate-sensitive, and inclusive waste management systems.

Policy Statement

The Municipality shall:

Operationalize the constitutional right to a clean and healthy environment by implementing its devolved mandate over refuse removal, dumps, and solid waste disposal in compliance with the Constitution of Kenya (2010) and Legal Notice No. 137 of 2013; align its waste management practices with national legislation and enforce national environmental and public health standards within its jurisdiction; and integrate national policy directions into local systems to promote sustainable consumption, resource recovery, and climate-smart waste management.

2.3 County and Municipal Context

At the devolved level, Nyandarua County and the Municipality operate under the national framework but must adopt county-specific policies and systems:

2.3.1 Nyandarua County Public Participation and Civic Education Act No. 4

The Act was developed in line with Article 10 of the Constitution and Section 91 of the County Governments Act which recognize public participation as a mandatory element in planning and implementation of SWM. The Municipality will be required to integrate this principle by engaging residents, business owners, CBOs, waste workers and other relevant stakeholders in decision-making processes.

2.3.2 The Nyandarua County Integrated Development Plan 2023-2027

The Plan includes solid waste management as a critical priority. The county government is focusing on implementing projects that involve sorting waste at the source, improving collection systems, and using environmentally sustainable methods to manage increasing waste levels. These efforts aim to

reduce pollution and improve public health. Additionally, the county is exploring waste recycling programs to create economic opportunities and promote environmental conservation as part of its broader development goals.

2.3.3 The Engineer Municipality Integrated Development Plan 2020 – 2025

The Plan aims to guide sustainable solid waste management to ensure a healthy, safe and secure environment for all. This will be achieved through the following strategies: -

i. Awareness creation on safe waste disposal methods and reuse.
ii. Increasing collection by provision of solid waste bins and transfer stations in the strategic areas.
iii. Purchase of refuse trucks to facilitate transfer to these transfer stations.
iv. Sensitization on circular economy of waste
v. Promotion of technologies and enterprises on waste recycling and reuse
vi. Adoption of polluter pays principle.
vii. Licensing and regulating the small-scale private waste collectors.

2.3.4 The Engineer Municipality Strategic Plan 2023 – 2027

Provides for effective waste management, which is essential for reducing pollution, conserving resources, and safeguarding public health. It also encourages investment in waste collection, recycling infrastructure, and public education campaigns to promote waste reduction and recycling behaviors among residents and businesses.

In summary, the county and municipal framework establishes the Municipality as the frontline actor in solid waste management within its area of jurisdiction, operating under delegated authority from Nyandarua County. The Municipality is therefore obligated to translate national and county policies into localized systems, by-laws, and infrastructure**,** ensuring efficient service delivery and accountability to residents.

Policy statement

The Municipality shall:

Implement solid waste management as a devolved function of Nyandarua County by exercising delegated authority under the Urban Areas and Cities Act to deliver efficient, transparent, and accountable services; develop and enforce by-laws consistent with county and national frameworks while ensuring active public participation and stakeholder engagement in planning, service delivery,

and monitoring; and integrate solid waste management priorities into municipal planning and budgeting instruments, including municipal development plans, to guarantee sustainable financing, institutional capacity, and long-term accountability.

CHAPTER THREE: POLICY FRAMEWORK

1.1 Vision

To achieve a clean, healthy, and environmentally sustainable Engineer Municipality through efficient, inclusive, and innovative solid waste management systems.

1.2 Mission

To provide reliable, safe, and sustainable solid waste collection, transportation, recycling, treatment, and disposal services through community participation, stakeholder partnerships, resource recovery initiatives, and enforcement of environmental and public health regulations.

1.3 Policy Goal

To establish an integrated, sustainable, and financially viable solid waste management system that protects human health, conserves the environment, fosters climate resilience, and generates green jobs while ensuring equity, accountability, and citizen participation across all levels of society.

1.4 Policy Objectives

The specific objectives of this policy are to:

1. **Promote Waste Minimization** – Encourage sustainable consumption and production practices that reduce waste generation at source.
2. **Strengthen Segregation, Collection, and Transportation** – Ensure waste is properly segregated, efficiently collected, and safely transported using environmentally sound systems.
3. **Enhance Recycling and Resource Recovery** – Support the growth of recycling industries, composting, and other circular economy initiatives that maximize material recovery.
4. **Ensure Safe Disposal** – Provide adequate, sanitary, and environmentally compliant waste disposal facilities, including engineered landfills.
5. **Address Hazardous and Special Waste** – Establish systems for the safe handling, treatment, and disposal of biomedical, industrial, e-waste, and other hazardous waste streams.
6. **Strengthen Institutional and Human Resource Capacity** – Build technical, managerial, and operational capacity of Municipality to deliver quality SWM services.
7. **Promote Partnerships and Participation** – Foster collaboration among households, communities, private sector, CSOs, and development partners in SWM.

8. **Mobilize Financing and Investments** – Establish sustainable funding mechanisms through municipal revenues, PPPs, grants, and innovative instruments (e.g., carbon credits).
9. **Enhance Public Awareness and Behavior Change** – Implement continuous education and advocacy campaigns to foster responsible waste practices at household and community level.
10. **Mainstream Climate Change and Resilience** – Align SWM practices with climate change adaptation and mitigation strategies, reducing greenhouse gas emissions from waste.

3.5 Guiding Principles

The following principles shall guide policy and practice:

3.5.1 Right to a Clean and Healthy Environment

Every resident has a constitutional right to live in a clean and healthy environment. Waste management systems and services shall be designed to progressively realize this right, with equal attention given to urban, peri-urban, and rural settings.

3.5.2 Public Participation and Inclusivity

Communities, households, businesses, and civil society organizations shall be meaningfully involved in decision-making on SWM. Platforms such as barazas, school programs, and digital platforms will be used to ensure all voices are heard, especially marginalized groups.

3.5.3 Polluter Pays Principle

Waste generators, whether households, institutions, or industries, shall bear the cost of managing the waste they produce. This includes compliance with service charges, levies, and penalties for illegal dumping or non-segregation.

3.5.4 Precautionary Principle

Where there is risk of serious or irreversible environmental damage from waste mismanagement, precautionary measures shall be taken even in the absence of full scientific certainty. This principle shall apply especially to hazardous, biomedical, and e-waste management.

3.5.5 Circular Economy and 7Rs (Reduce, Reuse, Recycle, Rethink, Refuse, Repair, Refill)

Municipality shall transition from a linear "collect–transport–dispose" model to a circular economy approach. Resource recovery and value addition shall be prioritized through the 7Rs framework, turning waste into raw materials, energy, compost, or other usable products.

3.5.6 Intergovernmental and Inter-agency Collaboration

Effective SWM requires synergy between Municipality, county governments, national agencies (such as NEMA), private sector actors, and development partners. Clear roles, service-level agreements, and information-sharing mechanisms shall be established to avoid duplication and ensure accountability.

3.5.7 Equity and Social Inclusion (Gender, Youth, Disability)

Waste management policies and programs shall integrate gender equity, empower youth through employment and innovation opportunities, and mainstream disability inclusion in service delivery, workplace safety, and public awareness initiatives.

3.5.8 Climate Change Adaptation and Resilience

SWM systems shall contribute to climate resilience by:

a) Reducing greenhouse gas emissions through diversion of organics, recycling, and improved disposal.
b) Adopting adaptive infrastructure to withstand flooding, drought, and other climate-related risks.
c) Promoting green jobs and climate-smart technologies.

CHAPTER FOUR: THEMATIC POLICY AREAS AND STRATEGIC INTERVENTIONS

4.1 Waste Generation and Minimization

Policy Statement: *Engineer Municipality shall promote waste minimization at source by reducing overall waste generation and encouraging sustainable consumption practices*.

Strategic Interventions:

a. Enforce the 7Rs principle (Reduce, Reuse, Recycle, Rethink, Refuse, Repair and Recycle) across all sectors.
b. Introduce incentives for industries and businesses that adopt cleaner production and packaging practices.
c. Develop by-laws discouraging single-use plastics and non-biodegradable packaging.
d. Promote home-based composting and sustainable farming practices to reduce organic waste volumes.

4.2 Waste Segregation at Source

Policy Statement: *Waste shall be segregated at the point of generation into organic, recyclable, hazardous, and residual fractions to enhance recovery and safe disposal.*

Strategic Interventions:

a. Establish mandatory household and institutional waste segregation guidelines.
b. Provide color-coded bins and collection receptacles to support segregation.
c. Train waste collectors and handlers on handling segregated waste streams.
d. Link segregated streams to specialized recovery, recycling, and treatment facilities.

4.3 Collection and Transportation of Waste

Policy Statement: *Engineer Municipality shall ensure efficient, reliable, and environmentally sound waste collection and transportation systems.*

Strategic Interventions:

a. Strengthen fleet capacity by acquiring modern, closed-body waste trucks.
b. Adopt route optimization technologies to improve efficiency and reduce fuel costs.
c. Expand coverage to underserved areas, including informal settlements and peri-urban zones.
d. Promote Public-Private Partnerships (PPPs) for cost-effective service delivery.
e. Establish performance-based Service Level Agreements (SLAs) with private collectors.

4.4 Recycling, Composting, and Resource Recovery

Policy Statement: *Recycling, composting, and resource recovery shall be prioritized to reduce waste volumes sent to disposal sites and create green jobs.*

Strategic Interventions:

a. Establish and operationalize Material Recovery Facilities (MRFs) in Municipality.
b. Support youth and community groups to develop enterprises in recycling and composting.
c. Provide incentives for industries using recycled materials and producing eco-friendly products.
d. Introduce extended producer responsibility (EPR) programs in line with national regulations.
e. Promote circular economy models to integrate waste as a resource.

4.5 Treatment and Safe Disposal (Landfills, Incineration, Sanitary Sites)

Policy Statement: *Residual waste that cannot be recycled or recovered shall be safely treated and disposed of in engineered facilities.*

Strategic Interventions:

a. Identify, acquire, and gazette sanitary landfill sites in compliance with NEMA standards.
b. Phase out open dumping and uncontrolled burning of waste.
c. Invest in modern treatment technologies such as waste-to-energy, biogas digesters, and sanitary incineration.
d. Fence and secure dumpsites to prevent scavenging and illegal dumping.
e. Develop environmental safeguards to protect soil, air, and water from leachate and emissions.

4.6 Hazardous and Biomedical Waste Management

Policy Statement: *Hazardous and biomedical waste shall be handled separately and treated with strict adherence to environmental and health standards.*

Strategic Interventions:

a. Establish designated hazardous waste collection and treatment systems.
b. Strengthen monitoring of hospitals, laboratories, and industries to ensure compliance.
c. Adopt environmentally sound biomedical treatment methods (e.g., autoclaving, microwaving, incineration).
d. Train health and waste management personnel on handling hazardous waste.
e. Enforce licensing and reporting requirements for all facilities handling hazardous waste.

4.7 E-waste and Special Waste Streams

Policy Statement: *E-waste and special waste streams shall be formally managed through regulated systems to prevent environmental pollution and promote recovery of valuable materials.*

Strategic Interventions:

a. Establish e-waste collection centers and partner with certified recyclers.
b. Create awareness among households and institutions on safe disposal of e-waste.
c. Regulate construction and demolition waste through designated collection and reuse systems.
d. Integrate e-waste management into extended producer responsibility (EPR) schemes.
e. Develop data systems to track and report on e-waste flows.

4.8 Public Awareness, Education, and Behavior Change

Policy Statement: *Public awareness and education shall be central to changing behaviors and promoting sustainable waste management practices*.

Strategic Interventions:

a. Institutionalize community education and awareness programs (CEAPs).
b. Integrate environmental education, with emphasis on SWM, into school curricula from ECD to tertiary level.
c. Conduct periodic awareness campaigns through barazas, media, and digital platforms.
d. Encourage community participation in clean-up days, recycling fairs, and competitions.
e. Promote behavioral change communication strategies to discourage littering, illegal dumping, and open burning.

Thematic Policy Areas, Strategic Interventions, Outcomes, KPIs, and M&E Linkages

Thematic Area	Strategic Interventions	Strategic Outcomes (Targets/Results)	KPI Alignment (Monitoring Indicators)	Link to M&E Chapter (9.1–9.5)
4.1 Waste Generation and Minimization	Promote 7Rs, incentivize cleaner production, discourage single-use plastics, promote home composting	• Waste generation per capita reduced by 15% by 2030 • 50% of households adopt home composting by 2028	• Kg of waste generated per capita per year• % of households practicing composting• # of businesses adopting 3R practices	**9.1–9.2:** Monitor waste reduction trends**9.3:** Report to municipal board annually**9.4:** Review impact every 5 years**9.5:** Share best practices on 3Rs
4.2 Waste Segregation at Source	Enforce segregation guidelines, provide color-coded bins, train collectors, link segregated streams to recovery facilities	• 70% of households and institutions practicing segregation by 2027 • 80% of collection points equipped with segregation facilities	• % of households segregating waste• % of waste collected in segregated form• # of segregation bins distributed	**9.1–9.2:** Segregation KPIs tracked quarterly**9.3:** Public reporting dashboards**9.4:** Mid-term evaluation of segregation adoption**9.5:** Knowledge exchange across Municipality
4.3 Collection and Transportation of Waste	Acquire modern trucks, expand coverage, optimize routes, establish PPPs	• 90% collection coverage in urban areas and 60% in peri-urban/informal settlements by 2028 • 70% reduction in missed collection days	• % of households covered by collection services• # of operational collection trucks• Frequency of missed collection per route	**9.1:** Service delivery monitoring**9.2:** SLAs tracked via KPIs**9.3:** Municipal and county reporting**9.4:** End-term review of coverage**9.5:** Route optimization lessons shared

4.4 Recycling, Composting, and Resource Recovery	Establish MRFs, support youth/community enterprises, incentivize industries, promote circular economy	• 30% of waste recycled/recovered by 2030 • 5 new youth/community enterprises operational by 2027	• % of total waste recycled or composted• # of active recycling/composting enterprises• Tons of recovered materials sold annually	**9.1–9.2:** Recovery rates tracked**9.3:** Public progress reports**9.4:** Mid-term/End-term review of circular economy programs**9.5:** Disseminate enterprise case studies
4.5 Treatment and Safe Disposal	Identify/gazette sanitary landfills, phase out open dumping, invest in treatment technologies	• 100% closure of open dumpsites by 2028 • At least one sanitary landfill operational in each municipality by 2030	• # of open dumpsites closed• # of sanitary landfills operational• % of waste disposed in compliant facilities	**9.1:** Disposal facility monitoring**9.2:** Landfill performance KPIs**9.3:** Reports to regulators & public**9.4:** End-term evaluation of compliance**9.5:** Replication of safe disposal models
4.6 Hazardous and Biomedical Waste Management	Establish hazardous waste systems, strengthen monitoring, adopt safe treatment methods, train staff	• 100% of biomedical waste treated through approved methods by 2027 • Annual compliance reporting by all health facilities	• % of biomedical waste safely treated• # of compliance reports submitted• # of staff trained on hazardous waste handling	**10.1–10.2:** Hazardous waste audits**10.3:** Annual compliance reports**10.4:** Review of safe treatment systems**10.5:** Share verification tools as best practices

4.7 E-waste and Special Waste Streams	Establish e-waste centers, raise awareness, regulate construction waste, integrate EPR	• 3 formal e-waste collection centers by 2026 • 40% of construction/demolition waste reused or recycled by 2030	• # of e-waste collection centers established• Tons of e-waste safely collected/recycled• % of construction waste reused/recycled	**10.1:** Monitoring special waste flows**10.2:** Track e-waste KPIs**10.3:** Reports to NEMA & county**10.4:** Mid-term review of EPR performance**10.5:** Lessons shared with private sector
4.8 Public Awareness, Education, and Behavior Change	Run education campaigns, integrate SWM into school curricula, promote clean-up days	• 4 major awareness campaigns annually• 80% of schools incorporate waste management into curricula by 2027	• # of awareness campaigns conducted• % of schools with SWM in curricula• % of residents aware of and practicing 3Rs	**10.1–10.2:** Awareness tracked via surveys**10.3:** Public reporting mechanisms**10.4:** Mid-term review of behavior change**10.5:** Documentation of awareness models

CHAPTER FIVE: INSTITUTIONAL AND GOVERNANCE FRAMEWORK

5.1.0 Introduction

Solid waste management in the Municipality operates under a multi-level governance system, with responsibilities shared between national, county, and municipal authorities, and supported by regulatory agencies, private sector actors, civil society, and residents to ensure sustainable and effective waste management.

5.1. National Government Institutional Structures

5.1.1. Role of the National Government

The National Government plays a key role in overall policy direction, sets the legislative framework and technical standards, and undertakes sector oversight.

The National Government shall:

i. Develop national legislation, policies, and strategies on solid waste management.
ii. Provide conditional grants and other forms of financial support to counties.
iii. Ensure compliance with international environmental treaties and commitments.
iv. Facilitate research, innovation, and national awareness campaigns.

5.1.2. Role of the National Environment Management Authority (NEMA)

NEMA operationalizes national laws and ensure compliance with environmental laws and standards.

NEMA shall:

i. Issue licenses and permits for waste collection, transportation, treatment, and disposal facilities.
ii. Monitor compliance with environmental laws and taking enforcement actions against offenders.
iii. Conduct environmental audits and impact assessments for waste-related projects.
iv. Provide technical guidance and capacity-building support to counties and municipalities.

5.2. County Government Institutional Structures

Within the national framework, the County Government assumes direct responsibility for solid waste management as a devolved function under the Constitution, translating national policies into county-specific legislation, plans, and budgets.

5.2.1 Role of the County Executive Committee

The County Government through the County Executive Committee shall:

i. Enact enabling county - level legislation and approve municipal by-laws, and frameworks for SWM.
ii. Allocate budgetary support and mobilize external resources for waste management.
iii. Facilitate inter-municipal collaboration and ensure alignment with the County Integrated Development Plan (CIDP).
iv. Coordinate county-wide awareness campaigns and ensure equitable service provision.

To discharge this mandate effectively, the County Government works through its technical departments, which provide policy oversight, technical support, and regulatory alignment to municipalities in the implementation of solid waste management functions.

5.3. Municipality Institutional Structures

At the municipal level, the Municipal Board acts as the primary governance body, ensuring that delegated functions, including solid waste management, are executed in line with county policies and national standards

5.3.1. Role of the Municipal Board

The Board shall: -

i. Provide overall oversight of solid waste management within the Municipality by adopting policies, strategies, and targets that align with county and national waste management frameworks.
ii. Review and approve municipal SWM plans, by-laws, and annual budgets, and ensure that adequate resources are allocated for waste management services.
iii. Regulate solid waste management services provided by the Municipality or contracted service providers, ensuring compliance with environmental laws, public health standards, and NEMA regulations.
iv. Facilitate effective public participation in SWM decision-making, promote community ownership of waste management initiatives, and monitor the impact of policies and programmes.
v. Promote partnerships with the private sector, civil society, and informal actors (such as waste pickers and recyclers), and mobilize additional resources to enhance SWM services.
vi. Safeguard public health and the environment by ensuring waste is managed sustainably and in line with constitutional principles of a clean and healthy environment.

5.3.2. Role of the Municipal Manager

The Manager shall:

i. Ensure that all policies, plans, and resolutions of the Board relating to solid waste management are executed efficiently and in a timely manner.
ii. Provide leadership and supervision in the day-to-day operations of municipal waste management services, including collection, transportation, recycling, and disposal.
iii. Act as the accounting officer for SWM, approving expenditure, authorizing payment of funds, and ensuring prudent financial management in line with the Public Finance Management Act (2012).
iv. Oversee the staffing, performance management, and capacity building of officers within the Solid Waste Management section and other relevant units.
v. Coordinate technical departments, contracted service providers, and stakeholders involved in SWM, and prepare regular performance and financial reports to the Board.
vi. Ensure that municipal SWM practices comply with applicable national and county legislation, NEMA regulations, and public health standards.

5.3.3. Role of the Director of Public Health, Environment, Trade & Tourism

To strengthen institutional capacity, the Municipality shall establish a Directorate in charge of Public Health, Environment, Trade and Tourism within its organogram**.** The Directorate shall be headed by a Director, supported by other technical officers.

The Director shall support the Manager, and provide overall leadership on environmental health and sanitation, ensuring compliance with waste management laws and standards.

5.3.4 Public Health Unit

To strengthen institutional capacity, the Municipality shall establish a Unit in charge of Public Health within the Directorate of Public Health, Environment, Trade and Tourism. The Unit shall be headed by a Public Health practitioner, supported by other technical officers.

The Unit shall ensure compliance with public health standards in waste handling, collection, and disposal to protect community health.

5.3.5 Role of the Solid Waste Management Section

The SWM Section shall:

i. Lead in the planning, coordination, and operational delivery of all solid waste management services in the Municipality, including collection, transportation, treatment, recycling, and disposal.
ii. Enforce municipal SWM by-laws and standards, monitor compliance by service providers and residents, and apply penalties in accordance with relevant laws and regulations.
iii. Develop and implement municipal by-laws, operational guidelines, and technical standards, and establish robust data collection and management systems for monitoring waste generation, recovery, and disposal.
iv. Promote waste minimization, recycling, recovery, and circular economy initiatives, including public education and partnerships that support climate-smart and sustainable waste practices.
v. Oversee the development, operation, and maintenance of SWM infrastructure such as transfer stations, recycling centres, material recovery facilities, and sanitary landfills.
vi. Provide training to municipal staff and awareness programmes for communities to encourage waste segregation at source, responsible waste handling, and active citizen participation.

5.3.6 Role of Other Municipality Technical Units

The Municipality shall operationalize its mandate through other specialized technical units, each with distinct responsibilities but working collaboratively to support the solid waste management unit:

i. **Environment, Water and Natural Resources Unit** shall oversee environmental conservation, waste minimization, and sustainable resource use within the Municipality.
ii. **Inspectorate and Enforcement Unit** shall enforce SWM by-laws, issue penalties for illegal dumping, and ensure compliance with licensing and regulations.
iii. **Lands and Physical Planning Unit** shall provide zoning and spatial planning for waste management infrastructure such as landfills, transfer stations, and recycling plants.
iv. **Building Control and Housing Unit** shall ensure building approvals integrate proper waste management facilities (e.g., waste chambers and collection points).
v. **Roads and Transport Unit** shall support the development and maintenance of road access for waste collection vehicles and transport of waste to disposal facilities.
vi. **Finance, Economic Planning & Accounts Unit** shall manage budgeting, revenue collection (waste fees, charges), and financial accountability for SWM services.
vii. **Trade and Enterprise Development Unit** shall promote circular economy initiatives, recycling enterprises, and partnerships with waste sector entrepreneurs.

viii. Legal Unit shall draft municipal by-laws, undertake legal and compliance audits, and support dispute resolution in waste management services.

ix. **Inspectorate and Enforcement Unit** shall enforce compliance with SWM by-laws and regulations and deters illegal dumping or littering.

5.4. Non-State Actors

Beyond municipal structures, effective waste management also depends on partnerships with non-state actors, including civil society, private enterprises, and the informal sector, who contribute innovation, investment, and community engagement.

5.4.1. Role of CSOs, NGOs, CBOs, Faith-Based Organizations

The non-state actors shall:

i. Conduct public awareness and advocacy on safe waste practices.
ii. Mobilize communities to participate in clean-up exercises and SWM initiatives.
iii. Support recycling, composting, and other sustainable practices at the community level.
iv. Act as watchdogs to promote accountability and transparency in waste management.

5.4.2. Role of Private Sector and Informal Sector (Waste Pickers, Recyclers)

They shall:

i. Provide waste collection, transportation, and recycling services under contracts, concessions, or PPP arrangements.
ii. Innovate solutions, technologies, and business models to enhance waste recovery and value addition.
iii. Create jobs and livelihoods for waste pickers, recyclers, and other informal workers.
iv. Expand coverage and efficiency of waste services through partnerships with municipalities.

5.5. Role of Households and Residents

They shall:

i. Practice waste segregation at source (organic, recyclable, and hazardous).
ii. Pay service charges, levies, and fees to support SWM operations.
iii. Participate in community clean-up activities and public consultations.
iv. Avoid illegal dumping and open burning of waste.
v. Act as watchdogs by reporting poor service delivery or violations of SWM regulations.

5.6. Organizational Structure for Solid Waste Management

To effectively deliver solid waste management services, the Municipality has adopted an institutional structure that defines clear reporting lines, accountability mechanisms, and technical support units. The structure integrates governance (oversight by the Municipal Board), executive leadership (the Municipal Manager), technical operations (the Directorate, Unit and Section and other supporting departments) and the private sector.

The organogram below illustrates how SWM functions are embedded within the Municipality's governance and administrative framework, ensuring that responsibilities are well-coordinated across directorates, units, and support services.

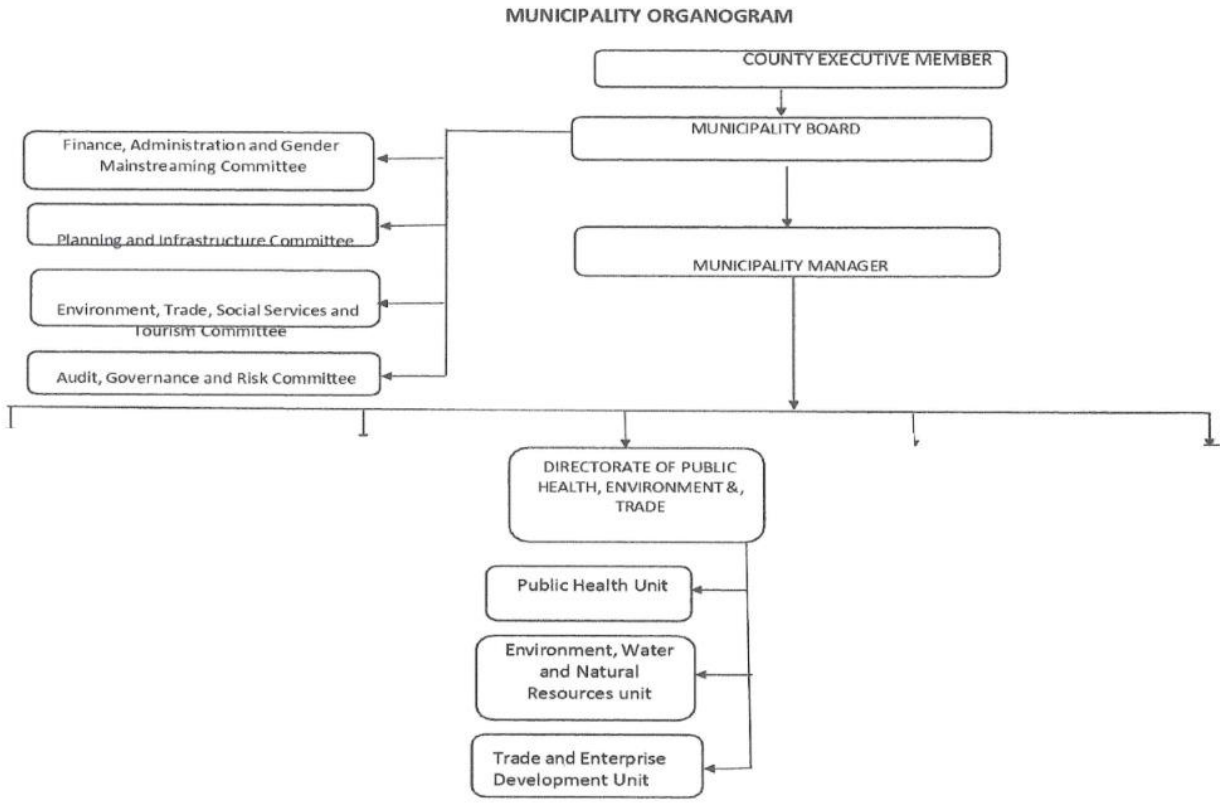


Figure 3: Organizational Structure for Solid Waste Management in the Municipality

By embedding SWM functions across multiple levels of the Municipality, the structure promotes accountability, efficiency, innovation and private sector participation in delivering a clean, healthy, and sustainable environment for all residents.

Policy statement

The Municipality shall ensure clear coordination and accountability across all institutional actors.

CHAPTER SIX: FINANCING AND RESOURCE MOBILIZATION

6.1 Public Finance Management Act Provisions

Funding for the implementation of this policy shall be guided by the provisions of the Public Finance Management Act. This ensures accountability, transparency, and proper utilization of public resources allocated for solid waste management in Engineer Municipality.

6.2 Municipal Revenue Sources (Service Charges, Levies, Fees)

The Municipality shall generate revenue from waste generators through service charges, levies, and fees. These revenues will support waste minimization at source, efficient collection and transportation, and final disposal of non-recyclable or non-reusable waste.

6.3 County Transfers and Conditional Allocations

The County Government of Nyandarua shall provide budgetary transfers and conditional allocations to support the Municipality's solid waste management programs, ensuring alignment with county-wide priorities.

6.4 Public-Private Partnerships (PPP) and Concessions

Engineer Municipality shall actively apply and enhance Public-Private Partnership (PPP) approaches in the implementation of solid waste management strategies. PPPs and concessions will be explored for infrastructure development, collection systems, recycling, and waste-to-energy initiatives.

6.5 Donor and Development Partner Support

The Municipality shall seek funding and technical assistance from development partners and donors to strengthen solid waste management programs and introduce best practices in line with international standards.

6.6 Innovative Financing Mechanisms (Carbon Credits, Recycling Revenues)

To ensure long-term sustainability, innovative financing mechanisms such as carbon credits, recycling revenues, and other green financing instruments shall be pursued. These will help integrate environmental and economic benefits into all phases of the waste management system.

CHAPTER SEVEN: CROSS-CUTTING ISSUES

7.1 Gender and Youth Inclusion in SWM

Engineer Municipality recognizes that effective solid waste management (SWM) requires the participation of all stakeholders, including youth, women, and community-based organizations (CBOs). The Municipality shall adopt an inclusive approach to public participation by:

a. Engaging youth and women in waste collection initiatives through the formation and registration of CBOs tasked with waste collection in zoned areas.
b. Encouraging the participation of women and youth groups in recycling and recovery activities to create employment opportunities.
c. Promoting equal representation of women, men, and youth in decision-making forums, public awareness campaigns, and environmental protection committees.

7.2 Disability Mainstreaming

The Municipality shall ensure that persons living with disabilities are not excluded from SWM programs. Measures will include:

a. Providing accessible participation channels (e.g., barazas, social media, radio broadcasts) to gather feedback on waste services.
b. Including persons with disabilities in awareness campaigns and SWM education initiatives.
c. Encouraging CBOs and private sector actors to create roles within SWM that are inclusive of persons with disabilities, in both collection and recycling processes.

7.3 Climate Change Adaptation and Mitigation in SWM

Poor SWM contributes to climate-related risks such as pollution, open burning, and greenhouse gas emissions. Engineer Municipality shall:

a. Integrate climate change considerations into public education and awareness programs, emphasizing safe waste disposal and the consequences of illegal dumping and open burning.
b. Promote waste segregation, recycling, and extended producer responsibility to reduce emissions from unmanaged waste.
c. Involve schools, religious institutions, and community organizations in climate-conscious waste practices, embedding environmental responsibility from early childhood through Environmental Education in schools' curricula.

7.4 ICT and Innovation in Waste Management

To enhance inclusivity, accountability, and feedback mechanisms, Engineer Municipality will adopt ICT solutions and innovative approaches. These will include:

a. Establishing hotline phone numbers and active social media platforms to allow residents to provide feedback on SWM services.
b. Exploring ICT-based platforms to map waste collection zones, monitor service delivery, and report illegal dumping.
c. Encouraging innovation among youth and private actors in recycling technologies, waste-to-energy solutions, and eco-friendly waste processing methods.

7.5 Occupational Health and Safety for Waste Workers

The safety and health of waste workers is a priority for the Municipality. In accordance with the Occupational Health and Safety Act (2007), Engineer Municipality shall:

a. Provide annual training on occupational safety and health (OSHA) for all waste collectors, including loaders and CBO members.
b. Require all waste handlers to use full Personal Protective Equipment (PPE) at all times, with semi-annual refresher training.
c. Issue PPEs to municipal loaders, while requiring CBOs and private groups to procure their own equipment.
d. Ensure that all waste workers receive relevant vaccinations, such as tetanus, with proof provided through vaccination cards.
e. Establish and monitor compliance through Environmental Inspectors to safeguard workers against occupational risks and uphold public health standards.

CHAPTER EIGHT: IMPLEMENTATION PLAN

8.1 Introduction

Engineer Municipality in Nyandarua County is experiencing population growth, expanding commercial activities, and rising solid waste generation.

Improper waste management threatens public health, environmental sustainability, and urban development.

This implementation plan aligns with the Kenya Urban Support Programme (KUSP) and adopts an Integrated and Sustainable Solid Waste Management (ISSWM) approach focusing on waste minimization, segregation, recycling, composting, and safe disposal over a five-year period. The implementation shall abide by the implementation framework for this policy.

8.2 Objectives

a. Achieve at least 90% waste collection coverage.
b. Ensure at least 60% segregation at source.
c. Divert at least 50% of waste through recycling and composting.
d. Eliminate illegal dumping and open burning.
e. Strengthen institutional and financial capacity for waste management.

8.3 Implementation Strategy

The Municipality will implement ISSWM guided by legal compliance, planning and prioritization, community participation, technology adoption, and results-based monitoring and evaluation.

8.4 Phased Transfer of Functions

Phase I – Preparatory institutional setup and equipment acquisition.

Phase II – Partial transfer of collection and transport in pilot towns.

Phase III – Full transfer including treatment, recycling, disposal, and enforcement.

Phase IV – Consolidation, stakeholder strengthening, and climate resilience integration.

8.5 Partnerships

Collaboration with community groups, private sector recyclers, county and national government, development partners, and academic institutions will support sustainable waste management.

8.6 Monitoring, Evaluation, Reporting and Learning

Performance will be tracked through service coverage, segregation rates, recycling volumes, safe disposal compliance, and annual municipal reporting aligned to KUSP indicators.

8.7 Conclusion

Effective implementation will create a clean, healthy, and economically vibrant Engineer Municipality supported by strong leadership, financing, and community participation

Through these arrangements, Engineer Municipality will progressively build a solid, efficient, and sustainable solid waste management system that ensures a clean, healthy, and livable environment for present and future generations.

CHAPTER NINE: MONITORING, EVALUATION, REPORTING AND LEARNING (MERL)

9.1 Monitoring Framework

Environmental monitoring will be a key component of municipal Solid Waste Management Plans (SWMPs). Poor solid waste management has direct and indirect impacts on public health, environmental quality, and climate change, and must therefore be regularly monitored. The monitoring framework will:

a. Track waste generation and disposal rates in relation to population growth, economic activity, and social dynamics.
b. Assess compliance with established environmental quality standards.
c. Provide a basis for future planning, including the establishment of landfills, transfer stations, and material recovery facilities.
d. Measure the effectiveness of public awareness and education programs, as well as other policy interventions.

The monitoring system shall include measurable indicators to track progress in SWM. Key Performance Indicators will cover, but not be limited to:

a. Waste generation per capita and per household.
b. Percentage of waste collected versus waste generated.
c. Recycling and recovery rates.
d. Reduction in illegal dumping and open burning incidents.
e. Compliance with occupational health and safety standards for waste workers.
f. Greenhouse gas emissions avoided or reduced through improved waste management practices.

9.2 Reporting Mechanisms (to Municipal Board, County, Public)

To ensure transparency and accountability, reporting mechanisms will be established as follows:

a. Municipal staff will compile regular monitoring reports for submission to the Municipal Board.
b. Consolidated reports will be submitted to the County Government for integration into county-wide planning and resource allocation.
c. Public reporting will be undertaken through community meetings, media channels, and digital platforms to keep citizens informed and engaged.

9.3 Mid-term and End-term Reviews

Monitoring and evaluation will be carried out through structured reviews at mid-term and end-term stages of the policy cycle. These reviews will:

a. Assess progress against planned outputs and outcomes.
b. Identify gaps, lessons, and areas requiring adjustment.
c. Provide recommendations for scaling up best practices or revising strategies.

9.4 Knowledge Management and Continuous Learning

The monitoring and evaluation system will also serve as a learning tool. Municipality shall:

a. Collect and share lessons learned from daily implementation of SWM activities.
b. Develop means of verification for greenhouse gas emissions reduced or avoided.
c. Document and disseminate best practices within the municipality, across counties, and nationally for replication.
d. Build institutional memory and improve future waste management strategies through continuous learning.

CHAPTER TEN: POLICY REVIEW AND AMENDMENTS

10.1 Review Period

This Solid Waste Management Policy shall be subject to periodic review to ensure its continued relevance, effectiveness, and alignment with evolving national legislation, county frameworks, and global best practices.

Annexes

Annex 1: Implementation plan

Annex 11: Monthly report template

Annex 111: Minutes and Photos

REFERENCES

1. County government of Nyandarua (2020)Ol'kalou Municipality integrated development plan 2020-2025
2. County Government of Nyandarua (2023)Nyandarua county Integrated development plan
3. Government of Kenya (2010).The constitution of Kenya.
4. Government of Kenya (1999)Environmental Management and Coordination Act (EMCA)No 8 of 1999
5. Government of Kenya (2007)Occupational Safety and Health ActNo.15 of 2007 (Cap.514)