PLAN APPROVAL

This plan has been prepared and published as per the requirements of the Urban Areas and Cities Act, County Government Act, Planning Standards and Guidelines.

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Departmental Reference No. __________________________

Approved Development Plan No. __________________________
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ACRONYMS AND ABBREVIATIONS

CBD: Central Business District
ECDE: Early Childhood Development Education
EMCA: Environmental Management and Coordination Act
GOK: Government of Kenya
KIMAWASCO: Kibwezi-Makindu Water and Sewerage Company
NEMA: National Environmental Management Authority
NLP: National Land Policy
NMT: Non-Motorized Transport
NUDP: National Urban Development Policy
PIM: Plan Implementation Matrix
UACA: Urban Areas and Cities Act
ULUP: Urban Land Use Plan
UNEP: United Nations Environmental Programme
CHAPTER ONE: INTRODUCTION

1.1 Background of the plan

Machinery town is a rapidly growing town located in Kibwezi East Sub County, Makueni County. It’s not an exception as it is crippled with urban planning issues like other towns in the county. This is due to its strategic location in high pressure highways, Old Mombasa-Nairobi road. An integrated plan for the town is essential to enhance sustainable growth.

Machinery Town Local Physical Development Plan (2016–2021) has been prepared in tandem within the legislative framework of the Physical Planning Act (Cap. 286), County Government Act (2012) and Urban Areas and Cities Act, 2011.

The proposals contained in the plan are product of an interactive-learning-communicative process with the stakeholders. The general objective of the plan was to prepare broad land use guidelines to enhance land management practices, town governance, and the development of relevant infrastructure for a sustainable growth of the town.

1.1.1 The need to plan

The current state of the town is undesirable as there’s an uncontrolled mixed up developments. Further, there is evidence of poor urban planning techniques and non-adoptions of policies and regulations as can clearly be seen in the town typology. Machinery being a growing rural town which attracts various people from distant areas for exchange of goods and services. It’s expected to be expanding and major developments to occur in the coming years hence proper planning is paramount to ensuring sustainable livelihoods. Urban challenges like poor infrastructure, uncontrolled developments, poor solid and liquid waste management and Lack of basic utilities in the market are the key concerns for the planning exercise. Uncontrolled developments cause constraints to the provision of basic services hence deterioration of living standards.

It is important to manage change within urban and periphery areas especially those that occur near high pressure areas like highway and Machinery town is not an exceptional since it’s traversed by the old Mombasa-Nairobi highway, and bordering the New old Mombasa-Nairobi highway, A109. With the increasing commercial activities attracted by the highway, areas within and around Machinery town are subject to intense pressure leading to land use change with concomitant environmental
challenges. Such urban growth, if not properly managed may result in development not matched by supportive infrastructure, incompatible land uses and environmental degradation.

Therefore, planning the market will improve levels of infrastructure, provide for harmonious development of the market and that of its surrounding area, increase land value and attract investors to invest in the market hence increase individual income and county revenue hence the high need for physical planning of this market. Environmental degradation will also be mitigated and this will ensure safety to both mankind and animals.

1.2 Vision statement

Machinery town as a sustainable, serene, safe and healthy, lively and dynamic town with interactive harmonious functioning urban land uses.

1.3 Planning objectives

1. To provide a framework to facilitate security of land tenure;
2. Enhance and promote integrated socio-economic development in the town;
3. Allocate sufficient space for all land-uses to ensure efficient operation and comfort of users and accommodate future growth;
4. To assess the levels of infrastructure and services, and provide a framework for provision of adequate infrastructure and services;
5. To identify and analyse planning issues, opportunities and intervention measures.
6. To propose appropriate land-uses, location and permissible densities.
7. To identify the environmental concerns in Machinery town and propose environmental management and protection measures;
8. Ensure compactness of urban form and design of transport and communication network to enhance interaction while minimizing loss of open land, agricultural land, forest, wildlife (land and riverside), water catchment areas etc.;
9. preserve and protect the exiting cultural heritage and fragile ecosystem
10. Create a specific town character by different uses of topography and other natural features and by specific groupings of uses and densities;
11. Provide a policy framework for socio-economic investments, economic use of space, infrastructure services and community facilities; and
12. Provide a framework of plan implementation, organization and administration structure requirement, and resources needed to implement the plan.

1.4 Scope of the plan

Machinery town ULUP is a short term Integrated Urban Development Plan covering a period of 5 years (2016-2021) subject to annual reviews. The plan covers an area of 1sq. km. The planning area will be the entire town and neighbouring rural-agricultural land. Descriptively, the Plan will serve as an integrated Land Use framework to promote the economic and environmental development for all land within the area of jurisdiction of Machinery town. The tasks undertaken included:

- A study of physical and natural ecological features of town and its outlying region with view to preparing a strategy for their efficient use, conservation and spur economic development.
- Determination of the existing resource potentials with view to their maximisation and utilization.
- Developing a policy document to guide urban/agricultural areas with view to proposing an improved and integrated development.
- Identification of the existing land malpractices and settlements and propose strategies for improved land Management, administration, development approval, control and regularisation.
- An assessment of transport, infrastructure and utility needs, housing and community services and propose new strategies. This will include a deliberate short-term plan NMT, hawking management, and opening of roads to allowable standards, mapping of the transport, infrastructure and utility network of town.
- Analytical reports and proposals for future spatial, demographic, social and economic growth.
- Proposals for long term 5 years Integrated Urban Development Plan for the town, together with detailed plans in the identified areas.
- Development of appropriate transport infrastructure services and community development facility strategies.
- Identification of suitable land for both public purpose and utilities and address security issues in the town.
1.5 Principles of the plan

1. **Sustainable development:** - the plan is enhancing sustainable utilization of resources for the current generation without compromising the needs for future generation.
2. **Land use compatibility:** - the plan encourages conformity of land uses to enhance order and harmonious living conditions
3. **Equitable distribution of resource:** - the plan aims at promoting equal distribution resources and optimal use of natural resources.
4. **Enhanced accessibility:** - the ULUP supports opening up of access roads and tarmacking of existing all-weather roads to other nodes.
5. **Environmental conservation:** - the ULUP for Machinery town promotes environmental sustainability balancing, social, economic and environmental needs;
6. **Promote aesthetics:** - the ULUP for Machinery supports establishment of landscaping of the town to ensure aesthetic impression and beauty is restored.
7. **Inclusivity- Multi-sectorial, multidisciplinary and participatory approach:** - The plan follows all-inclusive process. It requires that all stakeholder groups are represented: local direct and indirect users, public authorities, private investors, NGOs and CBOs.
8. **Land use balance:** - The plan will ensure equity and adequate allocation of land uses

1.6 Methodology

The planning process was informed by the following stages;

1. **Identification of the need to plan**
Profiling involved holding meetings with the relevant authorities such as; the physical Planning department and representatives from the local community. During reconnaissance the consultants were able to acquaint themselves with the planning area, and the planning issues requiring intervention. A detailed situational analysis was done taking to consideration the anticipated population growth, needs assessment, scope and reconnaissance survey.

2. **First Stakeholders Meeting**
This involved delineating the planning area, constitution of project management committee and stakeholder analysis The stakeholders were drawn from various groups that included; business community, informal (jua kali) sector, neighborhood associations, religious associations, civil society, service providers, Industrial sector, education and health institutions, local authority, relevant
government departments (Lands, survey, planning, public health, public works, water, environment, agriculture etc). The stakeholders were also informed on the need to plan the town.

3. **Issuance of intention to plan notice to the public**
As per the Physical Planning Act Cap. 286, notification for intent to plan Machinery town was made in the print media by the Director of Physical Planning in consultation with the county government of Makueni. The advert was also used as part of sensitization and awareness to members of the public. The publication was done in two local dailies (Daily Nation and Taifa Leo)

4. **Base map preparation**
This involved picking and plotting of all existing property boundaries, natural features, public utilities, physical and social infrastructure.

5. **Primary and secondary data collection**
Several methods of data collection were used in preparation of this plan. This include observation, focused group discussions, interviews, photography, imagery, baseline information (population, economic base, infrastructure, existing land uses) and existing literature.

6. **Data analysis, interpretation and presentation**
Descriptive methods of analysis aided with Statistical Package for Social Sciences (SPSS) was used. Analyzed data was presented in the form of maps, simple frequency tables, charts, photographs plates and figures.

7. **Preparation of the draft plan.**
This involved preparation of draft Integrated Urban Development Plan for Machinery town. The plan is drafted in line with planning practices in Kenya and it was led by qualified planners. The planning team factored in all inputs from stakeholders in effort to incorporate expert and local knowledge in the planning process. The outcomes of this phase included a draft plan that was eventually presented to stakeholders in a workshop for deliberation and validation.

8. **Second Stakeholders meetings and incorporation of their views into the plan.**
The draft plan was presented to stakeholders. During this phase, all stakeholders were consulted and involved by giving their views in validating the plan.

9. **Plan consolidation and forwarding for approval.**
During this phase, recommendations from the second stakeholders are considered in drafting the final plan. The outcomes of this phase is the final draft of the Machinery Urban Development Plan that is forwarded to the relevant authority (County) for approval.
1.7 Outline of the report

The report gives in detail the project background, its goal and objectives, scope, baseline information, Policy- legal and institutional framework governing the exercise among others as briefly discussed hereunder. The report has a total of eight chapters.

CHAPTER ONE: This chapter gives a brief background of the project, its goal and objectives, scope and the methods used in conducting the study.

CHAPTER TWO: This chapter highlights the details on location context at national, regional and local levels. It also covers the different legal frameworks and policies that guide preparation of integrated development plans in Kenya. Stakeholder concerns are also highlighted in this chapter with reflection on the key stakeholders in urban planning.

CHAPTER THREE: Chapter three highlights the distribution of current land uses, soil and topography, environment, demographic characteristic, distribution and economic activities of the town residents, housing and infrastructure establishment.

CHAPTER FOUR: This chapter gives the planning synthesis. The chapter highlights the different development challenges, opportunities and alternative interventions pertaining the planning area.

CHAPTER FIVE: This chapter gives thematic proposals addressing key issues as planning objectives and proposing a town structure. Different strategies and measures to counter the various challenges as are also highlighted. These include: Transport and infrastructure strategies, Environmental strategies and economic strategies.

CHAPTER SIX: This chapter discusses the proposed action plans. The action plans are classified in terms of short term, Medium and long term plans.

CHAPTER SEVEN: Chapter seven discusses the proposed implementation strategies. The chapter gives timelines for different projects proposed in this plan for implementation and the responsible actors in each case.

CHAPTER EIGHT: This gives the financing strategy elaborating on the monitoring and evaluation procedures. It also shows the source of funding for the projects proposed herein.
CHAPTER TWO: PLANNING CONTEXT

2.1 Location-National, Regional, Local Context

Machinery town is located in Nzeeka location, Masongaleni and Thange-Utiithi Wards, Kibwezi East Sub-County, Makueni county. Machinery town falls under the jurisdiction of two wards, i.e., Masongaleni and Thange-Utiithi Wards. The town covers an area of 1 Km². It lies between Latitude 2º 30´ and 31 00 South and Longitude 38º 01´ and 38º 02´ East. Machinery town is traversed by the Old Mombasa-Nairobi highway and interconnected to the New Mombasa-Nairobi highway (A109) by a 15M road.

Figure 1 Google image showing location of Machinery town.
Figure 2 Kibwezi East Sub County Constituencies Map

2.2 Legal and Policy Context

The preparation of the Machinery ULUP has been undertaken within the context of the Constitution of Kenya and other National legislations.
2.2.1 The Constitution of Kenya
The Constitution is the supreme law of the country. It guarantees fundamental rights and freedoms for the citizens as espoused under chapter four (4). Chapter five of the constitution provides for use and management of land in a manner that is equitable, efficient, productive and sustainable. It also advocates for sound conservation and protection of the environment. The Action plan shall promote the realization of the constitution particularly respect to the following articles

Article 43 (1) pertaining to economic and social rights which include the right to clean and healthy environment, adequate and decent housing and to reasonable standards of sanitation, right to education

Article 60 (1) Land in Kenya shall be held, used and managed in a manner that is equitable, efficient, productive and sustainable, and in accordance with the land policy principles

Article 66 provides for regulation of the use of any land, or any interest in or right over any land for purposes of land use planning, public order, public morality, public health and public safety in Kenya.

Article 69 provides for the sustainable exploitation and utilization of natural resources. The Action plan therefore is anchored within the provisions of the Constitution.

2.2.2 Environmental Management and Coordination Act, 1999
The Act provides for the management and protection of conservation areas. It advocates for the planting of trees and woodlots by the community, individual users and institutions. Further, it offers for protection of species, ecosystems and habitats threatened with extinction. In consultation with other agencies, it prescribes measures, such as Environmental Impact Assessments, Environmental Audits to ensure conservation of the environment.

The Machinery town ULUP makes proposals for conservation and protection of environmentally sensitive areas – marine ecosystem, wetlands, riparian reserves and hill tops. The plan also identifies areas for tree planting, woodlots and greening. The EMCA provides the requisite legal basis for implementation of the plan proposals.
2.2.3 Physical Planning Act Cap 286
The Physical Planning Act Cap 286 is the primary legal framework which guided the preparation of the Machinery town ULUP. The Machinery town ULUP is a statutory product whose preparation adhered to the process stipulated in this Act in terms of public participation, content of the Plan and approval process. Once the ULUP approved, it will become a legal and binding instrument to guide development.

2.2.4 The County Governments Act 2012
The County Governments Act elaborates on the county governments' powers, functions and responsibilities and clarifies how the County Governments shall perform their Constitutional mandate, which includes implementation of specific Government policies on environment and natural resources conservation. Additionally, the Act requires that there shall be a five-year integrated development plan for each County and clarifies that cooperation in planning between the National and County Governments shall be done within the context of the Inter-Governmental Relations Act, 2012.

2.2.5 Urban Areas and Cities Act, 2011
To operationalize articles 184 of the constitution; the urban areas and cities act provide for the classification, governance and management of urban areas and cities to provide for the criteria of establishing urban areas, to provide for the principle of governance and participation of residents and for connected purposes.

2.2.6 The Land Act No 6 of 2012
It provides for the sustainable administration and management of land and land-based resources. This Act mandates the National Land Commission to take appropriate action to maintain public land that has endangered or endemic species of flora and fauna, critical habitats or protected areas and to identify ecologically sensitive areas that are within public lands. The Act further requires the Commission to undertake an inventory of all land based natural resources, and reserve public land for any purposes, including environmental protection and conservation. The Act further empowers the Commission to make rules and regulations for the sustainable conservation of land based natural resources including

i) Measures to protect critical ecosystems and habitats;
ii) Incentives for communities and individuals to invest in income generating natural resource conservation programmes;

iii) Measures to facilitate the access, use and co-management of forests, water and other resources by communities who have customary rights to these resources;

iv) Procedures for the registration of natural resources in an appropriate register;

v) Procedures on the involvement of stakeholders in the management and utilization of land based natural resources; and

vi) Measures to ensure benefit sharing to the affected communities.

2.2.7 The National Land Commission Act
Section 5 of the National Land Commission Act empowers the National Land Commission to, amongst other things, recommend a national land policy to the national government, conduct research related to land and the use of natural resources and thereafter make appropriate recommendations to relevant authorities, to exercise oversight responsibilities over land use planning throughout the country and to develop and maintain an effective land information management system at national and county levels.

2.2.8 Agriculture, Fisheries and Food Authority Act (2013)
This provides for the promotion and maintenance of stable agriculture, conservation of soil and its fertility to stimulate development of agriculture.

2.2.9 Water Act (Cap 372)
It provides for the management, conservation, use and control of water resources in Kenya. Thus it is also very useful in the management of water resource in the planning area.

2.3 Policy Context
The preparation of Machinery town ULUP has been undertaken within the context of National, Regional and Local policies strategies and guidelines. These are articulated in the following policy documents;

2.3.1 Kenya Vision 2030
The Kenya Vision 2030 seeks to transform Kenya into a newly industrializing, middle income country providing a high quality of life to all its citizens by the year 2030. The LDPE for Machinery Town Plan articulates aspects of the economic, social and political pillar.
In respect to the social pillar, it facilitates the provision of social infrastructure including schools, health facilities and water. Under the economic pillar: the plan facilitates promotion of tourism, value addition, industry, forestry, fisheries and SMEs. The plan provides for Irrigated agriculture, development of tourist facilities, fish landing sites, storage and processing facilities, development of infrastructure within urban areas and roads as the main flagship projects. Under political pillar; it promotes good governance, gender issues, participation, safety and security.

2.3.2 Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) build upon the progress of the Millennium Development Goals (MDGs), which were agreed by governments in 2001 and expired in 2015. While the MDGs focused on reducing extreme poverty in all its forms (currently SDG 1), the SDGs pursue a broader agenda that encompasses the social, environmental and economic aspects of sustainable development, which is relevant for all countries worldwide. Goal 11 seeks to make cities and human settlements inclusive, safe, resilient and sustainable. The SDGs come into effect in a world that is increasingly urban. A little over half the global population now lives in cities and this figure is projected to grow to two-thirds of the global population by 2050. For cities and municipalities that are working to improve the quality of life in urban environments, the SDGs provide a roadmap for more balanced and equitable urban development. The mounting challenges posed by climate change, environmental degradation, food security, and civil unrest and violence, need different development solutions from those of the previous century. The SDGs offer a set of integrated objectives which can help to bring about a more sustainable vision of urban development, one that provides equal opportunities to all inhabitants, promotes healthy living environments with access to green spaces, and is resilient in the face of everyday disasters and climate risks.

2.3.3 Sessional paper No.3 of 2009 on the National Land Policy

The ULUP articulates the national land policy principles of efficiency, productivity and sustainability in the use of land and other resources. In line with this, the plan provides a framework that will facilitate the optimal use of land and other resources. Furthermore, the policy expresses the need for sound conservation and protection of ecologically sensitive areas. This is a key objective of the action plan including providing policies for conservation of fragile marine resources.
2.3.4 Machinery town Vision 2025
Chapter four on Strategic approaches to economic transformation indicates that one strategic approach to economic transformation is Enhanced Urban Planning and Infrastructural Development. The County Government will:

• Seek to enhance efficiency and effectiveness in physical planning, development control services to ensure that all urban areas are planned, and that development plans are approved for implementation. Where the plans have already been approved, the County Government will continue to implement those.

• Develop the roads within urban centres, parking zones; develop a water and sewage system and install lighting to increase hours of trading.

• Develop a sewerage master plan.

• Earmark public land for development of public utilities, and establishment of industrial parks.

In this regard, the county government has prepared the Machinery development plan which if well implemented will spur growth in economy and orderly use of land.

2.3.5 National urban development policy
The preparation of a National Urban Development Policy is part of the Government’s efforts to implement the provisions on urban development contained in the Constitution and in the Kenya Vision 2030 – Kenya’s blueprint to become a middle-income country within two decades.

NUDP is expected to substantially contribute towards poverty reduction, economic growth, and faster realization of Kenya’s Vision 2030. It was expected to be concluded within the first medium plan of vision 2030(2008-2012) and implemented during the subsequent medium term plans. If well implemented, the NUDP is expected to substantially contribute towards poverty reduction, economic growth, and faster realization of Kenya’s Vision 2030 as broken down in medium term plan. This will be guided by the themes addressed by the Policy which are: urban governance and management; the urban economy; urban finance; national and County urban planning; land, environment and climate change; social infrastructure and services; physical infrastructure and services; urban housing; urban safety and disaster risk management; and marginalized and vulnerable groups.
2.4 Stakeholder Concerns

The main concerns highlighted by stakeholders included:

- Inadequate public Facilities-Machinery town do not have enough facilities such as health, schools, recreational facilities etc.
- Inadequate water supply-The town lacks enough water for the residents
- Uncontrolled and unplanned urban growth which results to land use conflicts
- Land disputes especially when people lack tittle deeds to prove their ownership
- Accidents caused by heavy trucks passing along the two Mombasa roads
- Poor access and Narrow Roads-Machinery town lacks enough access road to withstand the high population due to its growth rate.
- Unemployment to the youthful population
- Poor solid waste management-there are a lot of delay in solid waste collection within the town
- Insecurity within the town.
- Noise pollution produced by vehicles
- Poor housing conditions. Air pollution-along Nairobi-Mombasa highway which is always busy tent to cause air pollution.
- Poor drainage in the CBD and residential areas-the town has poor drainage system because it lacks ad designated drainage channels to direct storm water during rainy season.
CHAPTER THREE: SITUATION ANALYSIS

3.1 Population and Demographics

Demographic factors play a major role in development of any region since they analyse the population dynamics such as growth rate, mortality rate and migration patterns of the area. Quality and quantity of the population and its socio cultural aspects coupled by other factors portray the problems and opportunities for development of an area.

Population dynamics is a life of science that studies short term and long term changes in the size and age composition of the population and the biological and environmental processes influencing those changes.

According to the 2009 Kenya Population and Housing Census (KNBS, 2010), the total population of Masongaleni ward and Thange ward are 36,066 and 35,934 respectively comprising 17,631 males and 18,460 females where female to male ratio is 100:96 for Masongaleni ward and 18,005 males and 17,929 females where female to male ratio is 100:100 for Mtito Thange ward. The population of Machinery town is estimated about 1100 persons. The maternal and infant mortality rate are 400 and 36 per 1,000 live birth respectively and crude birth and death rates (‘000) are 36.2 and 11.9 respectively. The total fertility rate is 5.1 children per woman, fertility is the key parameter that determines the size and structure of a population. The county’s population growth rate is 1.4% which is slower than the country’s rate of 2.6%.
3.1.1 Mortality rate
Mortality rate is defined as the total number of deaths per 1000 of a population in a year. Maternal mortality rate (‘000) is 400 and infant mortality rate is 36 per 1,000 live births in Machinery town projected from the larger County statistics.

3.1.2 Birthrate and Deathrate
Crude birth rate in Machinery town (‘000) is 36.2 while the Crude death rate (‘000) is 11.9 which is slightly higher the national Crude death rate (‘000) of 10.4 percent.
3.1.3 Fertility rate
Fertility rate is the average number of children that would be born to a woman over lifetime. Total fertility rate in Machinery Town is 5.1 children per woman, fertility is the key parameter that determines the size and structure of a population. The town has a high fertility rate of 5 children per woman.

3.1.4 Population growth rate
The town’s population growth rate is 1.4% which is slower than the Country’s rate of 2.6 %. The slow urban population growth in the town can be attributed to several factors including the scares rural population.

3.1.5 Migration
According to the 2009 census, migration rate in Machinery town is 10.1% while the nation migration rate is 20.9%. Migration of the population from rural to urban areas has increased due to better economic, health, trade, education and cultural infrastructure in upcoming urban centers in the county such as Machinery.

3.1.6 Sex composition
The female to male ratio in Machinery town105:100. The ratio of female to male is vital for development planning. It is important in monitoring various aspects of social development as they relate to gender.

3.1.7 Population projections of Machinery town
According to the KNBS census result of 2019, Machinery town had an approximately 1000 residents in 2009. This represent a population density of about 100 people per square kilometre. The projected population will be about 6500 people by the year 2022.

Table 1 Population projections of Machinery town

<table>
<thead>
<tr>
<th></th>
<th>2009 Census</th>
<th>2017 Projections</th>
<th>2022 Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>3000</td>
<td>6500</td>
</tr>
</tbody>
</table>


3.2 Physiographic dynamics

3.2.1 Topography
Machinery town lies within arid and semi-arid area. The topography of Machinery town is generally flat.

3.2.2 Ecological conditions
The town is largely arid and semi-arid and usually prone to frequent droughts.
3.2.3 Climatic Conditions
The town experiences two rainy seasons, the long rains occurring in March /April while the short rains occur in November/December.

Machinery town average annual rainfall ranges between 300mm and 550mm. Annual temperatures in Machinery town range from 20.2°C to 24.6°C.

3.3 Land Analysis

3.3.1 Land Tenure
Land tenure in Kenya falls under three categories namely; Community land, Private land and public land. Machinery town is mostly composed of private owned land (freehold tenure) with a small percentage occupation under public tenure. The town is surrounded by rural-agricultural land.

3.3.2 Existing Land Use(s)
The dominating pattern of land use in the town is a mixture of commercial and residential. While Machinery town lacks essential recreational facilities. Public purpose and utilities include police station and churches.

3.3.2.1 Administrative Offices
There are administrative offices in the town having Chief Office, located in the town.

3.3.2.2 Health
There are several private clinics within the town.

3.3.2.3 Recreation
Machinery town lacks designated sites for recreation although there is livestock yard that is used as a public playground adjacent to the interconnectivity road to the New Mombasa-Nairobi highway, others are playing fields in the schools found within the town for instance Machinery township primary school playing field.

3.3.2.5 Industrial
There is a Filling petrol station in the town and Light industrial activities such as welding, cycle and motor repairs take place on shop frontages and pavements. Also a site for industrial use need to be set aside for near future use.
3.3.2.6 Residential
Machinery town is composed of commercial cum residential plots. The residential areas in Machinery town mostly are low density residential. There is need to zone the residential area into three categories; High density residential, medium density and low density to cater for future generation.

3.3.2.7 Religious Institutions
Most of the religious institution in the town are occupied by Christians. The existing church institutions are Redeemed Church, SDA Church, Good Revival Church, and ABC Church.

3.3.2.8 Education Institutions
There is Machinery Township Primary School located North West of the town and other private academies within the town. In addition, there is need to establish land for tertiary institutions, special schools considering the future growth of Machinery town.

3.4 Economy- Industry, Agriculture, Commerce

3.4.1 Financial Services
There are several mobile money transfers in the town like Mpesa and Airtel money. The recently growth of the mobile banking in Kenya has seen the devolvement of banking services from the conventional banking system to more dynamic bank agents in the remote areas across the country. Similarly, in Machinery there are bank services through the bank agents such as KCB Mtaani, Equity Agents, and Coop Mtaani.

3.4.2 Agriculture
Machinery town neighbors a potential area rich in agriculture. The predominant crops grown include food crops like maize, pigeon peas, green grams and beans.

3.4.3 Commerce
There are various commercial premises in Machinery town among them retail and wholesale, petrol service stations and bars. Others include hotels and eating houses and an assortment of other business enterprises. Retail shops, bars and hotels form the bulky of business ventures. The existing commercial centre is deficient in basic services and infrastructure such as service lanes, access roads, piped water, and proper solid and liquid waste management systems thus deteriorating environmental conditions of the town.
The open market day in the town is Tuesday. The open market day attracts traders from the neighboring towns such as Kambu, Kibwezi, Ngwata among others. The common activities during this day include livestock trade, food stuff, and other household goods.

3.5 Transportation and Communication

3.5.1 Roads
The town is traversed by old Mombasa-Nairobi highway and borders the New Mombasa-Nairobi highway, A109 to the East. Most of the roads within the build-up area are gravel surfaced and others earth roads.

3.5.2 Communication and Telecommunications
There is good telecommunication network coverage in the town. Telkom Kenya, Safaricom and Airtel provide the means for communication with services available in 2G, 3G and 4G signals.

3.6 Infrastructure Services

3.6.1 Water
Machinery town is served water points that are managed by the Kibwezi-Makindu Water and Sewerage Company (KIMAWASCO) individual boreholes. During the dry season, water is supplied by water vendors using water tanker, donkey carts, and motorbikes.

3.6.2 Energy
There is electricity connection in the town. The connection is as a result of rural electrification programme that was initiated by the Kenyan government in 2007. Electricity power is connected for domestic use, small commercial, light industrial use and street lighting. Other sources of energy, which are utilized by 95% of the town residents include; charcoal, kerosene and firewood.

3.6.3 Waste water management
There is no established water waste management system in the town. However, a feasibility study has been conducted to propose establishment of sewerage and waste water treatment facilities.

3.7 Urbanization
Machinery town has experienced rapid urbanization which mainly can be attributed to its strategic location on a highway. The town attracts rural population from the parts of Masongaleni, Thange and Mtito-Andei wards.
3.8 Rural Developments

The town is undergoing rampant sub-division within its surroundings as a result of increased demand for residential housing. The influx of population in the rural area has led to decrease in agricultural productivity.

3.9 Housing

3.9.1 Typology
Modern housing structures are being constructed with the necessary facilities. Currently, developers have adopted use of stone and other appropriate technology. The town has also experienced construction of high rise buildings, both commercial and residential though with challenges of occupancy resulting to low returns on investment.

3.9.2 Affordability
The prevailing rent prices are way above the average income of many residents. The cost of land, construction labor and materials is also high thereby leading to high rental prices.

3.9.3 Demand and supply
There needs to be conducted a market survey to inform on the housing needs, design of housing schemes, detailed feasibility study to inform on provision of housing stock.

3.10 Environment

3.10.1 Waste Disposal
Solid waste
Machinery town has no designated site for solid waste disposal. There is, thus an urgent need for the county government to acquire the land for a dumpsite.

Liquid waste
Machinery town does not have a conventional liquid waste disposal system. All the developments in the town comprising of lodges, shops and hotel facilities empty their effluent onto the available septic tanks, soak pits and road sides or just like in the case of solid waste, on any available open spaces. Pit latrines are the main method of liquid waste disposal. Most people within the town use pit latrines for waste disposal.
3.11 Governance

3.11.1 Administration
Machinery town has a well-established administrative structure as illustrated below;

- Sub-county-Kibwezi East
- Ward – Masongaleni and Thange-Utiithi
- Sub-wards- Nzeeka and Masongaleni
- Villages- Utiithi,Utaati,Thange,Masongaleni,Isunguluni

Institutions involved in urban governance include: Department of Physical planning which is tasked with preparation of integrated development plans and development control and Kibwezi-Makindu Water and Sewerage Company (KIMAWASCO) for provision of safe and clean water.

The Governor has nominated to representatives of various sectors to the County community policing committee to oversee security related concerns.

3.11.2 Gender
The composition of committees within the town has observed the gender rule as per the Constitution of Kenya, 2010. Women are involved in developmental activities and also in elective offices.

3.11.3 Legislation and Enforcement
The department of lands, mining and physical planning has finalized the preparation of the following bills for onward submission to the county assembly for approval;

1. Spatial planning.
2. Housing.
3. Street naming.
4. Planning regulations

3.11.4 Urban Management
The County Project Management Committees oversee projects done by different departments. Urban management boards are set to be established by the end of the year once the municipal structures are set.
CHAPTER FOUR: PLANNING SYNTHESIS

4.1 Development challenges, opportunities and alternative interventions

Table: Development challenges, opportunities and alternative interventions

<table>
<thead>
<tr>
<th>AREA</th>
<th>SUITABILITY</th>
<th>ECOLOGICALLY FRAGILE AREAS</th>
<th>CHALLENGES</th>
<th>OPPORTUNITIES</th>
</tr>
</thead>
</table>
| Block 1(CBD)- along the OLD MSA-NRB highway | 1. Access roads establishment  
2. Commercial establishment.  
3. Hotel Industry  
2. Delaying in waste collection  
3. Air pollution  
4. Poor sanitation  
5. Poor drainage  
6. Inadequate water supply  
10. Poor road conditions and inaccessibility  
11. Impassable roads during rainy season  
12. Lack of road signs | 1. Availability of land for expansion of the town  
2. Finance from both county and national government to implement the projects.  
3. Strategic position of the town i.e. the town is traversed by highway and shared by two wards.  
4. Construction of modern hotels |
| Block B(institution(s)) | 1. Administrative Purposes | N/A | 1. Poor sanitation  
2. Inadequate health facilities  
3. Poor drainage  
4. inadequate educational institutions  
5. No social hall | 1. Strategic position of the town  
2. Availability of land.  
3. Availability of land for school establishment  
4. Available land for public purpose(churches) |
<table>
<thead>
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<th></th>
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<tbody>
<tr>
<td></td>
<td>2. Health facility establishment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. high density residential</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Block 3 | High density residential | N/A | 1.no residential facilities  
2.no access roads  
3.no street lights  
4.no drainage channels  
5.poor road conditions | 1.construction of high density residential houses due to flatness of the area  
2.Openning up of roads |
| | | | |
| Block 4 | Medium density residential and low density residential | N/A | 1.no residential facilities  
3.no access roads  
4.no street lights  
4.no designated drainage systems  
Poor road conditions | 1.establishment of schools and institutes of learning  
2.Construction of medium and low density residential houses due to flat topography of the zone  
3.Availability of land for future expansion  
4. Enough land for low density residential |
CHAPTER FIVE: PLAN PROPOSALS

5.1 Town Structure Plan

![Figure 5 a plan showing Machinery Urban Land Use Plan](image)

5.2 Strategies and Measures

5.2.1 Transport and Infrastructure Services strategies

The objectives of the measures and Strategies proposed are:

- To provide timely infrastructural services to accommodate the growth of Machinery town.
- To create infrastructural services network that maximizes citizens’ choices of choices and options.
- To create infrastructural services network in Machinery town that conveniently links the various services.
- To enhance aesthetics, environmental conservation, public health and minimize negative impacts of transportation system on existing neighborhoods and businesses.
5.2.1.1 Road Network

Strategies

- Systems should be put in place to prepare and maintain an updated road inventory for all roads (classified, access and streets, etc.) in the Machinery town.
- Prioritized roads be budgeted for and developed in accordance to the prioritized list.
- Acquisition of land for road reserves.
- Identify and address short term traffic flow constraints in the entire Machinery town in the short term.
- Systems be put in place to identify and address long term traffic flow constraints in the entire Machinery town.

Measures to actualize the Strategies

- Establishment of a Unit/Department within Machinery to deal with the development and management of the transport infrastructure.

5.2.1.2 Parking Facilities

Strategies

- Systems should be put in place to prepare and maintain an updated parking inventory for all parking requirements in Machinery town. Prioritized parking areas be budgeted for and developed in accordance to the prioritized list.
- Systems should be put in place to prepare and commence acquisition of land for parking spaces as shall have been identified.
- Systems be put in place to identify and address short term traffic flow constraints in the entire Machinery town that relate to parking.
- Systems be put in place to identify and address long term traffic flow constraints in the entire Machinery town that relate to parking.

Measures to actualize the Strategies

- Establishment of a programmes unit / department to deal with the development and management of the transport infrastructure. This to include a section for parking spaces.
- Development of new parking facilities in Machinery town.
5.2.1.3 Non-Motorized Facilities

**Strategies**

- Prioritized NMT facilities be budgeted for and developed accordingly.
- Systems shall be put in place to prepare and commence acquisition of land for NMT facilities as shall have been identified.
- Systems shall be put in place to identify and address short term NMT traffic flow constrains in the entire Machinery town that relate to parking.
- Systems be put in place to identify and address long term NMT traffic flow constrains in the entire Machinery town that relate to parking.

**Measures to Actualize the Strategies**

- Provision for adequate footpaths and cycle tracks network on the existing roads
- Acquisition of land for long term development of NMT infrastructure.

5.2.1.4 Road Safety and Security

**Strategies**

- Systems be put in place to prepare and maintain an updated Road Safety and Security inventory for existing facilities within the Machinery town.
- The road safety and security facilities be prioritized in order of need for opening up, routine maintenance, periodic maintenance, rehabilitation, reconstruction, and construction are documented.
- Prioritized road safety and security facilities be budgeted for and developed in accordance to the prioritized list.
- Systems be put in place to prepare and commence acquisition of land for road safety and security facilities as shall have been identified.
- Systems be put in place to identify and address short term road safety and security constrains in the entire Machinery town that relate to road safety and security.
- Systems be put in place to identify and address long term road safety and security constrains in the entire Machinery town that relate to road safety and security.
Measures to actualize the Strategies

- Provision of street lighting in strategic areas of the Machinery town, and in the residential area and along roads.
- Development and provision of road safety measures.
- The Road Safety and Security measures be incorporated to all new the development project and programmes being undertaken in the Machinery town through a by-law.
- The Machinery town undertakes a master plan for development and maintenance of road safety and security measures in the Machinery town. This to include acquisition of land for long term development of this infrastructure.

5.2.1.5 Storm Water Drainage

Strategies

- Systems shall be put in place to prepare and maintain an updated storm water drainage system inventory for the facilities within the Machinery town.
- The storm water drainage network facilities be prioritized in order of need for opening up, routine maintenance, periodic maintenance, rehabilitation, reconstruction, and construction are documented.
- Prioritized storm water drainage network facilities be budgeted for and developed accordingly.
- Systems shall be put in place to prepare and commence acquisition of land for storm water drainage network facilities as shall have been identified.
- Systems be put in place to identify and address short term storm water drainage network constrains in the entire Machinery town.
- Systems be put in place to identify and address long term storm water drainage network constrains in the entire Machinery town.

Measures to actualize the Strategies

- Cut off drain area to connect all the residential areas in Machinery town.
- Major drain lining in the special planning area of the Machinery town.
- The Machinery town undertakes a plan for development and maintenance of storm water drainage network measures in the Machinery town. This to include acquisition of land for long term development of this infrastructure.
5.2.1.6 Water facilities

Strategies

- Systems shall be put in place to prepare and takeover management and development of water supply and distribution in the entire Machinery town.
- The water supply facilities be prioritized and documented in order of need for new supply, routine maintenance, periodic maintenance, rehabilitation, reconstruction, and construction are documented.
- Prioritized water supply facilities be budgeted for and developed accordingly.
- Systems shall be put in place to prepare and commence acquisition of land for water supply facilities as shall have been identified.
- Systems shall be put in place to identify and address short term water supply needs in the entire Machinery town.
- Systems shall be put in place to identify and address long term water supply needs in the entire Machinery town.

Measures to actualize the Strategies

- The existing Kibwezi-Makindu Water and Sewerage Company (KIMAWASCO) to upgrade the operations of the existing water supplies and distribution facilities in Machinery town.
- Develop and implement an improvement master plan for the existing water supply and distribution facilities.
- Supply water to all residents in the town, and in residential areas.

5.2.1.7 Sewerage Facilities

Strategies

- Systems shall be put in place to prepare and takeover management and development of sewerage collection facilities in the entire Machinery town.
- Systems shall be put in place to prepare and maintain an updated sewerage collection facilities inventory for the facilities (public and community) within the Machinery town.
- Prioritized sewerage collection facilities be budgeted for and developed in that order.
- Systems shall be put in place to prepare and commence acquisition of land for sewerage collection facilities as shall have been identified.
- Systems shall be put in place to identify and address short term sewerage collection needs in the entire Machinery town.
- Systems shall be put in place to identify and address long term sewerage collection needs in the entire Machinery town.

**Measures to actualize the Strategies**

- Machinery town to form a unit to manage the sanitation facilities.
- Develop and implement an improvement master plan for the existing sanitation facilities.
- Connect all town residents and its environs to the newly developed sewerage treatment works.
- The Machinery town undertakes a master plan for development and maintenance of sanitation facilities system in the Machinery town. This to include; development of a new sewage treatment works once the designated site is acquired and acquisition of land bank for long term development of this infrastructure.

5.2.1.8 **Institutional Considerations**

**Strategies**

- Systems shall be put in place to prepare and address programmes financial needs for new development, routine maintenance, periodic maintenance, rehabilitation, reconstruction, and construction for facilities within Machinery town.
- Systems shall be put in place to prepare and undertake sourcing for development funds for all programmes to be undertaken within the Machinery town.
- All programmes shall be prioritized in accordance to need and be funded for development in accordance to the prioritized list.
- Systems shall be put in place to prepare and ensure that funds are made available for acquisition of land for long term facilities development.

**Measures to actualize the Strategies**

- Establishment of operational systems for programmes unit for all programmes and formation of water and Sanitation Company.
- Funding of immediate emergency programmes for all the sectors.
5.2.2 Environment Strategies

5.2.2.1 Solid Waste Management

Strategies

- Machinery town to pass by law requiring all town residents to have waste bins
- Machinery town to install street bins and elevated masonry waste storage cubicles for ease of waste collection
- Increase waste collection coverage and frequency
- Adopt the seven instruments proposed for plastic management for Kenya (UNEP, 2005) in Box 4.1 below.
- Use enclosed and NEMA licensed waste collection vehicles.
- Close and relocate the illegal dumpsite to the official dump site. Fence and plant trees along the new dumpsite boundary and cover deposited waste with soil.
- Provide protective clothing to waste handlers.
- Establish a department of Public Health and Environment (PHE) in the council to handle solid waste management among other environmental issues. The environmental section can later be elevated to a fully-fledged environmental department.
- Provide adequate waste handling technology.
- Make waste management bylaw and build enforcement capacity for the existing waste management laws.
- Promote waste recovery/recycling.
- Handle and dispose hazardous waste separately from the normal municipal waste. Follow hazardous waste management guidelines.

5.2.2.2 Waste water disposal

Strategies

- Provide sewer system especially in the build-up area and the proposed town expansion zones.

5.2.2.3 Degradation of water resources

Strategies
- Control water polluting sources/agents and move the current dumpsite.
- Discourage more human settlements/population and land subdivision to a minimum of one acre near water sources. Control grazing and agricultural activities in the swamps, wetlands and other water catchment areas. Replace the eucalyptus trees with indigenous vegetation. Formulate detailed environmental management plan for the swamps and other water resource areas.
- Control human activities at or near the water sources. Use the waters sources sustainably for domestic, livestock and small scale irrigation, fishing, recreation and ecotourism. Form a water users/stakeholder’s management committee and formulate a comprehensive environmental management/action plan to help in managing the water resources.
- Provide sewer or waterborne toilets to stop potential of underground water pollution.

5.2.2.4 Vegetation Cover

Strategies
- Increase vegetation cover within the town.
- Promote use of non-wood building materials and energy sources
- Practice agro forestry
- Control livestock grazing within the urban areas

5.2.2.5 Land Degradation

Strategies
- Control soil erosion on roads and bare spaces through the use engineering road side erosion control techniques, plant vegetation cover, terrace sloppy areas and pave dusty roads and footpaths
- Provide covered urban storm drainage system
- Backfill open holes and abandoned sites for excavation of building materials on the land
- Control the specified land pollution sources/agents
- Ensure building demolition and excavated materials are dumped on authorized sites.
- Control land subdivision to a minimum of one acre on the sloppy areas and near the water sources.
- Introduce ecotourism activities.
5.2.2.6 Flooding

**Strategies**

- Provide underground storm drainage system in densely built up areas and keep it free from blockage.
- Drain flooded areas.
- Enhance sustainable management of upstream water catchment areas to avoid downstream flooding.
- Use engineering and environmental flood control measures.
- Use integrated disease vector control measures in the flooded areas.

5.2.2.7 Air pollution

**Strategies**

- Ensure vehicles meet exhaust emission standards.
- Promote use of non-motorized transport, organize it and provide the necessary supporting infrastructure such as cycling lanes and parking grounds.
- Control open burning of materials including solid waste especially in crowded areas.
- Safely dispose rotting organic matter and improve hygiene standards in pit latrines, urinals and waterborne toilets to kill the foul smells.
- Pave roads/footpaths and improve land vegetation cover to contain dust.
- Promote use of cleaner domestic energies such as electricity and liquefied Petroleum Gas to control indoor air pollution.

5.2.2.8 Aesthetic Pollution

**Strategies**

- Sitting of outdoor advertisement billboards and signs boards to be approved and regulated by county physical planning department.
- Control illegal structures and building materials.
- Enhance greenery and town beautification.
- Erect proper directional signage for use by the business community.
5.2.2.9 Noise pollution

**Strategies**

- Promote use of acoustics materials and measures at the noise sources.
- Discourage use of loud speakers.
- Discourage heavy traffic from densely populated areas
- Enforce EMCA noise standards.

5.2.2.10 Public Recreation Ground

**Strategies**

- Identify and establish public recreation grounds at strategic positions within the town. Buy or acquire land compulsorily.
- Encourage sharing of private (e.g. hotels) and institutional (e.g. schools, churches) recreation grounds with the general public.
- Factor provision of public recreation grounds in future town development plans.

5.2.2.11 Institutional, legal and policy framework

**Strategies**

- Establish environment section in the Machinery town to address urban environmental issues.
- Strengthen environmental laws and avoid overlap.
- Create enforcement capacity and development control.

5.2.2.12 Stakeholders involvement

**Strategies**

- Strengthen structures for stakeholders participation in environmental matters.
- Broaden incentives to attract wide participation.
- Broaden and strengthen public/private partnership.
- Enhance community participation.
5.2.2.13 Poverty and environment

Strategies

- Reduce poverty by initiating economic empowerment programs for the poor
- Work with the poor in improving their neighbourhood environments
- Channel the bulk of environmental resources and programs to the poor

5.2.2.14 Environmental awareness

Strategies

- Promote community environmental awareness through electronic and print media (including poster), public meetings, organized sector forums, youth and women

5.2.2.15 Environmental management tools

Strategies

- Ensure/promote and monitor application of environmental management tools where necessary.

5.2.3 Economic and Investment Strategies

Since there is devolved system of government, Machinery Town will be expected to be the centre for a wide range of partnership initiatives to leverage resources and expertise beyond the County in order to address the economic development challenges of accelerated and shared economic growth as well as job creation in the Town. Proposed activities and programmes towards that end are based on three thematic thrusts:

1. Improving the capacity of Machinery town business regulatory regime to be amenable to the promotion of private enterprise;
2. Increasing selected agricultural sector value chains’ productivity and stimulating other sectoral opportunities; and
3. Stimulating non-farm employment and income generating opportunities.

5.2.3.1 Growth Sectors

The growing sectors in the town are agriculture, business, education, and boda boda transport services.
CHAPTER SIX: ACTION PLANS

Table 2 the action plan for the Machinery town plan

<table>
<thead>
<tr>
<th>AREA</th>
<th>SUITABILITY</th>
<th>ECOLOGICALLY FRAGILE AREAS</th>
<th>CHALLENGES</th>
<th>OPPORTUNITIES</th>
<th>ACTION AREAS</th>
</tr>
</thead>
</table>
| Block 1(CBD- along the main roads) | 1.Opening up of Access roads  
2. Commercial establishment | N/A | 1. No dumpsite  
2. Delaying in waste collection  
3. Air pollution  
4. Poor sanitation  
5. Poor drainage  
6. Inadequate water supply  
10. Poor road conditions | 1. Availability of land for expansion of the town  
2. Finance from both county and national government to implement the projects.  
3. Strategic position of the town i.e the town is along highway and at the bounder between two wards. | 1. Allocation of land for dumpsite  
2. Supervision of waste collectors  
3. Creation of buffer zone  
4. Maintenance of vehicles  
5. Construction of public toilets  
6. Construction of drainage systems to direct storm water  
7. Establishment of borehole and kiosks to supply water  
8. Establishment of road signs |
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</thead>
<tbody>
<tr>
<td>2. Public purpose (churches)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. Availability of land for future expansion 2. Flat terrain of the area</td>
<td></td>
</tr>
</tbody>
</table>
| BLOCK 4 | Medium density residential and low density residential | N/A | 1. No residential facilities  
2. No access roads  
3. No street lights  
4. No designated drainage channels | 1. Availability of land for future expansion  
2. Enough land for low density residential  
3. Flat terrain | 1. Establishment of schools and institutes of learning  
2. Construction of medium and low density residential houses due to flat topography of the zone |
| BLOCK 5 (Peri-urban/rural-agricultural land) | 1. Public utilities  
2. Agriculture establishment  
3. Water and sewer treatment | N/A | 1. Lack of cemetery  
2. Lack of agricultural institute to enforce agriculture  
3. Land dispute especially when people lack title | 1. Availability of land to establish public utilities (cemetery, dumpsite and water and sewer treatment plant)  
2. Availability of land for agriculture establishment | 1. Allocation of land for cemetery  
2. Establishment of agricultural institutes to sensitize locals on agricultural technics  
3. Government to solve all land disputes within the town  
4. Drilling of boreholes and |
<table>
<thead>
<tr>
<th>plants establishment</th>
<th>deeds to prove the ownership</th>
<th>3. Involvement of government and NGOs to protect environment</th>
<th>construct kiosks to supply water</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Inadequate water supply</td>
<td>5. Creation of a conservation area</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER SEVEN: IMPLEMENTATION MATRIX FOR MACHINERY IUDP

The Plan Implementation Matrix (PIM) below highlights the individual programmes of action which need to be implemented towards achieving the proposals which have been put forward in the Machinery IUDP. The area specific programmes or actions have been phased accordingly and have indicated the actors who will spearhead the implementation process.
<table>
<thead>
<tr>
<th>ISSUE(S)</th>
<th>ZONE</th>
<th>ACTIVITIES</th>
<th>ACTORS</th>
<th>TIME FRAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of spatial framework to guide urban development</td>
<td>Whole Planning area</td>
<td>Prepare and seek approval of the Plan</td>
<td>County Director of Physical Planning, County Assembly, stakeholders</td>
<td>Immediately (2017)</td>
</tr>
<tr>
<td>Narrow roads</td>
<td>Whole Planning area</td>
<td>Widen roads to at least 12 m</td>
<td>- County Department of Transport &amp; Infrastructure, - County department of Lands, Mining and Physical Planning, - County department of Devolution</td>
<td>2017/2018</td>
</tr>
<tr>
<td>Poor road network</td>
<td>Whole Planning area</td>
<td>Acquire and grade way leaves, Open up existing roads</td>
<td>- County Department of Transport &amp; Infrastructure, - County department of Lands, Mining and Physical Planning, - National Land Commission</td>
<td>2017/2018</td>
</tr>
<tr>
<td>Flooding along road reserves</td>
<td>Town center/ built up areas.</td>
<td>Construct storm water drains</td>
<td>- County Department of Transport &amp; Infrastructure, - County department of Lands, Mining and Physical Planning</td>
<td>2017/2018</td>
</tr>
<tr>
<td>Issue</td>
<td>Area</td>
<td>Solution</td>
<td>Department/Commission</td>
<td>Timeline</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>---------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Inadequate public land for expansion</td>
<td>Whole planning area</td>
<td>Acquire land from freehold</td>
<td>- County Department of Environment, Water and Irrigation</td>
<td>2017/2020</td>
</tr>
<tr>
<td>Lack of land for sewerage treatment works</td>
<td>Whole planning area</td>
<td>Acquisition of land</td>
<td>- County department of Lands, Mining and Physical Planning</td>
<td>2017/2017</td>
</tr>
<tr>
<td>Lack of land for dumping site</td>
<td>Whole planning area</td>
<td>Acquisition of land</td>
<td>- County department of Lands, Mining and Physical Planning</td>
<td>2017</td>
</tr>
<tr>
<td>Poor road surface</td>
<td>Planning area</td>
<td>Grade existing roads</td>
<td>- County Department of Transport &amp; Infrastructure</td>
<td>2017/2020</td>
</tr>
<tr>
<td>Lack of sufficient parking space</td>
<td>Town Centre</td>
<td>Utilize suitable space within town</td>
<td>- County Department of Transport &amp; Infrastructure</td>
<td>Immediately (2017)</td>
</tr>
<tr>
<td>Issue</td>
<td>Affected Areas</td>
<td>Action</td>
<td>Responsible Departments</td>
<td>Timeframe</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Poor aesthetics</td>
<td>Whole planning area</td>
<td>Planting of trees along road reserves and maintenance of appealing environment</td>
<td>-stakeholders -non-governmental actors</td>
<td>1 year</td>
</tr>
<tr>
<td>Poor street lighting</td>
<td>Whole planning area</td>
<td>Erection of street lights</td>
<td>Dept. of transport and infrastructure</td>
<td>Medium term</td>
</tr>
<tr>
<td>Blockage and encroachment to road reserves</td>
<td>Whole planning area</td>
<td>Opening of access roads</td>
<td>Department of transport and infrastructure</td>
<td>Medium term</td>
</tr>
<tr>
<td>Blockage of drainage channels</td>
<td>CBD and in the residential areas</td>
<td>Unblocking the drainage channels</td>
<td>Department of transport and infrastructure</td>
<td>Short term</td>
</tr>
<tr>
<td>Vehicle and pedestrian conflicts</td>
<td>Transport</td>
<td>Provision of NMT infrastructure (walk ways)</td>
<td>Department of Transport and Infrastructure Department of lands</td>
<td>Medium term</td>
</tr>
<tr>
<td>Unplanned kiosks</td>
<td>CBD, and along the highways</td>
<td>Planning and standardization of kiosks</td>
<td>Department of lands</td>
<td>Short term</td>
</tr>
</tbody>
</table>
## CHAPTER EIGHT: FINANCING STRATEGY

### Table 4 Table showing financing strategy for Machinery ULUP

<table>
<thead>
<tr>
<th>S/No</th>
<th>Issue/Activity</th>
<th>challenge</th>
<th>Area</th>
<th>Strategy</th>
<th>Programme</th>
<th>Actor</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unplanned and Uncoordinated Urban Development</td>
<td>Urban sprawl and unregulated developments</td>
<td>Machinery town CBD</td>
<td>Control the high subdivisions of Agricultural land</td>
<td>Development control functions to be initiated</td>
<td>County Government of Makueni</td>
<td>10,000,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of Development control activity in the municipality</td>
<td>Machinery town peri-urban</td>
<td>To initiate development control functions</td>
<td>• Use the zoning plan to control subdivisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Create and equip the enforcement section of the planning dept.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Poor solid waste management</td>
<td>Poor sanitation</td>
<td>The whole planning area</td>
<td>• To develop the proposed dump site/garbage collection</td>
<td>• Open up and operationalize the solid waste it</td>
<td>County Government of Makueni</td>
<td>5,000,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• County Government to update and develops solid waste by-laws and guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Undertake land acquisition for the final solid waste disposal site</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Street Lighting/flood lights</td>
<td>Lack street lighting</td>
<td>Machinery town</td>
<td>County Government of Makueni</td>
<td>500,000</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>To develop street lighting and at least two flood lights</td>
<td>Undertake the erection and management of flood lights</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>