

PART IV
SYNTHESIS



4 CHAPTER FOUR: SUMMARY OF PLANNING ISSUES

4.1 Overview

This chapter highlights summary of planning issues within the Municipality. The sectoral issues highlighted have been categorized into opportunities, challenges and potentials.

4.2 Challenges

Siaya Municipality is faced with various challenges which have inhibited full exploitation of its potential thus limiting its growth. These challenges were identified through situational analysis of thematic sectors. These are summarized in the table below.

Sector	Challenges
Environment and Natural Resources	
Topography	<ul style="list-style-type: none"> Some areas have steep slopes and rock outcrops which limit human settlements
Geology and soils	<ul style="list-style-type: none"> Some quarrying sites have been left derelict thus endangering lives.
Hydrology and drainage	<ul style="list-style-type: none"> Siltation of water streams, rivers, waterpans, and dams Poor drainage on some parts of the Municipality resulting to flooding.
Climate Change	<ul style="list-style-type: none"> Erratic rainfall and increased incidence of drought has led to reduction in agricultural yields.
Transport	<ul style="list-style-type: none"> Lack of designated parking lots Inadequate designated boda boda termini Inadequate provisions for NMT and PWD
Drainage	<ul style="list-style-type: none"> Inadequate network of storm drains within the Township
Liquid Waste Management	<ul style="list-style-type: none"> Inadequate liquid waste treatment plant to serve entire municipality Limited liquid waste reticulation infrastructure (sewerage line)



Solid Waste Management	<ul style="list-style-type: none"> • Dilapidated solid waste collection bins in the municipality. • Lack of designated garbage dump site. • Lack of designated solid waste collection points in the municipality
Water	<ul style="list-style-type: none"> • Inadequate coverage of water network
Human Settlements and Urbanization	<ul style="list-style-type: none"> • Stagnated growth of market centres • Inadequate infrastructural facilities in some of the urban centres • Uncontrolled urban sprawl
Environment challenges	<ul style="list-style-type: none"> • Inadequate water supply • Lack of adequate resource conservation measures • Low compliance levels by water service providers • Poor drainage in some parts of the Planning area • Declining soil fertility • Lack of security installations within the water reservoirs • Encroachment on riparian reserves • Pollution of dams, rivers, the lake and springs • Illegalities in water abstractions • Deforestation • Natural disasters such as floods, mud and landslides. • Security risks in areas near dams • Climate change • Loss of bio diversity • Under exploitation of resources • Unsustainable human activities • Rapidly fluctuating water levels • Natural calamities such as floods



Social Analysis	<ul style="list-style-type: none"> • Inadequate facilities for the elderly. • Inadequate child friendly recreational facilities • High prevalent rates of communicable and non-communicable diseases • High population growth
ICT	<ul style="list-style-type: none"> • Poor network coverage of Internet Infrastructure • Lack of information or slow information dissemination in the municipality. • Limited ICT hubs for training and innovation.

4.3 Opportunities

Opportunities refer to potential events, circumstances, or situations that can be exploited to achieve a desired outcome or goal. In the context of planning, opportunities can be identified and analyzed to inform decision-making and strategy development. These opportunities represent the favorable conditions and prospects that can be leveraged to address various planning issues and achieve the desired goals for a region.

Sector	Opportunities
Topography	<ul style="list-style-type: none"> • Hills and ridges provide scenic value therefore opportunity for tourism, Cinematic, photographic and advertisements industries
Geology and soils	<ul style="list-style-type: none"> • The soils and rocks within the Municipality are useful in the construction and agricultural industries
Hydrology and drainage	<ul style="list-style-type: none"> • Available dams can be utilized for irrigation purposes • Available water sources are opportunities for irrigation farming and agriculture, recreation • Presence of Lake Kanyaboli
Climate	<ul style="list-style-type: none"> • Favorable climate to Support agriculture



Climate change and disaster management	<ul style="list-style-type: none"> • Rain water harvesting to reduce the risk of flooding
Energy	<ul style="list-style-type: none"> • High potential for exploitation of renewable energy sources
Social Analysis	<ul style="list-style-type: none"> • Existing medical and health incentives by the County Government • Availability of labour force • Rich cultural heritage
Environmental	<ul style="list-style-type: none"> • Fertile soils that favor agricultural activities • Tree planting programmes • Availability of reliable Water resources
Human settlements and Urbanization	<ul style="list-style-type: none"> • Opportunity for upgrading of informal settlements within the Municipality like Awelo informal settlement. • Generation of Urban Renewal programs within the old market centres • Availability of building material



4.4 Potentials

The chapter on summary of planning issues also presents several potentials that can be leveraged to overcome the challenges faced when planning and executing their strategies.

Some of the most promising potentials include:

Sector	Strengths
Topography	<ul style="list-style-type: none">• Gentle slope suitable for urban developments
Geology and soils	<ul style="list-style-type: none">• Presence of fertile soils favorable for agriculture in some parts of the Municipality
Hydrology and drainage	<ul style="list-style-type: none">• The rivers are a source of water for domestic use.• The river valleys create an opportunity for the establishment of small-size dams.• Several dams provide storage for rainwater.• Lake Kanyaboli
Climate	<ul style="list-style-type: none">• Climatic conditions are favorable for both agriculture and human settlement.• Potential for solar power production
Climate change and disaster management	<ul style="list-style-type: none">• Increased water volumes during rainy seasons can be stored for future use.• Presence of existing storm water channels
Social Analysis	<ul style="list-style-type: none">• Population composed of young and youthful population• High literacy levels• Existing County initiatives and Programmes on maternal and child care among others.• Availability of Labor force• Rich cultural heritage



Environmental	<ul style="list-style-type: none"> • Availability of natural resources such as rivers, springs and rocks • Existing Water Resource • Availability of Users association to monitor water resources • Fertile soils in some areas of the Municipality
Human Settlements and Urbanization	<ul style="list-style-type: none"> • Establishment of recreational parks within Siaya Town • Improving the aesthetics of the Town • Provision of Housing through affordable housing project • The municipality houses the county headquarter providing opportunities for development



5 CHAPTER FIVE: SCENARIO BUILDING

5.1 Overview

This chapter discusses the aspects that have been considered in the preparation of the Spatial Plan. The section also discusses the development models that have been considered in the preparation of the plan.

5.2 Planning Considerations

5.2.1 Development Vision

The consultant engaged the stakeholders in a consensus building visioning process. Several vision statements were proposed by stakeholders and were considered. Some of the vision statements are:

- A green and sustainable Siaya Municipality
- A smart Municipality of excellence and prosperity for her people.
- An economically and socially vibrant Municipality that is sensitive and inclusive to all its residents and those visiting the Municipality.

The consultant analysed each vision statement against the current vision statement. Ultimately, the development vision that was coined to guide the preparation of the Plan is **“A sustainable, economically vibrant, prosperous, socially cohesive and functionally interlinked entity (Municipality)”**.

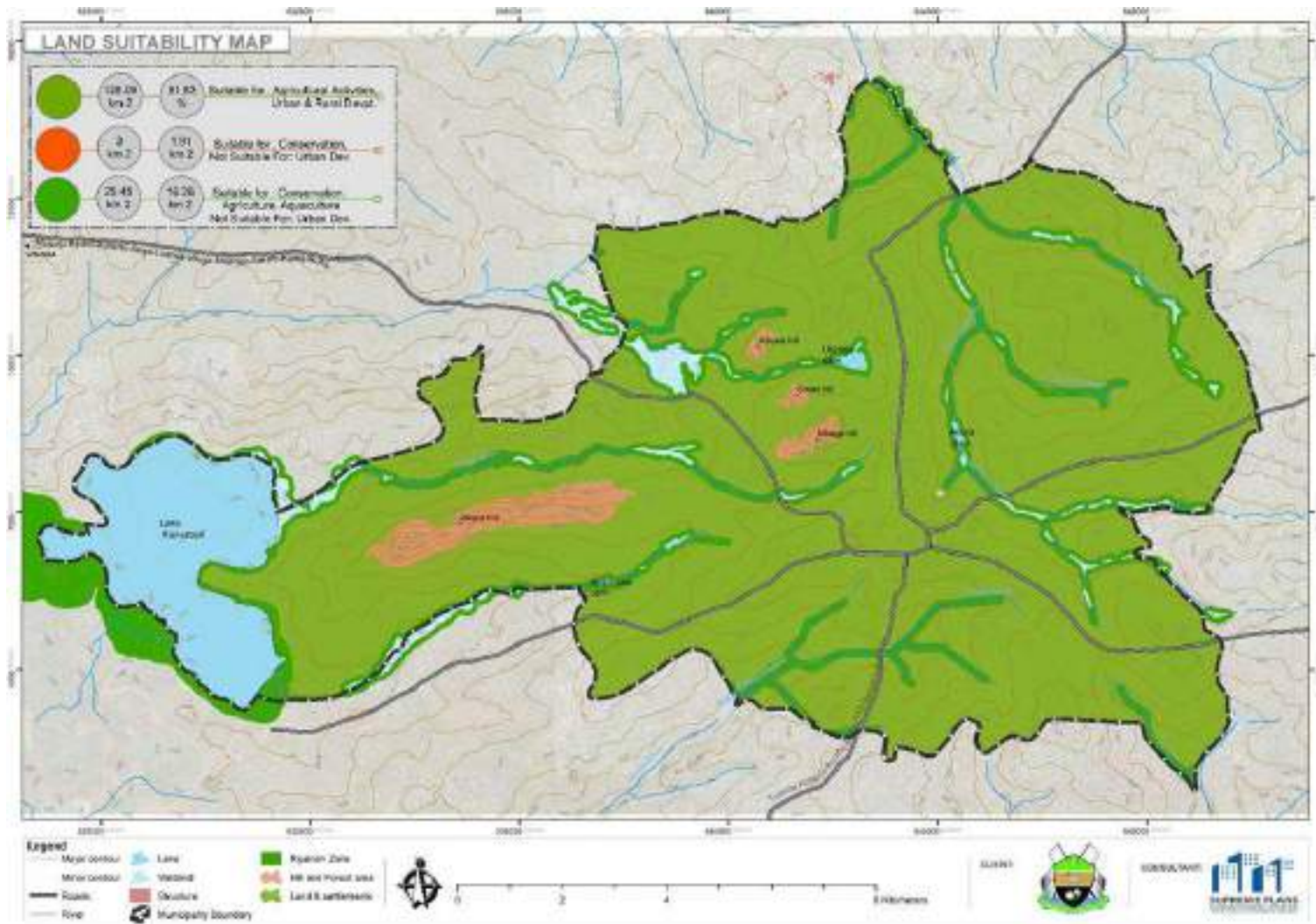
The Municipality Motto, **A Municipality of Choice for settlement, investments, work and recreation** was also adopted to guide the plan preparation.

5.2.2 Land Suitability Analysis

An analysis on the suitability of the land for urban development was carried out. This involved identifying the areas with steep slopes, low lying and with high likelihood of flooding, protected areas, conservation areas and water bodies. The map below shows the areas suitable for urban development.



Map 5-1: Land Suitability Map



5.3 Development Models

The development of the Plan considered several possible development scenarios. The major development scenarios/ models considered are:

1. Monocentric model
2. Polycentric model
3. Ecological Smart Growth model
4. Transit-oriented Model
5. Integrated Development Model

Each of these development models was analysed based on its pros and cons.

5.3.1 *Monocentric model*

The model is based on the following principles:

1. High density mixed-use land uses concentrated within the primary node
2. Trickle down of development from the primary node
3. Preservation of hinterland areas
4. Zoning of land uses

The monocentric model for Siaya Municipality focuses on development of Siaya Town as the primary node with development trickling down to the other areas within the Municipality. This would result in the development of 3 zones, the urban core, the transition zone and the hinterland.

In this model, the town would be densified and host appropriate facilities serving the municipality including administrative, commercial and residential spaces, municipality offices, and public institutions. The area around the town is will largely be occupied by commercial developments, residential developments, agricultural land and have some aspects rural developments. The outer zone would be characterized by agricultural activities and rural settlements.



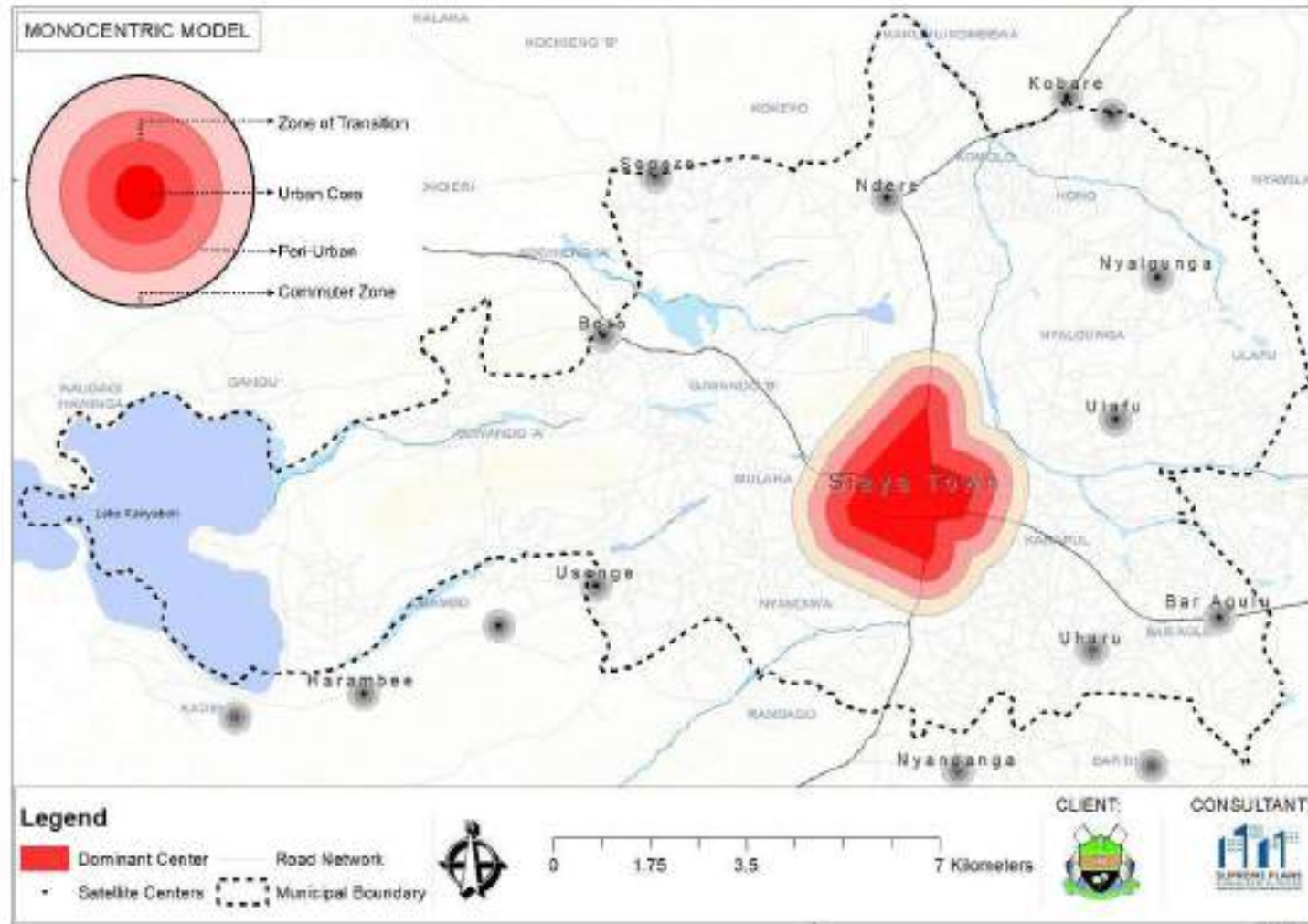
The centralization of infrastructure and services will translate to increased commuting distances within the municipality and an increase in traffic within the town leading to congestion. Among the long-term outcomes of this growth model is urban sprawl at its peripheries therefore uncontrolled growth of the town. It would also increase the pressure on existing infrastructure in the town that serves the municipality.

Table 5-1: Advantages and Disadvantages of Monocentric Model

Advantages of the monocentric model	Disadvantages of the monocentric model
<ol style="list-style-type: none"> 1. Increased activity within Siaya town 2. Maintain and grow the functionality of the town 3. Centralized access to services and facilities 4. Protection of agricultural land 	<ol style="list-style-type: none"> 1. Increased pressure on existing infrastructure within the urban core 2. Congestion within the town 3. Uneven development leading to disparities and dependency 4. Will lead to stagnated growth of existing urban nodes 5. Encourages the growth of social classes thus discouraging social cohesion



Map 5-2: Monocentric Model



5.3.2 Polycentric model

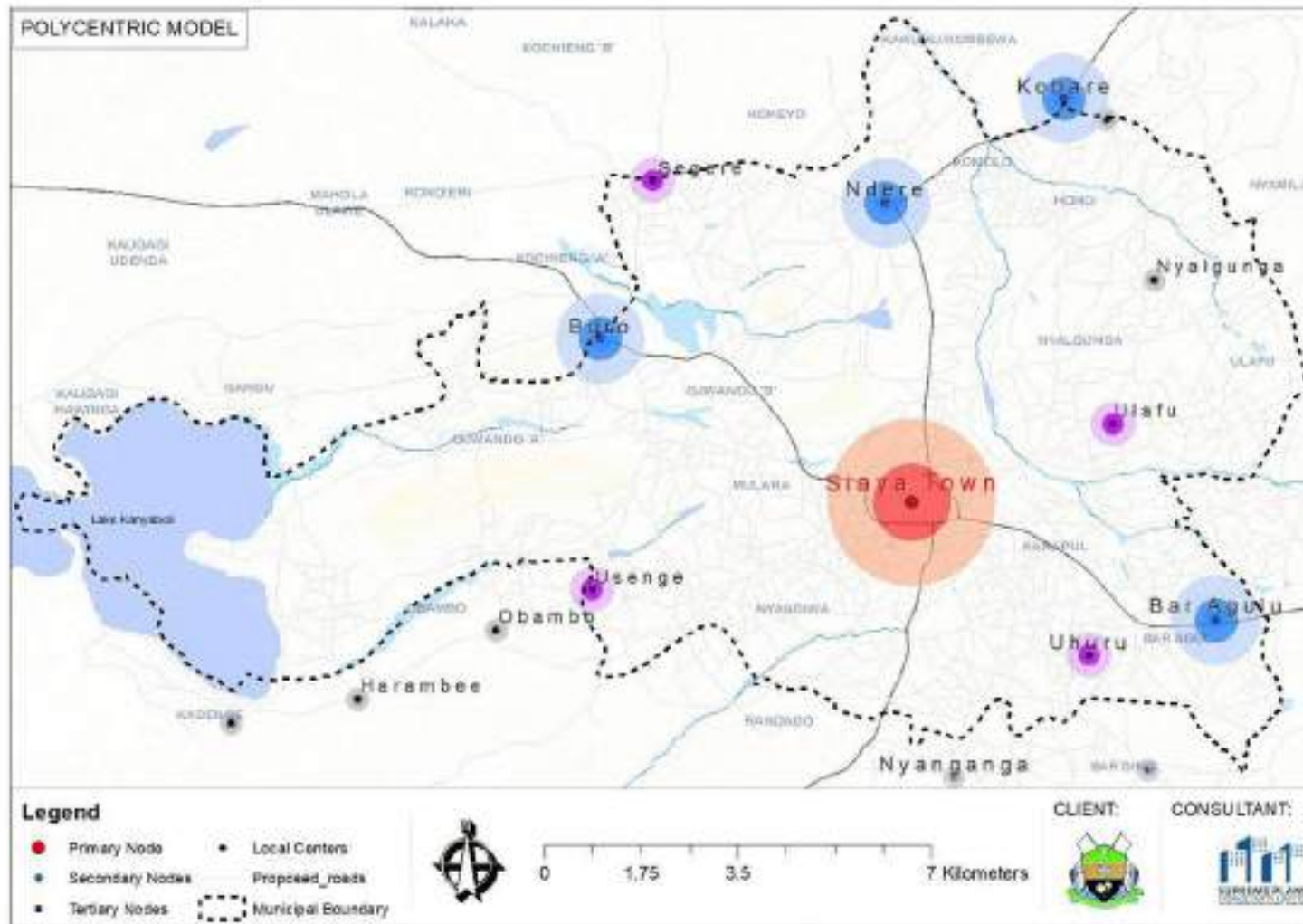
This model promotes co-existence among the primary, secondary and tertiary nodes throughout the planning area. Growth and development are based on linkages between a primary node and a secondary node where the municipality has a functional division of developments, facilities, and services. The centers are linked to the town and there is significant activity exchange between them while the secondary nodes maintain some aspects of individuality. This model achieves balanced development results through well-established linkages made possible by strategies such as improved communication technology and increased mobility within the maximum commuting distance.

Table 5-2: Advantages and Disadvantages of Polycentric Model

Advantages of the polycentric model	Disadvantages of the polycentric model
<ol style="list-style-type: none">1. A more convenient commuting service2. Reduced traffic congestion3. Creates multiple employment centers4. Improved access to facilities and services5. Reduced strain on infrastructure	<ol style="list-style-type: none">1. Heavy initial investment for developing linkage between multiple nodes2. Requires strict coordination across multiple nodes



Map 5-3: Polycentric Model



5.3.3 Ecological Smart Growth Model

This model approaches growth and development within the municipality in a way that combines sustainability, environmental protection, and community well-being. The model promotes balanced development that benefits both the rural and urban communities while safeguarding the wetland ecosystem present in the municipality.

The principles of the Model include:

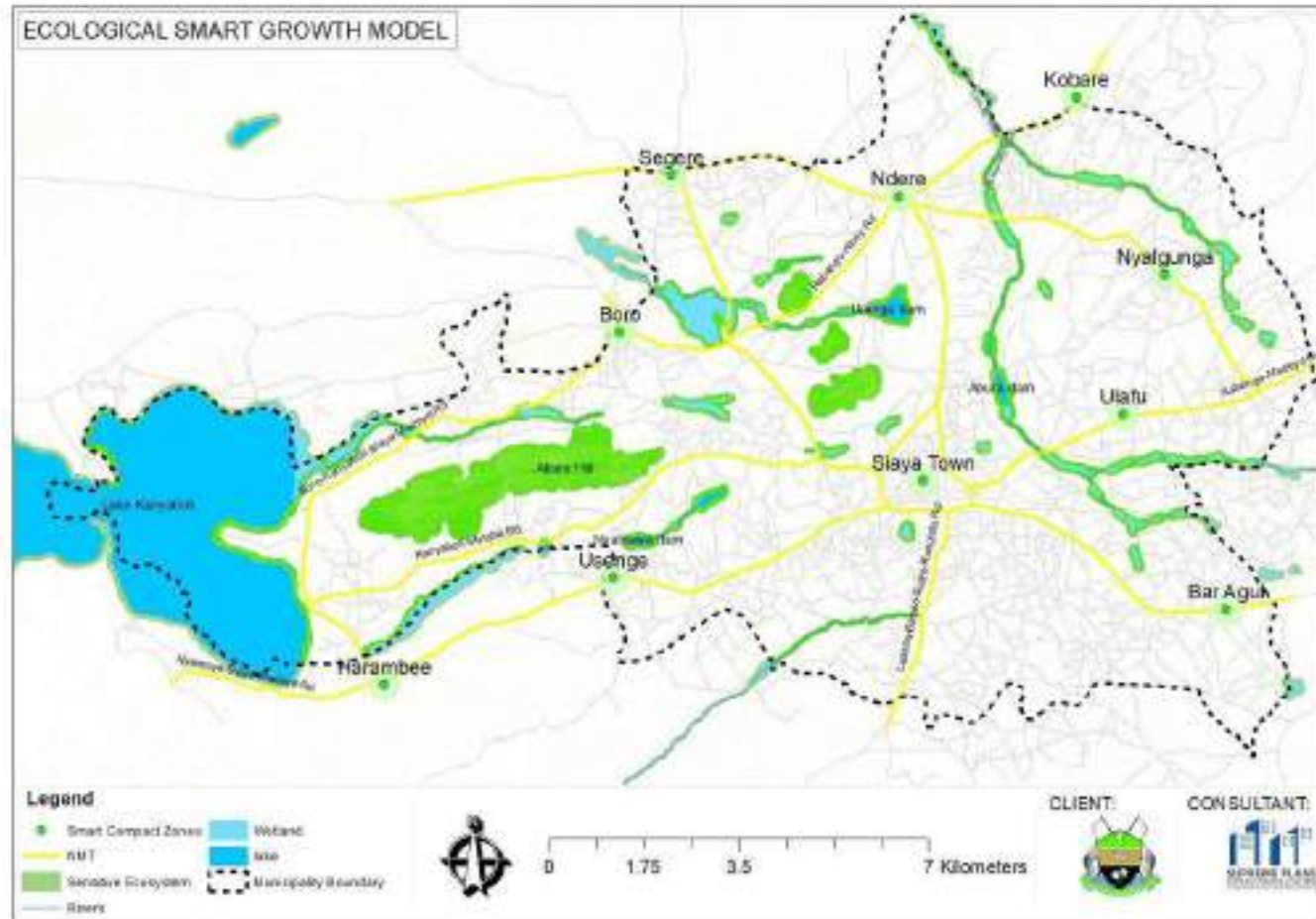
1. Strict zoning regulations and guidelines
2. Compact development
3. Promotion of green transport through NMTs

Advantages of the ecological smart growth model

1. Enhances NMT infrastructure
2. Increases activity within compact zones
3. Encourages agricultural activity
4. Protects ecological systems within the municipality
5. Reduces air pollution



Map 5-4: Ecological Smart Growth Model



5.3-4 Transit-oriented Model

This model guides growth and development through creation of compact mixed-use communities centered around high-quality transit systems. The transit systems are defined by walkability, pedestrian friendly infrastructure and offer alternatives for different modes of transport. The model promotes vibrant sustainable communities by maximizing development within walking distance of public transport.

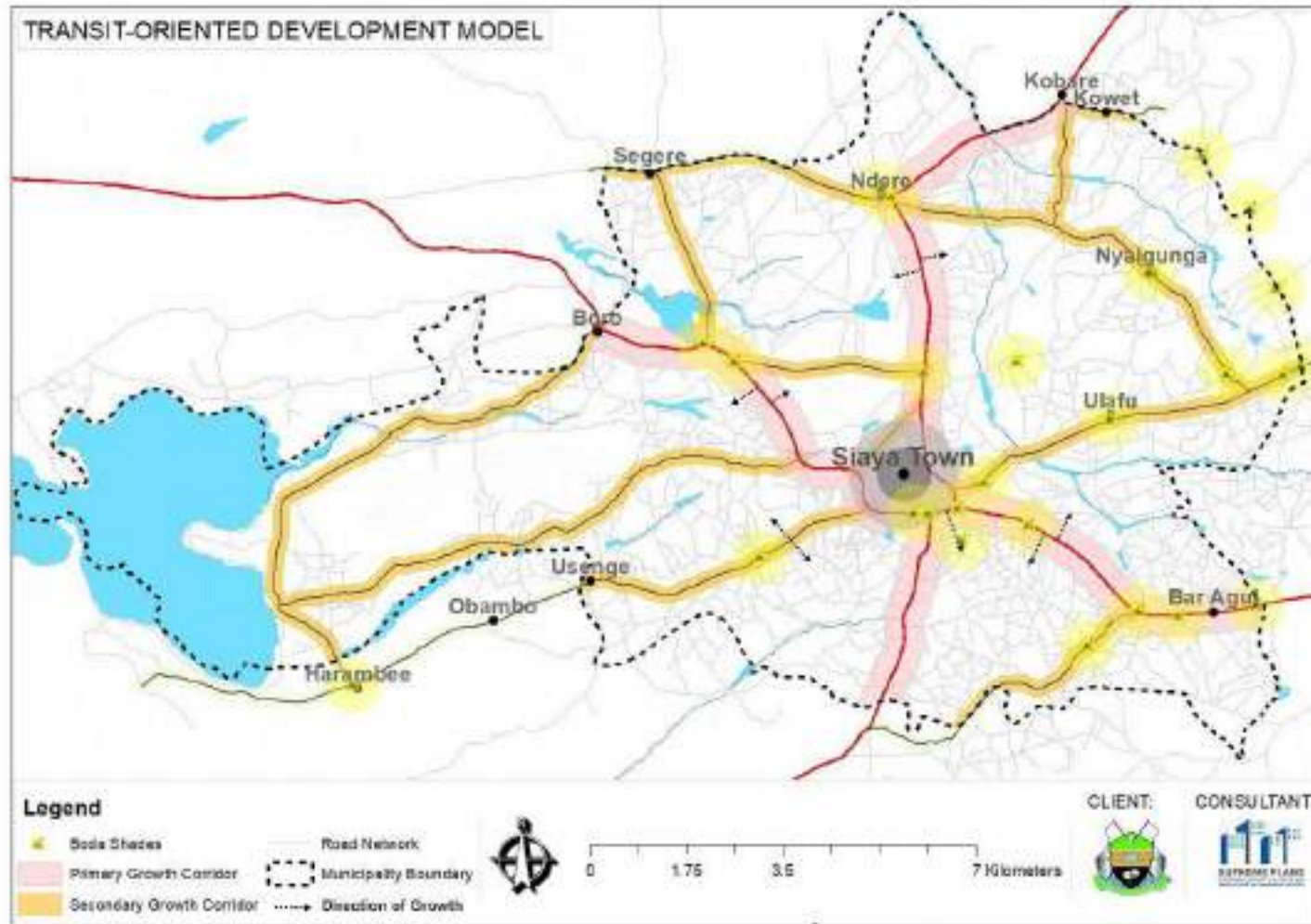
The introduction of NMT along the major transport corridors of Siaya Municipality seeks to promote pedestrianization within the town. The NMT facilities complement sustainable and compact developments within centers distributed in the area. Transit corridors introduced aim to concentrate developments and activities along them.

Table 5-3: Advantages and Disadvantages of Transit-oriented Model

Advantages of ToD model	Disadvantages of ToD model
<ol style="list-style-type: none">1. Increased use of public transport2. Easy access to facilities and services3. Stimulates the local economy4. Increased compact developments5. Reduced traffic congestion	<ol style="list-style-type: none">1. Reduced affordability due to property value shift2. Unequal distribution of benefits



Map 5-5: Transit-Oriented Development Model



5.3.5 Integrated Development Model

The model integrates major components of the models aforementioned. The integration model aims to create strengthened connectivity and linkages between centers distributed within the municipality. The model is based on:

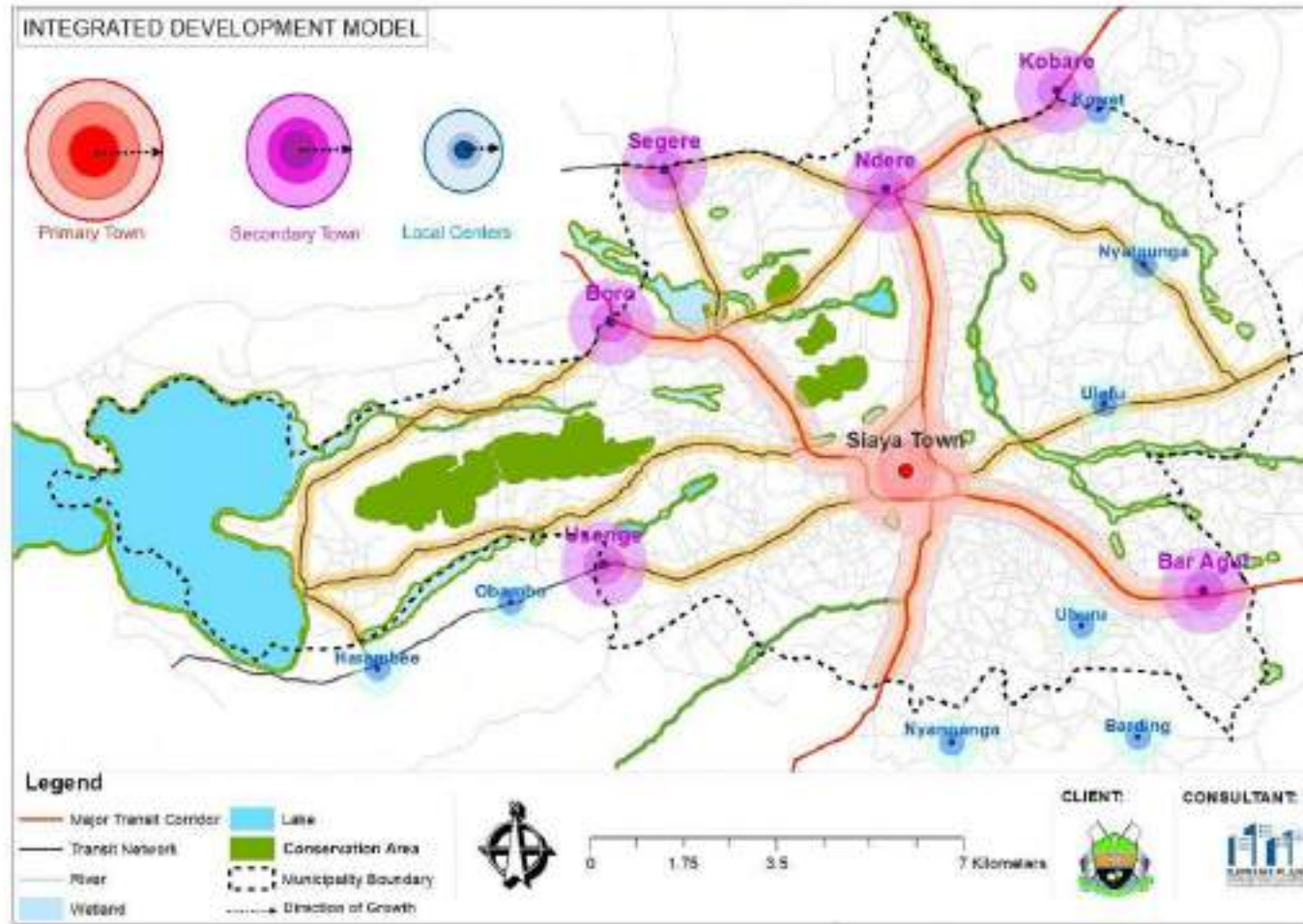
1. Incorporation of ToD and NMT approaches within the municipality
2. Compact development around major centers and along major transit corridors
3. Conservation and enhancement of the green environment

Table 5-4: Advantages and Disadvantages of Integrated Development Model

Advantages of the integrated development model	Disadvantages of the integrated development model
<ol style="list-style-type: none">1. Balanced developments within the entire Municipality2. Maximizes opportunities within the growth nodes3. Reduced traffic congestion due to dispersed developments4. Improved access to services and facilities in the municipality5. Controlled urban development limiting urban sprawl6. Protection of hinterland areas7. Increased specialization of nodes within Siaya municipality8. Enhanced regional accessibility and connectivity	<ol style="list-style-type: none">1. Requires strict development coordination and control2. Demands heavy investment on infrastructure and services



Map 5-6: Integrated Development Model



PART IV
PLAN PROPOSALS



6 CHAPTER SIX: DEVELOPMENT STRATEGIES

6.1 Overview

The strategies in this section have guided the development of the Siaya Municipality Spatial Plan. They are organised according to sectors as discussed below.

6.2 Physiography & Natural Resources Conservational Strategies

6.2.1 Conservation and Protection of water sources

Riparian reserves are high-valued ecosystems that require proper utilization and conservation to promote sustainable benefits to local communities. Implementation of the recommended development control guidelines for riparian reserves as a strategy guarantees ecological, economic, and social values;

- 1) For rivers, maintenance of a minimum riparian reserve of 10m or a reserve that is equal to the average full width of the river measured from the highest water mark, whichever is higher, but which shall not exceed thirty meters, on either side of rivers.
- 2) For all lakes, maintenance of a riparian reserve of not less than 30m and not more than 100m as measured from the highest water mark.
- 3) For all dams, maintenance of a riparian reserve of 10m as measured from the highest water mark: Provided that downstream of the dam, there shall be maintained a riparian reserve of at least twenty meters and not more than one hundred meters as measured from the toe of the dam as determined by structural engineer.
- 4) For springs, maintenance of a riparian reserve of at least 6m as measured from the source of the spring.

In addition, construction of dykes is proposed to ensure that this land is clearly marked out and protected from the general public. This will ensure that riparian land is protected from encroachment, thus ensuring maximum protection.



Ecotourism and organic agriculture are recommended within this region. This ensures that the water sources are protected from pollution. Public awareness on the compliance with the available water policies and regulations on water abstraction is also proposed to ensure compliance. All these activities should be carried out in consultation with the residents of Siaya Municipality, to enhance public participation in the conservation of water sources.

6.2.2 Conservation and Protection of Forests

There are no gazetted forests in Siaya Municipality. Gazettement of the existing community and public forests shall promote protection, conservation of the vegetation cover. The current 80.72% vegetation cover requires proper management and conservation measures.

To enhance vegetation cover, the following is proposed;

- a) Conservation, management and protection of all forests within the Municipality. KFS and KEFRI to advice on the suitable tree species.
- b) Promote efficiency in wood fuel utilization by energy-efficient “Jikos” and promote renewable energy sources (solar, wind, biogas) and electricity to save on trees.
- c) Promote Stakeholders Involvement in the environment and resources management through the existing associations.

6.2.3 Enhance Landscaping, Beautification and Greening

- a) Provision of Recreational Parks in each Market Centers; Ndere, Boro, Segere, Usenge, Kowet, Ulafu, Bar Agulu Centers: In accordance with Section 37(3) of the Forest Conservation and Management Act, 2016, County Governments; Every County Government shall, establish and maintain a recreational park in every market centre within its area of jurisdiction. It is from this basis that recreational parks are recommended within each market centers within Siaya Municipality.
- b) Afforestation/reforestation in cleared forests and on private properties
- c) Providing incentives for communities/farmers who protect and increase tree coverage
- d) Regulating human activities within the Community Forests



- e) Planting of trees on public land such as public schools, administrative offices, and health facilities hence providing an opportunity to increase forest cover
- f) Public awareness of the sustainable use of forest resources

6.2.4 Climate Change Adaptation

This is a global environmental problem. Some of the impacts of climate change are drought, floods, water scarcity, and food insecurity. Measures proposed include;

- a) Improve water resource management to address changing precipitation patterns and ensure water availability in Siaya Municipality
- b) Promote climate-resilient agricultural practices, including drought-resistant crops and sustainable farming techniques.
- c) Establishing and enhancing early warning systems for extreme weather events to enable timely responses.
- d) Educating communities on how to respond to early warnings.
- e) Promote the use of renewable energy e.g., Solar and wind energies
- f) Promote and encourage sustainable use of Natural resources

6.2.5 Waste Management Strategy

- a) Maintenance of the waste collection points: The current waste collection points are poorly maintained, and their exposure causes air pollution and ground water pollution. Maintenance and modernization of the facilities will minimize environmental pollution and is therefore recommended.
- b) Embracing public private partnerships: Siaya Municipality should embrace partnerships with private entities in the management of solid wastes. This will enable enation of solid waste management strategies such as waste recycling, waste recovery and waste reusing etc.
- c) Provision of waste collection points within private developments: As a requirement, all private developers should provide temporary waste collection points within their premises.



- d) Zoning of the waste collection and management areas: This strategy will eliminate exposure of municipal wastes therefore reduced health risks, land degradation, air and water pollution.
- e) Provision of waste collection bins (receptacles) in strategic areas within Siaya Town: Provision of waste collection bins within areas such as along streets, public spaces is recommended to improve waste management within Siaya Municipality.
- f) Modernization of waste collection points and transfer trucks: Most of the waste collection points in the town center are currently exposed, attracting pests and contributing to environmental pollution. The truck used to transport waste from collection points to a central area is not enclosed, making it unsuitable for waste transfer. According to the National Solid Waste Management Strategies (NEMA, 2014), waste transportation trucks must be enclosed and designed to safely and effectively transport various waste streams to treatment facilities and landfills. This highlights the urgent need for modernization to ensure compliance and environmental safety.
- g) Regular inspection of the sewer line networks within the Municipality: With the several blockage cases within the sewer lines in Siaya Town, there is need for regular inspection to prevent pollution and possibly reduce maintenance costs that would be resulted from total blockages.

6.2.6 Land Rehabilitation and Land Reclamation

This involves processes aimed to return land into original function or capacity that was otherwise degraded through processes such as mining and deforestation.

- a) Mapping and rehabilitation of the quarrying sites within the Municipality.
- b) Enforcement of the Guidelines for Mining and Quarrying by NEMA is recommended.



6.2.7 Sustainable Resource Management

- a) Conduct thorough assessments of available resources, including renewable and non-renewable resources, to understand their current state and potential for sustainable use.
- b) Implement measures to conserve and preserve natural resources by promoting responsible consumption patterns and reducing waste.
- c) Promote the use of renewable energy sources and sustainable materials to reduce dependence on non-renewable resources and minimize environmental impacts.

6.2.8 Disaster Management

Siaya Municipality is potentially prone to natural disasters such as flooding, drought and Fire hazards. In response to these hazards, a disaster management plan has been proposed. This will aid in identifying disaster prone areas, exploring available options for early warning systems by institutionalizing monitoring systems and enhancing strong coordination and collaboration mechanisms to protect the people from these disasters. The following has been proposed;

- a) Periodic assessment of the drainage according to land use trends
- b) Extend the drainage channel to areas of inadequacy
- c) Integration of humanmade and natural drainage systems
- d) Comprehensive Public awareness and training campaigns to enhance disaster preparedness among the residents
- e) Control development in the disaster-prone areas.
- f) Establish reliable early warning systems to detect and monitor potential disasters and ensure timely dissemination of warnings to the affected population
- g) Require water harvesting and flood management mechanisms in building approvals
- h) Establishment of a fire station within the Municipality



Table 6-1: Summary of Development Strategies

Sector	Current situation	Proposal
Geology and Soils	Land degradation - some of the soil extraction activities are destructive to the environment where open pits are abandoned	<ul style="list-style-type: none"> Implementation of the National Land Use Guidelines by NEMA; <i>Guidelines for Mining and Quarrying</i>
	Unexploited rocks within the hinterland areas of the Municipality	<ul style="list-style-type: none"> Mapping and exploration of these rocks as a resource
		<ul style="list-style-type: none"> Development of guidelines to control the rocks exploitation
	Unsustainable Management of Natural Resources	<ul style="list-style-type: none"> Mapping of the quarrying sites within the Municipality
Water resources	These are dams, rivers, springs and Lake Kanyaboli. They are currently faced with encroachment, pollution and degradation as a result of human activities along them.	<ul style="list-style-type: none"> Georeferenced mapping and protection of sensitive and critically fragile natural ecosystems.
		<ul style="list-style-type: none"> Protection of sensitive and critically fragile natural ecosystems
		<ul style="list-style-type: none"> Clearly marking the riparian reserves to protect from general public



Sector	Current situation	Proposal
		<ul style="list-style-type: none"> • Employment of enforcement officers to frequently monitor the delineated riparian reserves
	Majority of the water abstraction points within the Municipality are not compliant with the standards, procedures and regulations	<ul style="list-style-type: none"> • Public awareness on the compliance with the available water policies and regulations on water abstraction
Vegetation and natural forests	Widespread of Eucalyptus species. This reduces; <ul style="list-style-type: none"> - availability of water for other tree species - It also lowers the soil PH therefore declining the soil total nitrogen and soil total organic carbon concentrations. 	<ul style="list-style-type: none"> • Regulation of tree species exploited within the Municipality
		<ul style="list-style-type: none"> • Implementation of "Guidelines on Eucalyptus" developed by the Kenya Forest Service (KFS)
	The existing community forests within the municipality are constantly exploited as the residents' extract firewood,	<ul style="list-style-type: none"> • Mapping and gazette ment the forests
		<ul style="list-style-type: none"> • Provision of regulations to govern the extraction of timber and cooking energy from these forests.



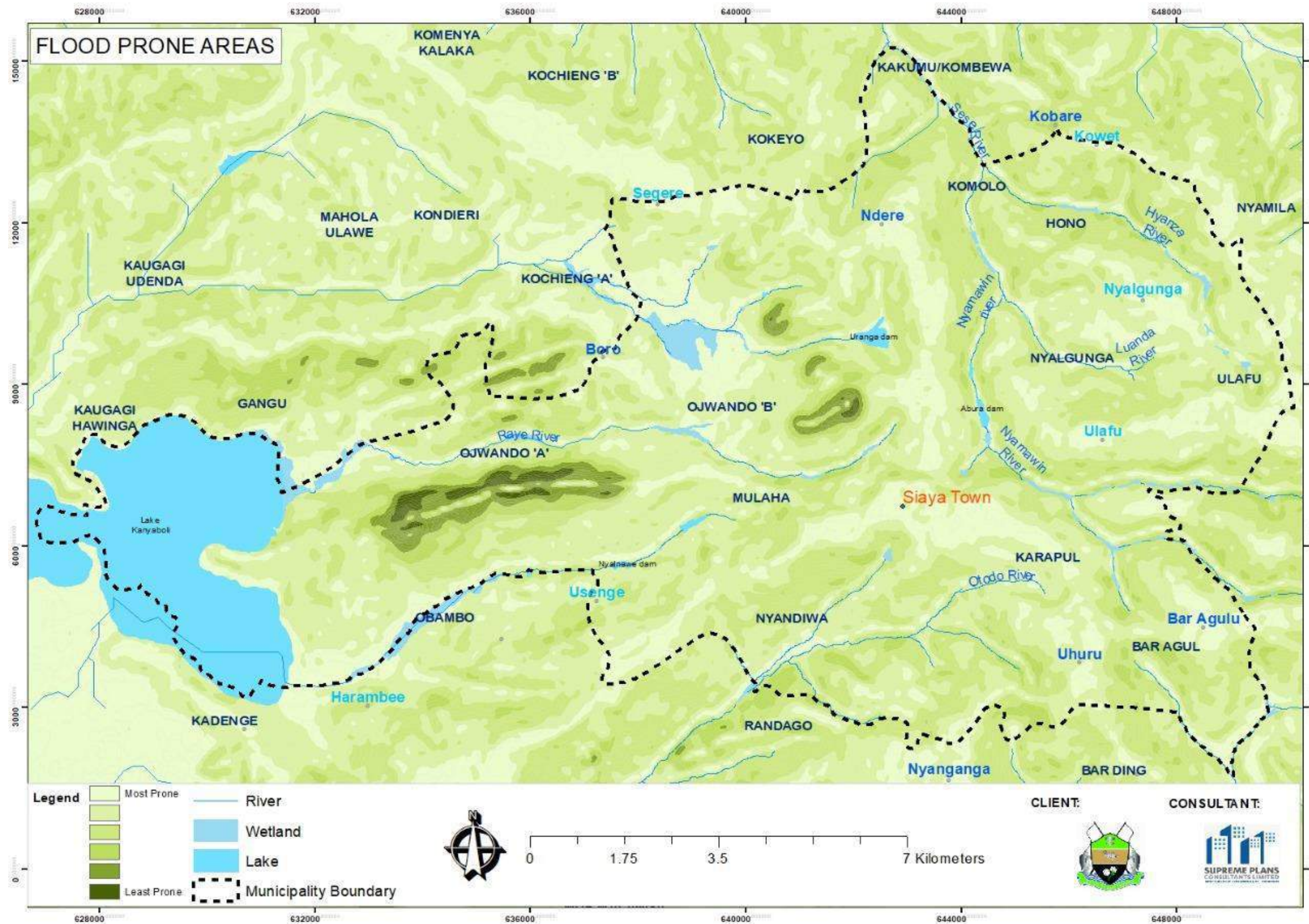
Sector	Current situation	Proposal
	charcoal and timber. As population increases, demand for housing developments increase exploitation for these resources.	<ul style="list-style-type: none"> Afforestation and conservation of the available natural forests are recommended within the Municipality
Waste Management	The Municipality lacks a solid waste management facility	<ul style="list-style-type: none"> Provision of Waste Collection Points within private developments Zoning of the waste collection and management areas Acquisition of modern transfer trucks for waste collection
	Poor management of Liquid waste	<ul style="list-style-type: none"> Regular inspection of the sewer line networks within the Municipality Treatment of all liquid waste before disposal into natural channels
	Lack of trunk sewer system. Some parts of the Planning area experience pollution due to blockages in sewer distribution channels. This poses both environmental	<ul style="list-style-type: none"> Designation and development of a trunk sewer system in the municipality



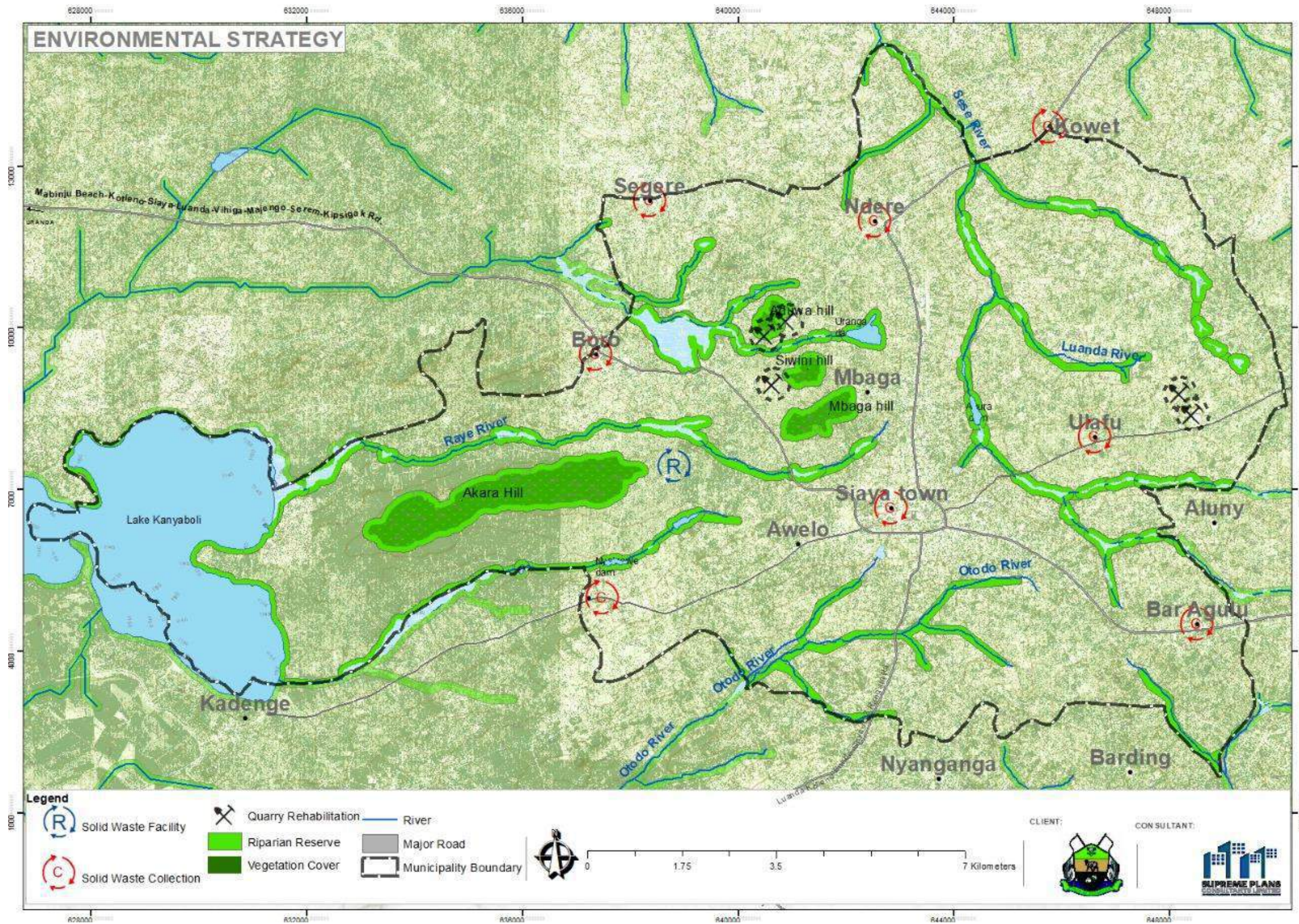
Sector	Current situation	Proposal
	and health risks through air, soil and water pollution.	
Green and Open spaces	Lack of adequate green and open spaces in the municipality	<ul style="list-style-type: none"> Recreational parks are recommended within each market centers within Siaya Municipality
Disaster response and management	Fire outbreaks, flooding	<ul style="list-style-type: none"> Mapping of disaster and risk-prone areas within the Municipality,
		<ul style="list-style-type: none"> Proper response mechanisms can be planned to prepare the Municipality for disasters. Establishment of a fire station within the Municipality for timely response
		<ul style="list-style-type: none"> Expansion of the roads to accommodate storm water drainage systems
		<ul style="list-style-type: none"> Engineering and design solutions towards solving the flooding issue



Map 6-1: Flood Prone Areas within Siaya Municipality



Map 6-2: Environmental Management Strategy for Siaya Municipality



6.3 Physical Infrastructure Strategies

6.3.1 Transportation Improvement Strategies

An effective transportation system plays an important role in ensuring accessibility to services, guiding urban growth and trade. The transport system in Siaya comprises of the following means that have been considered in detail:

1. Road transport
2. Non-Motorized transport (NMT)
3. Air transport and
4. Water transport

Road transport is the dominant mode of transport in Siaya. Both motorized and non-motorized modes of transport are used within the municipality. Gombe airstrip within the Municipality is available for air transport. Once it is operational, the airstrip will contribute to commerce and ease of transport to and from Siaya Municipality to the rest of the Country.

Critical transportation issues within the municipality; -

1. Road safety
2. Lack of NMT infrastructure
3. Road insecurity
4. Poor road conditions
5. Lack of bus parks and designated boda-boda stops
6. Narrow roads
7. Insufficient car parking facilities

6.3.1.1 Road Transport

The strategies on road transport evaluate the broad road network and recommends road widening, road transformation and improvements, creation of new roads and provision of parking facilities for improved vehicular transport. Transportation plays a major role in accessibility to services, promotes local level interaction and the flow of goods.



The transportation improvement strategies formulated to address the above issues are outlined in the section and table below:

Key Strategies:

1. Road Upgrading

The following roads will be upgraded to the following sizes and conditions; -

a) Luanda Kotieno-Bondo-Siaya Rang'ala Road (B9)

This 40m wide road connects Siaya town to Rang'ala via Ndere. It is of bituminous standards, in fair condition except for the faded road markings. Plans should be put in place to dual it. This shall facilitate growth for Siaya Municipality and the County at large. A service lane and NMT dedicated lanes should be provided on each side of the new road. Dualling of the road is to address expected traffic due to growth and provision of additional capacity. Pick-up and drop off points should be included as well and proper drainage channels put in place.

b) Mabinju Beach-Siaya-Luanda-Vihiga-Majengo-Serem-Kipsigak Road (C672)

This is 40m wide road that starts at Mabinju Beach and links Boro town in the North West of the municipality to Siaya town and proceeds towards Ngiya town outside the municipality towards Vihiga County. The efforts to open up the southern part of the municipality by this road will be facilitated by provision of street furniture, pedestrian walkways, pick up & drop off points. The road should have NMT facilities provided.

c) Rabango-Ulafu-Madeya Road (C844)

This is the main road linking Nyalgunga and Ulafu to Siaya town. There's a need to expand the road reserve of the road to 30m so as to have sufficient land for its expansion in future. This requires acquisition of land for the proposed road. The road should be paved and have NMT facilities provided.

d) Nyamonye-Siaya Madeya Road (C839)

This 40m wide road links Siaya town to Kadenge through Usenge. Part of the road measuring approximately 1.5Km at Awelo is of bituminous standard while the rest is of gravel and earth standard which renders it impassable during the rainy season hence the need to upgrade to



bituminous standards. This will help open up the south-west part of the planning area. The road should be paved towards Usenge beach, and have NMT facilities provided with drainage channels installed.

e) Boro – Awelo Road (E6100)

This road links Boro to C839 road via Kanyaboli area. There's need to widen and pave it in order to improve accessibility of the area. A 25m wide paved road is proposed with NMT facilities. It will serve residents of Kanyaboli area giving them access to services offered in Boro that are unavailable in their area. The road will also ease access to market for their goods.

f) E6100 Road – Mulaha – C672 Road

This road starts at the E6100 road junction near Suna Research Base Center towards Mulaha and ends at the C672 road junction. This road links Kanyaboli area to Siaya town giving Kanyaboli residents access to services offered only at Siaya CBD. A 25m wide paved road is proposed with NMT facilities provided.

g) Boro - Kanyaboli – Mulaha – C672 Road Junction.

The road connects Boro town to Lake Kanyaboli area linking up with the C672 Road. It is of gravel standard, rough & dusty and some areas are not easy to drive through. There is need to upgrade it to bitumen/asphalt standard and widen it to 25m. This will increase accessibility to the lake region opening up the area for growth and investment. NMT facilities should be provided as well.

h) Got Akara Industrial Park Link Road

This road aims to improve accessibility to the proposed industrial park at Got Akara. A 25m wide paved road is proposed with NMT facilities provided.

i) Boro – Usenge Link Road

This road will link C672 road with Usenge area via Pap Kakan area. A 15m wide paved road is proposed with NMT facilities provided.

j) Ulafu – Ndere – Segere Bypass

This road links Ulafu to Segere via Nyalgunga and Ndere. This proposed bypass is gravel and there is need to improve it to bitumen standard. It is recommended that this road is expanded to a minimum width of 30m. Once implemented traffic coming through C844 road with no



business in Siaya town will have an alternative access road to areas such as Segere, Boro, Kanyaboli amongst others. This will reduce any anticipated traffic congestion in Siaya CBD. The road should be paved and NMT facilities provided.

k) B9 – Uhuru – C839 Road

This road links B9 road to C839 road. It starts near Anduro Primary at B9 road and ends at Karemo junction at C839 road via Uhuru market. This road requires upgrading to bituminous standards. A 15m wide road is proposed and this will help open up the area. The road should be paved and NMT facilities provided as well.

l) Rabango - Aluny ECD Road (UCB4-Siaya)

This is the 4.4 km road connecting C672 road at Segere junction to B9 road at Ndere. It is on bituminous standard and helps divert traffic from C672 road to B9 road helping in traffic management in Siaya CBD. There is need to recover the areas of the road that have been encroached to enable provision of street furniture, NMT facilities, and construction of drainage channels.

m) B9-Nyandiwa-C839 Road

This road links B9 road to C839 road approximately 250m from Infant Jesus of Prague School in Awelo. This road requires upgrading to bituminous since it's of gravel standard. A 15m wide road is proposed. This will help open up the neighbourhood. The road should be paved and NMT facilities provided as well.

2. Road Safety

The strategy for reducing accidents will focus on the following:

- a) Provision of street signage and road markings.
- b) Provision of NMT facilities in all major roads in the urban areas.
- c) Separation of NMT lanes from motorized traffic.
- d) Enforcement of traffic rules, especially among the PSV operators.



3. Parking

The following strategies should be implemented by the County:

- a) Provide adequate parking facilities in the CBD by constructing additional off-street parking within the buildings, using appropriate guidelines (*see table below*).

The municipal should then charge on street parking fees - not as a revenue source but a deterrent measure.

Table 6-2: Provision of Parking Spaces

Usage	One Car space for every usage
Housing	2 houses or lodging
Specialized market place	50 to 60sq. m of covered area
Market	30 to 50 sq. of covered area
Office and Administration	50 to 60 sq. m of covered area
Hotel	5 to 8 beds
School	(a) 0.5 classroom/secondary school and above (b) 1.0 classroom/ below secondary school level
Restaurant, Cinema and Theatre	12 seats
Mosque / churches	10 to 12 prayer spaces
Hospital	5 to 10 beds
Sports field	10 to 20 seats or spectators
Industrial establishment and workshops	6 to 10 workers

- b) Operationalize the bus park within Siaya CBD so as to bring order and stop the usage of bus stops as bus parks. Provide for public conveniences such as passenger waiting sheds, storage facilities, fast-food kiosks and toilets. This mainly would serve transit traffic for other main towns and local movements to the southern part of the municipality. The bus



park should be properly designed and paved to improve drainage, preferably with concrete blocks.

- c) Provide for public conveniences such as passenger waiting sheds, storage facilities, fast-food kiosks and toilets in the proposed bus terminus located adjacent to Siaya market. This station will serve those accessing the proposed facility and those using the market.
- d) Boda-boda pick and drop points should also be integrated within the bus termini. Further, designated drop off & pick up points for boda-bodas should be provided along all streets within the busy town center. Operators should be organized in registered SACCOs for easier regulation by the municipal.
- e) Provide storm water drains on the roads that lack them and maintaining the already existing ones. Inadequate storm water drainage system accelerates road damage during the rainy season.

4. NMT Infrastructure

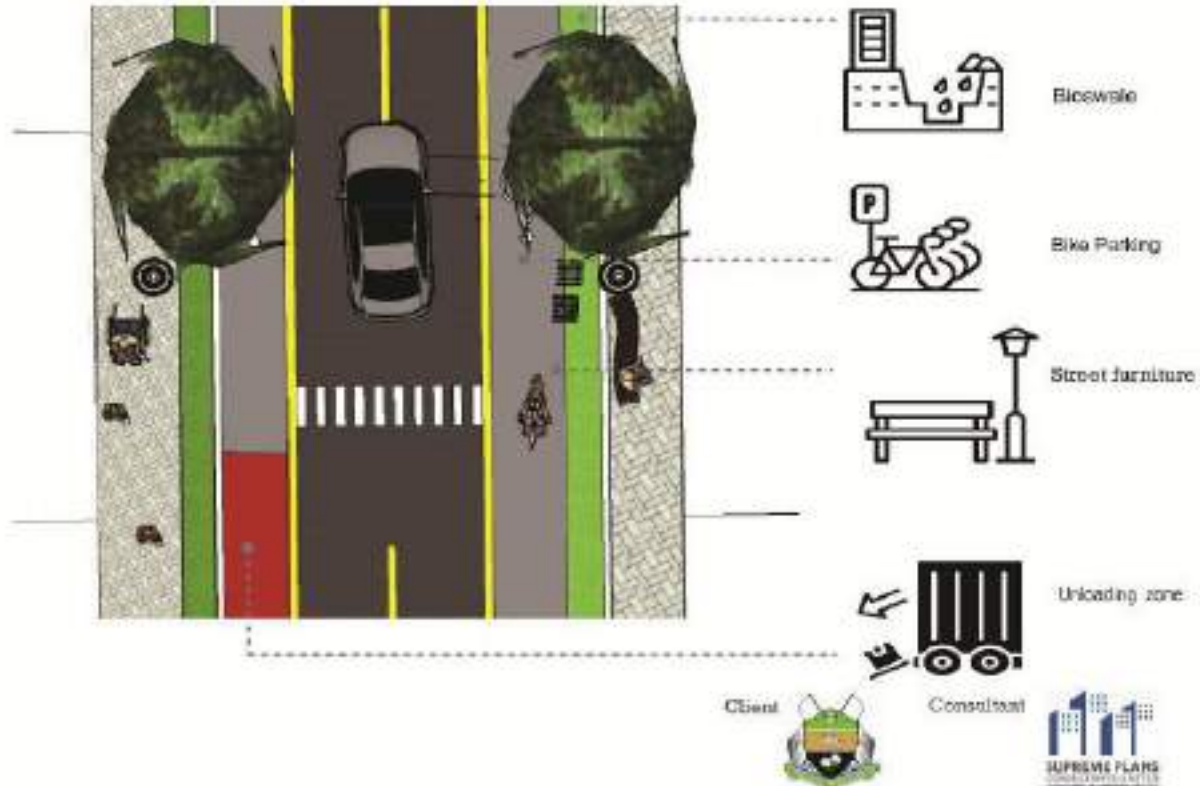
i. Pedestrianize the CBD Area

Proposal for introduction of properly designed pedestrian-walkways, complete with rails at some points and bollards at others to prevent vehicular obstruction of the walkways, minimize conflict and improve pedestrian safety. The roads should be improved in short term plans by providing foot paths and cycle tracks. This will improve safety for all road users and encourage use of NMT which is popular in the area. The plan recommends the development of a detailed NMT plan for the municipality that will clearly show the NMT infrastructure to be set up.

Boda-bodas should have a designated base of operation that is well designed complete with sheds they can shelter in during rainy periods and pedestrian resting. These cycle stages should be located near the main bus termini and the designated bus drop off and pick up stops to allow pedestrians easy access to them as they change modes.



Plate 6-1: Segregation of road users



5. Transform Busy Streets in the CBD to One-Way Streets

Transform the road from the junction at The Kenya Industrial Estate to the Stadium to a one-way street with a pedestrian walkway, planted trees and a cyclist track to improve safety, accessibility and mobility along this road. It is the main access road to the bus terminus and the municipal market within Siaya CBD. Transform Stima Road and Court Road into one-way streets to ease movement of vehicles and human traffic within the CBD. The concept aims at enhancing the experience of people visiting the area while decongesting the ever-busy street. These proposals are as illustrated below.



Figure 6-1: Design Strategies and Concept

VISION

The aim of the design was to make the selected street stretch a pedestrian priority street.

As analysed by the majority of stakeholders are the people that come to Stima Road to shop. Hence the Strategy was to enhance shopping experience by providing the pedestrians with ample walking spaces and allocating vendors respective zones.

The design also focuses on providing oneway and 6m wide constant carriageway for ease of vehicular circulation.

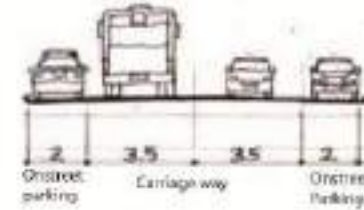
- A- Frontage Zone
- B- Walkway
- C- Bioswale
- E- Motorcycle lane

Stakeholders



- E1- Bikeway
- F- One Way Street

Design Strategies



Existing scenario



Proposed strategy



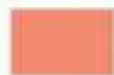
Client

Consultant



Figure 6-2: Potential Green Area Along Stima Road

ATTRIBUTE	PROPOSAL
A. Microclimate Enhancement	<ul style="list-style-type: none"> • Vegetation that absorbs heat through respiration. • Vegetation that provide shade to reduce solar reflection from nearby buildings.
B. Air filtration and purification	<ul style="list-style-type: none"> • Dense vegetation that filters and reduce airborne particles matter. • Broad leaves to trap pollution that will be washed to the ground when its raining.
C. Noise pollution reduction	<ul style="list-style-type: none"> • Dense vegetation along roads as sound barrier.
D. Architectural Uses	<ul style="list-style-type: none"> • Vegetation is planted in rows to connect space.



Commercial Buildings



Boda Boda Stage

Client



Consultant



Figure 6-3: Tree Planting Strategies Along Stima Road

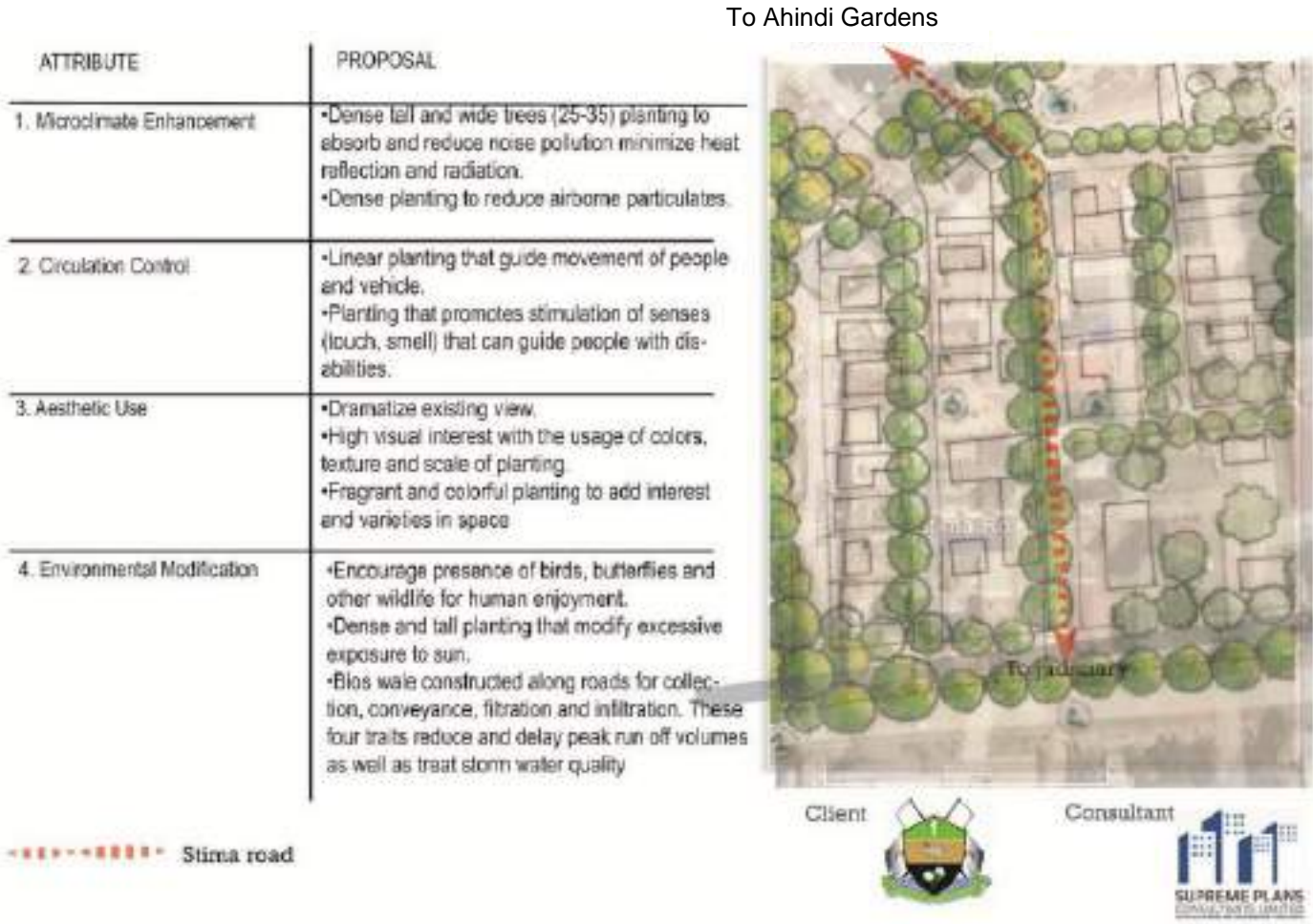


Figure 6-4: Proposed Stima Road Perspective



Artwall

Street Furniture

Pizza

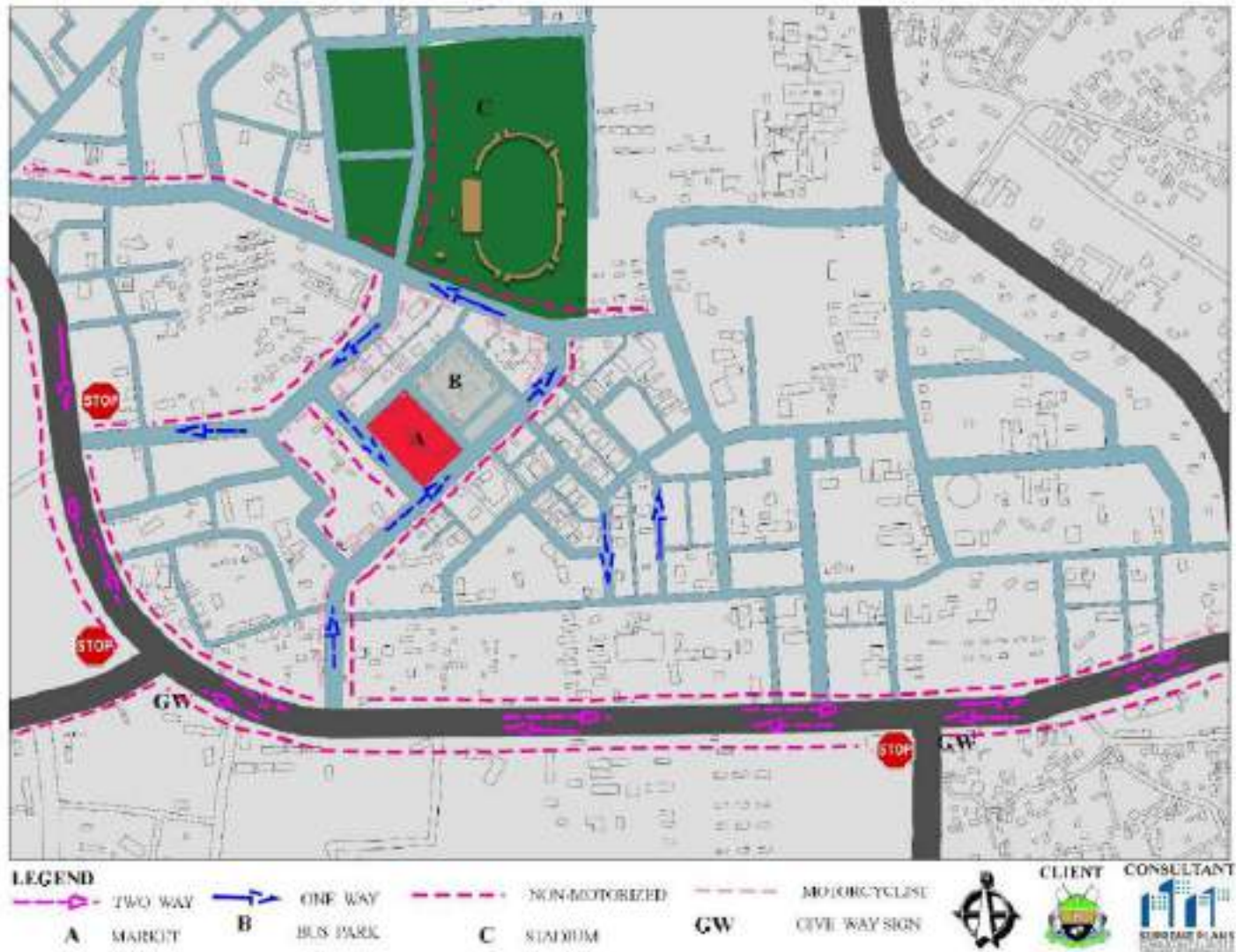
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Consultant



Map 6-3: A section of Siaya CBD Showing the Proposed Traffic Movement After Introduction of Selected One-Way Streets



Key Action Plans

1. Immediate Actions (Quick Wins)

The following actions should be implemented by the Municipality within a period of 1 – 2 years:

- a) Reclaim encroached road reserves on the existing roads within the CBD as demarcated on the existing approved development plan.
- b) Operationalizing of the bus terminus at the CBD so as to move public service vehicles off the road reserves to the terminus.
- c) Implement area-wide traffic calming measures: speed humps, road markings, signage and NMT crossings, especially on the busy sections within the CBD, along B9 road, C839 road and C672 road.
- d) Provision of traffic lights at the junction of B9 road and C672 road and the junction of C839 road and C672 road.
- e) Provision of unloading zones 100m from the junction of B9 road and C672 road and 100m from the junction of C839 road and C672 road to ensure congestion is not experienced within the bus terminus.
- f) Re-development of the bus stops to include pedestrian sheds with strict maximum allowable time for stops by PSVs.
- g) Transform the road from Kenya Industrial Estate to the Stadium to a one-way street with a pedestrian walkway, planted trees and a cyclist track to improve safety, accessibility and mobility.
- h) Transform Stima Road and Court Road into one-way streets to ease movement of vehicles and human traffic within the CBD.
- i) Provision of parallel parking slots along the streets within Siaya town.
- j) Improve all walkways within the CBD area: clear verandahs of traders; open (remove garbage) and upgrade (pave and drain) alleys; channelize pedestrians to designated crossings.
- k) Provision of a cyclist lane along the road that serves Siaya Level 4 Hospital, Township Primary School and Township Secondary School



- l) Construction of proper drainage channels on the roads within the CBD so as to avoid clogging and ensure storm water flows.
- m) Developomeng of urban mobility plan for the municipality

2. Short Term Actions (2-5 Years)

The following actions should be implemented by the County within a period of 2 – 5 years:

- a) Upgrade all gravel roads within Siaya CBD to bitumen standards with NMT facilities.
- b) Installation of street lights in major centers and security flood lights in strategic areas for the rest of the municipality.
- c) Provide traffic signs on the busy sections along C844 road (i.e., from Siaya CBD towards Ng'inya).
- d) Upgrade the Rabango – Madeya Road (C844) to bituminous standards.
- e) Widening and upgrading of the road from Boro through Kanyaboli to C839 junction and Kanyaboli through Mulaha to C672 Junction to 25m.
- f) Widening and upgrading of the Got Akara Industrial Park Link Road to 25m.
- g) Prioritize road development and maintenance in accordance to their functions in the urban road network.
- h) Initiate and maintain continuous dialogue with other Government Departments and key stakeholders in the implementation of the strategies.

3. Medium and Long-Term Actions (5-10 years)

- a) Dualling of B9 road to handle long term traffic. This plan should cover the entire section within the municipality towards Bondo town.
- b) Increase coverage of traffic signals within the central area and the growing centers. Upgrade of the proposed roads to bitumen standards to connect the neighborhoods.
- c) Expansion of the following roads to 15m wide; - *Boro – Usenge link road, B9 – Uhuru – C839 road and the B9 – Nyandiwa – C839 road*

The map below shows the proposed expansion and opening of new roads within the municipality



Map 6-4: Proposed Road Network Map

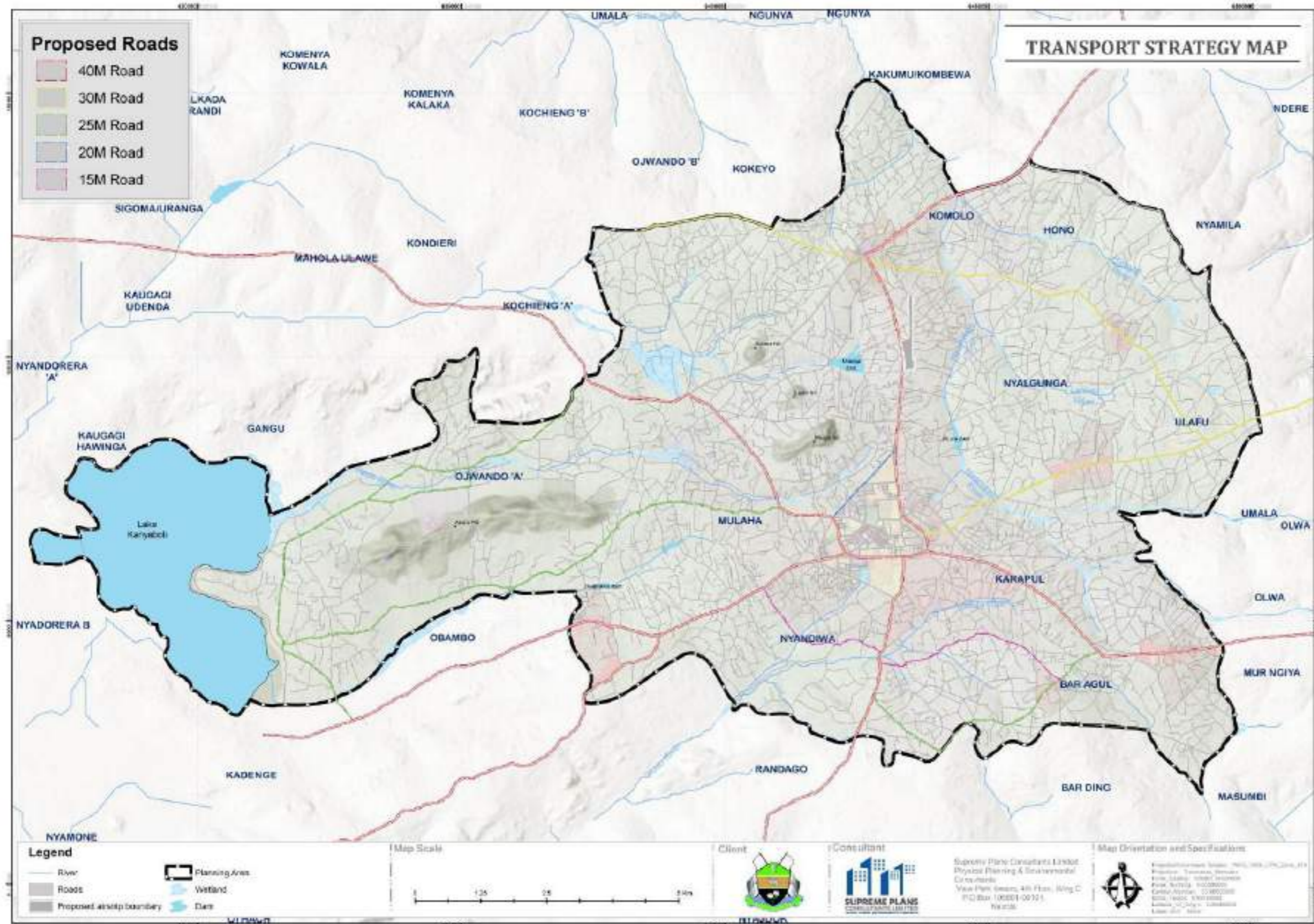


Table 6-3: Transportation Improvement Strategies

Problem	Affected Area	Objective	Mitigation/Strategies	Actors	Duration
Inadequate Transportation networks/ connectivity	Entire Municipality	Improve the road conditions	❖ Widening of the Got Akora Industrial Park Link Road to 25m	Siaya County Government Siaya Municipal Land owners	Short term to medium term
			❖ Widening of Boro – Awelo Road (E6100) to 25m.		
			❖ Widening of E6100 Road – Mulaha – C672 Road to 25m.		
			Widening of Rabango- Madeya Road to 30m so as to open up the eastern part of the municipality.	Siaya County Government Siaya Municipal Land owners	
			Widening of the B9 – Uhuru – C839 road to 15m.	KeRRA Siaya County Government Siaya Municipal Land owners	Medium term
			Widening of the Ulafu – Ndere – Segere Bypass to 30m.	KeRRA KURA Siaya County Government Siaya Municipal Land owners	Medium term to long term



			Opening up and paving of alleys within the CBD	Siaya Municipal	Short term
			Provision of pedestrian walkways along all the roads within the municipality.	Siaya Municipal	Short term
			Installation of street furniture	Siaya County Government Siaya Municipal	Short term
Avoiding future traffic congestion	Siaya CBD		Provision of hierarchy of roads from 40 m wide roads (B9, C672 & C839)	Siaya County Government Siaya Municipal	Medium term to long term
			Upgrade all gravel roads within the main centers to bitumen standards with NMT facilities	Siaya County Government Siaya Municipal	Continuous
			Roads widening within the whole of the municipality (Minimum Road width 9m)	Siaya County Government Siaya Municipal	Continuous
			Dualling of B9 to handle long term traffic	Siaya County Government Siaya Municipal	Long term
			Expansion of the following roads to 15m wide; - Boro – Usenge link road and the B9 – Nyandiwa – C839 road	Siaya County Government Siaya Municipal	Long term
			Adhering to the set building lines	Siaya Municipal	Continuous



			Discourage on-street parking by charging parking fees	Siaya Municipal	Continuous
			Encourage off-street and angular parking	Siaya Municipal	Continuous
			Relocate businesses from road reserves	Siaya Municipal	Continuous
Insecurity on the roads	Whole municipality	Promote security on the roads	❖ Installation of street lights in major towns and security flood lights in strategic areas for the rest of the municipality	Siaya Municipal	Medium term
			❖ Provision of security facilities-police station, police posts	Siaya county government	Short term
Poor road conditions	All access roads	Improve the road conditions	❖ Rehabilitation of Access roads	Siaya County Government Siaya Municipal	Medium term to long term
			❖ Constant road maintenance and repairs	Siaya Municipal KeRRA KURA	Continuous
Inadequacy of bus termini and bus parks	Bus termini	Provision of adequate space for public transport	Provision of wide entry & exit points	Siaya Municipal	Short term
	Bus parks		Proper management	Transport operators	Continuous
	Boda boda sheds		Payment of access by users for maintenance	Siaya Municipal	Continuous



			Provision of security personnel	Siaya Municipal	Continuous
			Installation of security lights	Siaya Municipal	Short term
			Provision of waste collection bins	Siaya Municipal	Short term
Lack of Non-Motorized Traffic facilities	All road reserves within Siaya CBD	Resolve the conflict between motorized and non-motorized traffic	Provision of a pedestrian walkway and a cyclist lane along the road that serves Siaya Level 4 Hospital, Township Primary School and Township Secondary School	Siaya Municipal KeRRA	Short term
			Provision of pedestrian walkways/lanes	Siaya Municipal Siaya county government	Medium term
			Paving of the walkways	Siaya Municipal Siaya county government	Medium term
			Provision of bollards to prevent vehicular obstruction of the walkways	Siaya Municipal Siaya county government	Medium term
			Provision of street furniture i.e., street light & waste bins along the walkways	Siaya Municipal Siaya county government	Medium term
			Provision of cyclist lanes	Siaya Municipal	Medium term
			Sensitization of road users on the importance to observe traffic rules	Siaya Municipal	Continuous
			Encourage cyclists on traffic rules	Siaya Municipal	Continuous
			Truncations on all road's reserves	Siaya Municipal	Continuous



			Minimize numbers of cross-junctions	Siaya Municipal	Continuous
Inadequate parking facilities	All main town centers	Provide parking spaces in Siaya CBD	Provision of adequate parking space	Siaya Municipal	Continuous
			Encourage angular parking in the central business district	Siaya Municipal	Continuous
			Encourage on set parking in the residential zones	Siaya Municipal	Continuous
			Encourage silo parking	Siaya Municipal	Continuous
Poor storm water drainage	All road reserves	Provide efficient Storm Water drainage systems	Construction of storm water drainage channels along all access roads	Siaya County Government Siaya municipal KURA & KeRRA	Continuous
			Construction of storm water drainage channel along the 40m wide roads	KeNHA	Medium term
Air transport	Gombe Airstrip	To ensure utilization and operation of the airstrip	<ul style="list-style-type: none"> ❖ Upgrading the airstrip to an airport ❖ Equipping the airport with airport personnel, a lounge and weather monitoring equipment 	Kenya Airports Authority Siaya municipal	Medium term to long term



The land acquisition strategy to achieve the above is as follows; -

Table 6-4: Land Acquisition Strategy

<i>Project</i>	<i>Land requirement</i>	<i>Acquisition options</i>	<i>Actor</i>
Expansions of roads		Compulsory acquisition Land Buying	KeNHA Siaya County Government Siaya Municipal
Link roads	30m road reserve, 25m road reserve & 15m road reserves.	Compulsory acquisition Land Buying	KURA KERRA Siaya Municipal
Road widening		Surrender during Development application Compulsory acquisition	KURA KeNHA Siaya Municipal
Airstrip	Approximately 9 Ha	Compulsory acquisition Land Buying	KCAA KAA Siaya County Government



6.3.2 Water and Sanitation Strategies

6.3.2.1 Water supply

Water distribution by Siaya-Bondo Water and Sanitation Company Limited (SIBOWASCO) within the planning area is currently concentrated at Siaya town CBD and the nearby residential areas. Based on the projections of the 2019 population census for the planning area, a projection for water demands up to year 2034 is illustrated in table below. Within the entire municipality, using the World Water poverty threshold of 0.046m^3 per person per day, (UNDP, 2006) the expected water demand will be as per Table 6-5 below. It should be noted that the computed projections in the table below of water demand exclude commercial and industrial demand.

The computations reinforce the fact that significant investment in the water sector is necessary to meet the future demands of planning area so as to successfully meet the goals of the strategic planning. From the design calculations on the projected water demands for the ultimate design year 2030, the demand then would be approximately $4,910\text{m}^3$ per day. If SIBOWASCO maintains its current supply capacity of $1,500\text{m}^3$ per day, then it would not be sufficient to provide adequate water by the year 2030, thus expansion plans should be underway in response the ever-increasing demands due to the population growth.

Table 6-5: Projected Water Demand

	Base	Projections			
Year	2019	2020	2024	2025	2034
Siaya municipality population	80,424	82,193	89,426	91,473	110,470
Annual Water demand (m^3)	1,331,821	1,361,116	1,480,895	1,514,793	1,829,383

(Taking demand at 0.046m^3 per person per day)



6.3.2.2 Water Provision Efficiency Strategies

The following strategies were developed:

Table 6-6: Water Provision Efficiency Strategies

Problem	Affected Area	Objective	Mitigation/Strategies	Actors	Duration
Inadequate water provision	❖ Entire municipality	Provision of adequate and reliable water supply	Compile the Siaya Municipal water and sanitation master plan incorporating existing plans under SIBOWASCO and CBOs.	❖ Siaya Municipal -Public Works ❖ SIBOWASCO	Short term
			Rehabilitation of Mbagha treatment plant	❖ SIBOWASCO ❖ Siaya Municipal ❖ -Public Works	Short term to medium term
			Improve capacity of storage facilities by construction of additional water storage facilities in the following areas - Karapul - Barding - Awelo - Got Mbagha	❖ SIBOWASCO ❖ Local Community ❖ Private sector	Medium term



			- SIBOWASCO office		
			Construction of water storage facilities in the following areas - Got Akara - Hono - Rock	❖ SIBOWASCO ❖ Local Community ❖ Private sector	Medium term to long term
			Extension of the piped water network to supply piped water in the following areas - Kanyaboli - Boro - Segere - Mulaha - Awelo - Gombe - Ndere - Nyalgunga - Ulafu - Rock	❖ SIBOWASCO ❖ Local Community ❖ Private sector	Medium term to long term
	❖ Lake Kanyaboli	Protection of the water sources	❖ Rehabilitation of Lake Kanyaboli's dyke to	❖ National Government ❖ Siaya County	Short term to medium term



Lack of protection of water sources	<ul style="list-style-type: none"> ❖ Nyamawin River ❖ River Yala ❖ Small <i>aoras</i> 		mitigate floods and save the lake	<ul style="list-style-type: none"> ❖ Busia County ❖ Private sector ❖ Residents 	
			<ul style="list-style-type: none"> ❖ Demarcation of riparian reserves on either side of the river 	<ul style="list-style-type: none"> ❖ WRA ❖ NEMA ❖ Siaya Municipal ❖ Residents/farmers 	Continuous
			<ul style="list-style-type: none"> ❖ Discourage planting of inappropriate trees on the river banks 	<ul style="list-style-type: none"> ❖ WRA ❖ NEMA ❖ Siaya Municipal - Environment department ❖ Residents/farmers 	Continuous
Maintenance of projects initiated	Entire municipality	Ensuring water projects do not stall after they are operational	Monitoring and continuous repair of water supply channels	<ul style="list-style-type: none"> ❖ SIBOWASCO ❖ CBOs ❖ Local community 	Continuous



6.3.3 Sanitation

Table 6-7: Liquid Waste Disposal Strategies

Problem	Affected Area	Objective	Mitigation/Strategies	Actors	Duration
Lack of sustainable liquid waste management infrastructure	Entire municipality (Sewer line serves Siaya CBD only)	Provide efficient portable (piped) Sewerage system covering the entire municipality	<ul style="list-style-type: none"> Expansion of the sewer network coverage to serve Mulaha, Awelo and Karemo areas. 	<ul style="list-style-type: none"> ❖ SIBOWASCO ❖ Siaya County Government 	Short term to medium term
			<ul style="list-style-type: none"> Purchase of adequate land for expansion of the sewer ponds at Pap Kakan to enable increase in its handling capacity in the future. 	<ul style="list-style-type: none"> ❖ Siaya County Government ❖ Siaya municipal ❖ SIBOWASCO ❖ Land owners 	Medium term to long term
			<ul style="list-style-type: none"> Feasibility study on the best location on a secondary sewerage treatment plant so as to serve the rest of the planning area. 	<ul style="list-style-type: none"> ❖ SIBOWASCO ❖ Siaya County Government ❖ Siaya municipal 	Medium term to long term



Table 6-8: Solid Waste Disposal Strategies

Problem	Affected Area	Objective	Mitigation/Strategies	Actors	Duration
Poor Solid Waste Management Strategy	Entire Municipality	Provide a sustainable solid waste management service	<ul style="list-style-type: none"> Develop and implement a solid waste management plan to include the 4 Rs (Recover, Reuse, Reduce, Recycle) 	<ul style="list-style-type: none"> ❖ Siaya County Government ❖ NEMA 	Short term to medium term
			<ul style="list-style-type: none"> Provide adequate waste handling technology such as waste collection trucks according to NEMA specification, street bins including protective clothing to waste handlers. 	<ul style="list-style-type: none"> ❖ Siaya County Government 	Medium term to long term
			<ul style="list-style-type: none"> Provide designated solid waste collection points within the municipality 	<ul style="list-style-type: none"> ❖ Siaya Municipal 	Short term to medium term
			<ul style="list-style-type: none"> Purchase of adequate land for construction of a solid waste management site in Lwala Kachol area. 	<ul style="list-style-type: none"> ❖ Siaya County Government ❖ Land owners 	Short term to medium term



6.3.4 Energy

These strategies aim to conserve the environment and reduce pollution by promotion of sustainable energy sources.

Table 6-9: Energy Strategies

Problem	Affected Area	Objective	Mitigation/Strategies	Actors	Duration
Lack of sustainable energy sources	Entire municipality	Promote use of sustainable energy sources	Adoption of Solar and LPG energy to reduce overreliance on wood, paraffin and electricity	<ul style="list-style-type: none"> ❖ Siaya County Government ❖ Siaya Municipal ❖ Private sector ❖ Residents 	Continuous



6.3.5 ICT

ICT enhances the flow of information. ICT strategies seek to find a faster, more affordable and sufficient way of communicating over the internet. It includes;

Table 6-10: ICT Strategies

Problem	Affected Area	Objective	Mitigation/Strategies	Actors	Duration
Limited internet infrastructure	Entire municipality	Provide faster, efficient and affordable internet.	Provide a fibreoptic cable connection to the rest of Siaya municipality to serve the residents and schools in the municipality	<ul style="list-style-type: none"> ❖ Siaya County Government ❖ Siaya municipal ❖ Ministry in charge of Communication ❖ Internet service providers 	Medium term to long term
Limited ICT hubs for training and innovation	Entire municipality	Provide ICT hubs to promote innovation and provide employment	Construction of two ICT hubs within the municipality to give training and access to ICT equipment to the youth in the municipality	<ul style="list-style-type: none"> ❖ Siaya County Government ❖ Siaya municipal 	Medium term to long term



6.4 Social Infrastructure Improvement Strategies

The social infrastructure development strategy covers the education, health, sports and recreation and security facilities. Most of the social facilities are public spaces and thus their provision should consider ease of access, adequacy and optimal location. These facilities play a critical role in promoting social cohesion, empowerment and inclusivity. The provision of sufficient and functional social infrastructure will contribute to a healthy and vibrant Municipality.

6.4.1 Education Improvement Strategies

Siaya Municipality is endowed with all the levels of educational facilities. There are 145 ECD Centers, 36 primary schools under the primary level which are accessible from the Municipality. There are 21 facilities under the secondary level and 3 facilities under the tertiary level.

While as the population-based analysis indicates that there are sufficient educational facilities, the location-based analysis indicates that the Municipality requires 5 new ECD Centers, (Akara Hills Area, Ulafu Area, Aduwa Hill Area and Area between Boro and Segere) 1 Primary school (Ojuando A area) and 1 secondary to ensure optimal access.

The proposed measures to improve the education sector are summarized in the table below

Table 6-11: Education Strategies

Problems	Location	Objectives	Strategies/Mitigation	Actors	Period
Insufficient ECDE centers	Akara Hills, Ulafu, Aduwa Hills, Between Segere and Boro	Improve access to education	<ul style="list-style-type: none"> Retention and equipping of the existing facilities Proper staffing of the available centers Provision of 4 additional ECDE Facilities 	Siaya County Government	Short term

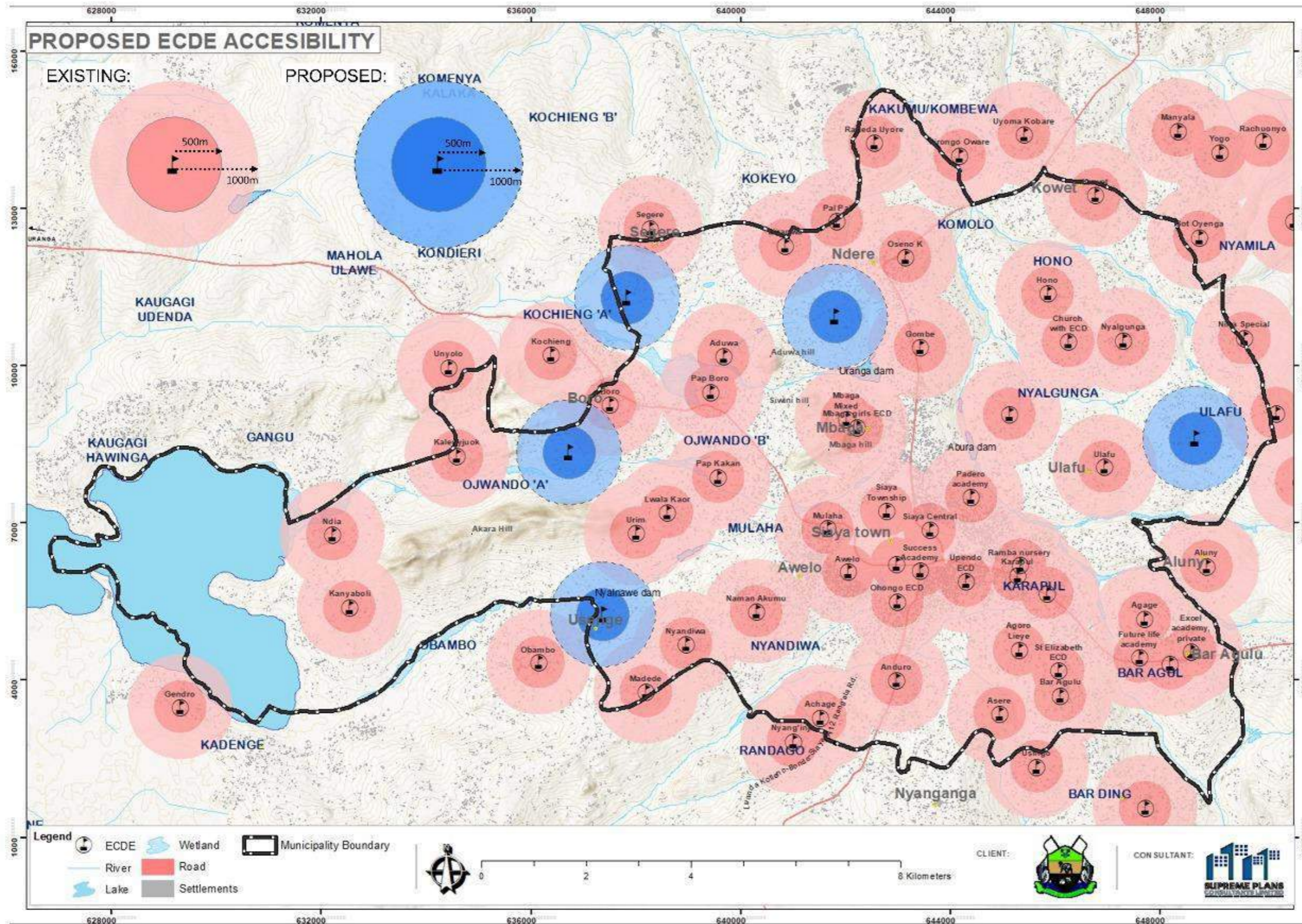


Inadequate Secondary Schools	Ojuando A Area	Improve access to secondary Schools	Provision of additional primary school within Ojuando A area	National Government	Long term
Inadequate Educational infrastructure	Most of the Schools within the Municipality	Improve school infrastructure	Improvement of classrooms and support infrastructure within schools	<ul style="list-style-type: none"> • National Governm ent • NG-CDF • County Governm ent • Private Sector 	Medium Term

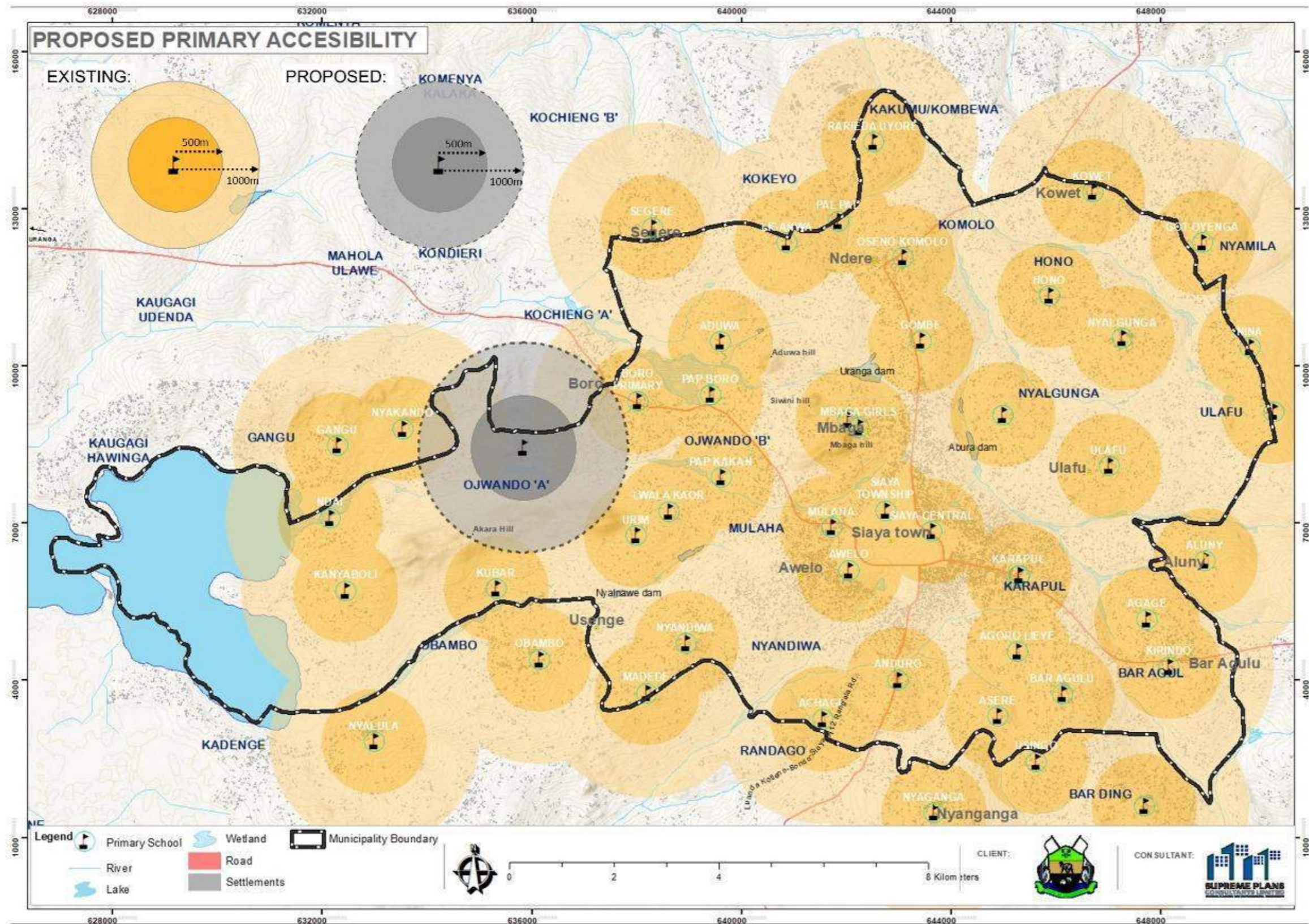
The maps below show the spatial location and accessibility of the proposed educational facilities.



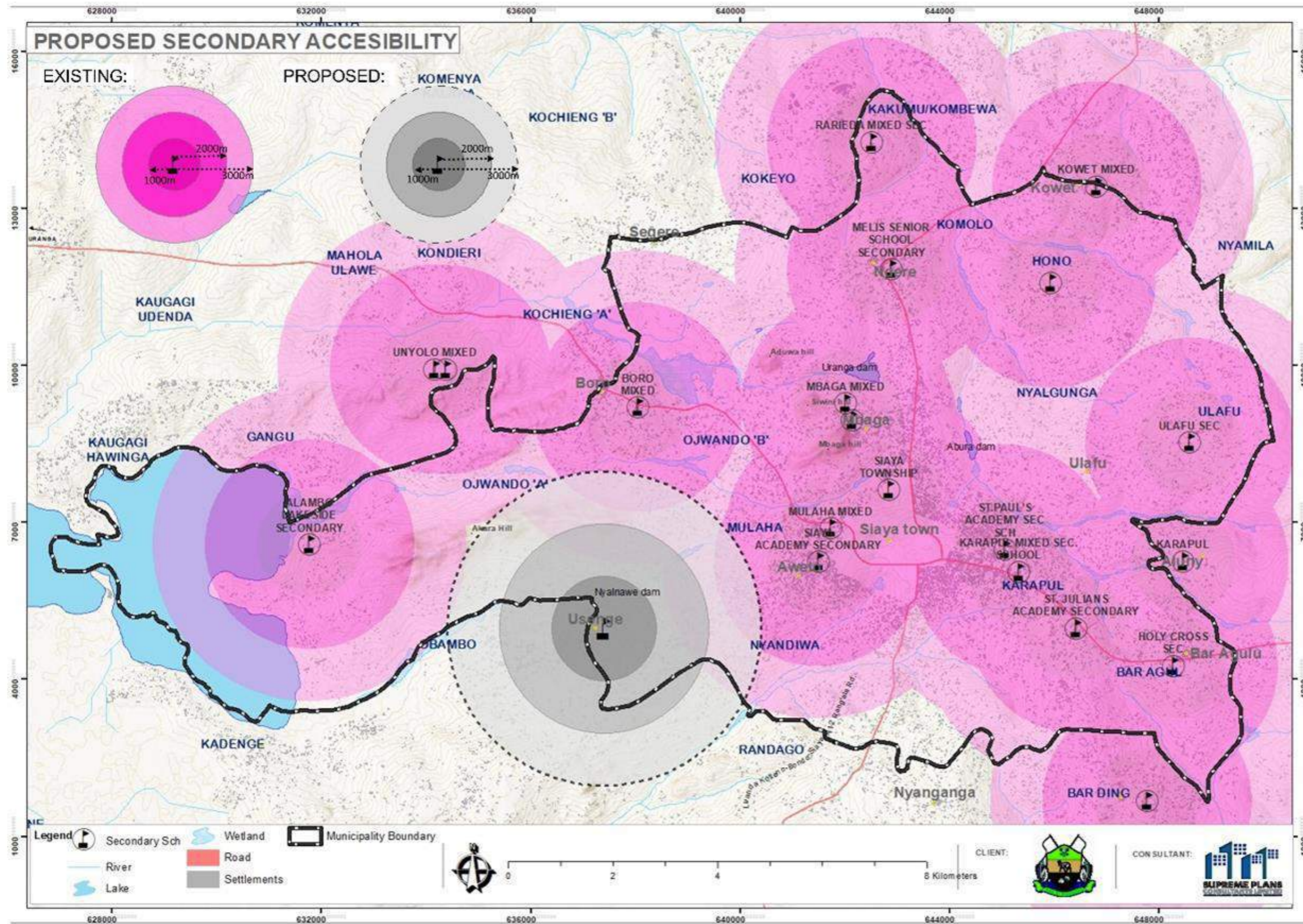
Map 6-5: ECDC Intervention Map



Map 6-6: Primary Schools Intervention Maps



Map 6-7: Secondary Schools Intervention Map



6.4.2 Health Promotion Strategies

The health sector is vital in ensuring the wellbeing of a society. Thus, provision of adequate, properly equipped and well distributed health facilities is vital in a society. Further proper staffing of these facilities is a plus to service delivery.

The population and spatial based analysis for health need indicates that the planning area is adequately served with health facilities. Further it was identified that the health facilities are understaffed and poorly equipped. There are reported cases of rise of both communicable and non-communicable diseases. The following measures are therefore recommended to ensure proper delivery of health facilities.

Table 6-12: Health Strategies

Problems	Location	Objectives	Strategies/Mitigation	Actors	Period
Unequipped and Under-staffed	Dispensaries within the Municipality		<ul style="list-style-type: none"> Upgrade one dispensary in each ward to a level 3 Incorporate maternity health services into the facilities Acquire an ambulance complete with paramedics to support the health system within each ward 	<ul style="list-style-type: none"> Siaya County Government MoH (National Government) NGOs 	Medium term
Increase in non-communicable diseases	Municipality	To Halt and reverse the increasing burden of non-communicable conditions	<ul style="list-style-type: none"> Increase community awareness on the risks and dietetics 	<ul style="list-style-type: none"> Siaya County Government 	Short term



Problems	Location	Objectives	Strategies/Mitigation	Actors	Period
			<ul style="list-style-type: none"> Promotion of preventive health care 	<ul style="list-style-type: none"> MoH (National Government) 	
Prevalence of Communicable diseases	Municipality	To Halt and reverse the increasing burden of communicable conditions		<ul style="list-style-type: none"> Siaya County Government MoH (National Government) 	Short term

6.4.3 Sports and Recreation Promotion Strategies

The presence of recreational and sporting grounds is a requirement for any area to be classified as a municipality. Recreational areas provide space for residents to relax and also act as areas of interaction thus promoting social cohesion. The proposed strategies in the table below are aimed at ensuring provision of safe and adequate sporting and recreational areas.

Table 6-13: Recreation and Sports Strategies

Problems	Location	Objectives	Strategies/Mitigation	Actors	Period
Inadequate Recreational Facilities	Siaya Town	Improve access to recreation facilities	<ul style="list-style-type: none"> Construction of cultural centers and social halls within urban centres 	Siaya County Government	Medium term
Inadequate Sporting Facilities	Siaya Town	To provide adequate sporting facilities	<ul style="list-style-type: none"> Completion of the construction Siaya Stadium 	Siaya County Government	Short Term

6.4.4 Security Improvement

Peaceful coexistence among the residents of a particular area is key to development of that area. To secure the municipality there is need to provide more security facilities as outlined below.



Airstrip Police Station

Once the Gombe Airport is operational there will be need to secure the critical infrastructure within the Airstrip and also provide law and order. To provide adequate security within this area a police station is proposed within Gombe Airstrip.

County Aggregation Industrial Park Police Station

The police station will secure the investments made at the Industrial Park while at the same time providing security to the Akara hills Area and the Lake Kanyaboli area.

Table 6-14: Security Strategies

Problems	Location	Objectives	Strategies/Mitigation	Actors	Period
Insecurity around Strategic projects	Gombe Airstrip	Protect County Strategic Projects	Acquisition of land and construction of two police posts	Siaya County Government National Government	Short term
	Akara Hills Police Post		Deployment of security personnel to the new stations	Siaya County Government National Government	Short Term

6.4.5 Other Social Infrastructure

6.4.5.1 Cemetery

Currently, the planning area has one cemetery. The existing cemetery is not capable of servicing the increasing population in the planning area and thus requires the establishment of another cemetery. The following measures are recommended:

1. Conducting of feasibility studies to establish the best suitable site.
2. Detailed planning to show space for Christians, Muslims & crematorium.
3. Acquisition of a NEMA license.
4. Provide 15m buffer around the cemetery and planting of trees along the buffer to reduce visibility to the cemetery.



6.4.5.2 Fire Station

Siaya Municipality does not have a fire station though it has a fire engine. With increased development within the Municipality there is increased risk of fire thus the need to adequately prepare. The establishment of a fully serviced fire stations are proposed in the Siaya Town and Akara Hill Area.

The fire station Within Siaya Town will serve Siaya town, Ndere and Gombe Airstrip Areas which are experiencing rapid growth. The Fire station at Akara Hills will serve the County Aggregation Industrial Park within the area.

There is also the need to establish an Emergency and Disaster Management Team and providing the necessary equipment and training to tackle any emergencies that may occur within the municipality and the whole county.

Table 6-15: Other Social Infrastructure Strategies

Problems	Location	Objectives	Strategies/Mitigation	Actors	Period
Inadequate cemetery	Town wide	Provide sufficient space for cemetery	Feasibility study for establishment of suitable site for location of a cemetery Acquisition of site for setting up of the cemetery Detailed planning of the cemetery Establishment of a buffer around the cemetery	Siaya County Government NGO's	Medium term



Problems	Location	Objectives	Strategies/Mitigation	Actors	Period
Inadequate Fire disaster management	Municipality	Construction of a Fire station at Siaya Town	Construction and Equipping of the fire station	County Government of Siaya	Short term
		Establishment of a fire station at Akara Hills Area (Site for County aggregated Industrial Park)	-Acquisition of land for a fire station Setting up and equipping a fire station at Akara Hills Area	County Government of Siaya National Government	Short term
		To establish and Emergency and Disaster management Team	Recruitment of adequate staff Training of staff Provision of required equipment	Siaya County Government Donors	Medium term

6.5 Economic Improvement Strategies

The economic improvement strategies in this section seek to resolve the challenges identified in different economic sectors and enhance the realization of the full potential of different opportunities. These strategies include projects and programs in agriculture, trade and commerce, tourism development, and industrialization. The section also recommends strategies for improving revenue generation at the municipal level.



6.5.1 Agriculture and Livestock Development Strategies

The sector is among the primary contributors to economic growth in the municipality. Crop farming, livestock keeping, and fisheries facilitate economic and social development of the residents through enhanced food security, household income generation, employment creation, and wealth generation. Besides, the forward and backward linkages with other sectors create a multiplier effect in the economy. The municipality should become food secure by embracing commercially-oriented practices in the sector.

6.5.1.1 Improved Extension Services

Extension services in agriculture, livestock keeping, aquaculture, and apiculture in the sector strengthens coordination of sectoral and intersectoral programmes while offering professional support to stakeholders. The municipal board should increase the extension officers to facilitate more farmer training programs, agricultural shows, trade fairs, and exhibitions. There should be 20 extension officers serving the municipality.

The municipality should increase the resources allocated to extension officers to facilitate their work. The municipality should target to acquire 10 motor vehicles and 10 motorcycles in the next five years to support extension service. A fleet of two vehicles and two motorcycles should be added each year until 2027/28. Proper operational tools and equipment should also be acquired to support extension services in crop farming and livestock production.

Farmer training should adopt a group approach to ensure efficiency. Farmer groups should be organized at the ward level to receive a one-week training on best farming practices. The municipality should hold four training sessions in different regions, addressing existing and emerging farming needs. In the first year (2023/24), the program should target 10,000 farmers, increased progressively to 25,000 farmers by 2027/28. The farmer training programme should be accompanied by agricultural shows, fairs, and exhibitions. These activities would not only showcase Siaya Municipality as a centre for agricultural program, but would also market it in other regions. Besides, farmers would acquire essential resources from these activities. The targets for these programs in the next five years are tabulated below.



Table 6-16: Programs Targeted on Improving Extension Services

Programme	2023/24	2024/25	2025/26	2026/27	2027/28
No. of farmers trained	10,000	12,000	15,000	20,000	25,000
No. of agricultural shows/demonstrations	4	4	4	4	4
No. of fairs and exhibitions	1	1	1	1	1
Procured vehicles	2	2	2	2	2
Procured motorcycles	2	2	2	2	2
Procured operational tools and equipment	5	5	5	5	5

6.5.1.2 Improved Land Management Practices

Land management practice influence crop productivity, influencing farmers’ earnings and food security. The municipal board should collaborate with the county government to improve land management practices, including expanding the area under irrigation, soil conservation, and mechanized agriculture. Table 2 details the target programs for the next five years.

Table 6-17: Target programmes to Improve Land Management Practices

Programme	2023/24	2024/25	2025/26	2026/27	2027/28
Procured soil testing kits	4	4	4	4	4
Tractors acquired for subsidized ploughing	0	1	3	5	5

6.5.1.3 Provision of Farm Inputs

The county government should support farmers by providing high-quality farm inputs. The move would enhance production in different farming sector. In particular, the municipal board should target fertilizers, pesticides, seeds/seedlings, animal breeding stocks, artificial insemination services, animal feedlots, and hives. The target programs for the next five years are outlined in Table 6-18



Table 6-18: Target Programs to Improve the Quality of Farm Inputs

Programme	2023/24	2024/25	2025/26	2026/27	2027/28
Fertilizer distribution (MT)	50	100	100	150	150
Food crop seeds (MT)	15	20	25	30	35
Commercial crop (cotton and rice) seeds (MT)	1	1	1.5	1.5	2
Horticultural seeds (MT)	0.1	0.1	0.1	0.1	0.1
Pesticides (Kgs)	500	500	750	750	1000
Poultry breeding stock (1-day chicks)	3,000	5,000	5,000	3,000	2,000
No. of artificially inseminated animals (subsidized rates)	3,000	3,000	3,000	3,000	3,000
No. of vaccinated animals (subsidized rates)	10,000	10,000	10,000	10,000	10,000
Hives distributed to groups	200	200	200	200	200
Tilapia fingerings to restock dams and fish ponds ('000)	1,000	1,000	1,000	1,000	1,000

6.5.1.4 Value Addition and Marketing

The financial sustainability of the agricultural sector and its capacity to spur growth within the municipality depends on the value of products. The municipality should implement measures that increase the revenue generated from each sector and the demand for products. In particular, it should focus on commercializing the agri-food subsector, value addition for livestock products, and market creation.

The proposed programs for this sector are included in Table 6-19.



Table 6-19: Proposed Programs on Value Addition and Marketing

Programme	2023/24	2024/25	2025/26	2026/27	2027/28
Milk processing plants	0	1	0	1	0
Livestock markets established	0	1	0	0	1
Crop/livestock/fish aggregation centres	1	1	1	1	1
Industrial parks established			1		
Operationalized feed mills	0	0	0	1	0
Goat and sheep improvement centres	0	1	0	0	0
Established fish handling facilities	0	1	0	1	0
Crush pens constructed	1	1	1	1	1
Operationalized slaughterhouses	0	0	0	1	0
No. of groups benefiting from agribusiness entrepreneurship fund	0	5	10	15	20

6.5.2 Trade, Commerce and Industrialization

Siaya Municipality can improve its economic stability through the promotion of trade, commerce and industrialization. The county government has a critical role to play in providing and enabling environment, facilitating competition, aiding industrialization, and spurring investment. In particular, the county should focus on the small and medium-sized enterprises (SMEs) and the informal sector, which constitute the bulk of commercial activities in the municipality. The proposed projects and programs are as follows:

6.5.2.1 Training and Capacity Building

Offer formal and informal training to players in SMEs and the informal sector. The municipality should introduce business seminars and training for market vendors, boda-boda operators, taxi and matatu operators, and jua-kali artisans. The municipality should also sponsor jua-kali artisans to acquire formal training to improve their skill levels. Lastly, the municipality should hold an annual business fare targeting all registered and aspiring entrepreneurs in the region.



6.5.2.2 Improved Market Infrastructure

The County Government of Siaya commenced the construction of the Siaya Integrated Modern Market in Siaya Town (Alego Usonga) in 2024 to create a conducive working environment for traders within the municipality and beyond. The market features a section for fish traders, fresh produce traders, closed stalls, periphery stalls, cold rooms, and an IT hub. The project also provides support infrastructure, including high-mast flood lights, raised water tanks, sanitation facilities, car parks, and a sewer system. Once completed, the market will cater to the needs of over 1,000 traders in Siaya Town.

To complement the Siaya Integrated Modern Market, the municipal board should improve the state of the existing markets - Rabango, Ndere, Koyogo, Obambo, Harambee, and Mbagu – within the municipality to ensure they serve to provide an expanded enabling environment to traders. The improvement areas in the next five years are tabulated below:

Table 6-20: Improvement Areas on Market Infrastructure

Project	2023/24	2024/25	2025/26	2026/27	2027/28
No. of markets equipped with high mast lighting system.	3	3	-	-	-
No. of sanitation facilities (toilets) constructed	6	-	-	-	-
Number of markets with modernized structures	1	2	2	1	-
Number of boda boda parking bays constructed/improved	10	10	10	10	10
Number of dump-sites acquired	-	-	-	1	-
No. of NEMA-approved waste bins installed	2	2	2	2	2



6.5.2.3 Improved Access to Business Financing

The county government should introduce an enterprise development fund to ease access to capital for people in the informal sector. The fund should be given through established Saccos, such as the Siaya Boda Boda Association, Siaya Juakali Association and matatu Saccos. Loans should be charged an interest rate similar to the formal credit sector to prevent exploitative credit terms.

6.5.2.4 Industrial Development

The county government should facilitate the establishment of a business industrial park to support value addition activities within the municipality. Within the industrial park, the county should construct fish and milk processing plants to spur development. It should then partner with players in the private sector facilitate their entry in the market. The county should ease the entry requirements for firms established within the industrial park to attract investors.

6.5.3 Tourism

Siaya Municipality is not a major tourist destination due to lacking tourism infrastructure and poor marketing of available attraction sites. The Municipal Board should emphasize the development of tourism attraction sites, promotion of cultural events, and embedding conference tourism. These activities should be supported with proper marketing.

Proposed Programs and Projects

6.5.3.1 Develop Additional Tourism Infrastructure

The county government should construct a museum within Siaya Town. The museum should be equipped with a collection of paintings, sculptures, and other art works to attract tourists from within and outside the municipality. The museum should also include an exhibition centre to enable local artists showcase and sell their works to tourists.

6.5.3.2 Promote Cultural Events

The municipal board should introduce bi-annual cultural events, attracting people from around the country. The events should focus on showcasing the Luo culture and traditions. Event



organizers should partner with renowned artists from the region, generating national acclaim and attendance.

6.5.3.3 Promote Conference Tourism

Siaya Municipality should market itself as a destination for conference tourism. The Municipal Board should engage private players in the hotel and conference sector to identify and map available facilities for such purposes. Siaya's proximity to Kisumu City acts as an opportunity to generate conference business. Effective marketing and pricing can make Siaya Municipality a close competitor to Kisumu.

6.6 Housing Provision Strategies

To improve the quality and supply of housing within the planning area, various strategies will have to be implemented. The strategies focus on uneven building lines and setbacks, urban informality, urban decay, housing conditions, accessibility, friendly urban designs and social facilities adequacy. The strategies to guide the development of this sector are as outlined below.

1. Promote Land Use planning by allocating sufficient land for new housing developments
2. Densification of existing residential neighbourhoods
3. Initiate Urban Renewal (Redevelopment) Programmes within the Urban Centres
4. Provide and Improve Infrastructure and Services

6.6.1 Promote Land Use Planning by Allocating Sufficient Land for New Housing Development and Public Facilities

Projects/ Measures

1. Demarcation of residential extents within the centres so as to prepare detailed master plans for areas identified for housing development.
2. Preparation and approval of building plans before development.
3. Expansion of facilities with inadequate land.



6.6.2 Densification of Existing Residential Neighbourhoods

Projects/Measures

1. Demarcation of commercial extents within the centres.
2. Redevelop centers to high density.
3. Enforcement of zoning standards and guidelines.

6.6.3 Initiate Urban Renewal (Redevelopment) Programmes Within the Urban Centres

Projects/Measures

1. Redevelopment of Useage and Hono centers.
2. Develop and support services and amenities necessary for quality neighbourhoods as well as assisting the maintenance and production of substantial, well designed, serviced and located housing.

6.6.4 Provide and Improve Infrastructure and Services

Projects/Measures

1. Open new roads and upgrade main and access roads to residential neighbourhoods.
2. Provide piped water to all residential neighbourhoods.
3. Extension of the sewer reticulation system.
4. Provide for solid waste collection services in residential neighbourhoods with adequate transfer stations.
5. Improve storm water drainage in residential neighbourhoods
6. Provision of green spaces within the residential neighbourhood.



PART IV

**DEVELOPMENT CONTROL FRAMEWORK AND
GUIDELINES**



7 CHAPTER SEVEN: DEVELOPMENT CONTROL FRAMEWORK AND GUIDELINES

7.1 Overview

This chapter outlines the various zones delineated within the municipality and the development guidelines formulated to guide development within the zones. It also discusses the proposed land uses and action area plans.

7.2 Zoning

7.2.1 Zoning Considerations

7.2.1.1 Existing Land Use Pattern

The existing situation on the ground highly influenced the structuring of the various zones. Areas that have similar land uses and have similar housing typologies have been placed in the same zone. The development trend within the municipality was also considered in the delineation of the zones.

7.2.1.2 Natural Features

Natural features such as hills and the lake were considered in the delineation of the zones. The areas which need protection from encroachment have been categorised in the same zone and protection strategies recommended/proposed to ensure they are protected from adverse exploitation.

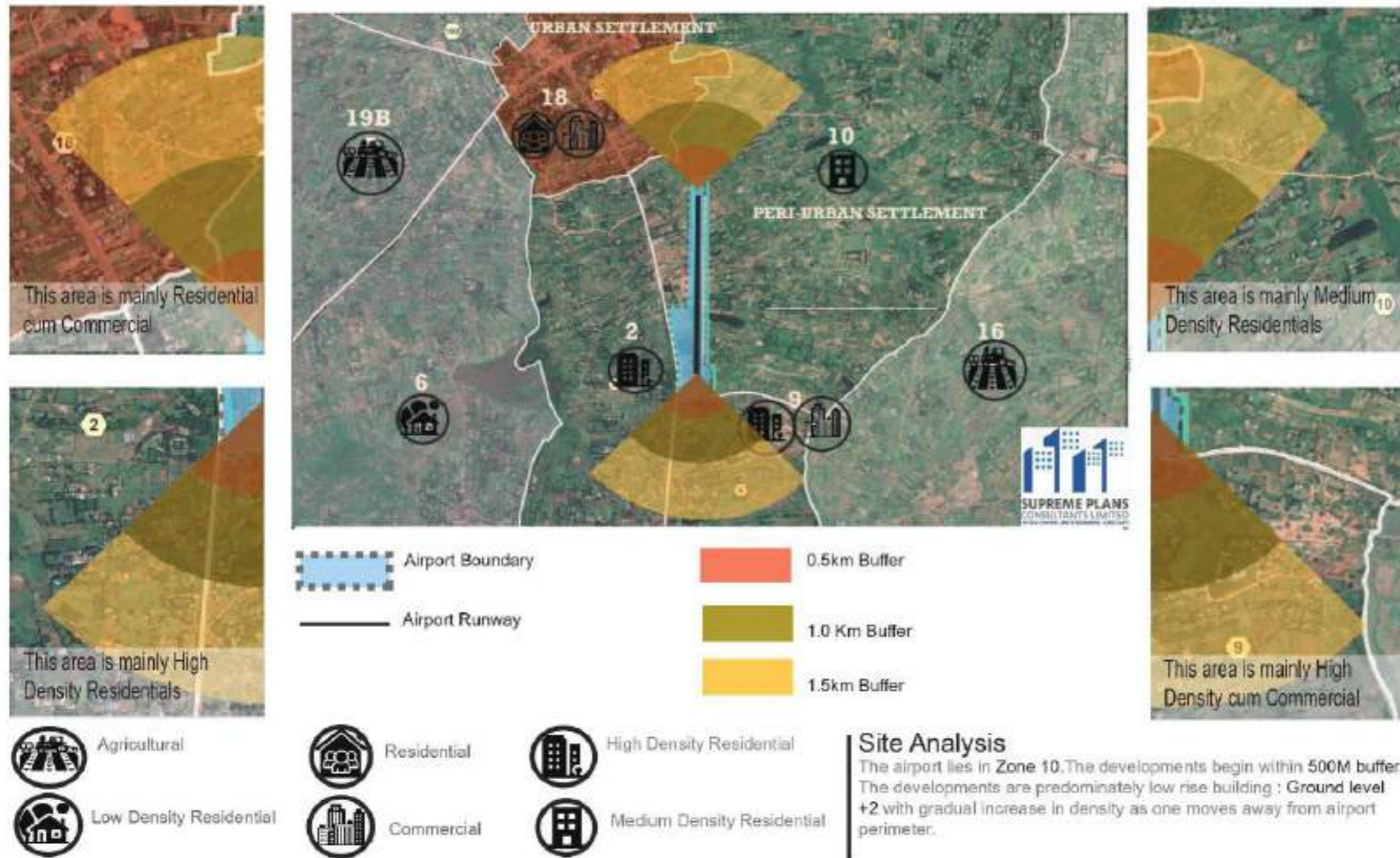


7.2.1.3 Gombe Airstrip

The presence of Gombe Air strip is a key influence of zoning regulations in the town. It has impacts on development heights and nature of land use compatible with aviation needs and standards.

Map 7-1: Gombe Airstrip Analysis

GOMBE AIRSTRIP



Planning implications

Figure 7-1 Planning Implications of the Existing Airport



7.2.2 Municipality Zones

Siaya Municipality has been categorised into Twenty-Two (22) Zones. These zones are as described below.

7.2.2.1 Zone 1 - Mixed Use Development Zone

This zone covers Siaya Town and is characterised by commercial buildings, administrative offices, educational institutions and health facilities. This zone houses the county headquarters and the county assembly. The zone is a mixed-use development zone characterised by high rise building and buildings of strategic county importance. This is the densest and active zone within the Municipality.

7.2.2.2 Zone 2 – Medium Density Residential Area

This Zone covers part of Hono and Komolo Sublocations. The boundaries for these zones are Siaya – Ndere Road (C28), Siaya-Boro Road (C30) and on the Eastern Side of Mbagha Hills. These areas are close to Siaya Town and serve as the residential neighbourhoods for the Town. Development within this area is characterised by medium density residential houses and is greatly influenced by the need for provision of housing for Siaya Institute of Technology students. It serves as a dormitory zone for workers within and outside town, higher learning educational facilities among others within the Municipality.

7.2.2.3 Zone 3 - High Density Residential Area

This Zone covers Awelo and Pap Kakan areas on the South Western Part of Siaya Town. Some of these areas are characterised by dense settlements. The informal settlement improvement project in Awelo and the Affordable housing project are located within this Zone. The close proximity to town has stimulated growth of residential developments.

7.2.2.4 Zone 4 &5 High Density Residential Area

Zone 4 covers Awelo area on the Southern part of Siaya Town while Zone 5 covers part of Karapul and Bar Agulu Sublocations (Area between Siaya – Bondo Road, Luanda Siaya Road and



Oking River). The close proximity of these areas to town has stimulated growth of residential developments.

7.2.2.5 Zone 6 – Low Density Residential

The zone covers Mbagha Hills area, Sawini Hill area and Uranga Dam area. The zone is characterised by agricultural uses and pockets of low-density development. Due to its close proximity to Siaya Town, Usenge and Boro Urban Centres and the topography characteristics of the area, it has potential to develop as low-density residential area.

7.2.2.6 Agricultural Zones (7, 11, 15, 18A and 18B)

These zones are characterised by agriculture and rural settlements.

7.2.2.7 Zone 8 - Low Density Residential

This zone covers areas along Siaya Bond Road from Anduro Primary School and extends southward to the edge of the Municipality. To the Eastern side of the Road the zone extends up to Asele Primary school while on the Western side of the Road it extends to Achage Primary School. The Siaya – Bondo road traverses through the zone and greatly influences development within the Zone.

7.2.2.8 Zone 9 - Medium Density Residential

The Zone is divided into two sub zones; 9A and 9B Zone 9A covers the area below Kanungo Junction southwards near Karapul primary school while 9B covers part of Karapul sub location bound by Siaya Luanda road to the South West and the Municipal boundary to the North East. The Zone is characterized by emerging medium residential developments.

7.2.2.9 Zone 10- Medium Density Residential

The Zone is divided into two sub zones; 10A and 10B. Zone 10A covers the areas around Gombe airstrip while Zone 10B covers the area from Gombe airstrip towards Nyamawin river. The zones are characterized by medium density residential developments. Proposals to develop within Zone 10A shall seek clearance from KCAA due to the existing Gombe airstrip.



7.2.2.10 Zone 11 – Agricultural

This zone covers part of Bar Agulu Sub location from Karemo Junction and stretches to the South Eastern Part of the Municipality.

7.2.2.11 Urban Centres (Zone 12, 13, 14, 16,17, 19, and 21)

These zones cover the urban areas of Uhuru, Bar Agulu, Ulafu, Nyalgunga, Ndere, Boro and Usenge respectively. These zones have been delineated to control up hazard urban development within the agricultural areas.

7.2.2.12 Zone 20 – Agricultural Zone

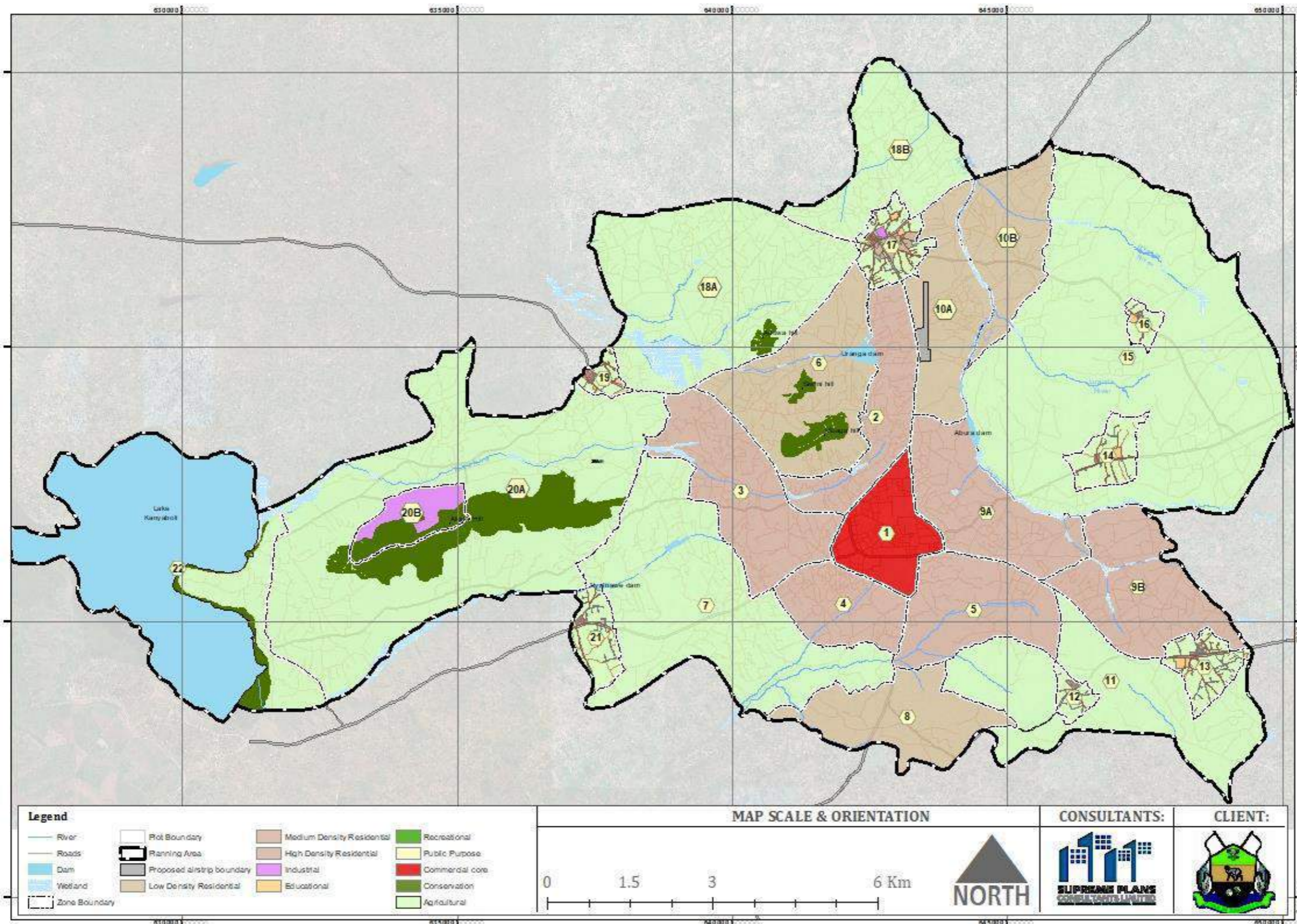
The Zone is divided into two sub zone 21A (Agricultural) and 21B (Industrial). Zone 21B is located within Ojuando A sublocation within Akara hill area.

7.2.2.13 Zone 22 – Lake Kanyaboli and its environs

The zone covers Lake Kanyaboli and the areas around the lake. The development within this zone will be highly influenced by the lake.



Map 7-2: Siaya Municipality Zoning Map



7.3 Zoning Standards and Guidelines

Zoning regulations and standards have been formulated for each zone within the Municipality. These are as outlined in the table below.

Table 7-1: Zoning Regulations

ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
1	Siaya Town	Commercial allied uses, Supermarkets, Retail shops, Offices, Banks, Motels, Hotels, Restaurants, Entertainment centres, Recreation Centres	High rise commercial blocks, Office Parks	75	600	0.05	8 applicable for plots 0.05 ha	<ul style="list-style-type: none"> - Minimum number of floors permissible to this area is 3 floors - Provide geotechnical report for buildings above 10 floors - Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment - Lifts to be provided for buildings above G+4 floors
			Mixed Use Buildings		750 applicable for plot above 0.1 Ha		10 -15 applicable for parcel 0.1 Ha - 0.2 Ha	
		Serviced Apartments/Guest Houses/ Residential Hotels / Hostels	High rise apartments, flats, hotels	65	650	0.05	10	
					975	Above 0.1	15	



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
2	<p>Part of Hono and Komolo Sub locations</p> <p>Area bound by Siaya – Ndere Road (C28), Siaya Boro Road (C30) and on the Eastern Side of Mbage Hills towards Uranga Dam</p>	Medium Density Residential	Flats/ Apartments	50	200	0.1	G+3	<ul style="list-style-type: none"> - Servant Quarters, Storage building / garages, Farm houses and silos allowed - A swimming pool may be provided on the site if the space permits. It should be located at least 6m from buildings.
3	Awelo area, Pap Kakan area	High Density Residential	Flats/ Apartments	60 Sewered Areas 50 – Non Sewered areas	450 400	0.05	8	<ul style="list-style-type: none"> - Shopping Centres allowed within comprehensive development - Lifts to be provided for buildings above G+4 floors



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
4	Awelo Area	High Density Residential	Apartments / Flats	60 Sewered Areas 50 – Non Sewered areas	450 400	0.05	8	<ul style="list-style-type: none"> - Shopping Centres allowed within comprehensive development - Lifts to be provided for buildings above G+4 floors
5	Part of Karapul and Bar Agulu Sublocations (Area between Siaya – Bondo Road, Luanda Siaya Road and Oking River)	High Density Residential	Flats/Apartments	60 Sewered Areas 50 – Non Sewered areas	450 400	0.05	8	<ul style="list-style-type: none"> - Shopping Centres allowed within comprehensive development - Lifts to be provided for buildings above G+4 floors
6	Komolo Sublocation (Mbage Hills Area)	Low Density	Masionetes, Bungalows	40	80	0.2	Ground +1	<ul style="list-style-type: none"> - Servant Quarters, Storage building / garages, Farm houses and silos allowed - Structures for



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
								<p>Agricultural Use should have a total area not exceeding 150m².</p> <ul style="list-style-type: none"> - A swimming pool may be provided on the site if the space permits. It should be located at least 6m from buildings.
7	Area between Nyamonye - Siaya - Madeya Road (C839), Boro – Usenge Road, River Kine, Mulaha dispendary Lwala Kouja Rd	Agricultural	Single Dwelling	20	60	0.4	Ground +1	<ul style="list-style-type: none"> - Agro based industries Permitted - Single dwelling units Permitted - Minimum Subdivision is 0.4Ha
8	Area along Luanda Kotieno Bondo-	Low Density	Masionetes, Villas, Bungalows	40	80	0.2	Ground +1	<ul style="list-style-type: none"> - Servant Quarters, Storage building /



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
	Siaya-A12 Rang'ala Road	Commercial (up to 100 m on either side of the highway) (Hotels, shops) Inoffensive Light Industrial	High rise commercial blocks, Office Parks Mixed Use Buildings	60	180	0.05 – Commercial 0.1 – Industrial	Ground +2	<ul style="list-style-type: none"> garages, Farm houses and silos allowed - Structures for Agricultural Use should have a total area not exceeding 150m². - A swimming pool may be provided on the site if the space permits. It should be located at least 6m from buildings.
9A	Area below Kanungo junction southwards near Karapul primary school	Medium Density Residential	Low Rise apartments	50	200	0.1	G+3	<ul style="list-style-type: none"> - Servant Quarters, Storage building / garages, Farm houses and silos allowed - A swimming pool may be provided on



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
								the site if the space permits. It should be located at least 6m from buildings.
9B	Part of Karapul sub location Area bound by Luanda Siaya Road	Medium Density Residential	Low Rise apartments	50	200	0.1	G+3	<ul style="list-style-type: none"> - Servant Quarters, Storage building / garages, Farm houses and silos allowed - A swimming pool may be provided on the site if the space permits. It should be located at least 6m from buildings.
10A	Komolo Sublocation (Gombe Airstrip Area, Gombe Area)	Low Density	Masionetes, Villas, Bungalows, Town houses and Duplexes	60 Sewered Areas 50 – Non Sewered areas	120 100	0.05	Ground +1	<ul style="list-style-type: none"> - Each unit on 250m² - Seek clearance from KCAA - No flat roofed buildings are allowed



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
10B	Area bound by Nyamawin river to the West and East towards Hono and Komolo area	Low Density	Masionetes, Bungalows	60 Sewered Areas 50 – Non Sewered areas	120 100	0.05	Ground +1	<ul style="list-style-type: none"> - Servant Quarters, Storage building / garages, Farm houses and silos allowed - Structures for Agricultural Use should have a total area not exceeding 150m². - A swimming pool may be provided on the site if the space permits. It should be located at least 6m from buildings.
11	Bar Agulu Sublocation and Part of Karapul Sublocation	Agricultural	Farms Houses Bungalows and Maisonettes	30	60	0.4	Ground +1	<ul style="list-style-type: none"> - Servant Quarters, Storage building / garages, Farm houses and silos allowed - Structures for



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
								<p>Agricultural Use should have a total area not exceeding 150m².</p> <ul style="list-style-type: none"> - A swimming pool may be provided on the site if the space permits. It should be located at least 6m from buildings. - Single dwelling units Permitted - Minimum Subdivision is 0.4 Ha
12	Uhuru Market	Commercial	High rise commercial blocks, Office Parks Mixed Use Buildings	70	250	0.5	Ground +2	<ul style="list-style-type: none"> - Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment
		Residential	Flats/Apartments	50	200	0.1	Ground +3	



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
13	Dondi Urban Centre	Commercial	High rise commercial blocks, Office Parks Mixed Use Buildings	60	250	0.5	Ground +3	<ul style="list-style-type: none"> - Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment
		Residential	Flats/Apartments	50	200	0.1	Ground +3	
14	Ulafu Urban Centre	Commercial	High rise commercial blocks, Office Parks Mixed Use Buildings	60	180	0.5	Ground +2	<ul style="list-style-type: none"> - Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment
		Residential	Flats/Apartments	50	200	0.1	Ground +3	
15	Nyalgunga Sublocation, Part of Ulafu, Nyamila, and Hono	Agricultural	Single Dwelling	20	40	0.4	Ground +1	<ul style="list-style-type: none"> - Agro based industries Permitted - Single dwelling units Permitted



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
	Sublocations (Nyalgunga, Ulafu, Nyakongo Kokang and Hono areas)							- Minimum Subdivision is 0.4 Ha
16	Nyalgunga Urban Centre	Commercial	High rise commercial blocks, Office Parks Mixed Use Buildings	60	180	0.5	Ground +2	- Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment
		Residential	Flats/Apartments	50	200	0.1	Ground +3	
17	Ndere Urban Centre	Commercial	High rise commercial blocks, Office Parks Mixed Use Buildings	60	250	0.5	Ground +3	- Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment
		Residential	Flats/Apartments	50	200	0.1	Ground +3	



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
18A	Part of Kochieng 'A' and Koyeyo Sublocations (Aduwa area, Karuoth Area, Liganwa area)	Agricultural	Single Dwelling	20	40	0.4	Ground +1	<ul style="list-style-type: none"> - Agro based industries Permitted - Single dwelling units Permitted - Minimum Subdivision is 0.4 Ha
18B	Ndere Area, Liganwa Area	Agricultural	Single Dwelling	20	40	0.4	Ground +1	<ul style="list-style-type: none"> - Agro based industries Permitted - Single dwelling units Permitted - Minimum Subdivision is 0.4 Ha
19	Boro Urban Centre	Commercial	High rise commercial blocks, Office Parks Mixed Use Buildings	60	250	0.5	Ground +3	<ul style="list-style-type: none"> - Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment
		Residential	Flats/Apartments	50	200	0.1	Ground +3	



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
20A	Part of Obambo and Ojwando 'A' Sub locations (Urim Area, Akara Area, Boro Area)	Agricultural	Single Dwelling	20	40	0.4	Ground +1	<ul style="list-style-type: none"> - Agro based industries Permitted - Single dwelling units Permitted - Minimum Subdivision is 0.4 Ha
20B	Area on the western side of Akara Hills covering the area around Siaya County aggregation Industrial Park.	Industrial	Go d owns, Industrial Parks, Warehouses Office Buildings	50		0.4	Ground +2	<ul style="list-style-type: none"> - All developments to be subjected to NEMA approval
21	Usenge Urban Centre	Commercial	High rise commercial blocks, Office Parks Mixed Use Buildings	60	180	0.5	Ground +2	<ul style="list-style-type: none"> - Provide for loading and offloading lanes - Any premises to which members of the public are ordinarily admitted to provide PwD friendly environment
		Residential	Flats/Apartments	50	200	0.1	Ground +3	



ZONE	AREA(S) COVERED	TYPE(S) OF DEVELOPMENT ALLOWED	TYOPOLOGY	GC %	PR %	MINIMUM PLOT SIZE (HA)	NO. OF FLOORS ALLOWED	SPECIAL CONDITIONS
22	Kanyaboli Lake	Eco-tourism& Recreational, Commercial (Hotels), Conservational Aquaculture, Residential	Villas. Eco lodges, Masionettes Floating restaurants	40	120	0.4	Ground +2	<ul style="list-style-type: none"> - Development to employ flood control measures - WRA/ NEMA Guidelines to be strictly adhered to



7.4 Proposed Land Use

The proposed land use has built on the existing uses and the proposed structure plan. The proposed land use shows the location of important facilities, institutions and projects within the Municipality. The land uses in the plan are residential, industrial, educational, recreational, public purpose, commercial, public utility, transportation and agriculture.

The table below shows the summary of the proposed land use budget within the Municipality.

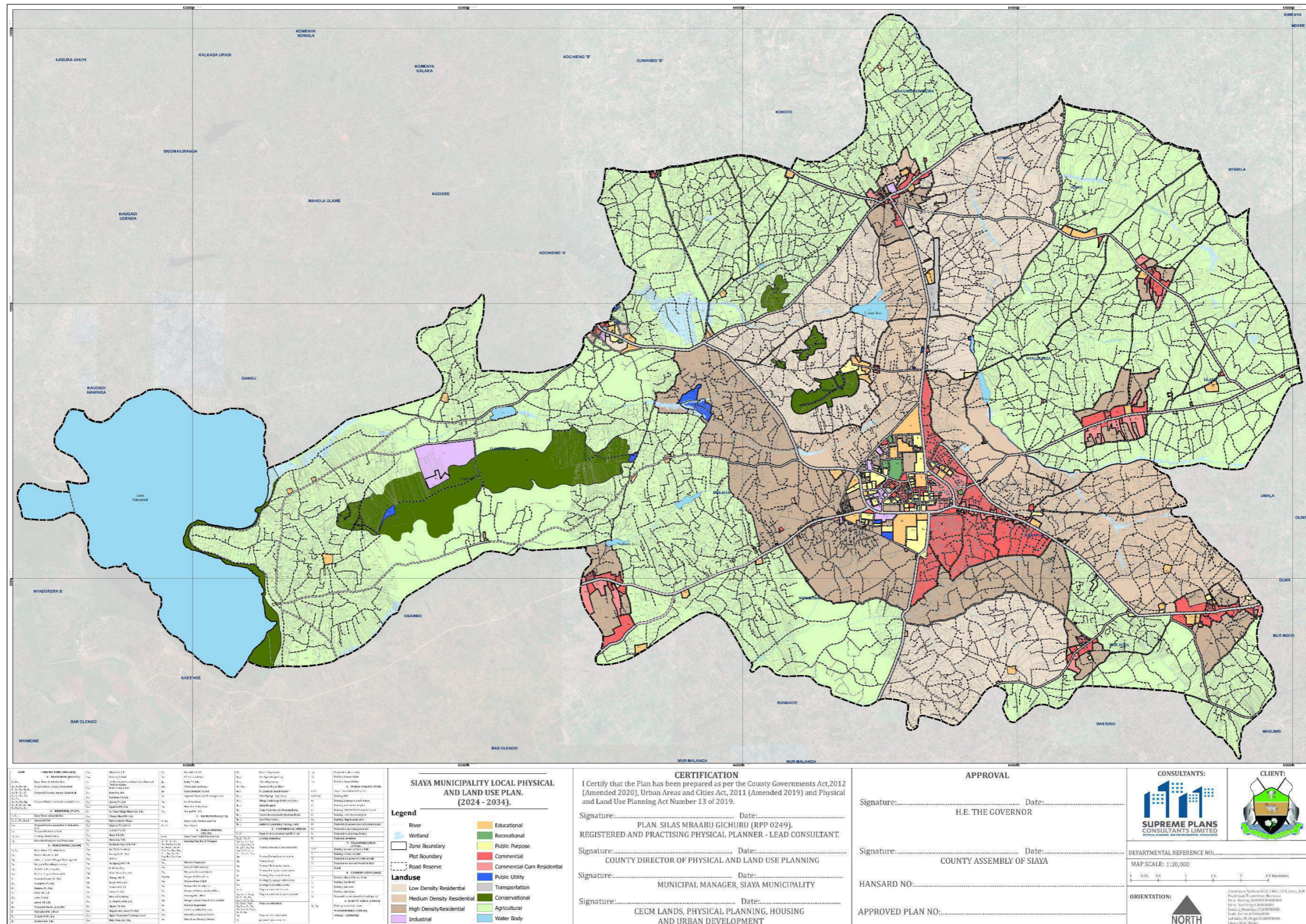
Table 7-2: Siaya Municipality Land Use Budget

Land Use code	Land Use	Area (Ha)	Percentage
0	Residential	4135.32	26.42
1	Industrial	79.27	0.51
2	Educational	136.89	0.87
3	Recreational	17.10	0.11
4	Public Purpose	101.41	0.65
5	Commercial	458.63	2.93
6	Public Utility	27.94	0.18
7	Transportation	1359.86	8.69
8	Conservational	540.0	3.45
9	Agricultural	7489.03	47.85
	Water Bodies	1305.36	8.34
	Grand Total	15,650.81	100.00

The map below shows the proposed land uses within the Municipality.



Map 7-3: Siaya Municipality Local Physical and Land Use Development Plan



7.5 Action Area Plans

7.5.1 Siaya Town

The Action Area Plan covers the entire of Siaya Town and the area under its influence. This area is dominated by administrative offices, educational facilities and commercial premises. The area around the town are the residential areas serving the Town. Residential land use is the dominant land use within the Siaya Town Action Area. These areas will allow high density development thus discouraging urban sprawl into the agricultural areas. The Table below summarises the land use budget for Siaya Town Action Plan.

Table 7-3: Siaya Town Action Area Plan Land Use Budget

Land Use Code	Land Use	Area (Ha)	Percentage
0	Residential	48.90	15.64
1	Industrial	15.80	5.05
2	Educational	58.82	18.81
3	Recreational	13.66	4.37
4	Public Purpose	67.52	21.59
5	Commercial	47.19	15.09
6	Public Utility	3.48	1.11
7	Transportation	57.38	18.35
	Total	312.75	100.00

Developments within Siaya Town will be guided by zoning guidelines for Zone 1.



7.5.2 Ndere Urban Centre

Ndere Urban Centre is located at the junction of Siaya-Rangala Road (B9) and Boro-Ndere Road. Due to its close proximity to Siaya Town the urban centre has growth to be the second largest urban area within the Municipality.

Table 7-4: Ndere Urban Centre Land Use Budget

Land Use Code	Land Use	Area (Ha)	Percentage
0	High Density Residential	50.80	40.72
0	Low Density Residential	28.48	22.83
0	Medium Density Residential	23.64	18.95
1	Industrial	2.51	2.01
2	Educational	2.63	2.11
3	Public Purpose	1.58	1.26
4	Recreational	0.26	0.21
5	Commercial	9.87	7.91
5	Commercial Cum Residential	4.91	3.94
6	Public Utility	0.00	0.00
7	Transportation	0.02	0.02
8	Agricultural	0.03	0.03
	Total	124.74	100.00

The land uses within the urban centre are as summarised in the table below.

The development within the urban centre will be guide by zoning standards as provided in zone.

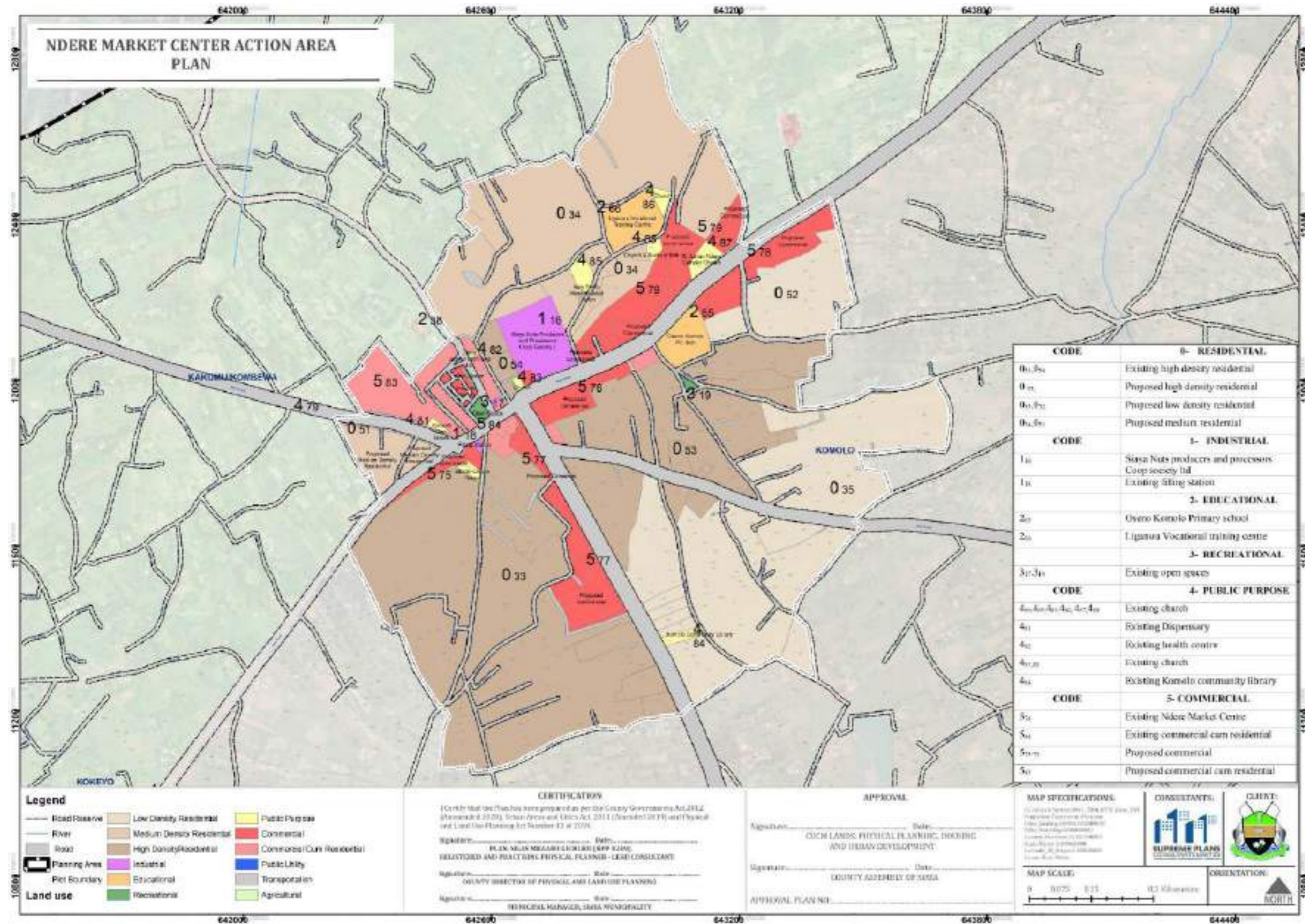


Table 7-5: Ndere urban Centre Land Uses

Code	o- Residential
O ₅₃ ,O ₅₄	Existing High Density Residential
O ₃₃ ,	Proposed High Density Residential
O ₃₅ ,O ₅₂	Proposed Low Density Residential
O ₃₄ ,O ₅₁	Proposed Medium Residential
Code	1- Industrial
1 ₁₆	Siaya Nuts Producers and Processors Co-op Society Ltd
1 ₁₈	Existing Filling Station
	2- Educational
2 ₆₅	Oseno Komolo Primary School
2 ₆₆	Liganwa Vocational Training Centre
	3- Recreational
3 ₁₇₋₃₁₉	Existing Open Spaces
Code	4- Public Purpose
4 _{80,483,485,486, 487,488}	Existing Church
4 ₈₁	Existing Dispensary
4 ₈₂	Existing Health Centre
4 _{83,85}	Existing Church
4 ₈₄	Existing Komolo Community Library
Code	5- Commercial
5 ₇₄	Existing Ndere Market Centre
5 ₈₄	Existing Commercial Cum Residential
5 ₇₅₋₇₉	Proposed Commercial
5 ₈₃	Proposed Commercial Cum Residential



Map 7-5: Ndere Action Area Plan



7.5.3 Ulafu Urban Centre

The Urban is located within the agricultural area in Ulafu sublocation. High density Urban Development will be contained within the demarcated urban area to protect the agricultural land. The table below summarises the land use budget within Urban Centre.

Table 7-6: Ulafu Urban Centre Land Use Budget

Land Use Code	Land Use	Area (Ha)	Percentage
0	High Density Residential	67.51	60.43
2	Educational	2.22	1.99
3	Public Purpose	0.36	0.32
5	Commercial	18.48	16.54
2	Commercial Cum Residential	23.14	20.72
8	Agricultural	0.00	0.00
	Total	111.71	100.00

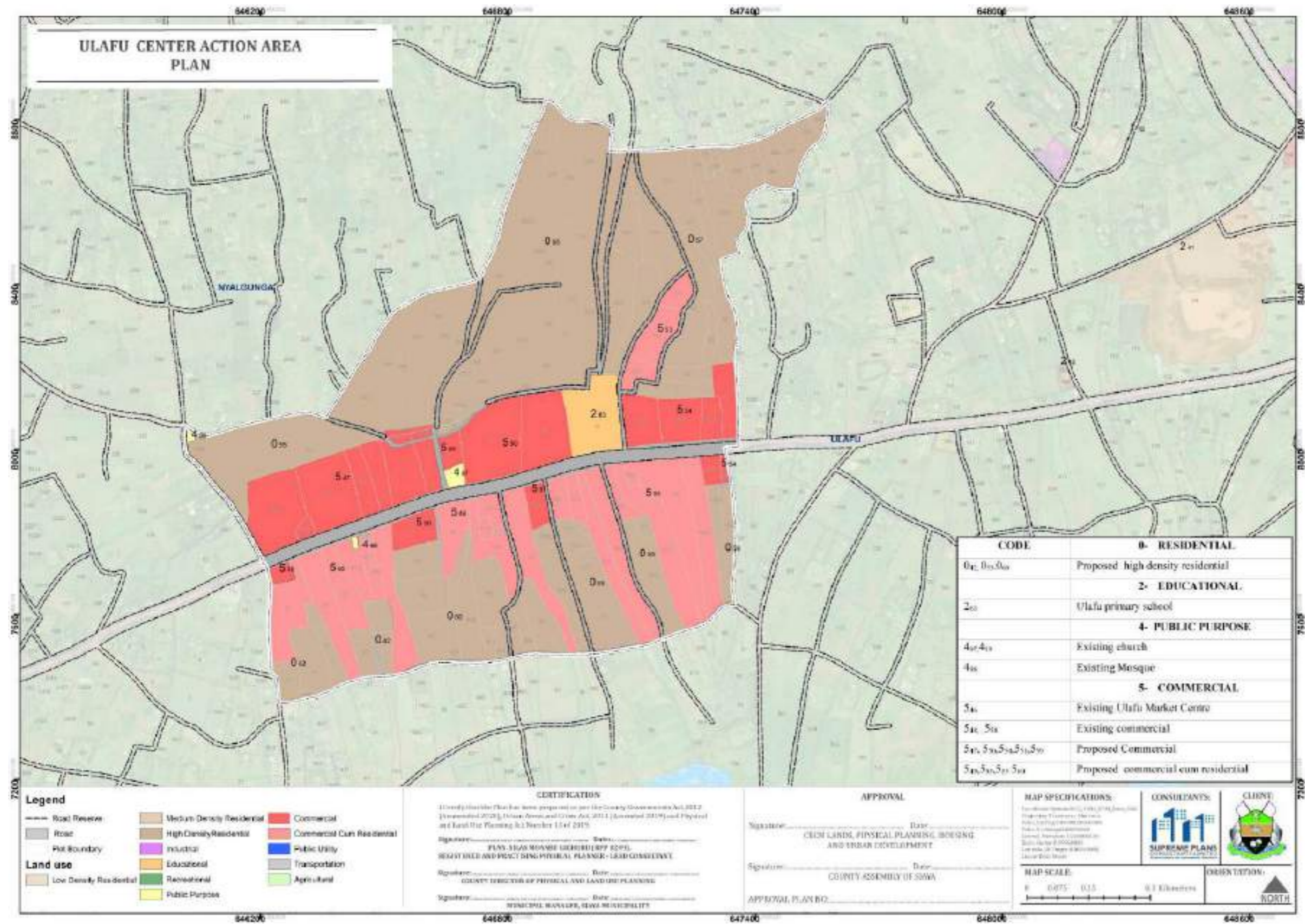
The land uses within Ulafu Urban Centre are as summarized in the table below.

CODE	1- RESIDENTIAL
0 ₄₂ , 0 ₅₅ -0 ₆₀	Proposed high density residential
	2- EDUCATIONAL
2 ₆₃	Ulafu primary school
	4- PUBLIC PURPOSE
4 ₉₇ ,4 ₉₉	Existing church
4 ₉₈	Existing Mosque
	5- COMMERCIAL
5 ₄₆	Existing Ulafu Market Centre
5 ₄₈ , 5 ₅₈	Existing commercial
5 ₄₇ , 5 ₅₀ , 5 ₅₄ , 5 ₅₁ , 5 ₅₉	Proposed Commercial
5 ₄₉ , 5 ₅₃ , 5 ₅₅ 5 ₆₀	Proposed Commercial cum residential

Development within the Urban Centre will be carried out according to the zoning conditions of zone 14. The map below shows the proposed Ulafu Action Area Plan



Map 7-6: Ulafu Urban Centre Action Area Plan



7.5.4 Bar Agulu Urban Centre

Bar Agulu Urban Centre is located along the Siaya – Luanda (C672) Road one of the major arteries within the Municipality. The high level of activity within the road encourages leapfrog development. This will the servicing of the development expensive thus the need to contain the development within nodes. Bar Agulu Urban Centre is thus proposed to develop and provide essential services to the residents within the adjacent agricultural hinterland. The table below summarises the land use budget for the proposed land uses.

Table 7-7: Bar Agulu Land Use Budget

Land Use Code	Land Use	Area (Ha)	Percentage
0	High Density Residential	66.32	54.41
0	Medium Density Residential	14.27	11.71
2	Educational	6.38	5.24
3	Public Purpose	1.64	1.35
4	Recreational	0.03	0.02
5	Commercial	31.19	25.59
5	Commercial Cum Residential	2.05	1.68
	Grand Total	121.89	100.00



The action area plan proposes high density residential areas to reduce conversion of agricultural land for urban development. Development within the Urban Centre will be carried out according to the zoning conditions of zone 13. The table below show the various uses proposed within the Urban Centre

CODE	RESIDENTIAL
0 ₄₄ , 0 ₄₅ , 0 ₆₁₋₀₆₅	Proposed high density residential
	EDUCATIONAL
2 ₅₉	Ngiya Vocational Training Center
2 ₆₀	Holy Cross Sec. School
2 ₆₁	Korindo Pri. School
2 ₆₂	Excel Academy
	RECREATIONAL
3 ₂₀	Existing open space
	PUBLIC PURPOSE
4 ₁₀₀	Bar Agulu Dispensary
4 ₁₀₁₋₄₀₅	Existing church
	COMMERCIAL
5 ₅₅	Existing Bar Agulu Market Centre
5 _{55,557,558}	Existing commercial
5 _{52,584-592}	Proposed Commercial
5 ₉₃	Proposed commercial cum residential

The map below shows the proposed land uses within the Urban Centre.



7.5.5 Uhuru Urban Centre

Uhuru Urban Centre is located within a rich agricultural Hinterland. To control the conversion of rich agricultural land to urban development there is need to demarcate the area where high density development will be allowed. The table below analyses the proposed land use within the urban centre while the map below shows the location of the land uses.

Table 7-8: Uhuru Market Centre Land Use Budget

Land Use Code	Land Use	Area (Ha)	Percentage
0	High Density Residential	29.57	68.50
2	Educational	0.47	1.10
3	Public Purpose	0.55	1.26
4	Recreational	0.08	0.19
5	Commercial	6.78	15.71
5	Commercial Cum Residential	5.61	13.01
8	Agricultural	0.11	0.24
	Grand Total	43.17	100.00

The urban centre has expanded area for location of commercial activities. To contain high density development within the agricultural areas the action area plan proposes areas where high density residential can be carried.

Development within the Urban Centre will be carried out according to the zoning conditions of zone 12. The table below show the various uses proposed within the Urban Centre.

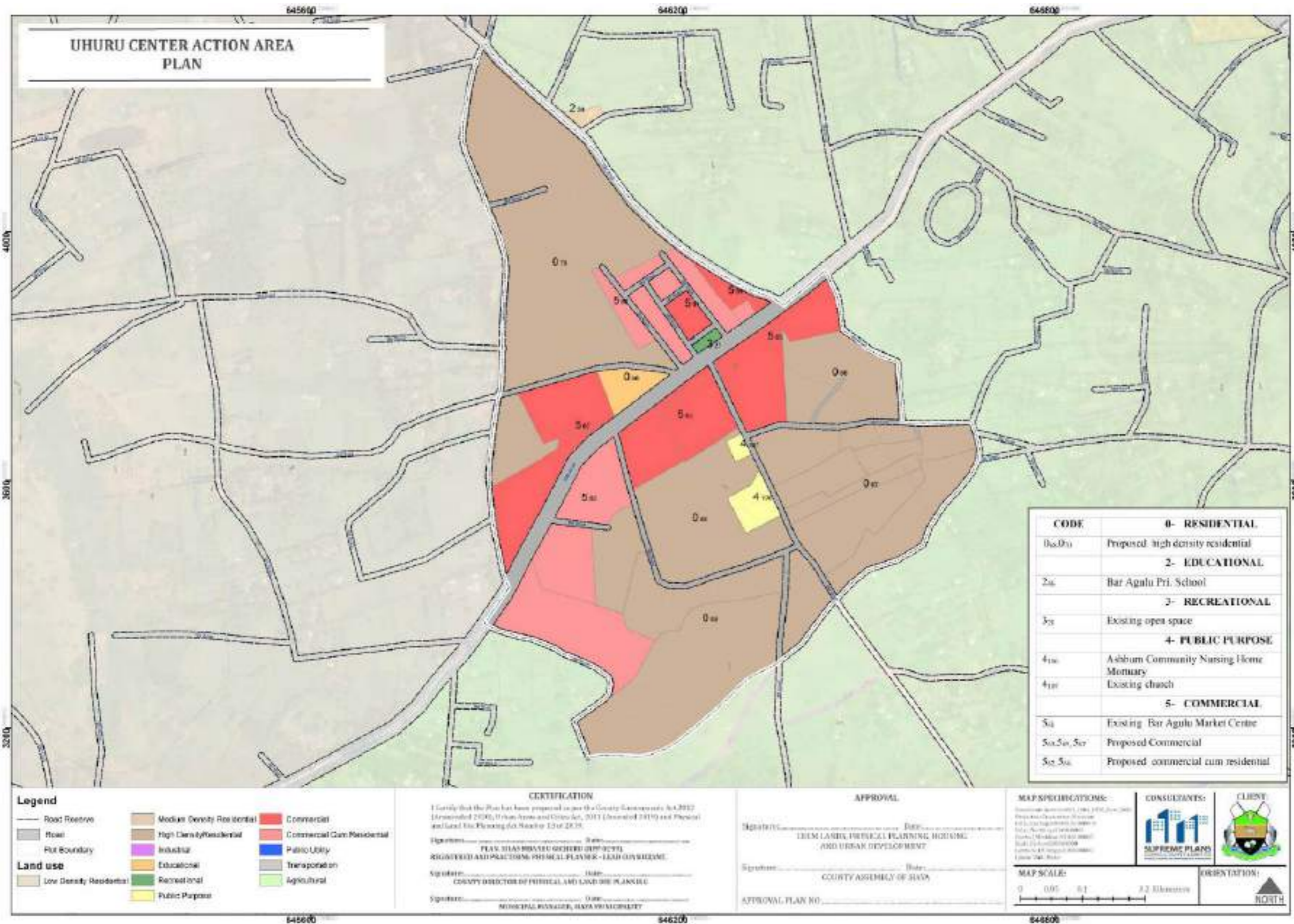


Table 7-9: Land Uses Within Uhuru Urban Centre

Code	Residential
068-070	Proposed High Density Residential
	Educational
246	Bar Agulu Pri. School
	Recreational
321	Existing Open Space
	Public Purpose
4106	Ashburn Community Nursing Home Mortuary
4107	Existing Church
	Commercial
561	Existing Bar Agulu Market Centre
563-565, 567	Proposed Commercial
562, 566	Proposed Commercial Cum Residential



Map 7-8: Uhuru Urban Centre Action Area Plan



7.6 General Guidelines

Development within the municipality is expected to adhere to provisions of the Physical and Land Use Planning Act and its regulations. In addition, the following guidelines are proposed.

7.6.1 Location and Approval of Petrol Stations

Under this category, four tiers are envisioned as per EPRA regulations depending on land area and services offered as follows; -

- a) **Tier One** - This consist only of fuel pumps and filling accessories due to allowed small plot size no ancillary developments are allowed.
- b) **Tier Two** - This will include the pumps, the service bay and Ancillary services such as minimart, ATMs, Chemists and shops. It's barred from operating an eatery.
- c) **Tier Three** - This will include the pumps, the service bay and Ancillary services such as minimart, ATMs, Chemists, Eateries, Office blocks, banking halls and shops.
- d) **Tier Four** – This will include the pumps, the service bay and Ancillary services such as minimart, ATMs, Chemists, Eateries, Bakery, Office blocks, banking halls and shops.

Allowable Minimum plot size;

- a) **Tier One** - 0.05 Ha minimum and a depth (the station's entry line to the back) of 22 metres. The allowable ground coverage is 50%
- b) **Tier Two** - 0.15 Ha minimum and a depth (the station's entry line to the back) of 24 metres. The allowable ground coverage is 50%
- c) **Tier Three** - 0.22 Ha minimum and a depth (the station's entry line to the back) of 69 metres. The allowable ground coverage is 50%
- d) **Tier Four** – Above 0.22 Ha and a depth (the station's entry line to the back) of 69 metres. The allowable ground coverage is 50%

Building lines

9m on roads above 18 m and 6m on roads below 18m.

Frontage road;

Minimum 12m road in CBD and 15m wide in other areas.



Location and conditions

- a. Developments included on the precinct shall be guided by tier category.
- b. Allowable along transit routes and only on straight stretches of road with a clear sight of traffic except in urban areas
- c. No petrol stations shall be sited opposite each other along two-way traffic corridor
- d. The distance between stations shall be determined by the traffic volume on given corridors
- e. Not allowable in residential areas.
- f. Buildings are to be located a minimum of 12 m from road property boundaries to provide adequate area for maneuvering of vehicles in the service area.
- g. Canopies and supports over pumps and service equipment should be constructed of non-combustible material.
- h. No fuel pumps or other mechanical equipment shall be installed so as to permit servicing of motor vehicles standing in a public street or highway.

Access and Parking

- a. Developments shall provide buffer, acceleration and deceleration lanes and have clear entry and exit points.
- b. Frontage of the plot to be of not less than 30m.
- c. Development proposals shall be accompanied by Traffic management plans.
- d. Every petrol station with a convenient shop/store etc., shall provide one car parking space for every 4m square floor space of the shop/stores
- e. Application to be required to undertake an environmental Impact Assessment as part of approval conditions

In addition to these regulations, it is required that developers/operators seek approval from the relevant road agencies and EPRA.

7.6.2 Light industrial - minor processing plants, cottage industries

These includes cottage, industries, agro-processing, posho mills, tailoring, wood workshops.

Plot Coverage 60%, Maximum allowed floors 3, 1 Parking Space per 100m².



7.6.3 Educational Land Use Guidelines

These guidelines form the basis for development control within the education sector.

Type of institution	Land requirement	Plot coverage (%)	Location requirements	Other requirements
Day care centres	0.045ha	35	Within residential areas	Not fronting a major road Not within a commercial area Not within industrial areas
Nursery schools	Single stream- 0.1ha Double stream- 0.15ha Triple stream- 0.25ha	10	Within residential areas	Not fronting a major road Not within a commercial area All classes ground floor Design of facilities to cater for physically challenged persons
Primary schools	Combined with nursery minimum of 3.25ha Single stream- 1.2ha Double stream- 2.0ha Triple stream- 3.0ha	10	Within residential areas	Have an access road of a minimum of 12m Design of facilities to cater for physically challenged persons Swimming pool area to be fully buffered by physical barrier Allowable maximum number of floors is G+2



Type of institution	Land requirement	Plot coverage (%)	Location requirements	Other requirements
Secondary schools	Single stream- 3.5ha Double stream- 4.0ha Triple stream- 4.8ha	15	-	Access road should be a minimum of 15m Design of facilities to cater for physically challenged persons Swimming pool area to be fully buffered by physical barrier Allowable maximum number of floors is G+2
Commercial colleges	0.1ha	75	Within commercial areas	Not located in residential areas

7.6.4 Public Open Spaces and Recreational Facilities

The Municipality to identify, survey and maintain a register of all public open spaces and recreational facilities within its jurisdiction.

Land Use	Building Type	GC (%)	PR (%)	Min. Plot size (Ha)	No. of Floors	Conditions
Public Purpose -Religious	- Church, - Mosque - Temple	35	180	0.1	5	- Maintain Setbacks of 3 meters and appropriate Building lines - 9m on roads above 18 m and 6m on roads below 18m - Provide 1 Parking Space per 20m ² . Provide functional onsite parking. No obstructions and parking of road reserves



Land Use	Building Type	GC (%)	PR (%)	Min. Plot size (Ha)	No. of Floors	Conditions
						<ul style="list-style-type: none"> - Design of facilities to cater for physically challenged persons - Developers to facilitate mechanisms to deter noise pollution beyond decibels allowed
Health – Hospital		40	400	2	105	<ul style="list-style-type: none"> - Setbacks 3m all round, Building lines 9m on roads above 18m and 6m on roads below 18m
Health Centre and Dispensary		35	175	0.2	5	
Clinics		40	80	0.1	2	<ul style="list-style-type: none"> - Clinics Can be located within commercial building. - If located in a mixed used building, clear physical separation of the land uses shall be required.
Vet Clinics		50	80	0.045	2	<ul style="list-style-type: none"> - Vet Clinics should not be located within residential areas. Developers/operators to provide mechanisms for noise control. -

General Regulations on Health Sector

- a. Design of facilities to provide PwD friendly environment
- b. Provide for waste management Plan and adequate mechanism for disposal of medical waste.
- c. Provide adequate space for waiting bay, containment rooms and emergency rooms.
- d. Provide adequate parking spaces



7.6.5 Developments within the Lake

This covers proposals of development within Lake Kanyaboli; floating restaurants, Water sports, landing bays and aquaculture. These developments shall require County Government and relevant National Government agencies' approvals as applicable which shall be accompanied by sectoral comments and rigorous public participation on the adjacent and immediate neighborhoods developers, users and residents.

Conditions

- a. Development proposals within the Lake shall be submitted to the County government accompanied by Safety and Stability reports/plans from relevant licensed professionals.
- b. No person shall alter, reroute, deepen, widen or change in any way any existing ditch, canal, drain or drainage system without first obtaining a written permit from the County Government and the Kenya Maritime Authority where applicable.
- c. The development of floating restaurants is to have strict observance of environmental rules.
- d. Developments are not to be located along established water transport routes so as to prevent hinderance to transport.
- e. Developments to demonstrate proper waste management strategies and not to discharge any waste into the lake
- f. Aquaculture proposal to seek comments from department of agriculture and Fisheries.
- g. The County government shall cancel permits/approval of developments on the lake which shall become nuisance to adjacent developments on the shore.

7.6.6 Projects of Strategic County Importance

These are developments of great County importance and pride, great design and scale, cultural, social and financial significant. The county has a role to facilitate creativity and rational unique investments. The location of Strategic development within the Municipality



can be allowed subject to rigorous stakeholder’s participation & consent and it not resulting to adverse social, spatial and environmental impacts.

The CECM in charge of Lands, Physical Planning Housing and Urban Development shall form multi-sectoral advisory committee to evaluate, supervise stakeholder’s engagement and advise the approving authorities on its approval.

7.6.7 Comprehensive Land Subdivision Guidelines

When carrying out comprehensive subdivision, the following shall apply.

- a. Minimum plot size shall adhere to the proposed land use guidelines and zoning plan
- b. Dimensions shall be adequate to allow balance development
- c. Large scheme shall allocate land for public use and utilities. Land for recreational facilities/areas, rehabilitation center, social halls/centers.
- d. Subdivision will provide roads, surrendered to the county government of widths stated in the road widening policy
- e. The application may be subjected to surrender in accordance with s paragraph 7 of the Third Schedule (s.55) of the Physical and Land Use Planning Act of 2019 for public use at free of cost. This section should be applied reasonably.
- f. Planning report and public notices shall be required as provided for in Physical and Land Use Planning (General Development Permission and Control) Regulations, 2021. (L.N.253)

Road’s size

The allowable minimum road width size in all areas is 9m.

The following will apply to new subdivision schemes;

	Details	Recommended widths
1.	Primary distributors	Main spine 60m Important through routes 30-36m
2.	Main Roads in commercial or industrial area	25m
3.	Commercial streets zone	15m



4.	Industrial area streets	15m
5.	Major access road exceeding 200m in length	15m
6.	Access road not exceeding 200m in length (normal Residential Street)	12m
7.	Normal residential street exceeding 150m in length	15m
8.	Normal residential street exceeding 500m in length likely to become public transport route	18m
9.	Cul-de-sac or short road serving not more than 6 subplots	9m
10.	Service lane	6m
11.	Cyclist Lanes	3m
12.	Footpaths	2m
	<ul style="list-style-type: none"> • For Cul-de-sac serving less than 10 plots a single footway is sufficient • Occasional obstructions shall nowhere reduce the footway width below 1.2m. • Pedestrians shall be physically separated from moving vehicles by a barrier such as an up-stand kerb, open drain or wide verge 	

Existing Roads Less than 9m Wide

New Developments fronting roads less than 9m wide road shall be required to surrender a minimum 1.5M strip for road expansion. In scenarios where road expansion is not possible, Number of floors allowed shall be calculated from the ratio of existing road width, minimum road width (9m) and general number of floors in the zone.

$$N = \frac{y}{9} \times f$$

Where N=Number of floors allowable on specific plot

y= Fronting Road width

f= General allowable number of floors in the zone

g= Minimum Road size



7.6.8 Rain Water Harvesting and Storage

All building plans shall be required to incorporate rain water harvesting and storage mechanism.

7.6.9 Storm Water Drainage

Developers shall provide mechanisms for storm water drainages in development proposals as in Regulations No 28 of the Physical and Land Use Planning (Building) Regulations, 2021(L.N. No. 239 of 2021). In reference to article 66 of the Constitution, the county government may require storm water drainage easement on any land.

7.6.10 Use of Renewable Energy on Developments

Developers should comply with the provisions of Energy Act, 2019 especially on utilization of renewable energy.

7.6.11 Outdoor Advertisements

Siaya Municipality has mandate to regulate Outdoor advertisements within its boundaries. The regulation of outdoor advertisements shall be regulated as per the County Outdoor Advertising Control Act, 2018. The Municipality may take action to modify or remove any advertising device/structure that breach the advertising industry's code of ethics, (refer List of Negative Advertisements) or that otherwise causes a traffic hazard.

Negative Advertisements

- a) Nudity
- b) Racial advertisements or advertisements propagating status, community or ethnic differences
- c) Advertisements propagating exploitation of women or children
- d) Advertisement having sexual overtone
- e) Advertisement depicting cruelty to animals
- f) Advertisement depicting any nation or institution in poor light
- g) Advertisement casting criticism of any brand or person
- h) Advertisement glorifying violence
- i) Destructive devices and explosives depicting items



j) Advertisement of Weapons and related items such as firearms, firearm parts

The process for outdoor advertising application shall require the following:

- A planning report giving a broad framework of the proposal in line with the approved control guidelines
- A photographic simulation of the proposal illustrating the anticipated visual impact and appearance in terms of surrounding character and function;
- A site plan showing every building on the site and the position with dimensions of the sign or advertising in relation to the boundaries of the site, the location of the streets and buildings on properties abutting the site;
- Consent or legal agreement between the structure owner and registered land owner

7.6.12 Urban Agriculture

Protection of nearby residential areas, rivers and the lake from adverse agricultural activities. The County Government will require EIA/Audits and EMPs where appropriate. Annual Environmental Audits to be carried out in large scale farm.

In the areas where land is used for residential use, roof gardens, green wall and back yards, among others should be encouraged to practice agriculture.

7.6.13 Development's Regularization

The objective of this guidelines is to;

1. Provide a framework to regularize unapproved developments which meets minimum threshold.
2. To provide for regularization of development commenced or completed before date of commencement of zoning plan
3. Bring unauthorized development under umbrella of planning framework and provide basic infrastructures and services in concerned areas
4. Provide an eligibility framework for developments regulation

Regularization is applicable to both private and public land. It should be time bound to enable developers to comply and thereafter phased out based on normal development application. Any unauthorized development which shall not have been regularized under set period shall be liable for demolition and disconnection of services.



The Process of Development Regularization

1. The Municipality shall serve notice to the owner of the unauthorized development through the appropriate PLUPA Development Control Form.
2. On receiving the notice, the owner shall comply and furnish the relevant particulars and documents as specified on the notice
3. Any owner may, on his/her own motion, make an application to the Municipality for regularization of unauthorized development. The regularization application shall be done through a Registered Physical Planner for change of use, submissions, extension of use and via an Architect and structural engineer for building plans.
4. On receipt of relevant particulars and documents from the owner, the Municipality shall, after necessary inquiries and is satisfied that the development can be regularized, issue order requiring the owner to pay regularization fees.
5. The Municipality may regularize development subject to conditions he or she might impose and certificate of regularization shall not be issued unless such conditions are met by the owner within prescribed timelines.

Unauthorized Developments that Cannot be Regularized

1. Unauthorized development on public land or land otherwise reserved for public utility
2. Unauthorized development on existing or proposed roads, including those proposed for widening, communications and other civic facilities or public utilities
3. Unauthorized development which is structurally unsound or which poses danger to occupants, neighbors or general public.
4. Unauthorized development on land belonging to the government and not allotted
5. Unauthorized development on riparian reserves and forest land
6. Unauthorized developments on disputed land
7. Unauthorized development done in violation of any law other than planning law.



7.6.14 Developments by Government Agencies

All government agencies carrying out development within the Municipality are required to seek for development approvals from the Municipality/County Government of Siaya. Development application of National strategic projects shall seek comments from the county government as envisioned in the Physical and Land Use Planning (National Physical and Land Use Development Plan) Regulations of 2021 in Legal Notice No. 41.

7.6.15 Development Approval Guidelines

Developments need an application for issuance of development permit that provides information to the assessment personnel about the proposed development. Development applications shall be made through the appropriate PLUPA form(s). After evaluation of the applications the Municipality shall issue approval or rejections using the appropriate development control instruments/tools.

Types of development that need a development application include:

- a) Building Plans approval;
- b) Alterations and additions to existing buildings;
- c) Demolition of dwellings,
- d) Change-of-use
- e) Extension of use
- f) Extension and Renewal of land of lease
- g) Subdivision & Amalgamation of land
- h) Land readjustments
- i) Master plans
- j) Outdoor Advertising and signage;
- k) Regularization of existing developments
- l) Renewals of expired development permits
- m) Georeferenced and Sectional plans



Key Considerations

Factors to consider include:

County's Requirements

Local physical development plans (LPDPs), Zoning plans, by-laws and related policy documents contains requirements in form of guidelines and/or objectives. These are geared to minimize adverse impacts and maximize positive benefits to the community.

The Site and Neighbouring Properties

Under this consideration, the site characteristics (constraints and opportunities) and the impact of proposed development on the neighbourhood should be evaluated.

Consultants

They include design professionals such as architect (for building plans), physical planner (for change of use, subdivisions, extension of lease, and outdoor advertisement), and environmental expert (for environmental impact assessment and audit). In all these submissions no consent will be given where professionals are not involved.

Plans and Drawings

The type of plans required will vary depending on the type of development. If a proposal is not provided for in the matrix below inquiry should be made at the Planning Department.



Table 7-10: Development Application Requirements

ITEM (Submission by A - Architect P – Planner)	Change of Use (P)	Subdivision (P)	Extension of use (P)	Amalgamation (P)	Boundary/ Roads adjustment s (P)	Amendment s of approved development s (P)	Development Regularization (P)	Outdoor Advertising (P)	Extensio n of lease (P)	Land use plan (P)	Duplicat e copies	Buildin g plans (A)
Ownership documents	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Planning report	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
English Newspaper	✓		✓	✓			✓			✓		
Swahili Newspaper	✓		✓	✓			✓			✓		
Site Notice	✓		✓	✓	✓		✓			✓		
Location & Site plan	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
Contours data		✓			✓	✓				✓		



ITEM (Submission by A - Architect P – Planner)	Change of Use (P)	Subdivision (P)	Extension of use (P)	Amalgamation (P)	Boundary/ Roads adjustment s (P)	Amendment s of approved development s (P)	Development Regularization (P)	Outdoor Advertising (P)	Extensio n of lease (P)	Land use plan (P)	Duplicat e copies	Buildin g plans (A)
Colour coding		✓		✓	✓	✓				✓		
Linen copy		✓		✓								
Pictorial illustration	✓		✓				✓	✓				
Traffic management plan										✓		
Schemes/Plans		✓			✓	✓	✓			✓		✓
Elevations								✓				✓



7.6.16 Recommended Organization and Staffing

The below proposal can play major role in promoting effective development application and control mechanism in the municipality;

Staffing -Adequate and Qualified staff.

For the municipality to sustainably participate in the implementation of the Spatial Plan it requires relevant qualified personnel to participate plan implementation. The following expertise is required; Registered Physical planners, Architects, Urban designers, Structural engineers, GIS experts, surveyors and Environmentalists

Automation

Automation of Payments will reduce revenue loss, increase convenience, reduce timelines and enable efficiency and accountability of resource collected and utilized.

Automation in Development application processes will lead to removal of quacks in the system, increase accountability and facilitate effective record keeping and monitoring

Use of GIS and Land Information Technology in Development Control and Monitoring

This is likely to lead to increase in surveillance, increase in revenue collection, increase in adherence in development control standards and development order

Update and Revisions of Development Control Tools

Frequent update of cadastral data, approved land uses and alterations on the approve zoning plan is recommended to keep the tools relevant and current.

Adequate Instruments and Equipment

Procure and maintain adequate Computers, software, survey instruments, printers, plotters, servers, data storage facilities, working stations and offices.

Maintain Consistent Workplan and Timeline for Approval Assessment and Issuance

Prepare and avail service charter with current charges and requirement.

