



REPUBLIC OF KENYA



MIGORI COUNTY

AWENDO ISUDP

INTERGRATED STRATEGIC URBAN DEVELOPMENT PLAN 2018 - 2038



CERTIFICATE

I certify that this Plan has been prepared as per the requirements of the Physical Planning Act Cap 286.

Physical Planners' Name: Pln. Onesmas MUSYOKI Reg No: 0229

ACKNOWLEDGMENT

Special thanks to The County Government of Migori, for having recognized the importance of planning in development. This was demonstrated through facilitation of preparation of this Awendo town ISUDP 2018 - 2038. The County Executive Committee has been instrumental in the plan preparation exercise, through the consideration of the project in the budget as well as provision of the ultimate and overall leadership to ensure the success of this plan deserve special gratitude. The Chief Officer for Lands, Housing and Physical Planning has been most dedicated to ensure the plan is effectively and properly prepared and offered enormous contribution to the preparation of this plan.

The Director County Department of Lands, Housing and Physical Planning with his competent team from the Physical Planning section and various sections was instrumental in ensuring that the plan is prepared in accordance with general county sectoral policies. The National Ministry of Land, Housing and Urban Development: - Department of Physical Planning has been most crucial in providing unmatched technical and professional advice in the preparation of this plan without which the plan would have not been a success. The Director of Physical Planning who personally participated and offered his most generous professional contribution is most acknowledged.

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Last but not least all members of the public, County Departments, Sections, County staff and others who contributed in whatever manner towards the enrichment of this Land Use Plan are most appreciated. Thank you all.

FOREWORD

This Awendo Integrated Strategic Urban Development Plan has been prepared by the County Government of Migori, Department of Lands, Housing & Physical Planning within its mandate of preparing physical development plans. This is an important milestone not only for the Department but also for the town and the county at large since it will lead to the orderly and sustainable development of the town. The Plan is timely coming at a time when the country is involved in many initiatives to transform into a globally competitive and prosperous nation and when our urban areas and secondary towns are experiencing rapid developments as a result of devolution.

The Plan details the spatial vision that will guide the long term spatial development of the town for a period of 20 years. It covers the entire Awendo and the three nodal centres of Rapogi, Mariwa & Kokuro. It aims at achieving an organized, integrated, sustainable and balanced development of the town, hence informing the future use and distribution of activities by providing a framework for better spatial organization and linkages between different activities within the urban space. The approach adopted during the preparation of the Plan was highly participatory, collaborative and consultative and it brought on board participants from diverse backgrounds including national & county government ministries, departments, agencies, professionals, civil society, non-state actors among others. This is not only in conformity with the Constitutional requirements on public participation in policy making but it is hoped that this will provide the requisite basis for the implementation of the Plan.

For our county to be globally competitive, we need to balance development across it and promote optimal utilization of land and land based resources as well as to cultivate an integrated approach to development in order to address the intertwined problems of regional imbalances, skewed development and unsustainable human settlements. Let us all individually and collectively commit ourselves to the realization of the development policies and strategies contained herein and continue working together in order to realize our shared vision of a prosperous and vibrant county.

ELIJAH ODHIAMBO

CECM

DEPARTMENT OF LANDS, HOUSING AND PHYSICAL PLANNING

PREFACE

Land is a determinate resource that has to be accurately managed in order to reap maximum benefits thus the need for a spatial framework to guide its utilization. The Awendo ISUDP is a spatial vision that guides the long term spatial development of the country. It aims at achieving an organized, integrated, sustainable and balanced development of the town. The ISUDP will inform the future use and distribution of activities by providing a framework for better town organization and linkages between different activities within the urban space.

The plan has been prepared within the framework of the constitution. It seeks to achieve promises Kenyans furnished themselves under the new constitution like the right to economy; the need for balanced development across the town, the right to a clean and healthy environment and the right to property among others. It also lays a foundation on which article 66, on regulation of land uses, article 68, on maximum and minimum land holding sizes and article 69 on environment will be achieved. Other acts include the Physical Planning Act (cap 286), the NLC Act 2012 and the Land Act 2012 of the laws of Kenya. The plan covers the entire Awendo town and the three nodal centres of Rapogi, Mariwa & Kokuro.

The ISUDP, which covers a long term period of twenty years (20) from 2018-2038, addresses land use, socio-economic and environmental issues to achieve balanced and sustainable spatial development and optimal land use across the town. The plan provides comprehensive strategies and policy guidelines to deal with issues of urban development, infrastructure, energy production, industry, and sustainable human settlements. The plan is also a coordinating framework for various sectors involved in spatial planning and implementation. Lastly the plan will also form the basis upon which developments within the town will be guided.

ELIJAH GAMBERE
CHIEF OFFICER
DEPARTMENT OF LANDS, HOUSING & PHYSICAL PLANNING

MESSAGE FROM THE DIRECTOR LANDS

It is my honor to introduce this Plan to the people of Awendo and Migori County at large. The recent past has seen a deterioration in the quality of our urban areas due to uncontrolled development and increasing congestion. Awendo town specifically has experienced urban decay. This Integrated Strategic Urban Development Plan gives us the tools to rectify the situation, and establish a system that will give the town management the powers that it needs to direct development to the most appropriate locations and improve service delivery.

One of the features of this project is that the consultants were required to undertake aerial photography from which they could prepare a digital topographical base map. In addition they have prepared a cadastral map. These two are extremely valuable resources which have value far beyond the confines of spatial planning. They will assist in mapping and managing utilities such as water and electricity and in integrating the planning and taxation functions of the town. They may also be a resource that can be sold to private sector companies such as cell-phone operators.

Another feature of this work which distinguishes it from previous planning contracts is that it incorporates Capital Investment Plans. These are based on realistic estimates and prioritized according to the expressed needs of our citizens. In this way the plan provides a practical and realistic road map for the development of our much-loved town and implementation of the most important first steps in making Awendo A Green, Clean, Safe and Economically Vibrant town.

I acclaim this work to all citizens of Awendo and thank everyone who was involved in its preparation.

DENIS O. OIRO
DIRECTOR LANDS, HOUSING & PHYSICAL PLANNING

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ABBREVIATIONS

ISUDP	Integrated Strategic Urban Development Plan
TOR	Terms of Reference
SONY	South Nyanza
DTM	Digital Terrain Model
GIS	Geographic Information System
HP	Horse Power
CIP	Capital Investment Plan
NGOs	Non-Governmental Organizations
FBOs	Faith Based Organizations
CBOs	Community Based Organizations
FGDs	Focused Group Discussions
MITHUD	Ministry of Infrastructure, Transport, Housing and Urban development
MLPP	Ministry of Lands and Physical Planning
CBD	Central Business District
ICT	Information Communication Technology
CCTV	Close Circuit Television
ECD	Early Childhood Development
PWDs	People with Disabilities
KRA	Kenya Revenue Authority
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KURA	Kenya Urban Roads Authority
KWS	Kenya Wildlife Service
NHC	National Housing Corporation
PSV	Passenger Service Vehicle.
BRT	Bus Rapid Transit
EIA	Environmental Impact Assessment
KPLC	Kenya Power and Lighting Company
REA	Rural Electrification Authority
SMEs	Small & Medium Enterprises
FY	Financial Year
CFSP	County Fiscal Strategy Paper
CIDP	County Integrated Development Plans
OVCs	Orphans and Vulnerable Children
VRC	Vocational Rehabilitation Centre
UNCHS	United Nation Commission for Human Settlements
UNDP	United Nations Development Programme
NMT	Non-Motorized Transport

1.1 Background of Awendo Town

Awendo town is located in Migori County and lies along the A1 public road linking Rongo and Migori towns. Administratively the town sits in the Current Awendo Sub-County. The Town comprises the factory area and the urban core which in total covers an area of 5.96 Km². The Town has one of the largest industries in the county-South Nyanza Sugar Company. The town is in a close proximity to River Kuja and is dissected by River Sare. The mapping area is intended to cover Awendo town and the three nodal centers of Mariwa, Rapogi and Kokuro, which will translate to approximately 117.2 km² taking into consideration the sugarcane plantation sandwiched between them.

Awendo town is commercially linked to Rongo and Migori towns and is approximately 26km and 376Km from Migori Town and Nairobi respectively. The town suffers from growth restrictions due to the nucleus sugar cane farms. Its current population based on 2009 housing and population census is estimated at 24248 persons. This population also includes those who reside in Sony area.

The average population growth rate in reference to the recorded population is estimated at 2%. The average population density for the two sub-locations forming the town is 651.

The Awendo Integrated Strategic Urban Development Plan (ISUDP) is a combination of Land Use, Economic and Environmental framework Plan for all land within Awendo area of jurisdiction. The temporal scope for the Awendo ISUDP is set at 10-20 years that are considered reasonable balance between an appropriate period for strategic planning and the predictability of key variables and future trends. This period is also pegged to Kenya Vision 2030.

The plan was informed by among others:

- Resources, their availability, scale, characteristics and/or constraints and the need to attain synergies;
- The nature, scale and requirements of developmental needs;
- The tools, requirements and constraints defined in relevant legislation;
- Public policy goals and directives (e.g. developmental goals and policies, spatial and sector priorities);
- The need to meet existing and projected demands for economic development, housing, infrastructure and services;
- Environmental sensitivities;
- The need to identify and indeed create points of opportunity and choice, define key projects and ensure their implementation and development to enable and leverage further development;
- The need to ensure access for all sectors of the population to services;
- The need to protect the natural environment and to enhance and upgrade the built environment;
- The function and role of the town as an industrial, economic and administrative, and
- The critical function and role of the town as home and environment to its residents.

1.2 PURPOSE OF ISUD PLAN

The purpose of the Integrated Strategic Urban Development plan is to:

- Define a vision for future growth and development of the town over the next 10 to 20 years.
- Provide an overall integrated physical development framework for urban growth of the town.
- Provide a basis for coordinated programming of projects and budgets, hence serving as a downstream management tool.

1.3 OBJECTIVES

The specific objectives of the work were:

1. To enhance and promote integrated development of socio-economic development activities in Awendo;
2. To provide and develop sustainable human environmental and resource system;
3. To allocate sufficient space for all land-uses to ensure efficient operation and comfort of users and accommodate future growth.
4. Ensure compactness of urban form and design of transport and communication network to enhance interaction while minimizing loss of open land, agricultural land, forest, wildlife (land and riverside), water catchment areas, etc.;
5. To preserve and protect existing good features and fragile eco-system. This may often require removal of unsatisfactory features;
6. To create a specific town character by different uses of topography and other natural features and by specific groupings of uses and densities;
7. To provide a policy framework for socio-economic investments, economic use of space, infrastructure services and community facilities;

The aforementioned efforts were therefore;

- I. To enhance and promote integrated development for socioeconomic investment,
- II. To enhance economic use of space, infrastructure and services and community facilities;
- III. To help the town management have reliable digital maps for the planning of the town and for use in the infrastructure design and maintenance programmes;
- IV. To provide a framework for investments and orderly development of towns and; to develop a framework for plan implementation.

1.4 SCOPE OF THE WORK

The scope of the Awendo ISUDP was:

Digital mapping:

- Identification of existing geodetic control network
- Aerial photography acquisition
- Aerial photography data processing and terrain data mapping
- Acquisition and Digitalization of Cadastral Plans
- Quality control & assurance and final delivery of products
- A situational analysis of the current socio-economic, physical, environmental and cultural characteristics of the city

ISUD Plan:

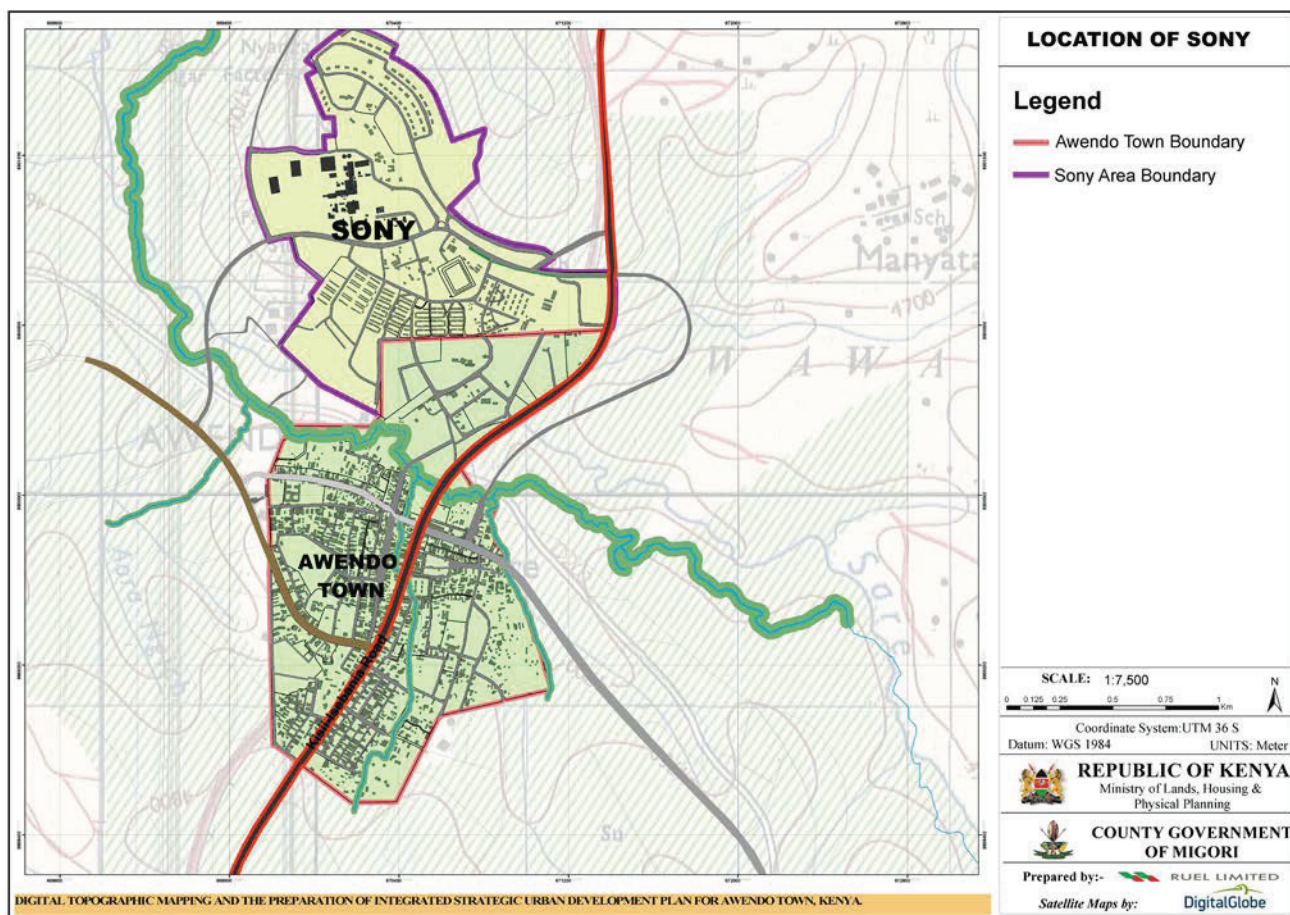
- Growth assumption, formulation of future development scenarios,
- Structure plan with detailed land use, design guidelines and action area
- Strategic Sector Plans:
 - Transportation Plan
 - Environmental Management Plan
 - Disaster Management Plan
 - Capital Investment Plan and Implementation plan

Area of Interest

The planning area covered 15.97 Sq.km consisting of Awendo town, Sony Area, and satellite centres of Kokuro, Rapogi and Mariwa.

- The area to be mapped and planned is as shown in the figure below

Figure 1- 1: Mapping Area



1.5 DURATION OF STUDY

The assignment was planned to run for 44 weeks for both the mapping exercise and ISUDP planning process.

1.6 COMMENCEMENT AND COMPLETION OF THE PROJECT

The project was formally started in May 2015 through a consultative meeting between the planning team and officials of the county government. The Inception Report was prepared and submitted.

The planning team after consulting the client prepared an Inception report outlining the fine-tuned TOR, methodology to be applied in achieving the objectives set out in the assignment, fine-tuned work plan with timelines and Curriculum Vitae of Key Professional Experts to be engaged in the assignment. The Inception report was submitted in August 2015 as specified in the TOR.

1.7 PROJECT DELIVERABLES

The timeline for outputs and deliverables was as follows:

The planning process provided for public participation as enshrined in the Constitution and Urban Areas and Cities Act. These were designed to allow for an iteration process with stakeholder feedback and sharing of results at each stage.

1.8 STAKEHOLDERS CONSULTATIONS

The Constitution of Kenya 2010 provides rights for citizens regarding participation in public affairs, and duties on behalf of Counties and urban governments to share information and seek the views of citizens. With regards to physical planning, stakeholders' participation through face-to-face meetings, discussion and focus groups provides planners with insights and information regarding community needs, and promotes public understanding and ownership of the project.

The main purpose of the stakeholder consultation process is to build consensus among key Stakeholders' on planning process and outcome; to determine positive qualities and assets of the town and to develop a vision statement, which best articulate the desires of the citizens about the future of the town. This is done through Workshops, Focus Group Discussions (FGD), one to one meetings and interviews to gauge their views etc.

The Planning Team made an assessment of stakeholders to:

- a) Identify the key stakeholders and their interests (positive or negative) in the plan;
- b) Assess the relative influence and importance of each stakeholder and their potential impact on the plan as well as the impact of the plan on each stakeholder; and
- c) Identify how best to engage stakeholders.

This was to ensure wide and inclusive representation of all relevant stakeholders including local NGOs, FBOs, CBOs, political and community leaders, investors, landowners, industrialists, businessmen, provincial administration, locally based professionals, vulnerable groups and any other relevant individuals, group and institution.

1.8.1 Identification of Stakeholders

The following guidelines were used in selecting stakeholders in the planning process:

- People with registerable interests
- Registered property owners
- Registered Faith-based, Community-based institutions, Non-Governmental operating in the area.
- Inter-Governmental Organizations
- Traditional/ Cultural institutions
- Constitutionally elected leaders
- Defined vulnerable groups in the area
- People with business interests
- Service Providers
- Government Line Ministries/Departments

The checklist and mobilization of stakeholders was undertaken in consultation with the County Physical Planning team.

1.8.2 Stakeholder Consultation

The consultation with stakeholders included the following activities from where the information generated was used to prepare and finalize the proposals:

- Inception Workshop
- Launch Workshop
- Focus Group Discussions
- Round Table Discussions
- Situation Analysis Stakeholder Validation Workshop
- Visioning Workshop
- Interim Report Validation Workshop
- Draft ISUDP Validation Workshop
- Final Draft ISUDP and Capital Investment Plan Validation Workshop

1. Launch Workshop

This session gave the stakeholders an opportunity to appreciate the objectives of the ISUDP and the methodology that would be used as outlined in the inception report. It also allowed for creation of the operational parameters for the engagement of stakeholders in the entire planning process.

2. Focus Group Discussions

These were sessions held with specific groups within the town, mainly the market traders, informal sector businesses and community institutions. The information gathered here triangulated with data generated through other techniques.

3. Round Table Discussions

These sessions were with Key Informants to tease out issues. These sessions allowed for sharing and fine-tuning sectoral issues and opportunities at the County and town level. It allowed focus on key planning parameters.

4. Situation Analysis and Mapping Stakeholder Validation Workshop

This session provided the stakeholders with highlights of the key issues identified during the data collection. The preliminary maps were presented to allow for appreciation of the spatial

situation of the study area. Data was also presented on the key planning sectors for validation by the stakeholders.

5. Visioning Workshop

This allowed the participants to translate information from the Situation Analysis into vision of the town. The overall town vision for Awendo was then derived from the sectoral vision.

6. Interim Report Validation Workshop

This session allowed for presentation of the thematic studies looking at the current provisions and the future demand. It also allowed for spatial analysis of these demands and possible direction of supply distribution. Concepts of spatial development were generated and would inform the planning proposals.

7. Draft ISUDP Validation Workshop

The consultant presented development proposals for each sector for stakeholder input and approval. Participants were given a chance to prioritize identified projects that would be implemented in the short and long term.

8. Final Draft ISUDP and Capital Investment Plan Validation Workshop

This was a session for presentation of the final plan to the County Government and key stakeholders for final approval of the plan.

1.9 Conceptual Approach

The conceptual framework envisioned for the plan preparation is as illustrated in the Figure below.

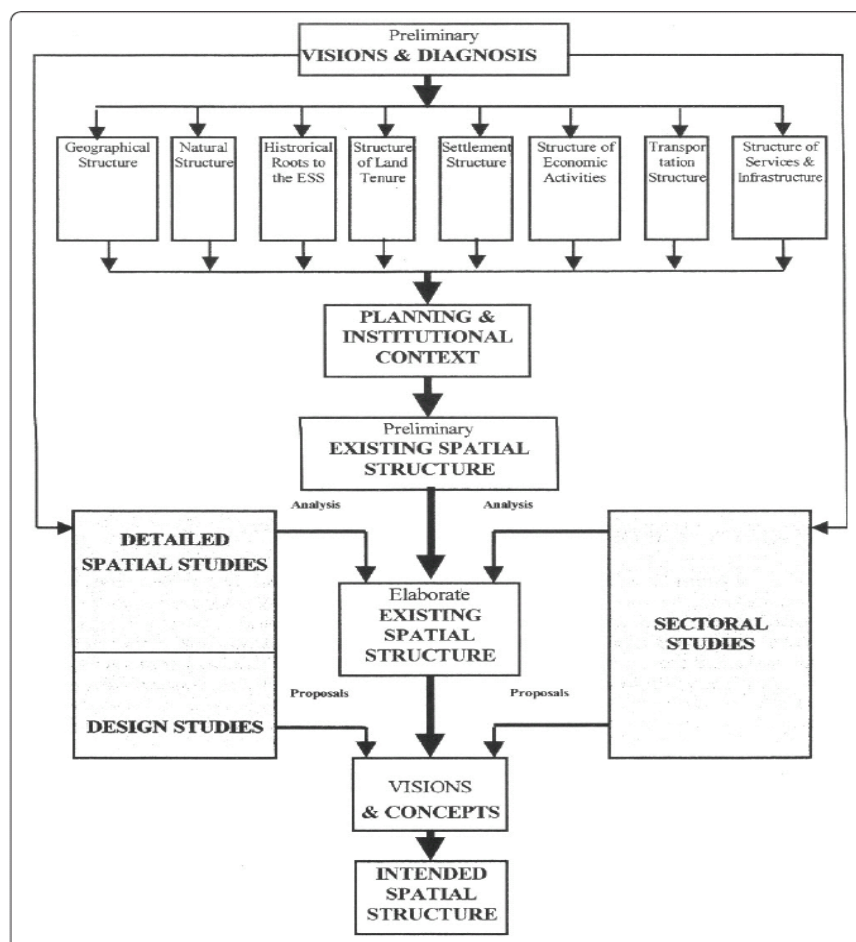


Figure 1- 2: The Conceptual Framework Envisioned For the Plan Preparation

1.9.3 PHASE 1: MAPPING AND SITUATION ANALYSIS

This phase involved comprehensive assessment of the project site and mapping which helped provide a picture of the current situation.

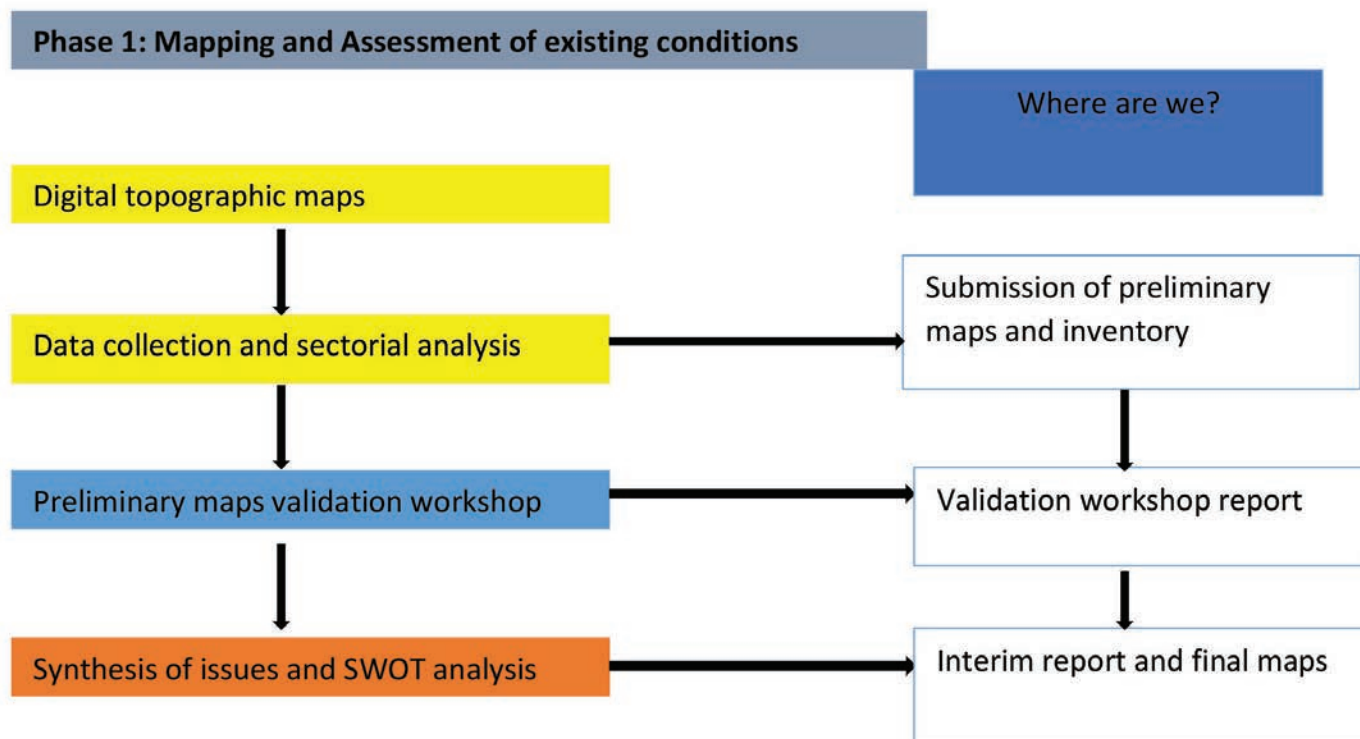


Figure 1- 3: Phase 1 Process of Mapping and assessment of existing conditions

1.9.3.1 Mapping

Activities 1 & 2: Planning operation and control establishment

- Control point establishment and planning operation were done in July 2016

Activity 3: Aerial survey and mapping

- Aerial survey requires an official flight permission
- Climate constraints
- Data processing: Digital Terrain Model, topographical maps, reference layers (roads, building, physical features)

Activity 4: Cadastral mapping

- Requires an access to existing cadastral data base

Activity 5: Training

- Knowledge transfer was completed during the entire process
- Preliminary maps validation workshop
- Synthesis of issues and SWOT analysis

1.9.3.2 Data Collection and Assessment

1. Primary data collection included: Density /"block survey", quick traffic survey, land use survey, market survey, informal sector survey

2. Secondary data collection

Table 1- 1: Data collection key components

Socioeconomic condition	Regional economy	Urban structure, planning and housing	Urban environment	Infrastructure and urban services	Institutional and legal analysis
Population: demographic trends Social infrastructure and access to basic services (education, health, and security)	Sector analysis: employment, industries, Tourism Potential Town Finance Major urban project	Urban morphology built environment Access to housing Land management system Previous planning	Natural environment and climate Identification of risks and vulnerable areas	Transportation and road network Water supply, Storm Water Drainage system Sewerage System Solid waste collection and removal Electricity Communication	Institutional context and decentralization Planning legal Framework Building permit process

1.9.4 PHASE 2 DRAFT ISUD PLAN

The information from Phase 1 provided the basis for preparing the Draft ISUDP. The main thrust was development of strategic options and growth scenarios which were subjected to stakeholder validation.

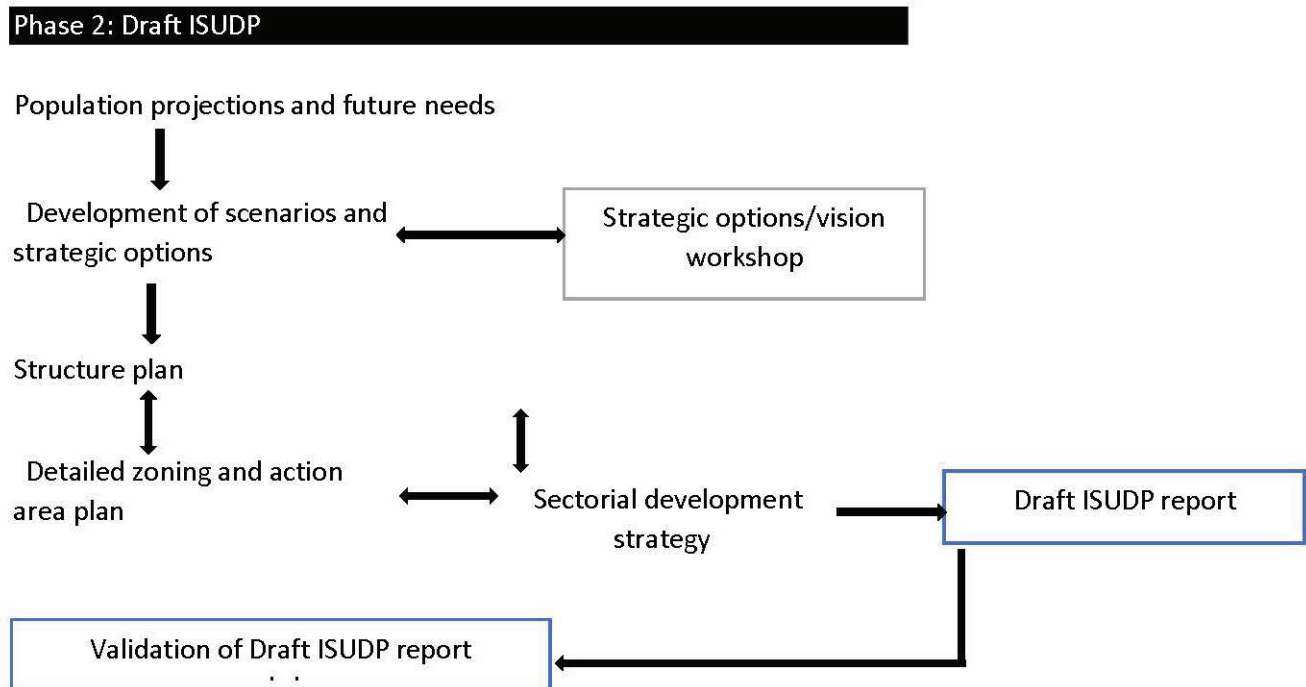


Figure 1- 4: Phase 2 Process of preparing the Draft ISUD Plan

1.9.4.1 Growth Assumptions and Scenarios

Growth assumptions and future needs

- How many new residents need to be accommodated?
- How and where will those residents be accommodated?
- What are the needs of this additional population in terms of infrastructure, social services and major facilities?

Development scenarios

- Step 1: Identification of policy framework and draft vision; (proposed by the consultant)
- Step 2: participatory vision; These scenarios developed based on perceptions of beneficiaries and stakeholders during the vision workshop
- Step 3: synthesis of the participatory vision workshop and finalization of common vision and future development scenario.

1.9.4.2 Strategic Option/Vision

The policy/vision workshop is an important step in the ISUD process

- Purpose was to set a clear vision and development objectives that were shared by the main stakeholders,

Participatory mapping process:

- The policy formulation was based on the result of the vision workshop.

Participants were asked:

- What is that they value, what are the assets in the town?
- What they would like to change?
- How do they see the future of the town (future development scenario)?
- How do they make the change happen?

1.9.4.3 Structure Plan

This includes:

- The future land-use (residential, commercial, industrial and public purpose) in accordance with national land-use guidelines;
- A proposed road network and land reservation for major future facilities;
- Proposed areas earmarked for future engineering infrastructure (sewage treatment plants; water reservoirs; as well as cemeteries and other cultural needs)
- The delimitation of zones unsuitable for development (e.g natural constraints, risks);
- The major project areas. (CBD area and areas for large scale development area)

1.9.4.4 Design Guidelines and Zoning Code

This involves preparation of:

- Action area planning;
- Strategic issues: CBD, new industrial areas, slum upgrading zone.
- Design guidelines
- Public space (street design);
- Construction guidelines for residential areas; and
- New development (housing, major projects).
- Detailed zoning
- Authorized uses,
- Construction rules
- Infrastructures (roads section, drainage and sewerage etc.)

1.9.4.5 Sectoral Strategy

The following sectoral plans have been prepared:

Transportation plan:

- A multimodal concept (formulated for the policy framework); Road network development principles and public transportation strategy;
- Proposed road sections and road intersection descriptions and Parking requirements;

Infrastructure plan:

- Assessment of the improvements required in order to close existing service gaps; and meet future service demands up to the year 2038;
- Estimation of the total cost of the required investments for the first phase of implementation.

Economic development plan

- Opportunities to develop driven sectors of the towns economy (commerce, agriculture);
- Land requirements and special zoning (e.g. protection of agricultural land.
- Environmental and Disaster management plan
- Natural features to be protected (included in the structure and detailed plan) and additional measures of conservation; climate change risks;
- Disaster management plan including: disaster prone areas; areas vulnerable to disaster.

1.9.5 PHASE 3 FINAL ISUD CAPITAL INVESTMENT PLAN AND IMPLEMENTATION

- The final phase provides documents which shall be used to actualize the proposed planning strategies, namely the ISUDP and the CIP.

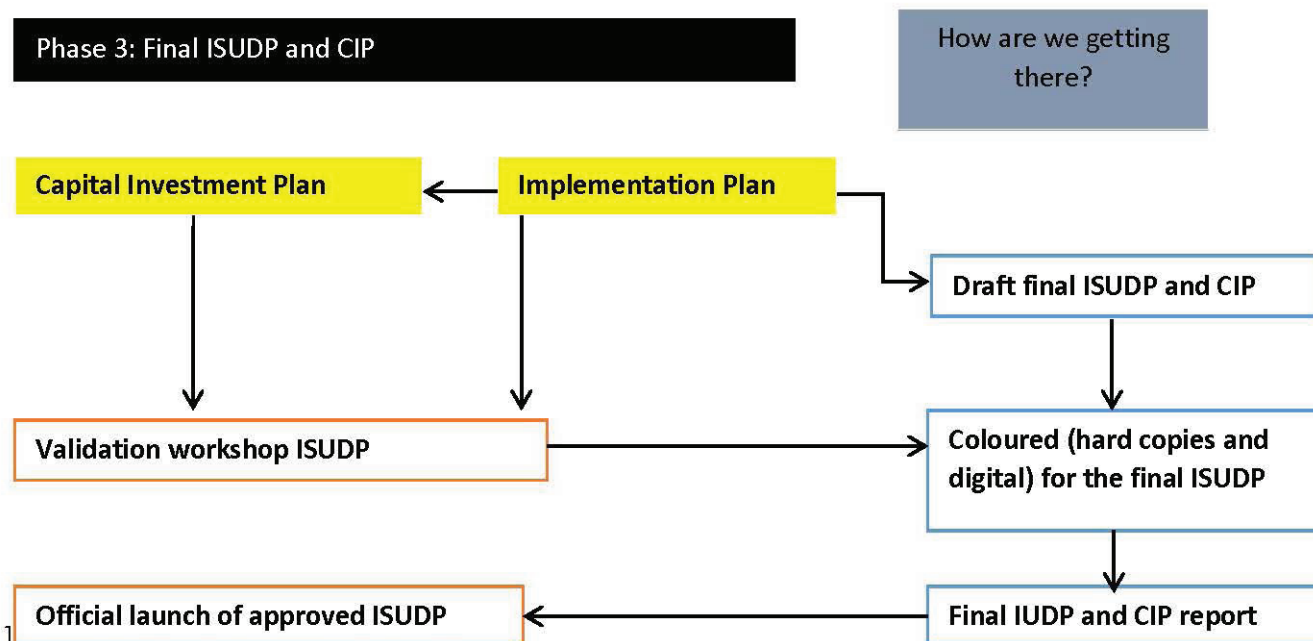


Figure 1- 5: Final ISUD Plan, CIP and Implementation

1.9.5.1 Capital Investment Plan with a high rate of return.

- Indicate objectives, expected output, responsibilities, capacity issues and capacity development needs.
- Include annual maintenance costs; authority in charge of maintenance operations; and potential source of income (e.g. local taxes) that will finance the maintenance costs.

1.9.5.2 Implementation Plan

- Funding urban projects and infrastructure: local tax improvement, leveraging land value, Public/private partnership opportunities;
- Controlling urban development: planning and building permit process improvement; and
- Data management/GIS: use and maintenance of the GIS data base created during the ISUDP project (phase 1 and 2).
- Capacity building plan

1.9.5.3 Final Deliverables

- Draft final ISUDP (Validated in a workshop)
- Summary of existing conditions and SWOT analysis;
- Projections; growth assumptions; and planning horizons;
- Development of scenarios and strategic options
- Structure plan
- Sectoral strategy
- Detailed zoning and Action Area Plan
- Capital Investment Plan, and
- Implementation Plan
- Final ISUDP delivery with colored (hard and print copy of the plans)

1.10 STRUCTURE OF FINAL ISUDP

- Chapter 2: Town Profile and Projection
- Chapter 3: Concept Plan
- Chapter 4: Structure Plan
- Chapter 5: Strategic Sector Plans
- Chapter 6: Action Area Plans
- Chapter 7: Development Controls and Zoning Regulations
- Chapter 8: Implementation Plan
- Chapter 9: Plan Monitoring and Review

1.11 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

1.11.1 POLICY FRAMEWORK

Kenya Vision 2030

Kenya Vision 2030 is the country's new development blueprint covering the period 2008-2030. It aims to transform Kenya into a newly industrializing, "middle-income country providing a high quality of life to all its citizens by the year 2030". The vision is to be implemented in successive five-year Medium-Term Plans, the second of such plan covering the period 2013-2017 is under implementation. The vision is based on three mutually existing pillars namely; the economic pillar, the social pillar and the political pillar. Urban and regional planning of metropolitan areas, border towns, special towns and municipalities is one of the flagship projects of Vision 2030 (A flagship project only sets the pace for multiple vessels behind it). Vision 2030 calls for proper urban and regional planning due to high population growth rate and increased urbanization. The timeframe for the preparation of this plan is in line with the overall objective of Vision 2030. Sustainable economic development, as the basic principle of Vision 2030 cannot be achieved without effective urban and regional planning.

National environmental policy

The Environmental Policy is one of the initiatives by the Government of Kenya to intervene in dealing with environmental issues in the country. It complements the Environmental Management and Coordination Act (EMCA). This National Environment Policy aims to provide a holistic framework to guide the management of the environment and natural resources in Kenya. It further ensures that the linkage between the environment and poverty reduction is integrated in all government processes and institutions in order to facilitate and realize sustainable development at all levels in the context of green economy enhancing social inclusion, improving human welfare and creating opportunities for employment and maintaining the healthy functioning of ecosystem. The goal of this policy is "a better quality of life for present and future generations through sustainable management of the environment and natural resources". One of its objectives is to provide a framework for an integrated approach to planning and sustainable management of Kenya's environment and its natural resources.

National land Policy

This is the first national land policy for Kenya. The policy was formulated through a participatory process. The vision of the policy is "To guide the country towards efficient, sustainable and equitable use of land for prosperity and posterity." The policy gives provision for formulation and implementation of national, regional, urban, periurban and spontaneous settlement planning principles and guidelines in transparent, accountable, sustainable, comprehensive and participatory manner. To ensure sound and sustainable environmental management of land based resources, dealings in such land will be guided by conservation and sustainable utilization principles outlined in national environmental laws and policies.

National Housing Policy

National Housing Policy for Kenya, 2004 The National Housing policy is intended to arrest the deteriorating housing conditions and solve the problem of inadequate housing due to population explosion, rapid urbanization, widespread poverty and escalating costs of providing housing which has manifested in poor housing, overcrowding, proliferation of slum and informal settlements among others. The Migori ISUDP will align with objectives of the National Housing Policy (2004) which include:

- Facilitate progressive realization of the right to adequate housing by all residents.
- Promote functional, healthy, aesthetically pleasant and environmentally friendly housing development.
- Earmark and set aside land for public housing development in urban areas and redevelopment of the dilapidated houses.
- Facilitate housing delivery and improvement, access to land and security of tenure for all socio-economic groups.
- The plan provides strategies and measures to facilitate greater access to funds and promote innovative ways of mobilizing funds to easily achieve quality housing delivery for all.
- Encourage research and popularize the use of appropriate building materials that are locally available and low cost building technologies to reduce the cost of housing.

Integrated National Transport Policy

The Integrated National Transport Policy of 2009 Integrated National Transport Policy of 2009 advocates for development and maintenance of an integrated and coordinated transport system to;

- Foster national and regional economic integration and trade facilitation.
- Integrate transport and land use planning and management systems.
- Enhance investment in the transport system.
- Incorporate environmental protection and resource conservation issues in transport sector activities. The plan will articulate the objectives of the policy with the aim of developing an integrated, balanced and environmentally sound urban transport system in which all modes efficiently play their roles.

Urban Development Policy

A National Urban Development Policy has been drafted and is awaiting Cabinet approval. The key points, as indicated in the Urban Policy Concept Paper, published by the Ministry of Local Government's Urban Development Department in December 2008, can be summarized as follows.

Unprecedented urban growth has contributed to a myriad of problems faced in urban centers today, and which can only be addressed by development based on sound national urban development policy. Some of the main problems include weak and poor urban management capacities, the growth of slums and unauthorized development and lack of clear tenure, environmental degradation, poor traffic management, congestion and poor transportation

systems, unemployment, delinquency, crime, inadequacy of clean water, inadequate drainage and sanitation, ill managed informal trading activities, poor location of industries, residential and commercial facilities. Rapid urbanization in Kenya has also not been accompanied by the necessary growth of infrastructure and services and industrialization. The Urban Development Policy to be prepared is expected to be comprehensive and at the same time focus on key issues, so that it can meet its stated objectives, such as:

- Ensuring the legal personality of cities to recognize cities as legitimate and legally empowered entities with independent organizational and self-administration status. The policy will for the first time provide clear criteria of classifying towns and of bestowing city and metropolitan status to urban centers and regions.
- Ensuring planned, inclusive and sustainable urban development that implies the recognition of urban centers as entities that strive to harmonize physical planning with economic development planning and are sensitive to stakeholders' participation and environment
- Ensuring plan based administration of urban land under various land tenure arrangements and systems thereby recognizing urban centers as entities that strive towards achieving effective urban land management and administration.
- Enhancing sustained improvement in the quality and coverage of infrastructure facilities along with government's key role, cities should strive to maximize the participation and contribution of the private sector and the community sector in infrastructure provision
- Ensuring a sustained improvement in the quality and coverage of service provision through a partnership framework that acknowledges the key roles of all key actors.
- Facilitating production and access to decent and affordable housing for all and eradicating slums
- Alleviating urban poverty through employment generation by maximizing local economic development (LED) and adopting pro-growth policies and strategies.
- Ensuring sustainable environmental management which entails the recognition of cities as entities that strive to work towards the reduction of poverty and promotion of a sustainable urban environment.
- Ensuring the promotion of an effective financial management system.
- Ensuring effective rural-urban and urban-urban linkages thereby promoting of the development of urban centers as loci for enhancing sustainable development with linkages to their rural counterparts.
- Ensuring the creation of effective coordination mechanisms for the roles and mandates of different actors in urban development
- Ensuring a stable, peaceful and safe urban life

Land Use planning Bill 2015

A Bill for Act of Parliament to give effect to Article 60, 66, 67 and 68 of the Constitution of Kenya 2010 and provide a legal framework for the sustainable planning, use, management, regulation and development of land and for connected purposes. The objects of the Act are:

- To provide a framework for the administration and management of land use planning in Kenya
- Provide for a uniform, effective and comprehensive system of land use planning and land use management
- Ensure that the system of land use planning and land use management promotes social and economic inclusion
- Provide for the sustainable and efficient use of land
- To provide for the principles, procedures and standards for the preparation, approval, implementation, review, monitoring and oversight of land use plans at transnational, national, trans-county, county, cities and urban areas levels
- To provide for the procedures and standards for development control, dispute resolution and the regulation of land use
- Provide for cooperative government and intergovernmental relations amongst the national and county governments
- To provide for a framework for monitoring and oversight over land use planning throughout the country and;
- To provide a framework for protecting and maintaining priority natural capital assets that support livelihoods and key economic activities.

1.11.2 LEGAL FRAMEWORK

The Constitution Of Kenya 2010

Article 176 and 184 of the Constitution of Kenya 2010 makes provision for devolved governance and management of urban areas and cities. Article 176 advocated for the preparation of the County Government Act which took over from the Local Government Act. Article 184 of the constitution states thus; (1) National legislation shall provide for the governance and management of urban areas and cities and shall, in particular – a) Establish criteria for classifying areas as urban areas and cities b) Establish the principles of governance and management of urban areas and cities c) Provide for participation by residents in the governance of urban areas and cities This set the course for the preparation and enactment of the Urban Areas and Cities Act, 2012.

Physical Planning Act 1996

The Physical Planning Act, Cap 286 of the laws of Kenya is a key legislation that governs physical and spatial planning in the Country. It outlines the procedure for the preparation of both the local and regional physical development plans and provides legal basis for their enforcement. The Act establishes the office of the Director of Physical Planning and vests the responsibilities of the preparation of all physical developments plans in the Directors office. The Act advocates for participation and stakeholder involvement in the planning process and provides conflict resolution mechanisms on planning in the form of liaison committee.

Urban Areas and Cities Act

The objectives and purposes of the Urban Areas and Cities Act, 2012 are to create a legislative framework for;

- Classification of areas as urban areas and cities
- Governance and management of urban areas and cities
- Participation by the residents in the governance of urban areas and cities. The act characterizes all the types of infrastructural facilities that distinguish a city, a municipality and an urban center. The preparation of this plan will take into account this act when allocating facilities to the urban centers identified for planning. The act also emphasizes on community participation during urban.
- In undertaking this plan, the Awendo Plan preparation, stakeholders' workshops were held to get the community approval.

The County Government Act, 2012

County governance is one of the pillars of the constitution. It establishes 47 county governments hence allowing growth in each of these counties. Sustainable development in these counties is possible if proper urban planning is undertaken to control development in these rapidly growing urban centers. The high level of poverty and haphazard mushrooming of settlements in the country has been blamed lack of spatial plan. This act puts in place a framework for planning within the counties. One of the many roles assigned to the County Assembly is approval of county development planning. The executive committee of the county government determines its own programme of activities through formulation and adoption of plans, assist urban areas with formulation of plans, facilitates the coordination of integrated developments plans for various urban centers, and monitor implementation of plans in these urban areas.

EMCA

The Environmental Management and Coordination Act, 1999 provides for the establishment of an appropriate legal and institutional framework for the management of the environment and related matters. It is a framework environmental legislation that establishes appropriate legal and institutional mechanisms for the management of the environment. It provides for improved legal and administrative co-ordination of the diverse sectoral initiatives in order to improve the national capacity for the management of the environment. This is in view of the fact that the environment constitutes the foundation of national economic, social, cultural and spiritual advancement.

The Water Act

The Water Act 2002 provides for the management, conservation, use and control of water resources and for the acquisition and regulation of rights to use water, to provide for regulation and management of water supply and sewerage services (GoK, 2002). The Act provides for establishment of Water Resources Management. Authority(WARMA) whose key mandate is to conserve water resources and Water Services Boards that deal with development of water infrastructure and provision of water services to end consumers. There is a strong linkage between land use planning and conservation of water resources. A land use plan is a technical instrument that can be used to protect water resources by zoning wetlands/riparian reserves and water towers for purposes of protection. Therefore, the preparation of this plan takes water resources conservation and supply into consideration.

The Land Act No 6 of 2012

The Land Act No 6 of 2012 provides for equitable access to land, security of land rights, sustainable and productive management of land resource, transparent and cost effective administration of land, conservation and protection of ecologically sensitive areas, elimination of gender discrimination in law, customs and practices related to land and property in land. It ensures equal opportunities to members of all ethnic groups, non-discrimination and protection of the marginalized and democracy, inclusiveness and participation of the people and alternative dispute resolution mechanisms in land dispute handling and management. It gives the National Land Commission the responsibility to maintain public land that has endangered or endemic species of flora and fauna, critical habitats or protected areas. It provides procedures for allocating public land, and gives the Commission the power to reserve land for one or more purposes in the public interest. There are detailed provisions for compulsory purchase of public purpose by the state of private land. It also provides detailed provisions regarding the rights of chargors and chargees (mortgagors and mortgagees) so as to encourage lending for house purchase.

The Land Registration Act No.3 of 2012

The Act revises, consolidate and rationalize the registration of Title to land, give effect to the principles and objects of devolved Government in land registration and related purposes, compulsory land acquisition.

Agriculture, Fisheries and Food Authority Act No. 13 of 2013

It provides for promotion of best practices in, and regulate, the production, processing, marketing, grading, storage, collection, transportation and warehousing of agricultural and aquatic products excluding livestock products as may be provided for under the Crops Act, and the Fisheries Act. It is responsible for determining the research priorities in agriculture and aquaculture. It advises the national and County Governments on agricultural and aquatic levies for purposes of planning, enhancing harmony and equity in the sector. It also provides for the maintenance of a database on agricultural and aquatic products excluding livestock products, documents and monitor agriculture through registration of players as provided for in the Crops Act and the Fisheries Act.

The Survey Act (Cap 299)

It was established to make provisions in relation to surveys, land subdivisions, conversions, geographical names and the licensing of land surveyors, and for connected purposes.

Public Health Act (Cap 242)

Public Health Act states that the duty of every health authority is to take all lawful, necessary and reasonably practicable measures for preventing the occurrence or dealing with any outbreak or prevalence of any infectious, communicable or preventable disease, to safeguard and promote the public health and to exercise the powers and perform the duties in respect of the public health conferred or imposed on it by this Act or by any other law. Hence Public Health Act provides for the enforcement of the plan with habitable buildings, proper sanitation through provision of high quality of water and proper solid and liquid waste management.

2.1 HISTORICAL ORIGIN OF AWENDO TOWN

The historical origin and growth of Awendo town can be traced back to pre-colonial era in the first quarter of the 19th century. Ever since it was started in 1923, Awendo had not experienced any exceptional change until 1978 when the SONY industry was established in the region with its factory located at the town. Hitherto that it had owed its growth to exchange activities of the local produce, and the demand provided by the surrounding populations for the light household goods - Awendo acting as the central place. It thus has grown out of commercial activities during much of its period in existence.

With commerce at the core of its growth, its population has grown presenting a demand for other activities and services; to which the private sector has tended to respond accordingly, apparently ahead of the public sector. The history of the town is here presented in phases of a decade's period up to the time the sugar industry was established

AWENDO in 1920s:

Interregional besides inter-communal trade had long been done in the Lake Victoria region (Nyanza).

The Kuria people and some of their Luo allies from as far as Tanzania mainland (then Tanganyika) exchanged cattle for goats, sheep and food crops with the Luos from as far as Kisumu. This barter exchange activity gave rise to certain routes across the Nyanza land.

In 1923, a large tree along one of the major trade routes presented a comfortable brief resting place for the traders, and that it was more-or-less in-between the trading regions it became a naturally convenient site. The traders from either directions along the routes met, haggled and swapped their items here and soon this large tree with its shade thereof point - the main tree itself has been felled to give way for other developments.

There were such other points elsewhere at Wath-Onger, Ndhiwa, and Migori. At this time much of the surrounding areas were under short forests and the population herein was scarce and sparsely distributed in nucleated clusters, undertaking basically subsistence activities.

One year later, the colonial government, out of its zeal to control African activities and generate revenues, instituted a temporary structure next to the exchange ground to act as an office where registration of animals and taxation were done. The 'office' consisted of four grass-thatched houses and thus became the first physical construction to be done at this site. As the exchange of animals continued it became necessary that the people involved be provided with certain support services. The local population responded to this by bringing foodstuffs such as bananas, 'uji' (gruel), cooked sweet potatoes, cooked maize and beans etc. which they sold to the traders. Money was already being used, after all, especially in their exchange of commodities which could not render themselves easily to the principles of barter trade, although the latter was still popular especially in the cases of animals.

In the same year, some Indian businessmen arrived at the site, assessed the 'market situation' and having been satisfied with that which appertained to commerce they set up some six temporary structures where they carried out the first ever retail business.

It is not established where these Indians came from, but it is possible that they were either from Kisumu or Kisii centres where the Indian Community had long established themselves in the retail and wholesale business activities; and establishing the similar retail business at Awendo 'site' could be seen just as a part of their countrywide expansion of their economic hegemonies in the commerce sector - where they have the upper most hand upto now - much to the chagrin of not a few lesser nationals. For more-or-less at the same time retail business was getting instituted at various centres such as Migori and Ndhiwa by businessmen of the Indian origin.

As more local produce such as maize, beans sim-sim, clay pots etc. were increasingly exchanged here mainly by women, an open-air market was set-up later in 1928 thereby separating retail activities, animal exchange and the other activities. At about the same period a main road from Kisii towards Tanganyika through the other centres such as Migori was constructed through the emerging centre dividing it into two sections. This road was later upgraded to an International Trunk road standard. The important history here is that the road itself, for much of its sections, tended to have followed the same trade route used by the animal traders. During the same decade, Awendo primary school was started at the centre by Missionaries, during which time a sub-post office was opened here.

Awendo in 1930s:

With the construction of the main road the small centre became open to external influences. In 1933, the Missionaries established a health centre in the neighbourhoods of the centre. The health centre still remains a reliable public health unit in Awendo.

To facilitate the missionary activities, in 1935, the colonial government constructed a road from Awendo' centre to Rapogi (where the missionaries set up a church and a mission school which themselves formed the nucleus for the now Rapogi market centre). But before that, in 1931, a main bridge was constructed on the first road to a more stable standard, next to Awendo centre, across the Sare River, which is the source of water supplies to Awendo Town. Just about the same time the first three butcheries were opened up at Awendo centre.

In 1932, the colonial government, through the local chief, mobilised the local people and a road from the centre to Mariwa in the east was constructed by human labor. This road linked the Awendo centre with the eastern regions of the district as far as Maasai land in Narok District. It is also during this time that a more permanent bridge across the Sare River on the main road from Kisii to Migori- Tanganyika was constructed thereby making it possible for bigger vehicles to move further into the interior regions of the district, (then covering much of the southern parts of the district). It made centres such as Migori more accessible to the already opened up areas such as Kisumu and Kisii, hence facilitating flows between them, a factor to which Migori and the centres around it owe much of their growth.

At this time Awendo had become an established centre for trade and had moved from a mere barter market centre to a status, then referred to as a general market.

Awendo in 19 40s

Awendo entered the 1940, with the status of a general market centre. Much of the activities therein were retail business. A posho mill was established during this period. It is also the time that two wholesale premises were opened up.

The centre was divided into two parts on either sides of the same river on racial grounds. The Asian side was called Sare while the Africans' side was called Awendo. The two groups of people could not conduct their businesses at the same place owing to the colonial taxonomic criteria.

The Asian area consisted of permanent structures - mainly retail and wholesale premises; while the African centre was dominated by temporary and semi-temporary structures, with a central open market place which operated on a periodic basis - once in a week.

The Asian area was upgraded to a trading centre, an indication of the level of recognition granted it by the colonial government. It continued to grow mainly along the major road, while the African area grew randomly at the isolated site.

Awendo in 1950s

In 1953 a major change occurred in the structure of the centre after it was surveyed for the first time by the south Nyanza A.D.C. The African market centre (Awendo) was cancelled and transferred elsewhere at Ochuna (now Ranen) some 6 kilometers in the Kisii direction. The African traders were forced out and were only allowed to carry their business at this new centre. Only the Asian remained at the Sare trading centre. The only structures that remained close to the former African market centre were the two blocks of the Awendo Health Centre and a Chief's Camp. No official explanation was given for the evacuation of the African traders from Awendo market centre. It had just to be taken as a gubernatorial order. However, it was suspected, most probably, that the Asian traders had requested the colonial authorities to push out the African traders from close neighbourhood where the latter 'tended to galvanize most of the customers; thereby reducing the business turnover rates for the Asian traders. With the racial categorization placing the Asians in the second position After the Europeans in the social structure that time, it was not strange when the government responded to their (Asians') plea by cancelling plots allocations at the Africa market centre and transferring the market function some 6kms away. (That transfer gave rise to the present Ranen market centre, then referred to as 'Ochuna', meaning 'forced'). If the aim was to eliminate competition between the Asians and African traders then that transfer was the best move on the side of the Asians. The entire surrounding population now remained at the service of them alone. Their business must have been accentuated for soon after that more plots allocations were necessarily done extending the trading centre with a number of structures and undeveloped plots bestriding the main road from Kisii to Tanganyika, a nearby primary school, health centre and chief's camp.

Awendo in 1960s

The order of displacing the African traders out of Awendo centre remained until 1961 when it was abrogated. This time the Africans were allocated plots within the Sare trading centre previously set exclusively for the Asian traders. As commerce continued to play a dominant role in the growth of the centre, a further extension was done to allow more premises bringing the total area of the centre to 6.3 acres. The open air market that was formally part of the old Awendo (African) centre was incorporated in the Sare trading centre. Although only a few of the plots were developed in the early parts of the period many of them were developed at the end of it and, in fact, more extension was done in 1967 along the main roads. Growth along Awendo-Rapogi road started then.

Perhaps a major achievement during this period in terms of urban form was consolidation of the centre making it into a one unit, rather than scattered paraphernalia, a form which is convenient for the provision of central services and lower costs of the provision of such services. The town has since then maintained a compact form in its growth. Besides that Population shot from a size just above 1000 to over 7,000. This presented an exceptional demand for housing and consequently for the first time housing sector became a distinct functional unit with the private individuals investing in the sector as a business. More social and physical infrastructural facilities came up with some of the already existing ones improved.

Awendo in 1970s

This is the period when the Government of Kenya compulsorily acquired large swaths of land in order to enable South Nyanza Sugar Company expand its nuclear scheme. This was done under the Land Acquisition Act No. 47 of 1968 pursuant to gazette notice number 2996 of 24th September 1976. Later vide another gazette notice dated 24th December 1976, gazette notice number 3737 most pieces were acquired. Most of those pieces of land were in Kamasoga and Waware areas of North Sakwa. After the gazette notices acquiring the above parcels had been issued and South Nyanza Sugar Company had acquired and utilized whatever portion it wanted for the expansion of its scheme, parts of the pieces remained unutilized by the same company. The unutilized portions were later taken over by South Nyanza county council and merged to form the current Awendo town boundary, excluding where the Industry is located.

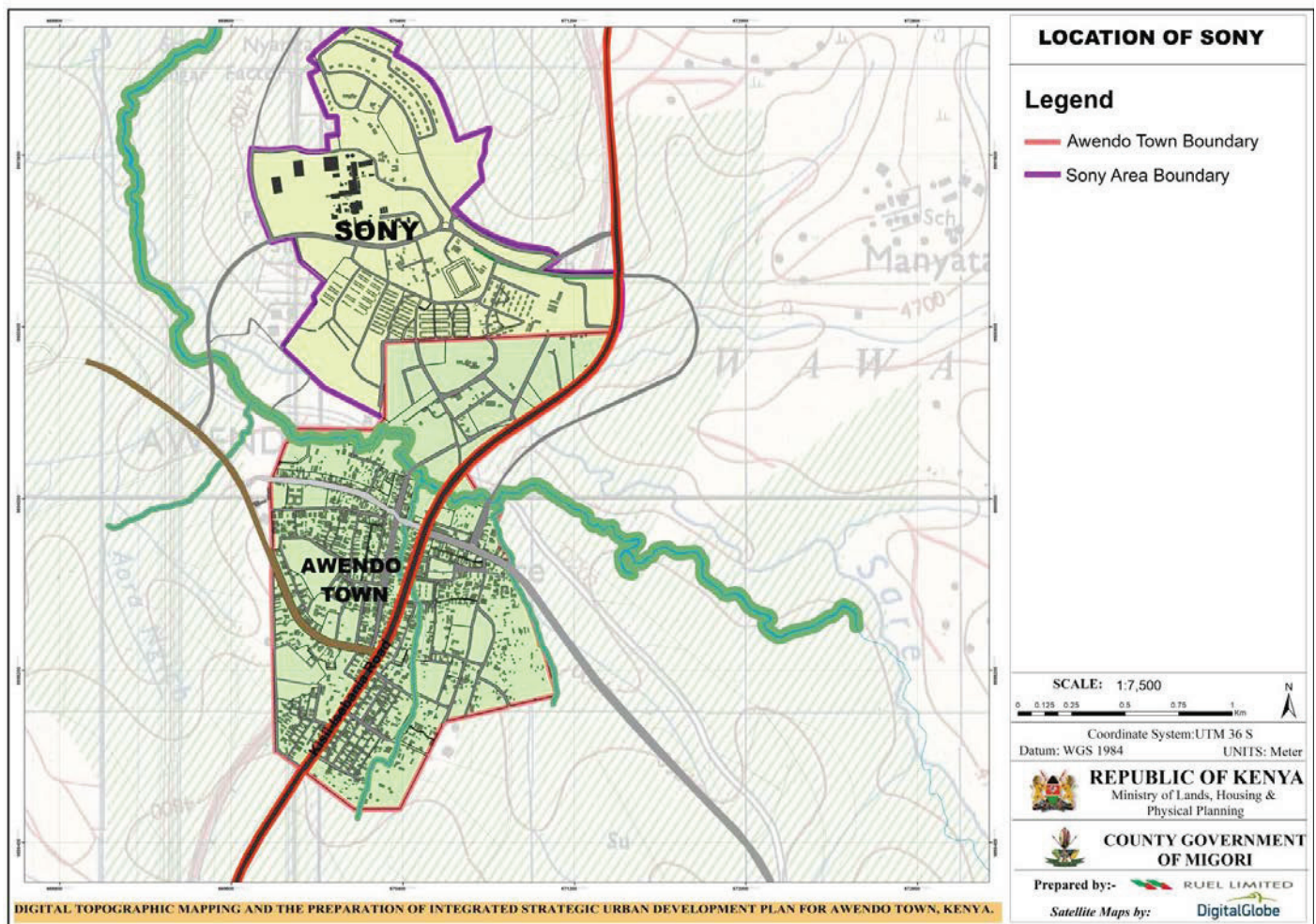


Figure 2- 1: Sony Area in Relation to Awendo Town

2.2 LOCATION AND CONNECTIVITY

2.2.1 National and Regional Context

Nationally, Awendo town is situated to the south-western part of Kenya; it is located approximately 353km North West of Nairobi County and about 150km South East of Kisumu County. The town is located to the North West of the larger Migori County that borders internationally with the Republic of Tanzania to the South, Homa Bay County to the north, Kisii and Narok Counties to the east. Lake Victoria borders the county to the west.

Regionally, Awendo town is situated within Migori County and South of the former greater Nyanza Region. It lies along the A1 public road linking Rongo and Migori towns. It is commercially linked to Rongo and Migori towns and is approximately 26km from Migori Town, and approximately 376Km from Nairobi. The town suffers from growth restrictions due to the nucleus sugar cane farms.

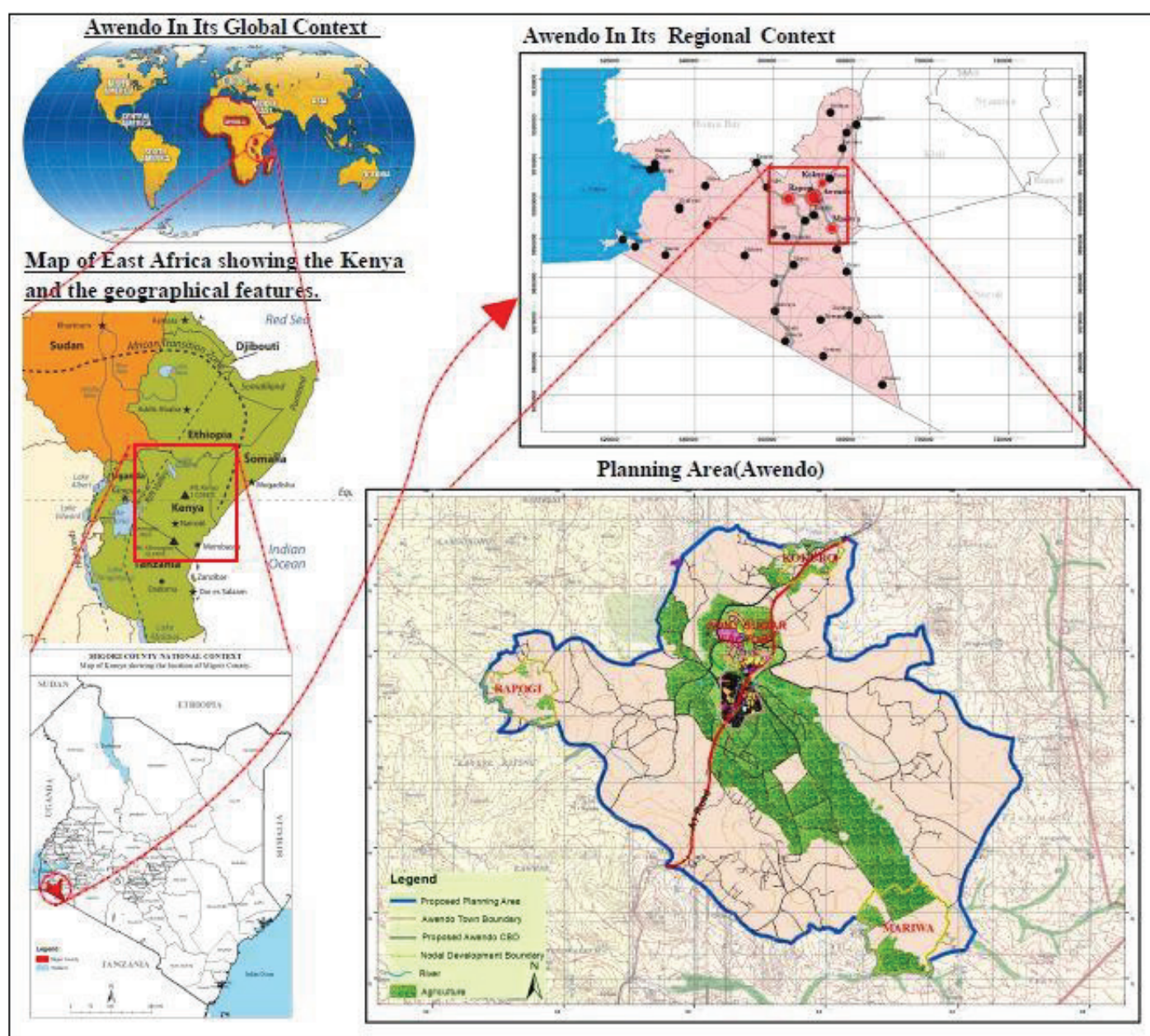


Figure 2- 2: Location of Awendo Town

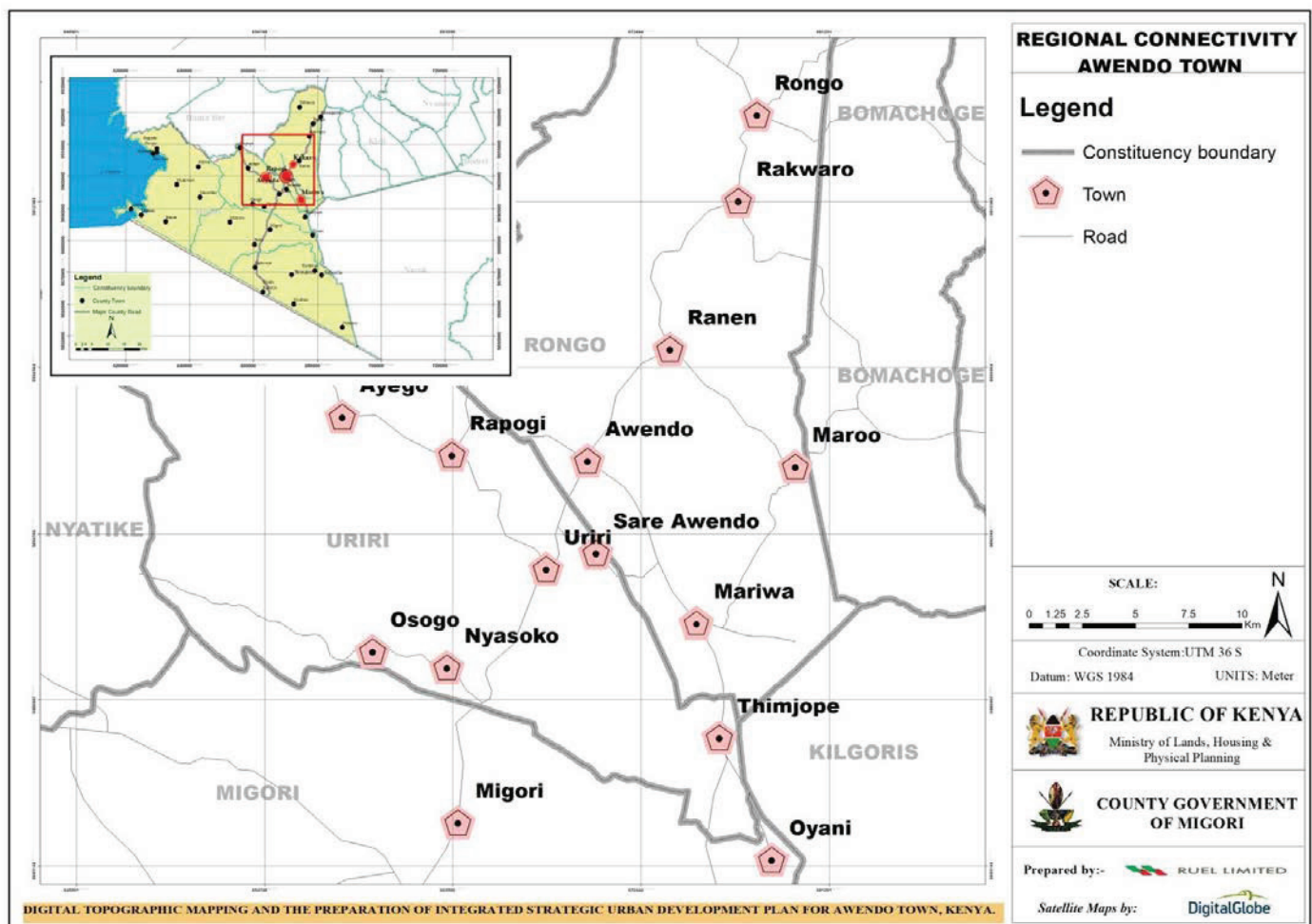


Figure 2- 3: Regional Road Connectivity of Awendo Town

2.3.1 Administrative

Administratively the town sits in Awendo Sub-county which was carved from the former expansive Rongo district. The Town covers an area of 5.96 Km² comprising of two sub-locations Kombok and Kanyagwala. The Town has one of the largest industries in the county-South Nyanza Sugar Company. The town is in a close proximity to River Kuja and is dissected by River Sare. With the advent of the devolved government the town has got new development incentive to enable it serve its key role of Sub-County Administrative Headquarters. This has implications in terms of office space, house and support services.

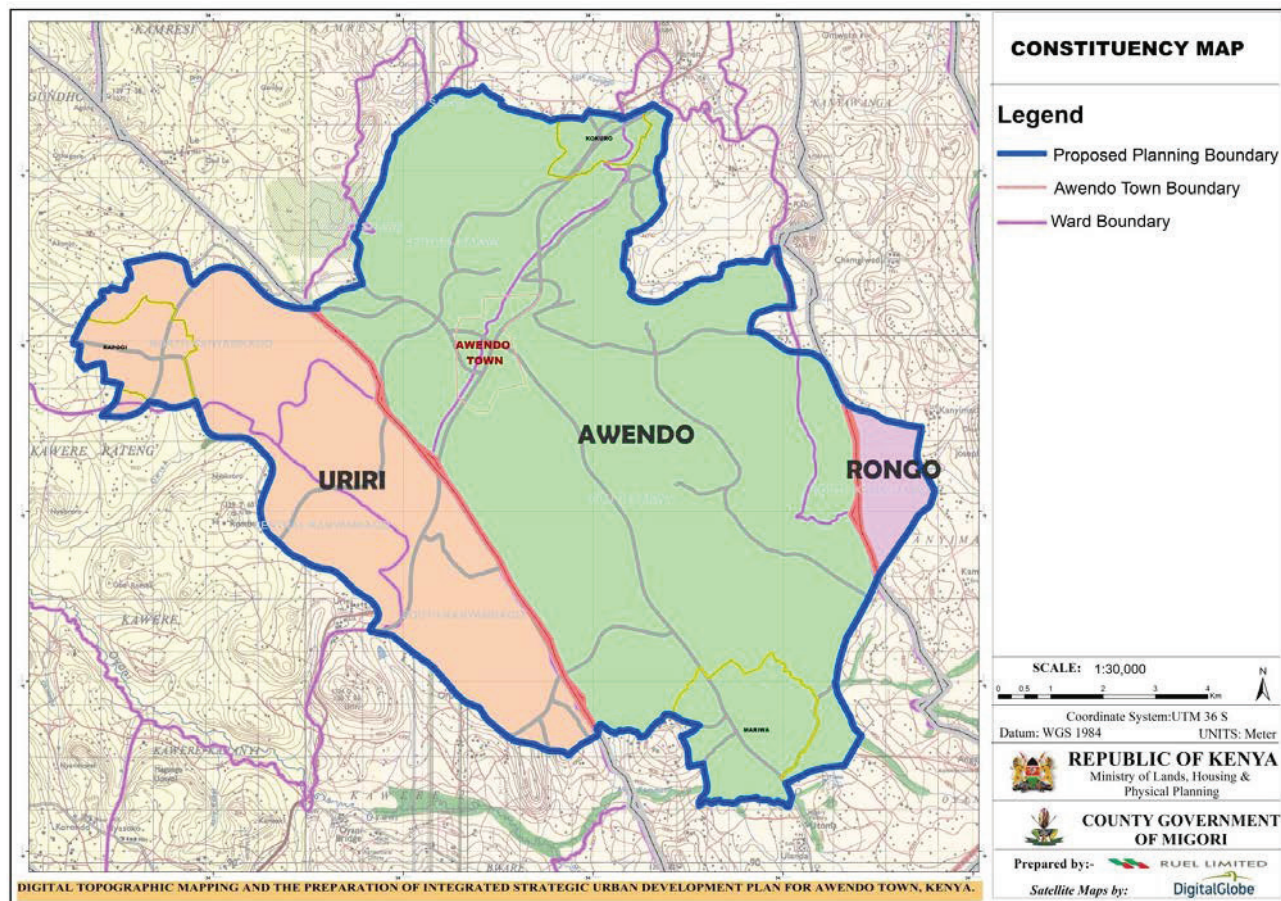


Figure 2- 4: Sub-County Units in the Planning Area

2.3.2 Spatial Growth

The South Nyanza County Council drew a new boundary for Awendo town in 1977 defined as the Awendo Urban Area which measured about 2.2 km². The new boundary was drawn in order to accommodate any new development that was anticipated by the establishment of the SONY Industry, on the basis of other areas' experience.

By early 1990s the town broadly consisted of three distinct sections

- (1) The trading center and the juxtaposed high density residential;
- (2) The SONY Industrial plant and
- (3) The SONY Company residential and a number of unplanned housing that mushroomed at various parts of the urban area
- (4) Deferred pieces of land

The town grew from the trading centre where there existed only three streets which served as transport and communication routes. The high density residential area was on the western parts of the trading centre and was served by some streets some of which were unplanned footpaths. The houses were of various types and sizes. The company residence was of three categories: low, medium and high class residential on the basis of workers categories and were served by internal street systems. The factory area consisted of the plant and the company offices and had its own internal circulation system. Residential user were the largest followed by commercial land use.

Presently the form and structure of Awendo town has not changed. The town has maintained the compact nature of development and the geographical size has also remained constant at around 2.2km² due to the constrained outward growth occasioned by the surrounding Sony Sugar Nuclear farms.

The limited room for horizontal growth in Awendo town necessitates the delocalization of some of the functions to a number of emerging satellite urban areas like Mariwa, Kokuro and Rapogi which are effectively linked together via good, motorable roads.

In terms of planning intervention there is approved plan for the town which was prepared way back in 1979. It seems that the weak institutional linkage during the era of South Nyanza County Council contributed to poor implementation of the 1979 Physical Development Plan. This prompted the revision of the plan in 2012. However this same revised plan was never approved. Broadly put, Awendo town has grown overtime both as a commercial Centre and Agro based industrial town. The town's geographical morphology has changed overtime as depicted in the figures below:

2.3.2.1 Awendo Town Boundary evolution

Below are the illustrations of how the town has evolved overtime.

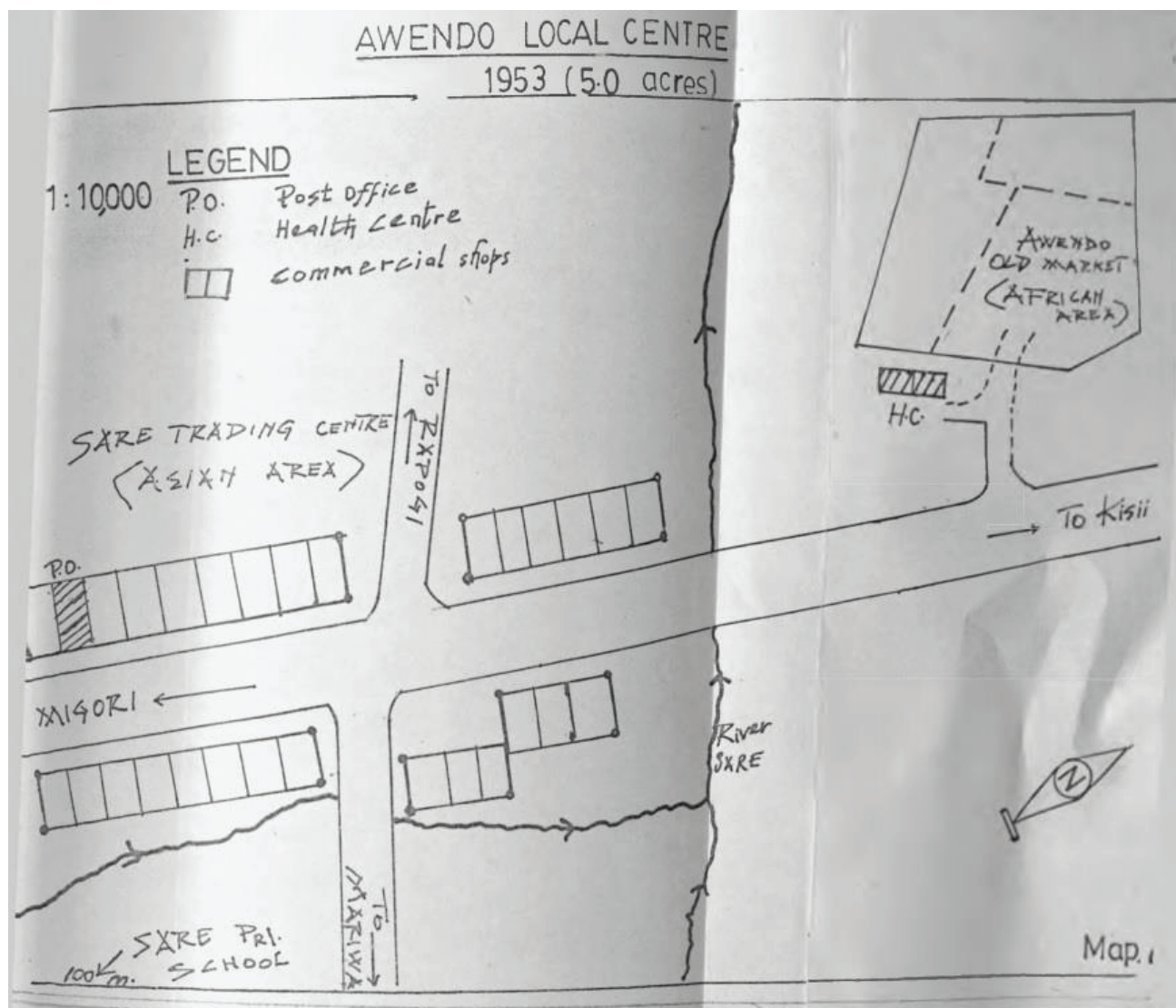


Figure 2- 6: Awendo town as at 1953

(Source: Jobando, P.L, DURP-UoN, 1987)

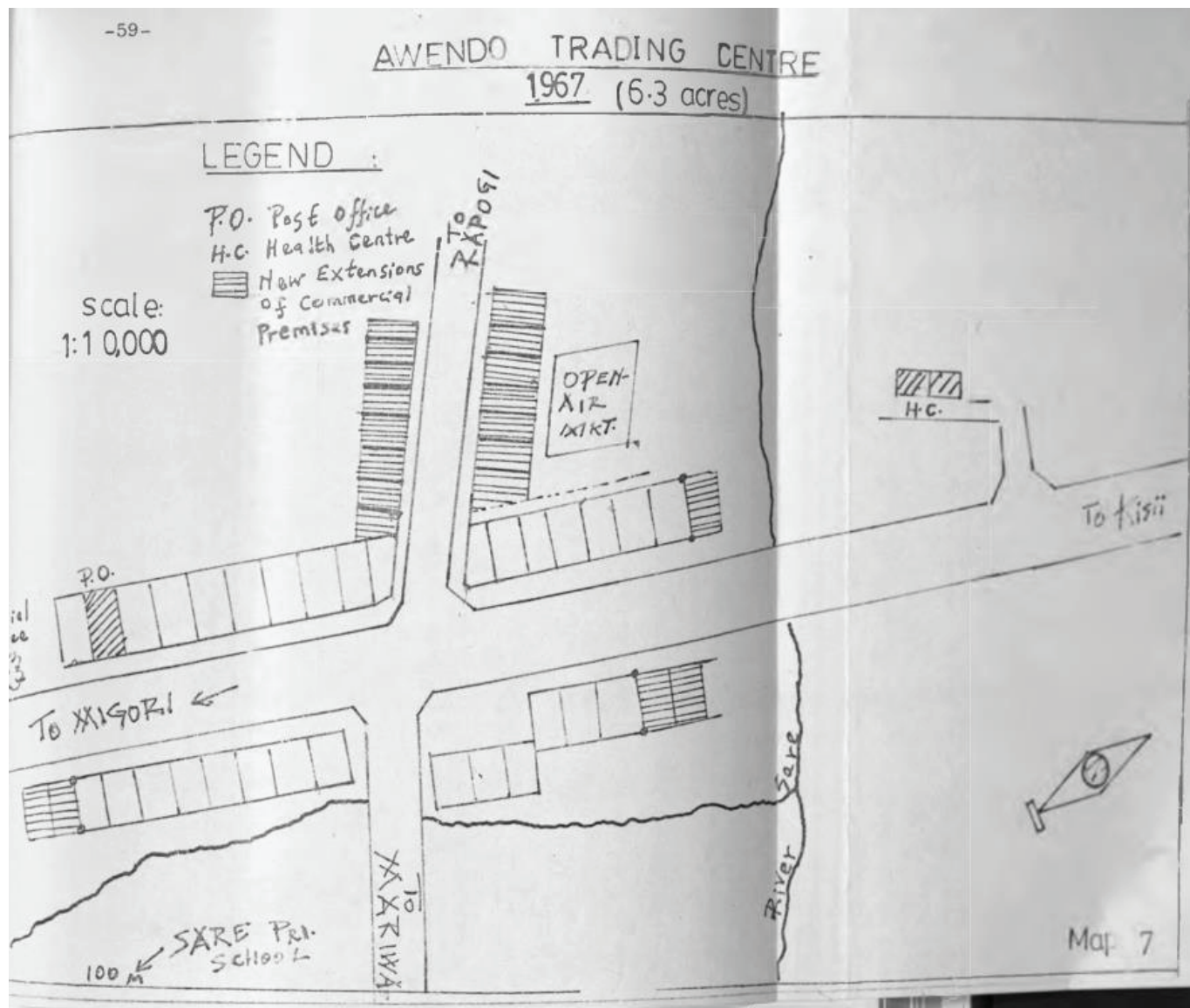


Figure 2- 7: Awendo town as at 1967

(Source: Jobando, P.L, DURP-UoN, 1987)

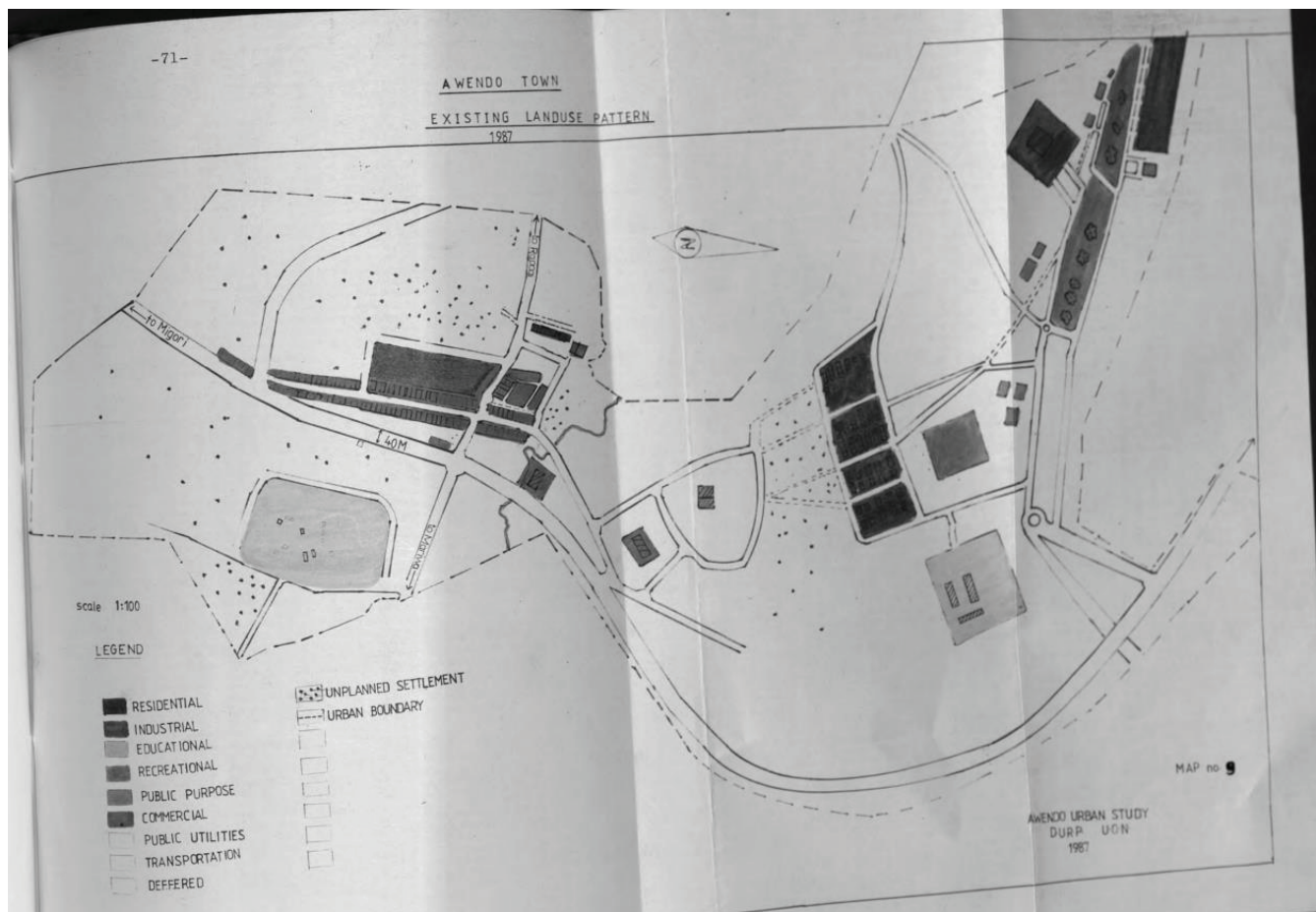


Figure 2- 8: Awendo town as at 1987

(Source: Jobando, P.L, DURP-UoN, 1987)

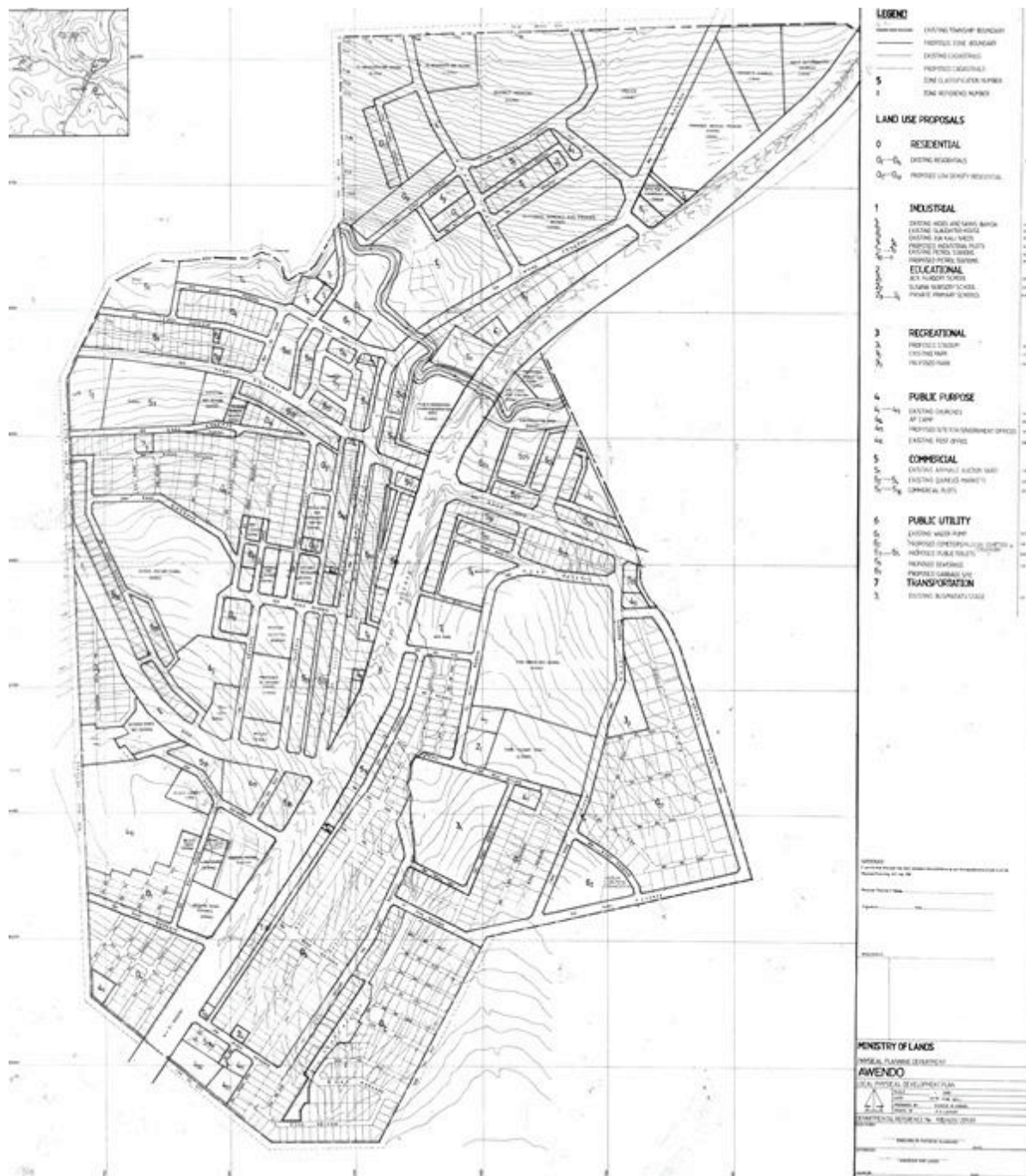


Figure 2- 9: Awendo town as at 2012

(Source: Physical Planning Office, Migori County)

2.3.3 Development Constraints and Opportunities

The location of the town and its physiographic components serve both as an opportunity and constraint. The compact form of the town is an advantage to service providers as it will be less costly to provide necessary services and utilities than when the town was widely spread.

The existence of an international trunk road dissecting the town enhances its competitiveness in terms of connectivity and commerce. River Sare which also passes right through the town can be harnessed to provide water to the town residents and also used as a recreational site for the town.

The presence of the SONY sugar factory is an obvious opportunity to the town as it is a source of labor and employment to the many Awendo residents. The Economic growth of the town is largely attributed to the sugar industry which serves as a catalyst for its development.

However the outward expansion of the town has been restricted and constrained by the Sugar cane plantations that wholly surround the town. This restriction implies that new developments can only be undertaken in the neighboring urban areas which with time will serve as satellite centers for Awendo town. The Sugarcane plantations have also cut off the town from close reach to its rural hinterland.

Partly the presence of River Sare can also be viewed as a constraint as no major development can be permitted close to its banks. This reduces portions of land available for housing development within the town.

2.4 FUTURE OUTLOOK

2.4.1 Demographic Growth Scenario

As illustrated in the earlier sections the geographical scope of current Awendo town is delineated by SONY sugar nuclear farms thereby confining it to just 2.2 km² with no room for outward expansion. However for purposes of this plan both the urban population of the town and the hinterland population residing in satellite urban areas of Kokuro, Mariwa and Rapogi were considered. The import of this consideration is to plan for the developments that will leap into the centers. With time Awendo town will grow as a primate town with its satellite centers developing outside the Sugar cane plantations.

According to the Kenya Population and Housing Census 2009, the population of the planning Area (Central Sakwa and South Sakwa locations) was 38 807. This population consisted of 17,992 people living in the current boundary of Awendo town while the remainder resided in the hinterland/ peri-urban areas.

When the 8.3% annual growth rate of total urban population of Kenya is compared with the growth rate of Awendo town for the same period, it is merely 3.6%. It may be concluded that the high urban growth rate of Kenya is not reflected in Awendo town. The main reasons for low growth rate of Awendo town could be the decreasing attractive opportunities in the town and its environs.

With regard to the lifespan of the plan the population of this planning area must be projected over a span of 20 years. The projection must also factor the current slow growth rate especially in the rural hinterland vis-a-vis the high growth rate within the constrained boundary of Awendo town.

We have therefore developed various scenarios with regard to the projected population over the period 2018-2038. The first case is where the population will grow at the rate of 3.8% as is the current trend (1999-2009) for the next decade. The second scenario is having the trend increase from 3.8% to 4.0% in the year 2027 up-to 2037 following the positive impacts of implementation of this plan.

The high projection would be for it to grow at 4% from 2018 to 2027 and later on increase to 6% till 2036. The table below illustrates the two scenarios.

Table 2- 1: Population projection:

2018	Intercensal Growth rate (annual)	2028	Intercensal Growth rate (annual)	2038
52,200	3.8	75796	3.8	110057
52,200	3.8	75796	4.0	112197
52,200	4	77269	6	138378

Population densities are highest in Awendo town and the nodal points of Kokuro, Mariwa and Rapogi.

Which population scenario to adopt?

From the above projections we have seen it safe to consider the second scenario where the population will increase with a constant rate of 3.8% in the first decade and shot upwards to 4% on the onset of the second decade as more people will tend to migrate to the flourishing satellite center following better opportunities within their radius.

Emerging issues

- The population of the satellite centres will increase as a result of spill over from Awendo town. This calls for proactive planning interventions to check on any foreseeable eventuality. The risk of a massive slum area is noted in Jiw-dendi area where uncontrolled development is creating a large informal settlement
- Migration into Awendo town has created an unprecedented demand for housing especially for middle income workers.
- Infrastructure for water, sewerage and solid waste will be hard put to cope with anticipated demand.

LAND REQUIREMENT PROJECTIONS

2.5.1 Land use Standards

In order to develop future land use projections for the Awendo town a market analysis was undertaken. The analysis included a review and projections of the town's primary market sectors.

(Residential, commercial, industrial and public facilities) from 2018 to 2038 and the expected population growth and distribution. The standards used are anchored in the Physical Planning Handbook and benchmarking with comparable urban areas. The standards used for the ISUDP are presented in the following sub-sections.

2.5.2 Public Purpose Facilities

Table 2- 2: Proposed Public purpose facilities

Facility	Catchment Population	Area in ha.
Crematorium	500,000	1.0
Town Library	500,000	0.4
Community Library	100,000	0.05
Community Centre	100,000	1.0
Orphanage/Children centre/Destitute home	500,000	3.5
Cemetery	500,000	5.0

2.5.3 Postal and Tele-Communication

Although there has been a major shift to the private sector for postal and communication services with changes in ICT, these services are still provided by State Corporation. Full postal facilities should be provided in any designated rural centre or estate which serves a resident population of about 2,000 - 10,000 and rural population of 40,000 people.

While a market center that is designed to serve approximately 15,000 rural people and a resident population of less than 2,000 people should have a sub-post - office 0.05 Ha is adequate for a post office.

Facility	Catchment Population	Area in ha
Corner shop	500	0.01
Neighborhood Shopping Centre	5,000	0.5
Shopping Mall/Commercial Centre	15,000	1.0
Slaughter House	500,000	2
Central Business District	Whole town	10

2.5.4 Fire Stations

For high-risk areas - there is need for accessibility to major road network. Land required is **0.4 hectares** minimum to include station, staff accommodation and drilling area. A small fire station would require 1 fire engine and at least 30 staff members to cover a population of between 50,000 to 100,000 depending on degree of fire risk. It is proposed that a fire station will be provided in the planning area to serve Awendo town and her satellite centers.

2.5.5 Security Facilities

The location of police stations depends on their functional requirements. If their administrative function is dominant they may locate in district centres but generally they should locate within residential neighborhoods. There may also be need to provide police stations within large commercial/industrial areas and large institutions. Space requirements should take into account residential, remand facilities, administrative facilities at different levels, parking and open spaces for recreation and for future expansion. Proposed space requirements for the various levels of stations are:

- Police stations **2 ha.**
- Police post **0.2 ha**
- Patrol base **0.1 ha**

The table below gives indications for security facilities. A juvenile home is expected to operate at the level of a school.

Table 2- 3: Proposed security facilities

Security Facility	Catchment Population	Area in ha.
Patrol base	10,000	0.1
Police Post	30,000	0.2
Police Station	70,000	2
Juvenile Home	300,000	3.5
Prison	500000	10

2.5.6 Health Facilities

Kenya's healthcare system is structured in a hierarchical manner that begins with primary healthcare, with the lowest unit being the community, and then graduates, with complicated cases being referred to higher levels of healthcare.

Primary care units consist of dispensaries and health centers. The current structure consists of the following six levels and estimated land requirements. Level 1 is the Community, addressing public health issues.

Health Facility	Catchment Population	Area in ha.
Level 6: Tertiary referral facilities	1,000,000	8
Level 5: Secondary referral facilities	100,000	4
Level 4: Primary referral facilities	30,000	2
Level 3: Health centers	10,000	1
Level 2: Dispensaries	5,000	0.5

2.5.7 Educational Facilities

The idea here is to provide the neighborhoods with adequate land for ECD, primary, secondary schools and tertiary with the future requirements being taken into account. To economize on land and reduce on distance that pupils have to walk from one place to the other within the schools compound, it is suggested that tuition blocks, libraries and offices should be accommodated in well-designed storied buildings wherever possible.

Land requirements for colleges should be 10.2 Ha. for 960 students. The Legal Notice No. 56 of 1989 indicates that land requirements for a University should be at least 50 hectares.

Table 2- 3: Proposed security facilities

Security Facility	Catchment Population	Area in ha.
Patrol base	10,000	0.1
Police Post	30,000	0.2
Police Station	70,000	2
Juvenile Home	300,000	3.5
Prison	500000	10

2.5.8 Recreational Facilities

Recreation is the sum total of all human, social-cultural and economic activities that enhances the therapeutic status of the mind. The facilities include major open spaces (parks and buffer zones), stadia, sports complexes, theatre, cinemas, restaurants, etc. These demand the market of a total urban population including local and foreign tourists. It is not possible to fix standards for open spaces at the urban level as these essentially develop from opportunities in the environment. However, specific recreational spaces are preferred to mere open spaces. For the purposes of the Plan the following are proposed:

Table 2- 6: Proposed recreational facilities

Facility	Catchment Population	Area in (Ha)
Neighborhood Park	15,000	1
Ward Level Park	150,000	1
Neighbourhood Playground	15,000	1
Stadium	500,000	5
Zoo	500,000	50
Amusement park	500,000	30
Social Halls/ and Community Centers	25,000	0.25

2.5.9 Commercial Facilities

The town center offers commercial and other related services that are used by the population of the town or urban area as a whole including the inhabitants of its hinterland. The most important requirements for a town center are geographical centrality, accessibility to vehicles and pedestrians, ample parking space and have four different degrees of completeness in separating pedestrians from vehicles in a town center. The other Nodes also require commercial facilities. The minimum size for a commercial plot should be 0.045 hectares.

Plot length versus the width should not be more than 1:3. The wholesale market should provide space for transport logistics.

Table 2- 7: Proposed commercial facilities

Facility	Catchment Population	Area in ha
Corner shop	500	0.01
Neighborhood Shopping Centre	5,000	0.5
Shopping Mall/Commercial Centre	15,000	1.0
Slaughter House	500,000	2
Central Business District	Whole town	10

2.5.10 Parking

Parking facilities should be related to the level of commercial activities created. For every 100m² of land in the Central Business District a minimum of 1½ parking space may be provided except where Basement parking is provided. However, for the Nodes, car park shall be provided for every 500m² of floor space.

2.5.11 Industry

Major Industrial Areas

(a) Location and Special Requirements

These areas provide suitable accommodation for the following types of industry; heavy and manufacturing, and noxious industries with large waste; large scale and users industrial plants; industries requiring excellent national/ international communication network; and industries requiring close links with other firms e.g. those firms which produce component parts for the same product or those involved in separate stages of the same industrial process. Accessibility to labour, communication routes, and ample supplies of power and water and sewage disposal facilities are of prime importance. Separation from residential areas through buffer zones is essential.

(b) Land Requirements

In selecting an area for location of major industries in Growth Centres, a site must be provided which is neither too small to inhibit the location of industries requiring large areas, not too large to increase the possibilities of congestion. The total site area for a major industrial area would therefore probably lie between 500-1200 acres for a town with a population of 200,000 and 5000,000. It will provide between 20,000 and 50,000 jobs, based on an average industrial density of 40 workers per acre.

Light Industrial Areas/Jua Kali

(a) Location Requirements

Light Industrial areas/estates cater for types of industries that are compatible with residential areas.

They provide favorable locations for Lab our intensive industries e.g. workshops, large laundries; dry cleansing depots, printing; packaging; food industries; light assembly furniture makers etc. These estates would be scattered throughout residential areas, approximately one estate per 30,000 population. They should be located on the major internal routes of the township with separated access from residential feeder roads.

(b) Land Requirements

The probable total area of each estate would range from 10-50 hectares, which would be sufficient to cater for 1500-7500 workers at a density of 60 workers per acre. An area of 50 hectares would allow large firms to locate in addition. Anything beyond 50 hectares would begin to create major conflicts and incompatibilities with the surrounding residential areas.

Workshop Areas

These cater for types of activities existing in a relatively uncontrolled way, close to retail activities primarily in low income residential areas e.g. repair workshops, carpenters, small tin smiths, re-use industries etc. As these workshops are also retail outlets, their location is more sensitive to the market than raw materials.

Table 2- 8: Land requirements for industries

Type of Industry	Land Requirements (Ha)	Catchment Population	Min Land Size in (Ha)
Light	4	30,000	0.05
Medium	10	100,000 to 500,000	2
Heavy	None	Over 1 million	20

2.6 FUTURE LAND REQUIREMENTS

2.6.1 Existing Land Use

The total land for the ISUDP is 1597.02 Ha. The total population of the urban core (Awendo town and SONY area which is 3.56 Km²) is about 25,169 with an average gross density of 70 persons per hectare. Given the high population density of Awendo town future developments will be decentralized to its satellite centers of Mariwa, Kokuro and Rapogi. The decentralization will bring Rural- Urban balance and better access to urban services among the rural folks.

Table 2- 9: Existing Land Use Distribution in the Urban Core & Sony Area

Use	Area in ha	% of Total Area
Residential	123.02	20.63
Education	27.98	4.69
Public Purpose	25.75	4.32
Commercial	33.89	5.68
Industry	39.59	6.64
Recreation	8.19	1.37
Agriculture	202.93	34.04
Transportation	119.96	20.12
Conservation	14.33	2.4
Public utility	0.56	0.09
Total	596.20	100

2.6.2 Density Projections

As already illustrated above, Awendo town exhibit high population density contrary to its upcoming satellite centers. To accommodate more people in the future and still maintaining good living conditions, it would be necessary to provide infrastructure and other incentives to encourage development of high-rise residential units with substantial ground coverage to enhance the concept of dense town. The development of new residential areas should also aim at densities of 70 dwelling units per hectare. The Nodes (Mariwa, Kokuro and Rapogi) should develop with a lower density of 20 to 40 dwelling units per ha to cater for the commuting population and provide more luxurious suburbs.

2.6.3 Enhancing Population Holding Capacity in Existing Built-Up Areas

There is potential for enhancing the holding capacity of existing built up areas through densification.

This will involve

- Multifamily residential development
- Development of residential neighborhoods
- Improving the quality of access roads to bitumen level
- Development of new employment zones near residential areas or with good access to residential areas.

It is proposed that the population holding capacity of already developed areas be enhanced through provision of improved social facilities and physical infrastructure. This will include improvement of existing facilities for a higher capacity. Most of the planning area is rural with large agricultural units. As part of densification this is planned to increase to average 70 dwelling units per hectare in the urban area with provision of multi family dwelling units in a mix of low, medium and high density. The total housing demand will be 28,049 units with 13,524 units done by the state. Due to densification some of the existing housing units will be demolished to create new housing hence the presentation of the total housing demand rather than additional housing. The built up urban area is estimated to take up 13.63% (15.97 km sq.) of total land in the mapping area.

Table 2- 10: Projected Residential land Requirement

Projected population for 2038	112,197 persons
Urban core population	54,096 persons
Peri-urban population	58,101 persons
Urban Housing Demand(Urban core) (Total) 4/hh	13,524 Units
Peri Urban Housing Demand (Total) 4/hh	14,525 units
Total Land required for urban residential development (hectares) @ 70unit/ha	193.2 Ha
Total Land required for urban residential development (hectares) @ 30 unit/ha	450.8 Ha
Total Land required for Peri urban residential development (hectares) @ 40 unit/ha	363.13 ha
TOTAL Projected Residential land Requirement	556.33 Ha

2.6.5 Commercial Land Requirements

The minimum size for a commercial plot should be 0.045 hectares. Plot length versus the width should not be more than 1:3.

Planning for kiosks and hawking is considered as a special feature in planning. The land requirement is considered under Commercial Sector

Table 2- 11: Land projection per facility

Facility	Land Requirements per facility in ha	Land required 2038 in ha
Corner shop	0.01	2.24
Neighborhood Shopping Centre	0.5	11
Shopping Mall/Commercial Centre	1.0	7
Slaughter House	2	2
Ward Level Market	1.0	2
Central Business District	25.25	25.25

2.6.6 Industrial Land Requirements

The planned industrial area should have proper relations to residential, commercial and recreational areas as an integral part of the overall urban development plan. Overall total land reserved for industry should form 8% of the total area planned. A ratio of 1:3 should be maintained for light and heavy industry. The percentage allocation of land for industrial area/estate may be as suggested below, depending upon the type of industries and the extent of the industrial area/estate.

Table 2- 12: Industrial land requirement per industry

Type of Industry	Land Requirements per facility in ha.	Land required 2038 in ha
Light	0.05	16
Medium	2	20

2.6.7 Public Purpose and Institutional Use Land Requirements

Land requirement for public purpose includes land for education facilities, health, and community and recreation facilities.

Table 2- 13: Land requirement per facility by 2038

Facility	Area required in Ha.	Land required 2038 in ha
Education		
ECD	0.25	8
Primary School	3.25	104
Secondary School	4.5	63
College	10.2	10.2
University	50	50
Health		
Level 5: Secondary referral facilities	4	4
Level 4: Primary referral facilities	2	6
Level 3: Health centres	1	10
Level 2: Dispensaries	0.5	10
Recreation		
Neighborhood Park	1	5
Neighbourhood Playground	1	7
Social Halls/ and Community Centres	0.25	1
Security		
Police Post	0.2	0.6
Police Station	2.0	2.0
Fire station	0.5	0.5
Postal and Communication		
Sub-Post Office	0.1	0.2
Head Post Office	0.25	0.25
Telephone Exchange 50,000 line	0.01	0.01
Others		
Cemetery	5.0	5
Crematorium	1.0	1
Town Library	0.2	0.2
Community Library	0.05	0.1
Community Centre	1.0	3
Orphanage/Children Centre	3.5	3.5

2.6.8 Land Requirements

The land requirement is estimated from current trends and population projection for the planning area. It comprises residential use with high-density use and the estimate for the other land uses. The additional land to accommodate future population and other land uses is about 1000 ha.

Table 2- 14: Land requirements

Estimated Population 2018	52,200
Current developed area (hectares)	596.20
Current gross population density (persons/ha) in planning area	32.69
Land available in planning area, which can be made available for development excluding environmentally sensitive, agriculture (Sugarcane) etc. (ha)	1000
Projected population for 2038	112,197
Proposed Net Population density (within proposed developable area excluding area under agriculture, forest, ponds, quarry and future development) (p/ha)	81.31
Additional Land required to accommodate future population (based on net density) in ha	379.86
Population to be accommodated in the planning area	81,311
Population to be accommodated in new development	30,886
Total Land required including existing developed land (hectares)	1,600

3.1 VISION

The Vision of the town was developed through a consultative process with stakeholders. The final vision statement was crafted in a validation workshop and is posited to drive what the town will become. The statement is provided here below.

Awendo Town -a green, clean, safe and economically vibrant town

3.2 GOALS

To achieve the Vision the stakeholders have created the following sectoral goals that the ISUDP should work towards the development strategy

3.2.1 ENVIRONMENT AND CONSERVATION

Liquid Waste

- Construct sewerage treatment plant
- Public Health Officers to monitor and enforce rules by prosecuting those who intend to release raw sewerage in the open.
- Authorities to monitor and supervise construction of new connection to the sewer system.

Solid Waste

- Recycle solid waste through systematic sorting out at the source
 - Educate the community on the need for sorting out and recycling solid waste
- Increase the number of private solid waste collection firms and ensure the solid waste is collected daily
- Provide waste skips at strategic points

Wetlands and Water Sources

- Enforce proper agricultural practices around water sources
- Replacement of all eucalyptus trees grown along the riparian areas and on the water resource catchment with Bamboo tree species

Forests, Slopes and other Vegetation

- Enforce 10% forest cover Government regulation

Air Quality

- Government to enforce laws on air and other pollution
- Control the use of motorized transport to reduce the amount of emission of carbon fumes.
- Policy regarding incinerators enforced

Noise Pollution

- Entertainment licenses should include limit on sound produced
- Enforce the regulation on level of noise produced in all places

Safety and Security

- Increase use of solar power for lighting
- Maintain street lights
- Enforce adherence to road signs

ECONOMIC DEVELOPMENT

Boda Boda Business

- Increase safety both for operators and clients:
- Safe parking
- Enforce revenue collection from the operators

Jua Kali Business

- Allocate suitable space for jua kali operators
- Enforce revenue collection from the operators

Open Air Markets Improve the markets by:

- Fencing
- Providing shades to traders
- Construct ablution block
- Ensure management is efficient

Hotels and Restaurants

- Increase capacity and quality
- Improve security to attract visitors
- Encourage investors

3.2.3 TRANSPORTATION

Roads

- Carryout regular maintenance
- Roads to be planned according to acceptable standards and to cater for all road users.
- Roads to have proper and adequate signs and marking.
- Authorities to enforce road use regulations and laws.
- Proper civic education with regard to effects of pollution.
- Garages to be located in specific areas.
- Demolish all illegal structures in the bus park.
- Include heavy deterrent fines for those abusing roads use regulations.
- Provide specific parking for bodabodas separate from Matatus.
- Construction, paving and widening of roads.
- Provision of NMT facilities.
- Provision of road side amenities.

3.2.4 HOUSING

Housing / Houses

- Provision of affordable and accessible housing facilities in town through PPP and Loans from NHC
- Policies and legislation on housing in place
- Introduce proper zoning systems and categorization of housing areas
- Adhere to zoning regulations
- Town to have standard housing design for different categories of housing
- Upgrade existing housing
- Construct wide roads within the housing areas

Standardize charges for approvals

- Introduce new and cheaper building technologies
- Provide access to subsidized facilities and equipment for manufacturing cheap building materials

3.2.5 COMMUNITY FACILITIES AND UTILITIES

Roads

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3.2.5 COMMUNITY FACILITIES AND UTILITIES

Water

- Identify and develop additional water sources
- Seek funds and allocate appropriately for the development of water supply
- Develop proper plans for the distribution of water

Electricity

- Develop and encourage investment in alternative energy sources
- Invite public private partnership in investment and development of power supply

Slaughter Houses

- Construct new slaughter house with improved standards adhering to technology

Public Toilets

- Encourage private investment in public pay toilets
- Every new development (commercial and public housing) should include provision of public toilet facilities
- Rehabilitate and renovate existing public toilets to meet higher standard of technology and cleanliness

Sewerage Systems

- Construct sewerage system to cover the whole town

3.2.6 RECREATION

Parks and Gardens

- Set aside land for park
- Introduce concrete benches for the convenience of the users
- Provide better security through:
 - Fencing
 - Lighting and paths
- Introduce cultural centers into the parks to increase attraction and serve as community and visitors education on the cultures of the local community

Hotels and Restaurants

- Encourage private investors to invest in developing hotel of higher standards
- Provide incentive for maintaining the hotels at the higher levels through quality service
- Encourage hotel to invest in swimming pools as part of attraction

Sporting Facilities

- Invest in stadia that will be open to the public and provide a variety of sporting facilities
- The stadia should be well drained to avoid storm water and stagnating waste water
- Provide facilities for public conveniences such as toilets, lighting and water
- The stadia should provide the following sporting services inter alia: Hiking, Cycling, Biking, Athletics, Gymnastic facilities etc.

Beautification and Landmarks of the Town

- Plant more flowers and trees in the CBD and along the dual carriage roads in and out of the town
- Ensure that street light and serviced and working always from 6pm to 6am
- Erect monuments to celebrate lives of local heroes
- Introduce standards for construction of high rise building in the CBD to reduce pressure on land and congestion.
- Land scapping of the town.

3.3 PLANNING FOR SUSTAINABILITY

Cities and towns are often described as nodes for economic, social, cultural and political development. In some cases, they are also administrative centres. Urban development and growth is generally seen in terms of increased population, economic growth and geographic size. However, a wider perspective is needed to address the sustainability of urban areas, which include economic, social and environmental dimensions.

Sustainable urban development requires a cross-sector and multidimensional approach as towns and cities involve complex functions, systems and relationships. This integrated approach addresses the interrelated social, economic and environmental dimensions (including cultural and technical aspects).

Considering the complexity of urban areas with all the interrelations and interdependencies between different sectors and systems, there are several ways of describing the three main dimensions of urban sustainability. However, in order to approach the definition of sustainability it is necessary to include the spatial dimension of the built environment in relation to environmental, social and economic aspects of sustainable urban development.

3.4 PROPOSED DEVELOPMENT CONCEPT

The development concept is guided by the structuring elements which determine the direction and form of the growth of the town. The urban typology, density and design of the town affects land use efficiency, and possibilities for economic development and socio-cultural sustainability. The typologies below show some of the key planning and design issues for new and regeneration areas. The examples are single blocks, but urban typology and density are equally important at area, district and city level.

Integrated planning and design of urban area should promote access to services and mobility systems for all citizens. Many people believe that high urban density requires high-rise buildings. However, a compact yet varied and attractive built environment can be created by combining a range of urban typologies and building designs.

3.4.1 Significance of Awendo in the Region

Awendo town is posited as a key urban area in the region acting as an industrial and town. It is also a transportation node connecting Rongo, Kisii and Homabay with Migori and Sirare boarder. It has potential for growth as the link roads are improved and as the regional economy becomes more interwoven.

3.4.2 Protect Environmentally Sensitive Areas

The conceptual framework posits environment at the nexus of the ISUDP. It looks at elevation, slope, protected areas and environmentally sensitive area to assess areas that would be suitable for spatial development. The concept envisages a balance between spatial considerations, institutional parameters, economic and social considerations and how these relate to environmental sustainability. There is consideration of conservation and development of natural resources optimally.

The suitability for development has been assessed by looking at the digital terrain model (DTM), elevation, Natural environment including the rivers and their drainage valleys. The DTM reflects the land in Awendo is undulating with ridges towards the north eastern parts of the town. Most

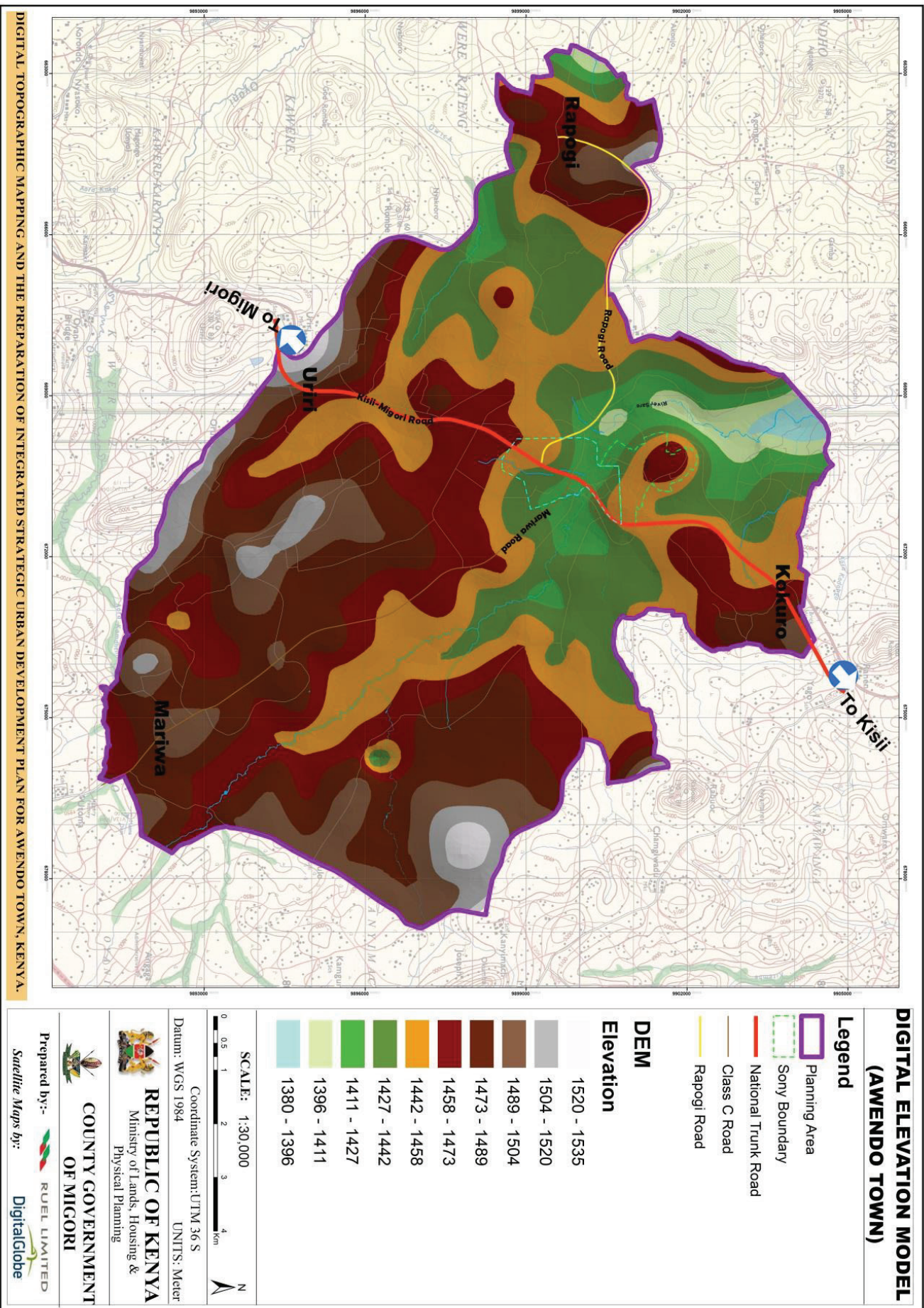


Figure 3- 1: Digital Elevation Model

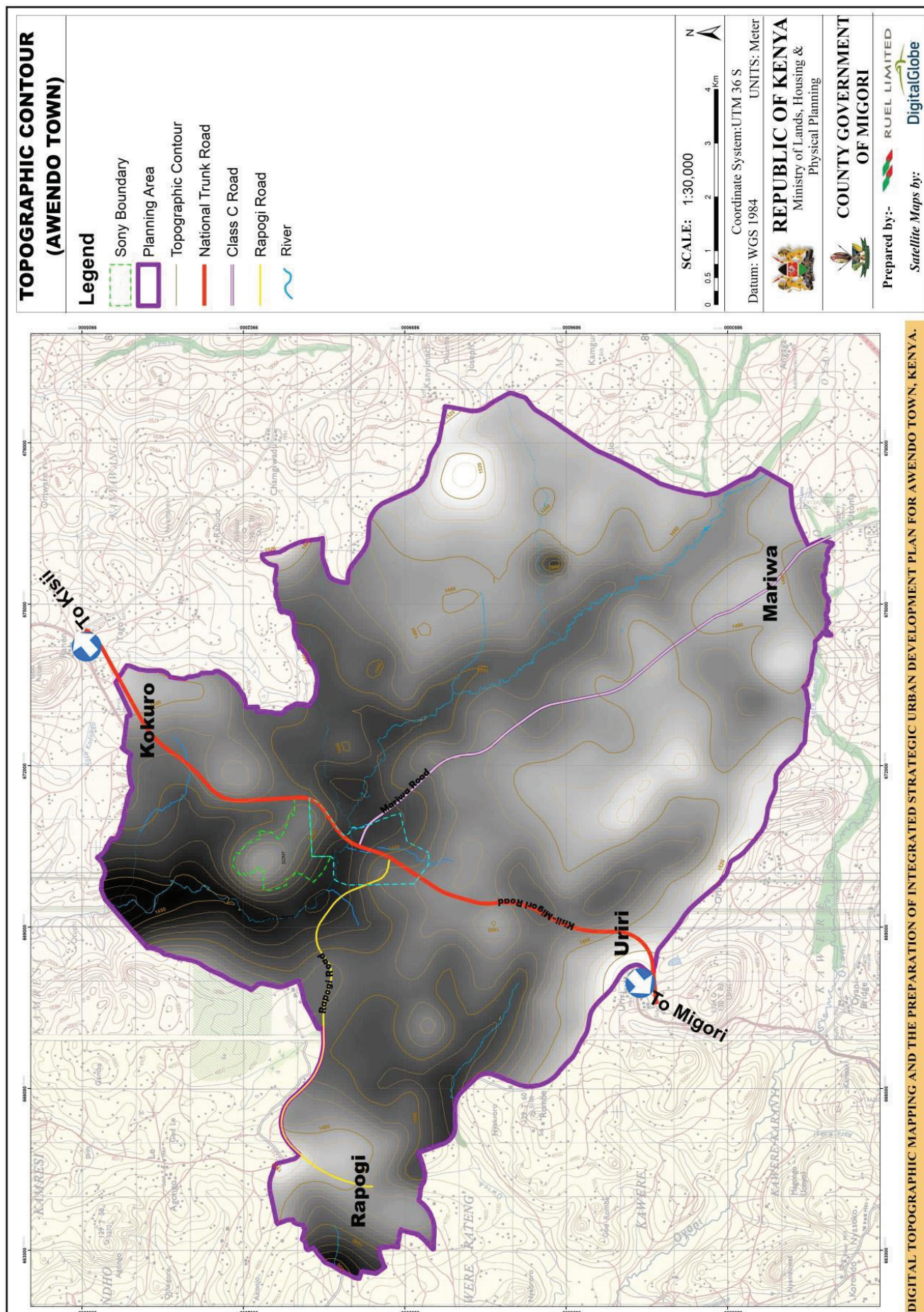


Figure 3- 2: Contour Map of Planning Area

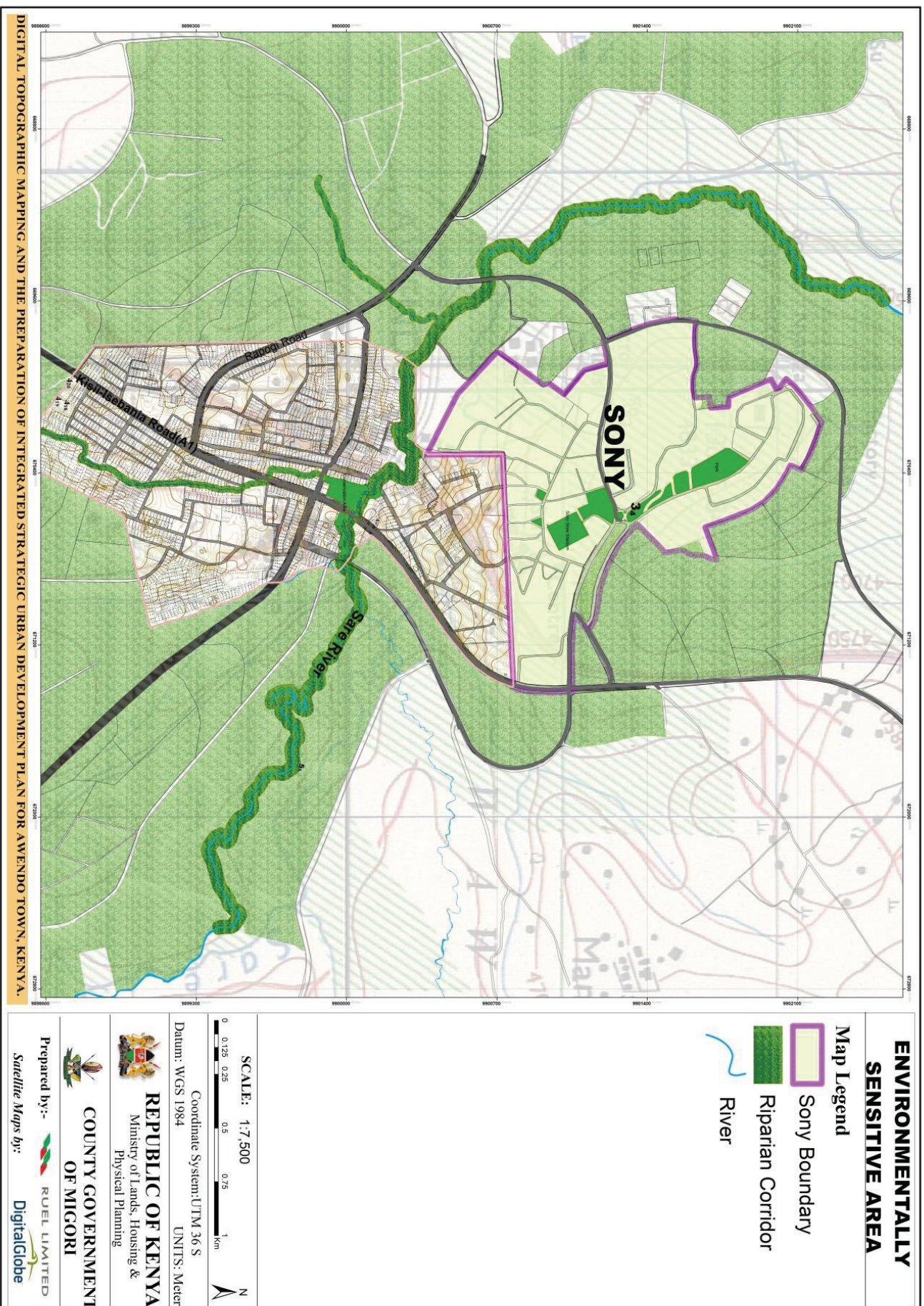


Figure 3- 3: Environmentally Sensitive Areas

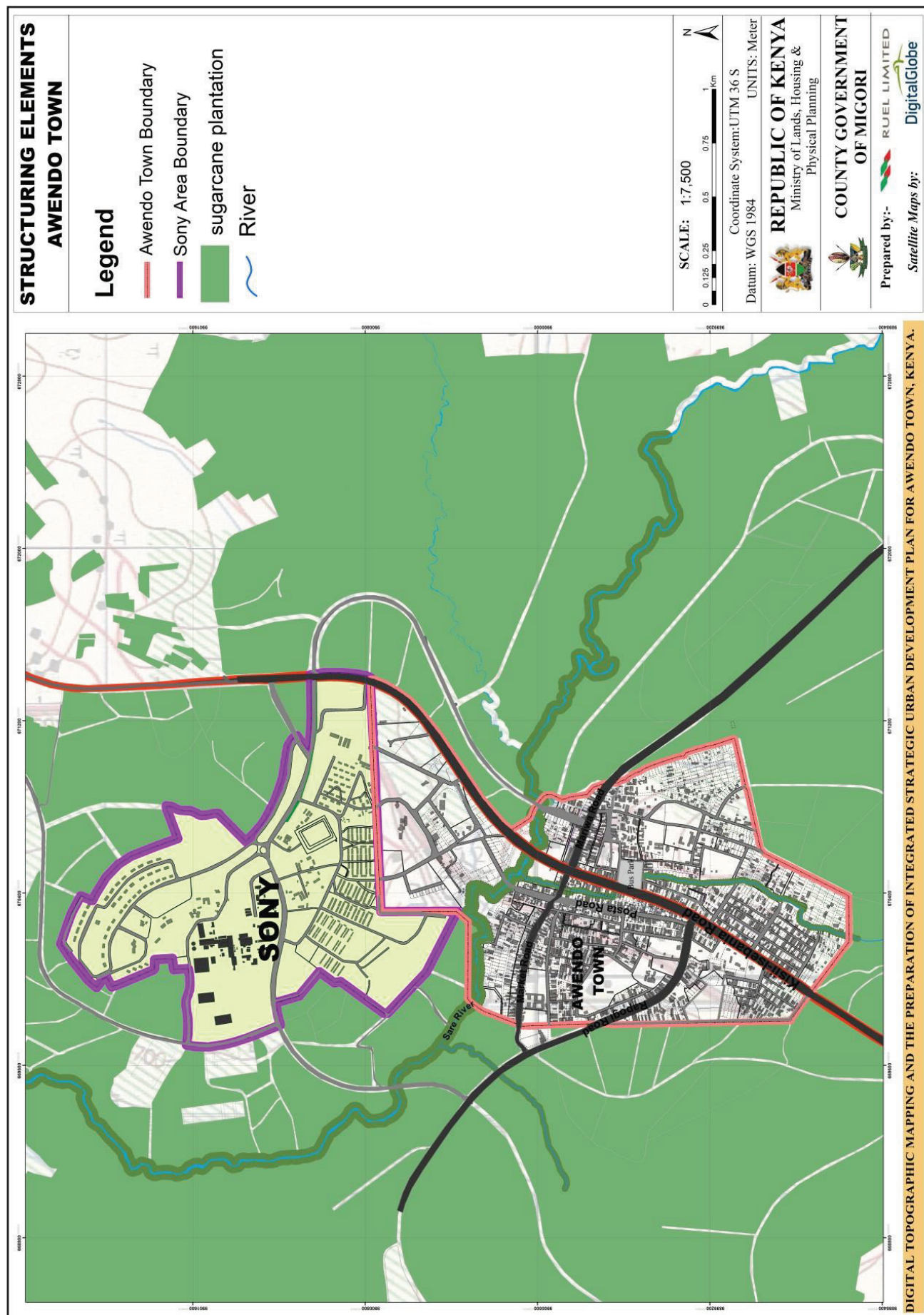


Figure 3- 4: Structuring Elements- Awendo Town

of the land (85%) have slopes less than 3 degrees. The land with a slope of less than fifteen degrees is classified as suitable for development and 95% of the land in Awendo is suitable for development. The sugar cane plantation makes up about 34.04% of the urban land (urban core plus Sony area).

3.4.3 Development Potential and Constraints

The Sugarcane plantations, forest, river, stream are constraints as well as potentials for development of the town. There is a river and stream that traverse the planning area. They have created generally fragile areas that require controlled use to ensure soil conservation.

- Maintain natural drainage channels as much as possible
- Set back development up to 30 meters on the main rivers.
- No development on roads designated for expansion

3.4.4 New Development Integrated with Arterial Corridors

As a strategy to enhance balance of residential areas within the town and enhancing use of community facilities the ISUDP focuses on development of the three nodes linked through the key arterials, which will be further developed to enhance rapid movement between the nodes and the CBD. It also envisages densification in the areas around the old town. At a broader scale, it shall promote reverse-flow of movement in the transport system by encouraging commuting away from town center out to major employment hubs located in Nodes thus reducing the pressure in the CBD.

3.4.5 Decentralized Planning

The conceptual approach is to decentralize the attraction areas in the town by developing the nodes as unique centers providing jobs away from the old urban core. This should reduce vehicular movement in the urban core but also allow development of the CBD as a pedestrian only area. Each of the nodes will have a different economic focus and unique identity, while the present CBD will continue to be the key business center of Awendo. The planning units will be the administrative Wards.

3.4.6 Low and High Rise Development with Medium and High Density

Development of housing is geared towards a densified urban area able to provide quality service. The plan also envisions a mix of housing design that would allow for various user desires. The layout for residential areas shall allow for medium and high density development with the nodes having medium development and the urban core having a greater concentration of high density development. This would allow for reduction of vehicular traffic with high density residential areas near the CBD.

3.4.7 Infill or Brownfield Development

Urban infill is defined as new development that is sited on vacant or undeveloped land within an existing community, and that is enclosed by other types of development. The term "urban infill" itself implies that existing land is mostly built-out and what is being built is in effect "filling in" the gaps. Brownfield redevelopment on the other hand is a broad term used to describe the reuse and revitalization of abandoned, underutilized or stigmatized properties through the use of one or more local, county or national programs.

Municipalities are also encouraging the practice of infill as it is more efficient to use existing infrastructure and services than it is to extend infrastructure and services farther afield, Infill development can also help a community achieve or sustain thresholds of population density

necessary for amenities such as park space, community services, retail establishments, and affordable housing. The ISUDP proposes such development in institution housing and other such government land within the urban core that would provide an opportunity for showcasing densification neighborhoods.

3.4.8 Control of the Sprawl Development

Awendo is showing a tendency of ribbon development. Such development may cause resource inefficiency in provision of services. Regulations shall be put in place to create agricultural buffer zones between the development nodes and the urban core.

3.4.9 Renewal of CBD

Urban renewal is critical issue for Awendo CBD. The old CBD was not designed for the emergent urban role as a commercial and administrative hub of the Sub County. The streets are narrow and the infrastructure is not able to cope with increasing demand. The plots are also small and development requires a rethinking on land management to create enhanced urban aesthetics. The leases in the CBD should be used to facilitate renewal of the CBD to position it as an urban core of a modern city.

3.4.10 Quality Living

Awendo plays a vital role in economic growth and county development as it offers employment, commerce and agricultural production. At the same time, however, it struggles for social cohesion and environmental sustainability, since serious contemporary problems, like social inequality, environmental degradation, crime, etc., are traditionally considered to accompany urban life. The Town Vision anticipates a place that is green, clean and safe. The proposals for residential, commercial, industrial, education, recreation and other uses shall see a blend of development that enhances the vision of the town's residents.

3.5 PLANNING HIERARCHIES/ DECENTRALIZED PLANNING

The provision of services in the town is guided by the Physical Planning Handbook and the County Government Act which provides for various levels of planning.

Estates

An estate is a spatial planning unit, which is adequately provided for in terms of basic community facilities bordered by principle through roads and has an identity. The service center which forms the focal point of the estate satisfies the minimum walking distance from the perimeter. The population of the estate should be able to support the services within the physical entity. It is recommended that an estate shall have 100 households on the average.

Neighborhood

This can be defined as a comprehensive planning unit with some of the following characteristics:

1. Socio-economic identity
2. Common facilities such as schools, recreational, shopping centers, etc.
3. An almost self-contained unit
4. It may include several estates.

It is estimated to have a population of between 5,000 and 15,000.

Ward

This is an administrative unit that is the lowest unit just before a village/neighborhood. It forms the unit for service provision just below a sub-county. It is estimated to have a population of between 15,000 and 20,000

Sub-County

The planning area falls within Awendo and Uriri sub counties with a population of about 112 197

4.1 INTRODUCTION

Awendo town is the sub-county headquarters of Awendo sub-county. The designed planning area of Awendo town will cover a total of 15.97 square kilometers including Mariwa, Kokuro and Rapogi.

Its strategic location as an industrial and commercial town has seen it grow. It has also been a net in-migration node for workers moving into the South Nyanza Sugar Company in the region. The Integrated Strategic Urban Development Plan (ISUDP) provides an opportunity to address these planning needs. This chapter posits the development concept for the structure plan.

Subject to the situational analysis of the town, eleven land use zones have been identified. These include:

Zone 1(industrial zone)

This comprises the larger SONY sugar factory area with the attendant facilities like staff housing, schools, hospital, stadium and offices. Its total acreage is approximately 143.4 ha.

Zone 2, 7 & 8 (Educational)

This zone covers the whole of St. Benedict Primary and secondary schools, Anindo & Sare primary schools and tom Mboya secondary school. The total area is approximately 23.85 ha.

Zone3 (public purpose)

This zone entails SONY outgrowers yard, catholic church, Kenya police, Awendo district hospital, Awendo NCPB and small pockets of commercial plots. It is approximately 30.8 ha.

Zone 4, 5, 9 & 11 (residential)

These comprise of low, medium and high density residential zones in Awendo town. The total acreage is 72.53 ha.

Zone 6 (CBD)

This is the commercial herb of the town, which mainly stretches along the market road, Mariwa road the international trunk road. It covers approximately 61.4 ha.

Below is the structure plan showing the above zones.

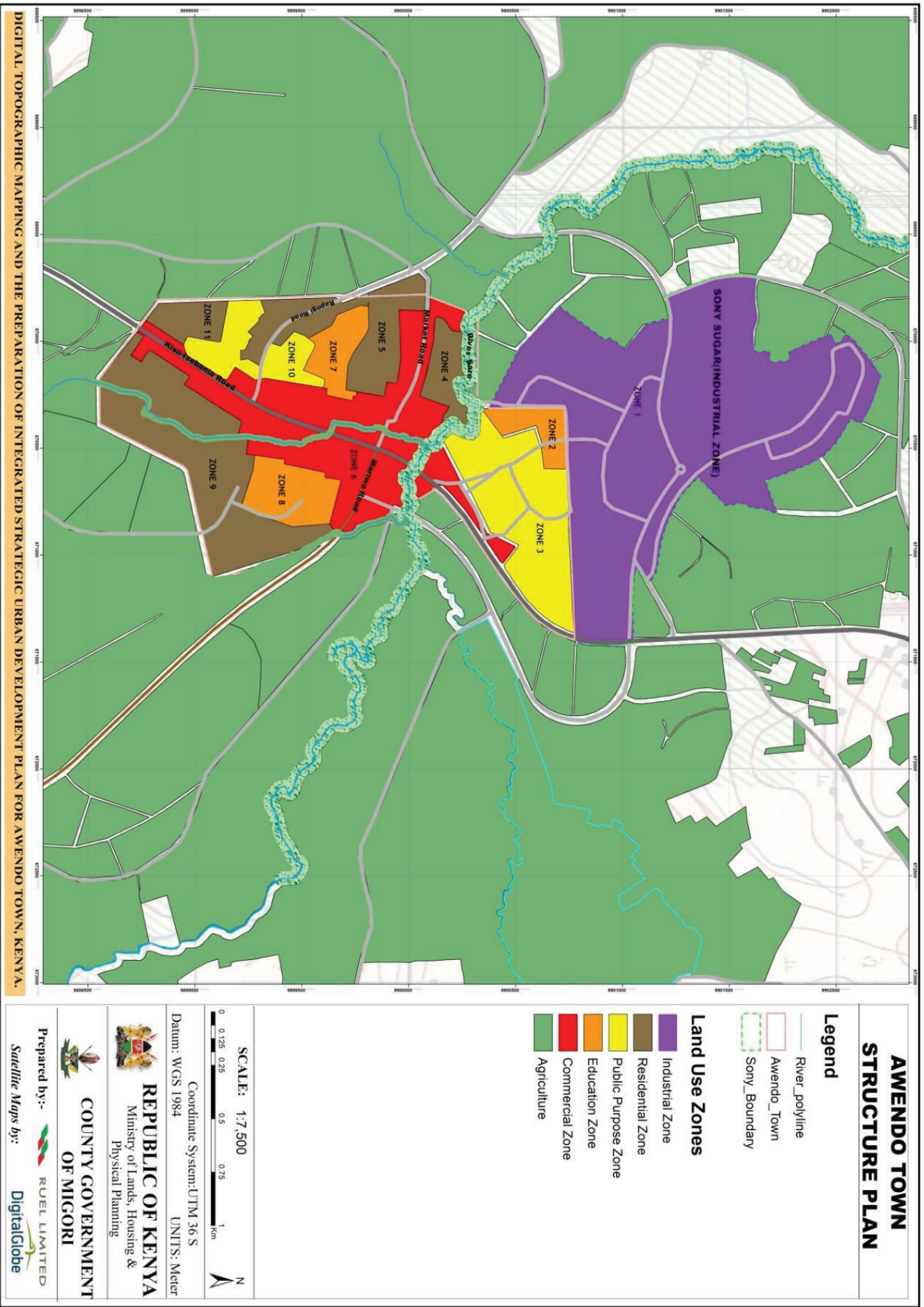


Figure 4- 1: The Structure plan

4.2 NORMS OF LAND USE

The Physical Planning Handbook has been used as the basis of assessment of the various categories of land use. This has been supplemented with guidelines and standards for comparable processes from other planning associations and institutions in so far as they help to position the planning process well. Benchmarking has also been made with towns within Kenya to ensure that proposals made here are not way off national trends. The distribution of land use in urban areas is based on norms factored on studies done by GoK in various urban centres in Kenya.

4.3 PROPOSED LAND USE

4.3.1 Residential

The densification of the urban core areas will target residential land-use development. Ground coverage to be used is as tabulated below. As part of densification it is proposed to increase density for housing from 40units/ha to 70units/ha with provision of multi family dwelling units in a mix of low, medium and high density.

Table 4- 1: proposed residential land uses

TYPE	Ground Coverage	% of Total Land	Ha
Residential Low density	50	20	111.27
Residential Medium Density	65	30	166.9
Residential High Density	70	50	278.16
TOTAL		100	556.33

The development of low income residential housing shall be anchored on high density development with regulations that encourage high-rise development. Jiw-dendi estate shall be redeveloped as a high density low income residential area. This development shall spread to Kolonono area and the area around kodede plaza next to Sare River with the National government, County government and the private sector being players in housing provision.

The medium and low density residential areas shall be juxtaposed within the urban core and in the satellite urban areas as indicated in the figures below:

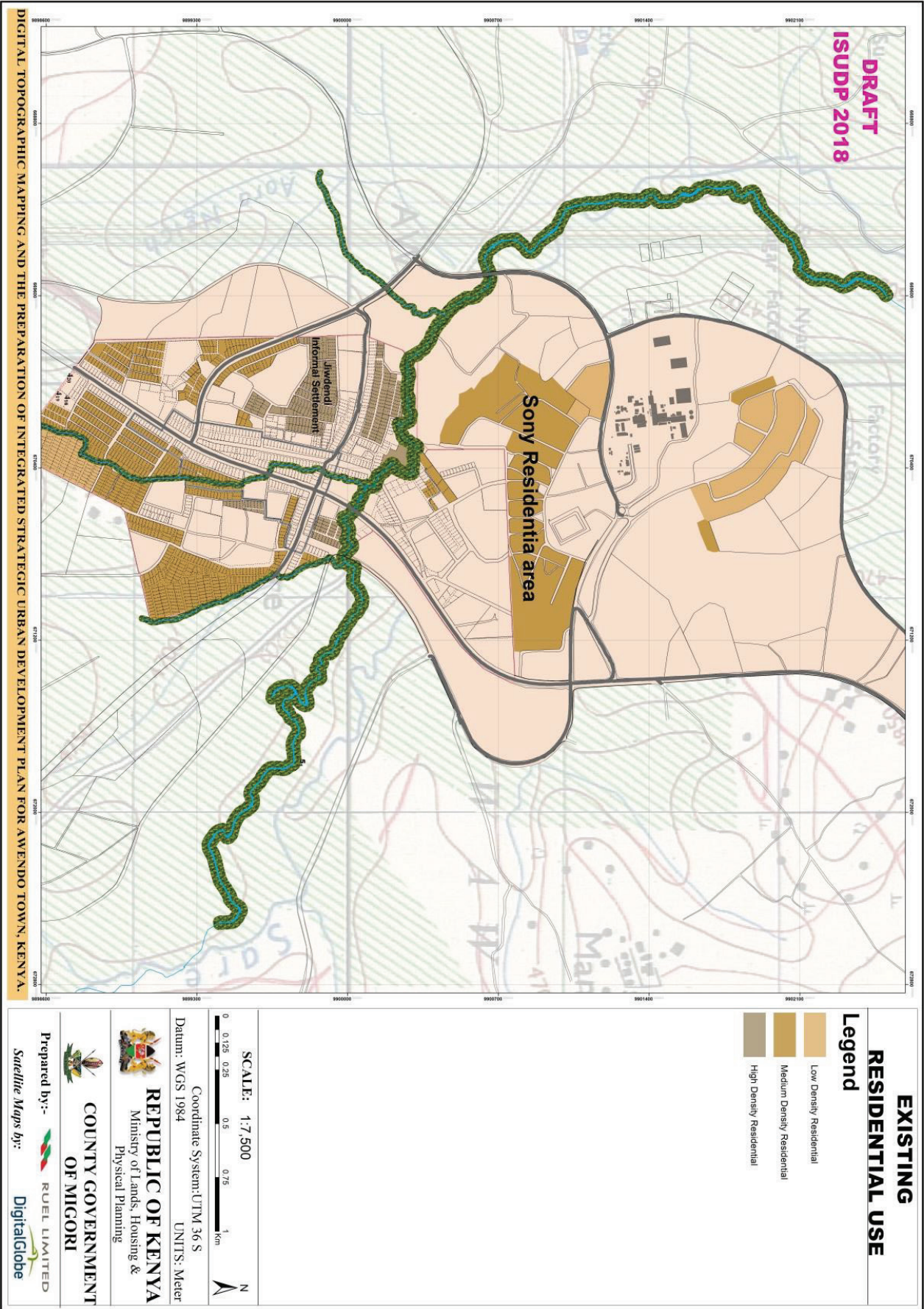


Figure 4- 2: Existing Residential Land Use

4.3.2 Industrial Use Plan

Awendo has investment mainly in the sugarcane industry. Industrial land makes up about 6.64% of the urban core (Awendo town and Sony area).

Light Industry

These are industries such as furniture and shoe making, repair, tailoring, flour milling, Jua kali fabrication, crafts and mechanic repairs among others. They are located mainly in the areas along the posta road, Rapogi and Mariwa roads. It also extends to River Sare. There are a number of residential flats that are being put up competing with these SMEs effectively pushing them out of this prime location. The minimum plot size proposed under light industries is 0.05ha put up in a complex of Light Industry zone. The total land required is 16 ha distributed across the town with some attached to the neighborhood commercial area. These industries will continue as part of mixed use in the current and extended locations.

Medium and Heavy Industry

It is proposed that other agro based industries be provided for targeting agro processing and be located within the nodes. A 10 Ha site should be provided at Mariwa to cater for such industry.

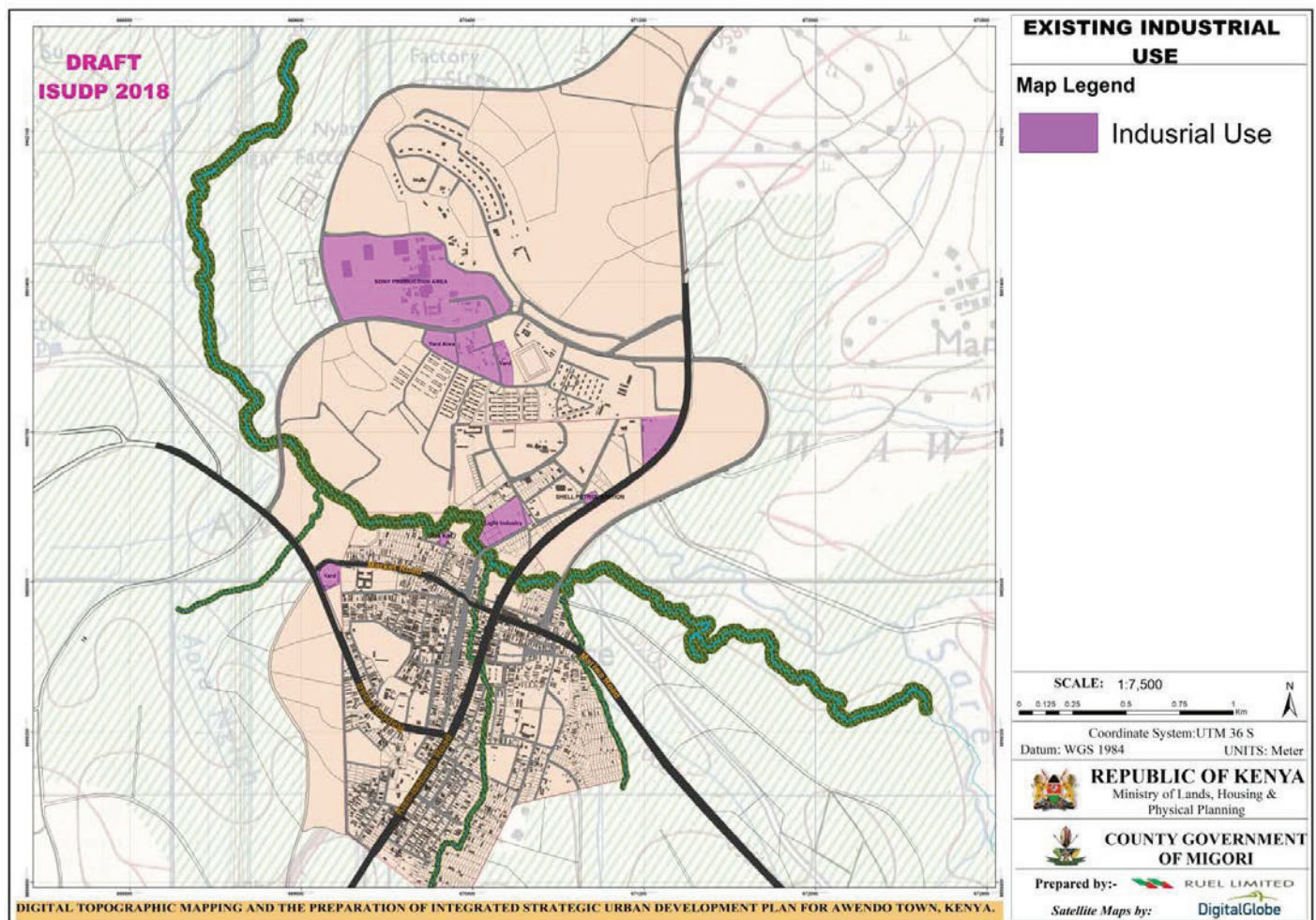


Figure 4- 3: Existing Industrial Land Use

4.3.3 Commercial Land Use

Commercial land use will be distributed between the three Nodes, the CBD and Neighborhood Centers. The total land required is estimated at 13.5 ha spread out in these centers. This will result in doubling of land under commercial use.

4.3.4 Education Use Plan

With a projected population of 112,197 by the year 2038 the following land will be required;

- ECD- 8 ha
- Primary- 104 ha
- Secondary - 63 ha
- College - 10.2 ha
- University 50 ha.

The University land may need to be expanded to cater for increased programs as need arises and as part of a techno-park.

4.3.5 Public Purpose use

Public purpose facilities includes health facilities, security facilities, community facilities like social centers, religious institutions, libraries, post offices, government offices. It is proposed that the land under this category be increased to 15% to ensure adequate land for such service provision for the future demand. This will include land for a cemetery at Mariwa.

4.3.6 Public Utility Use

Public utility land will be provided up to 3% of total land area to cater for the expansion of water and sanitation. The actual location of the sites may vary based on detailed engineering designs. The increase in the land allocation is projected on an increase in demand by year 2038.

4.3.7 Transportation Use

The viability of the three nodes linked to the urban core is anchored on good road transport. These will cater for local and through transport. There is also need to provide alternative routes, especially for through traffic and also linking

Up new residential and industrial neighborhood. There will be need for expansion of existing roads in order to accommodate the volume of growth in road transport. Such roads will cater for motorized and NMT. The existing Land for transport areas excluding the nodes is given as 20.12% of total land area within the residential, commercial and industrial zones.

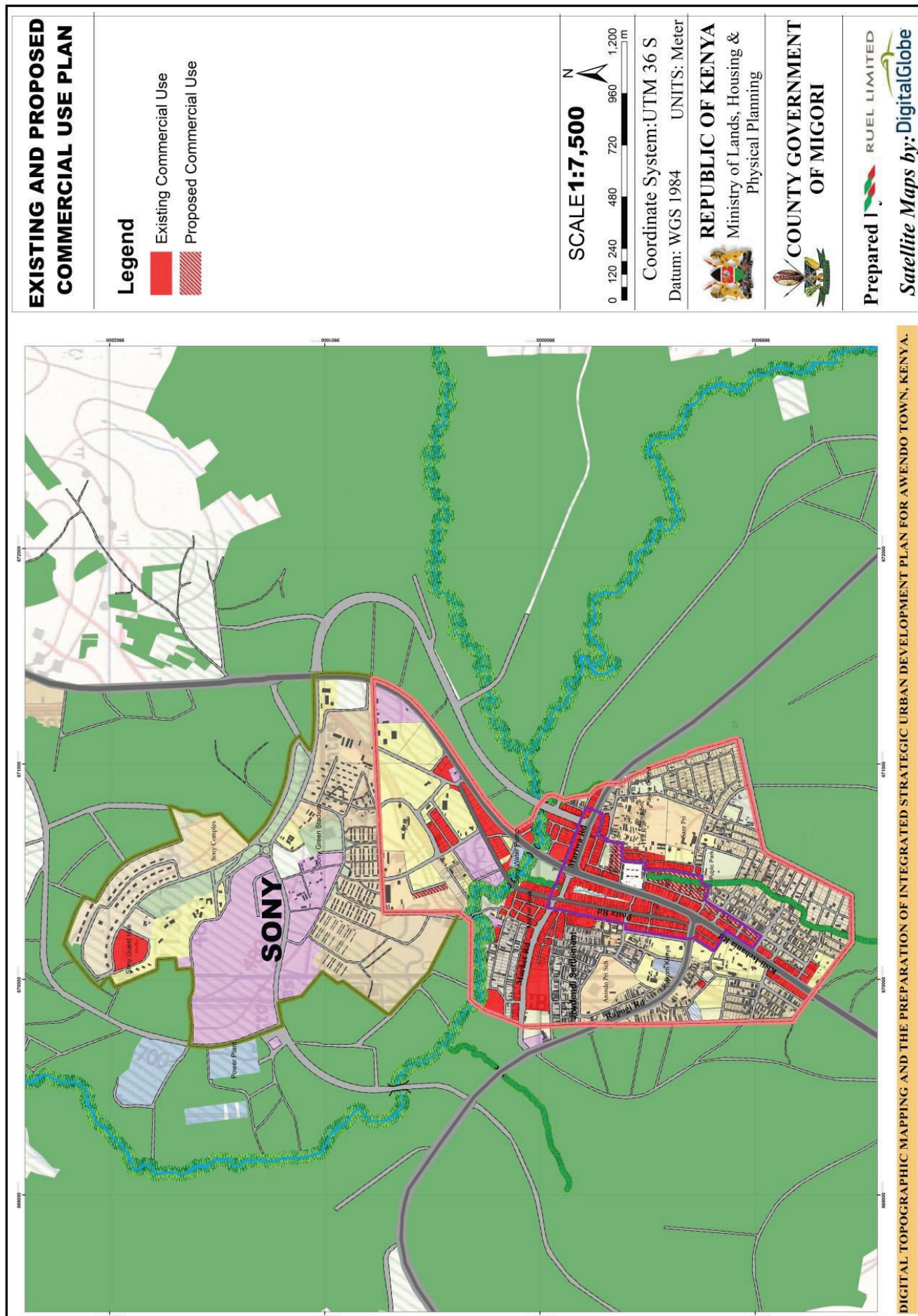


Figure 4- 4: Existing & Proposed Commercial Land Use

4.3.8 Environmental Sensitive Areas

Environmentally sensitive areas in Awendo include river Sare and a stream running northwards through the CBD and joining Sare river at the current conservation area.

River Sare which has its source at Nyangweta forest in Kisii county is a source of water for high populations within and downstream of Awendo Town. While appreciating that it has not been adversely affected by urban development, it is at risk in future growth of the town compromising its suitability for social and economic use.

4.4 Land Banking

To cater for unforeseen land requirements it is proposed that 10% of the land be banked for future development. These shall be distributed in the three nodes. They shall be kept under tree cover for the foreseeable future. The land for banking will be procured over the plan period in the second phase of five years in the plan period. The estimated land required for banking is 100 Ha.

4.5 SPECIAL AREA

These are areas that require special planning considerations to enable them perform the unique roles that makes them distinct drivers of the town's economy. They include the CBD and the three Nodes.

4.5.1 Central Business District Existing Situation

The public space in the central business district of Awendo town is largely allocated to the motorized vehicles for circulating and parking. No facilities are available for NMT, sometimes the verandas of the shops block the sidewalks and oblige people walking on the road. Many heavy goods vehicles circulate and park in the CBD creating congestion, occupying precious public space and decreasing the safety for NMT.

Objectives

- Improve the functionality, quality and beauty of the CBD
- To allow for comprehensive redevelopment of the towns superstructure

Proposals

The urban core within the old town boundary shall be developed as a Special Planning area.

- Regulations shall be provided to enhance the quality of the environment and increase the density within the zone.
- Improvement of the support infrastructure to allow for higher densities (Water, Sanitation, Storm Water and Lighting).
- Develop circulation systems that allow for flow of traffic; motorized and NMT
- Prepare indicative plans for densification of development

5.1 INTRODUCTION

In order to make the development of the town efficient and sustainable the ISUDP provides sectoral strategies that will provide a framework for integrated urban development.

This chapter presents sector wise proposals including Economy and Employment, Physical and Social Infrastructure, Housing and Informal Settlements, Transportation, Environment Management and Disaster Management. The strategic sector goals are based on stakeholder's visions for the town for the year 2038.

5.2 ECONOMY AND EMPLOYMENT

5.2.1 The Economy

Current financial situation

The FY 2015-2016 reflected that Migori County depends mainly on equitable national share for its revenue. To finance the budget, the County expected to receive a total of Kshs. 5,696,050,647 (2.25% of the revenue raised nationally) as equitable share of revenue raised nationally, Kshs. 87,452,156 from Conditional Allocation (Loans and Grants), 109,699,053 Conditional allocation - free maternal Health, 44,488,459 Allocation for Leasing of medical equipment, 74,147,432 Road maintenance fuel levy fund, 62,099,800 conditional grants and 20,440,000 DANIDA funds. The total local revenue collected in FY 2015/16 of Kshs. 400 million. The revenue collected was below the local revenue target, an unfortunate sharp decrease from Kshs.500 million collected in FY 2014/15.

Revenue sources for the FY included:

- a) Property rates & rents;
- b) Development approvals;
- c) Single business permits and Market fees

Agriculture Sector

This sector includes crop husbandry, fisheries and livestock. The objective of the sector is to accelerate the transformation of agriculture and livestock production into competitive and commercially viable enterprises at household level. This presupposes improvement of service delivery to support the sector development. Current challenges experienced were reported to include:

1. Weakness in accountability;
2. Some cases of Irregular harvesting of sugarcane leading to wastage;
3. Delayed payment of sugarcane dues by sugar companies

Sugar Production

Awendo is endowed with good climate which supports a vibrant sugarcane growing and processing industry. Awendo is the epicenter of sugarcane farming in the whole of Migori County. The town is surrounded by huge plantations of sugarcane. In addition, there is a sugar miller industry (SONY SUGAR COMPANY) within the town's environ, that processes sugar. The current sugar production stands at 300,000 metric tonnes valued at Kshs. 720 million.

The Sugar miller industry has empowered local peasant farmers to grow sugarcane by providing farm inputs in addition to providing a ready market for the sugarcane. There are also stores that cater for the farmers' needs such as fertilizers, seeds and farm implements.

Income generated from wages and salaries of sugar factory works and income periodically paid to the farmers has created a good effective demand which supports commercial and farmers businesses. The farmers can afford and are able to buy their household assets from these resources.

Opportunities

- I. Ready market for sugarcane provided by the sugar factory
- II. Locally available and ready market for the by-product of sugarcane (sugar) produced from the sugar factory
- III. Availability of sugarcane transportation services

Dairy Production

With a mean minimum temperature of 17°C and a maximum of 20°C with highest humidity and a potential evaporation of 1,800 to 2,000 mm per year, dairy production is viable in this area. The sub county produces about 320,000 litres of milk per month against a demand of 900,000 litres per month. The deficit in milk production is met by imports from other Counties such as Narok. Emphasis should be placed on zero grazing necessitated by land pressure and technology that promotes high milk production.

Keeping improved or even grade cattle will definitely be attractive to many farmers. Introduction of pure breed grades should be the ultimate aim of the dairy cattle farmers who will require expert support during the initial stages of the business.

Opportunities

1. Introduce improved dairy farming

Introducing high grade pure breed cattle to the farmers should be done systematically. First, only those farmers who have demonstrated ability and capacity to maintain improved breeds should be considered for selection as the first bunch of those to benefit from trials phase. Those selected should be given sufficient and systematic training and education in the husbandry of the pure breed cattle. This should not be difficult as it will be part of the selection criteria. The selected farmers should then be taken through a systematic training on management of pure breed herd including keeping of records and tracking of progeny including milking and care of calves.

2. Value Addition of dairy products

In tandem with promoting dairy industry, the County should consider introducing, through participatory consultation, value addition in milk processing. Surplus milk can be used to produce:

- Low fats
- Yoghurt
- Ghee and
- Mala

Horizontal linkage can be incorporated with passion fruit, pineapple, avocado, orange and banana growers to supply fruit to the value addition processing plant in producing yoghurt.

5.2.2 The Labor Force

Migori County's labor is projected to increase to 565,002 persons by the end of year 2017. This represents 61.5 per cent of the county population, in which 53 percent consists of females while 47 per cent males. Employment opportunities in the county however, are very limited. Majority of those in the labor force are semi-skilled and have only had primary school education though a good number have also attained O'Level certificate. Hence the majority of those seeking employment may not be easily absorbed in the formal sector. Strategies to expand opportunities in the informal sector must be formulated and implemented.

The unemployment levels in the county stands at 20%. Most of those unemployed are semi-skilled and unskilled. This creates a dependency challenge for the working and active population. The source of income for the people of Migori County comprises of proceeds from farm produce such as sugarcane, tobacco, maize, potatoes and horticultural crops. Employment by multinational companies such as sugar and tobacco factories is another major source of income. The informal sector offers the largest and fastest growing form of employment.

One of the features observed in Awendo is the sprawling hawking businesses around the central business district which are in direct competition with the formal businesses. If not controlled, this development will impact negatively on the established businesses which pay higher rates and taxes. Properly harnessed though, the informal hawking businesses will also contribute positively to the exchequer of each County while at the same time offering the traders secure source of income.

Being one of the main industrial and agricultural center in Migori County, Awendo town offers a variety of employment opportunities in the sugar production sector, both in the sugarcane farms and the processing industry.

The establishment of the County Government has also created new opportunities for formal employment.

A larger percentage of people working in companies such as sugar factory get their dues in terms of wages. This is because most of the employees of these firms are employed under contract terms.

Roads and building construction is another source of wage though seasonal. The major contributors to category of self-employment in the county are people working on their own farms. These are the people who spend most of their time engaged in tilling, harvesting and rearing livestock for their livelihood. This type of employment contributes more than 45 percent of employment in the county. Other kinds of self-employment comprise of people undertaking their own businesses either in the main trading centers or in the rural settings. These businesses range from small kiosks to wholesale trading.

5.2.3 Household Poverty

Household welfare is highly correlated with income. Household incomes are not easy to measure, because they are not always a true reflection of actual incomes, but household consumption expenditure is usually a reliable indicator. Individual expenditures have historically been shown to be correlated with income level. Household surveys have therefore traditionally captured data on expenditures as a proxy for estimating incomes. Consumption expenditure on a determined food basket is used to estimate the poverty line. Poverty is measured using estimated consumption expenditures. The poverty line is a threshold below which people are deemed poor. In 2005/06, the poverty line was estimated at Kshs 1,562 and Kshs 2,913 per adult equivalent per month for

rural and urban households respectively. Nationally, 45.2 percent of the population lives below the poverty line (2009 estimates), down from 46 percent in 2005/06.

Close to 46% of the residents in Migori County are in absolute poverty category, while 48% are experiencing food poverty. Men seriously dominate most of the development committees, right from the sub locational level whereas Women bear the brunt of poverty.

5.2.4 Investment Environment in Awendo

An investor in Awendo stands to gain from the various tax treaties and investment promotion and protection agreements that Kenya is a signatory to, enabling exports from Kenya to enjoy preferential access to world markets under a number of special access and duty reduction programs.

Further, the cost of doing business in Kenya has significantly reduced in recent years. An investor would also have access to highly educated, skilled and sought after workforce, in addition to operating in Kenya's fully liberalized economy that includes unrestricted foreign exchange, readily available import and export licensing, as well as no restrictions on remittances of profits and dividends. The following parameters would enhance investment in Awendo:

- Stable and declining inflation rate, currently lower than the average for Sub-Saharan Africa.
- Awendo has a relatively large well-educated and skilled labor force covering most sectors.
- Significant development of the County's transport infrastructure
- Access to both local and export markets through Kenya's membership in the East African Community (EAC) and Common Market for Eastern and Southern Africa (COMESA).

5.2.5 Major Challenges

Lack of adequate public land to attract investors is an issue that has to be addressed if the town wants to woo investors.

There is also no framework to support the Informal Industries to set up and operate. These include lack of a serviced site with sheds, water, electricity, sanitation and parking, yet this is the largest employer in the town.

5.2.6 Economic Goal

To attract investment and create employment opportunities for town residents

5.2.7 Proposed Strategies for Economic Development

The ISUDP proposes the following strategies for economic development:

Table 5- 1: Strategies for economic development

Goal	Strategies	Projects
To attract investment and create employment opportunities for town residents	New industrial areas linked to nodes	Allocate land for new industrial areas Notification of the land demarcated for industrial development
	New Commercial Districts	Allocate land for new commercial districts Notification of the land demarcated for commercial development
	Improve infrastructure for employment zones	Electricity Supply in the proposed commercial and industrial area Construct motorable Roads within proposed Industrial area Construct truck terminals
	Promote SMEs	Formulate county led SMEs policies Lower transaction costs Encourage cottage industries and strengthen value chain development Establish County led SMEs oriented financial institutions
	Promote Urban Agriculture	Develop water harvesting technologies, • Promotion of organic manure and high yield seeds • Explore daming of surface runoff for irrigation • Promote soil conservation and soil fertility
		• Establish County funding for agricultural based activities
	Institutional framework for Juakali sector	Allocate Juakali traders designated areas in the Nodes and urban core Training & capacity building on products improvement through County Trade Ministry
	County Investment Strategy	Develop a Town Investment Policy Develop Investment Information Centre Give incentives to investors including serviced land and tax holidays

5.3 PHYSICAL INFRASTRUCTURE

The physical infrastructure forms the framework of the town's development. It is imperative that these are teased out to allow for projections for the future demand of the town and enable the spatial components be arranged in a functional manner.

5.3.1 Water Supply

Awendo town is currently served by a reliable piped water supply from Migori-Kuria-Trans Mara Water and Sanitation Company (MIKUTRA) which was commissioned in 2012 by the Republic of Kenya.

The other water supply sources for Awendo town include River Sare pumping system and Awendo borehole.

Water supply characteristics of the town are shown in table below:

Table 5- 2: Water Supply characteristics & demand

Description	Quantity
Average water demand projections for the horizon year 2038	19,185m ³ /day
Average water demand for 2018 assuming 100% coverage area	8,926m ³ /day
Average production of water from Sare Intake	37m ³ /day from surface water (River Sare) Full capacity of the treatment works is 2,000m ³ /day
Number of boreholes in the planning area	Awendo borehole – safe yield 90m ³ /day Mariwa borehole – safe yield 90m ³ /day Kokuro borehole – safe yield 90m ³ /day Rapogi borehole- safe yield 90m ³ /day
Percentage area covered by the distribution pipelines	20%
No. of Household with individual connection	122
No. of water kiosks	10
Number of institutions with water connections	12

There is an additional water source from Sony water supply scheme. The Water supply system was constructed by the Sony Sugar Company. The system which capacity is about 4,882 m³/day serves both for domestic water demand with the population of about 7,000 people and industrial water. The distribution mainly reticulates within Sony area except for the line that extends to Awendo sub district hospital which is located in the Sare area.

5.3.1.1 Water Demand and Capacity of Existing Scheme

According to Awendo Town Water Supply Design Report, 2010, the water demand for Awendo town by 2030 is estimated at 2000m³/day. This design capacity of the existing system proposes to meet the 2030 demand for the town. This projection assumes a population growth rate of 3.1% in Kombok sub location and 2.8% in Waware sub location.

This projection will require review after a period of 10 years bearing in mind the proposed expansion of the Class A1 road and the positive effects of devolution.

5.3.1.2 Water Demand Analysis

The population of Awendo is steadily growing and according to the projection, the total population for the urban and Peri-urban is expected to shoot to 54, 096 and 58,101 for the urban and the Peri-urban respectively by the year 2038. The table below indicates the water demands for the current population at 2018 and the projected population at 2038.

Table 5- 3: Water Demand Analysis

YEAR	2018	2028	2038
WATER DEMAND(M³/Day)	8,926	12,961	19,185
CAPACITY	7,152		
DEFICIT	1,774		

From the analysis above, it is clear that there is a deficit in water demand at 2018 hence calling for the following strategies:

1. Expansion of the Sare river water intake to accommodate an additional of at least half of its current capacity.
2. Drilling of additional boreholes, at least one each in Mariwa, Rapogi, Kokuro and Awendo.
3. Installation of at least 3 high capacity storage water tanks of in each satellite center to cater for water security
4. Practice of rain water harvesting & storage through roof catchment.

Water Storage

The current storage capacity for Awendo town is 1020m³ consisting of 20m³ pressed steel elevated tank and 1000m³ concrete tank.

Distribution Pipeline

The distribution pipeline is about 12km ranging from 90mm diameter to 225mm diameter.

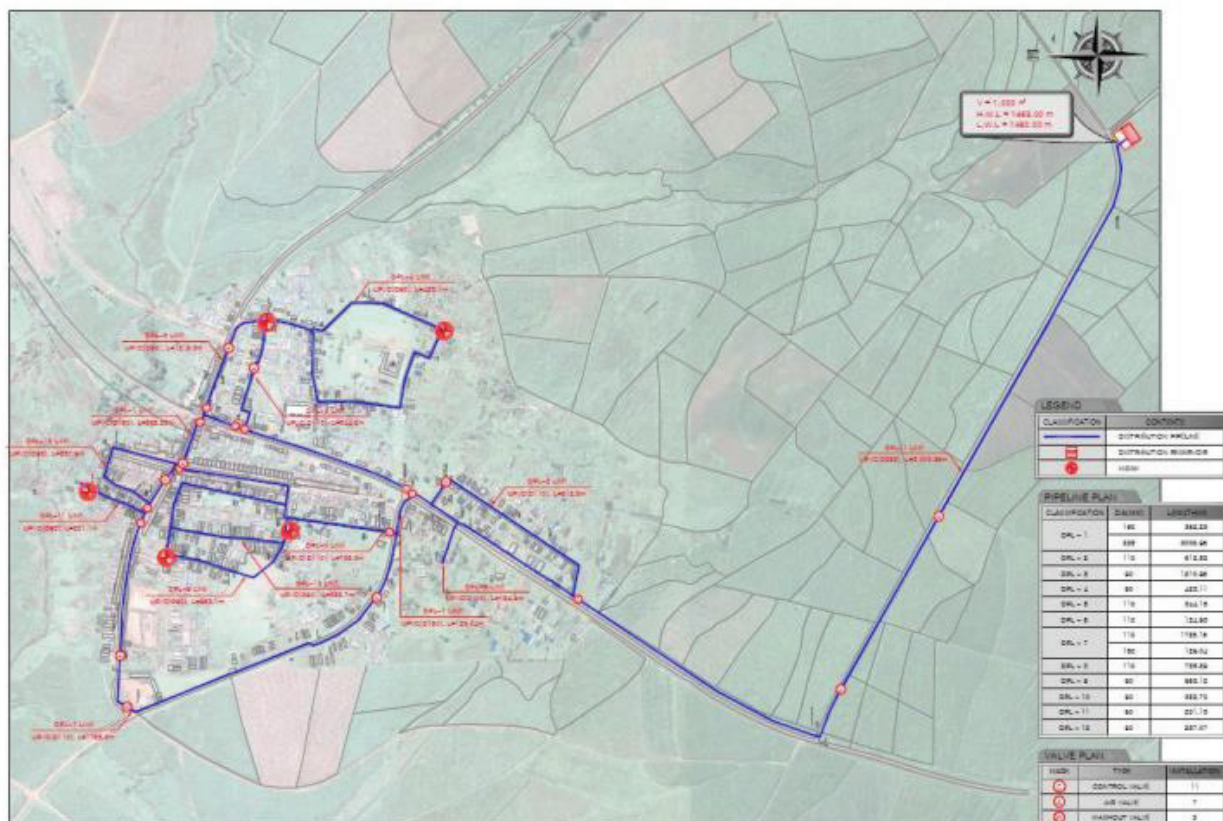


Figure 5- 1: Existing Water Distribution Pipeline

5.3.2 Sewerage and Sanitation

5.3.2.1 Status of Sanitation Provision

Awendo Town has no water borne sewerage system. Households, commercial premises and institutions rely on onsite sanitation facilities, predominantly pit latrines and septic tanks. Full septic tanks are disludged using exhauster from MIKUTRA and disposed in Kisii town wastewater treatment plant. The arrangement for the exhauster is individual or institution based and therefore cost per trip varies. On average, exhauster services costs about Kshs 15,000 per trip. In some instances, some households still dispose the sludge from filled up pit latrine and septic tanks in dug pits and in worse cases discharge to storm water drains during rainy season.

Strategies for addressing the issues on Sanitation

1. Establishment of waste water treatment plant at Ranjira area
2. Establishment of a well-networked sewerage system within the town and its environs connected to the waste water treatment plant.
3. Stop all the unnecessary drainages of waste water into water sources

5.3.3 Storm Water Drainage

Storm water management in Awendo town is not well defined. The only identifiable storm water drainage system runs on both sides of Class A1 road and the Awendo- Mariwa road, though they are not well coordinated at the crossings to various parcels.

The key influencing factors for the characteristics of drainage system in Awendo Town that may also be described as the challenges facing the town include the following;

1. Climatic conditions where the town and its surroundings are endowed with heavy rain periods generating huge volumes of storm water that need to be managed,
2. There are serious conflicts between land use trends and natural drainage systems leading to erosion and damages to road reserves,
3. Inadequate provision of drainage systems to match the expanding social and economic development of the town
4. Increasing hard surfaces in form of roads and buildings and diminishing open land surface for percolation,
5. Poor maintenance of the existing drainage systems.

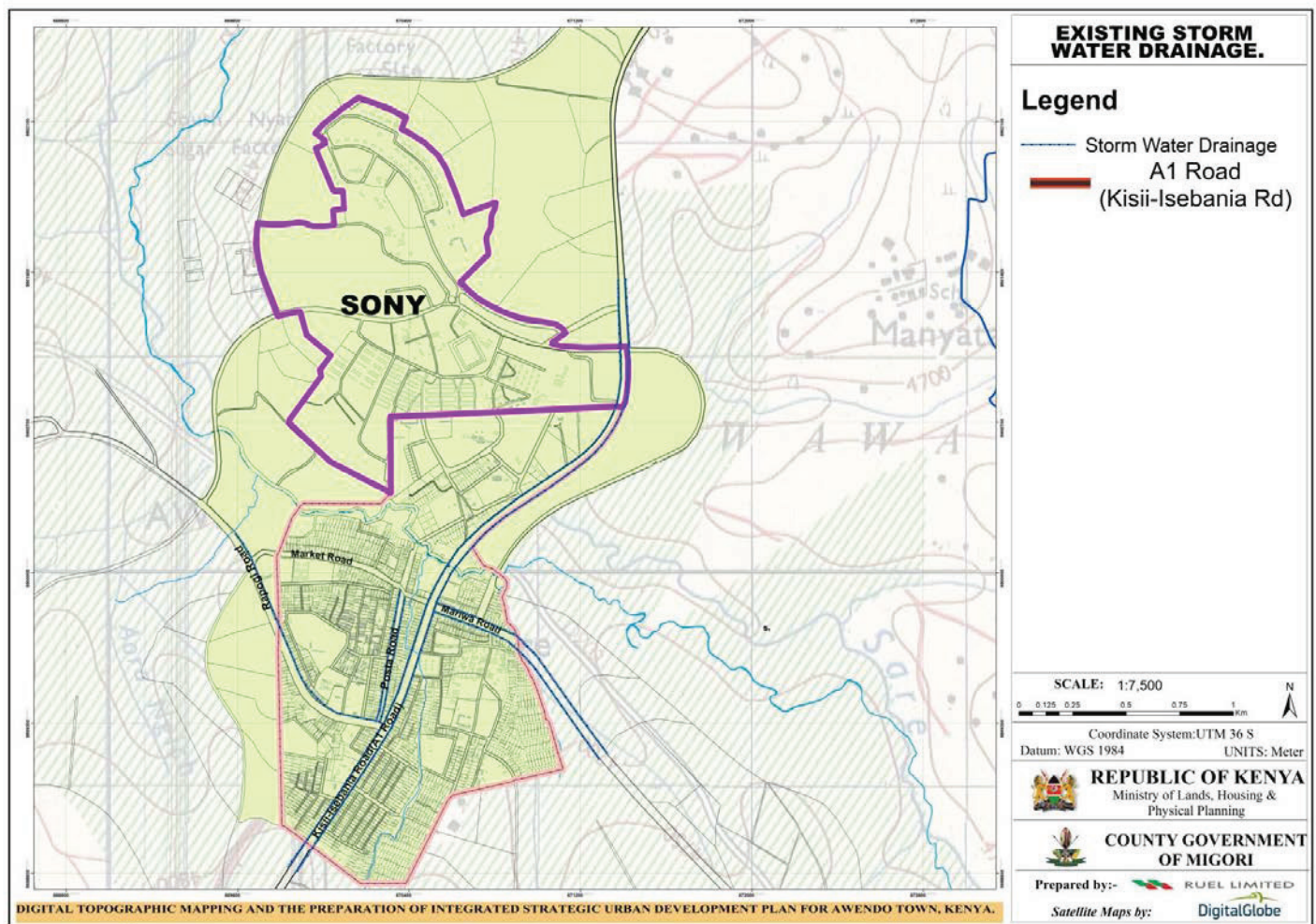


Figure 5- 2: Existing drainage network

5.3.3.1 Strategies for addressing the issues on Storm water

To improve storm water drainage the following will be undertaken:

- Establish surface runoff catchments for integration into the land use plan
- Drainage channels and outfalls integration from the town into the rivers
- Provide for drainage outfalls with minimal or no conflicts with land use features
- Confine drains to natural drainage system to the extent possible
- Establishing land requirements for drainage channels and outfalls

5.3.4 Solid Waste Management

General Status of solid waste management:

There are no designated solid waste transfer stations and therefore solid wastes are crudely dumped by the generators along the road and any available open space. Some of the major challenges facing the town include:

- Inadequate collection and transportation equipment to handle collection and disposal of solid waste.
- Minimal workforce to collect and transport solid waste.
- Lack of land for the establishment of solid waste transfer station

5.3.4.1 Generation quantities

Based on a generation rate of 0.4kg per person per day, the amount of solid waste generated in Awendo town is shown in table 4.6.7 below.

Table 5- 4: projected waste generation

Year	2018	2038
Projected population	52,200	112197
Generated solid waste, using 0.4kg/person/day	10.88 Tons	44.88 Tons

Strategies to Address Solid Waste Management Issues

The main issues that need to be addressed for solid waste management are:

1. A center of solid waste disposal & management site be identified and developed at Kokuro.
2. A comprehensive study on solid waste management be undertaken to work out the best strategy for waste management in the town.

5.3.4 Electricity and Energy

The Kenya Power Company has played an important role in lighting up the rural areas in the county. This is mainly through the Rural Electrification Programme which has enabled it not only covering the whole of Awendo town but also includes the ISUDP areas. Awendo town is connected to the national power Grid with Solar power, kerosene, gas, charcoal are the other sources of energy for the town

Table 5- 5: Adequate Infrastructure Services for Urban Development

Goal: To provide adequate infrastructure services to support urban development				
Sub Sector	Strategies	Projects	Quantity	Units
Water Supply	Access to potable water for all household	Increase water reticulation coverage to households in the built up areas	28,049 HH	No
Sewerage and Sanitation	Improved sanitation network	Establishment of waste water treatment plant within the town's environ	1	No
		Establishment of a well-networked sewerage system within the town and its environs	12.12	Km ²
		Stop drainage of black water into rivers and drainages		
Storm Water Drainage	Reduce negative impact of storm water	Establish surface runoff catchments for integration into the land use plan	1	No
		Drainage channels and outfalls integration from the CDB into the rivers'		
		Confine drains to natural drainage system to the extent possible.		
Solid Waste Management	Reduce proliferation of solid waste	A landfill site be identified and developed in mariwa	1	No
		A comprehensive study on solid waste management be undertaken to work out the best strategy for waste management in the town.		
		Waste transfer stations in CBD (main commercial area, bus stage, market)	5	No
Electricity and Street Light	Enhanced security and energy access	Grid network Coverage	100	%
		Street Lighting	100	%

5.4-SOCIAL INFRASTRUCTURE

Social infrastructure provision is crucial for a livable city. The provision of the facilities are guided by population sizes and planning standards. The Ministry of Health has provided a guideline on the hierarchy of health services that should be provided for various population areas. The social infrastructure is addressed in table 5-6.

5.4.1 Educational Facilities

The guidelines for education facilities by the Physical Planning Handbook allow for gross estimation of education numbers needed. Within the Awendo sub county, the existing education facilities are described in the table below: Increase in population will impact on the demand for education facilities.

Table 5- 6: Existing Educational Facilities

S/N ⁰	EDUCATION FACILITY	PUBLIC	PRIVATE	TOTALS
1	Primary schools	72	34	106
2	Secondary schools	28	6	34
3	Colleges	0	0	0
4	Universities	0	0	0

This will cut across all levels of education including early childhood development, primary and secondary levels. Based on the population projection, the urban plans should anticipate increased demand on education facilities and infrastructure and make requisite provisions. In addition to standard classrooms, the education institutions will need laboratories for science and technical skills. Plans for tertiary education should include emphasis on the new education policy which emphasizes technical training.

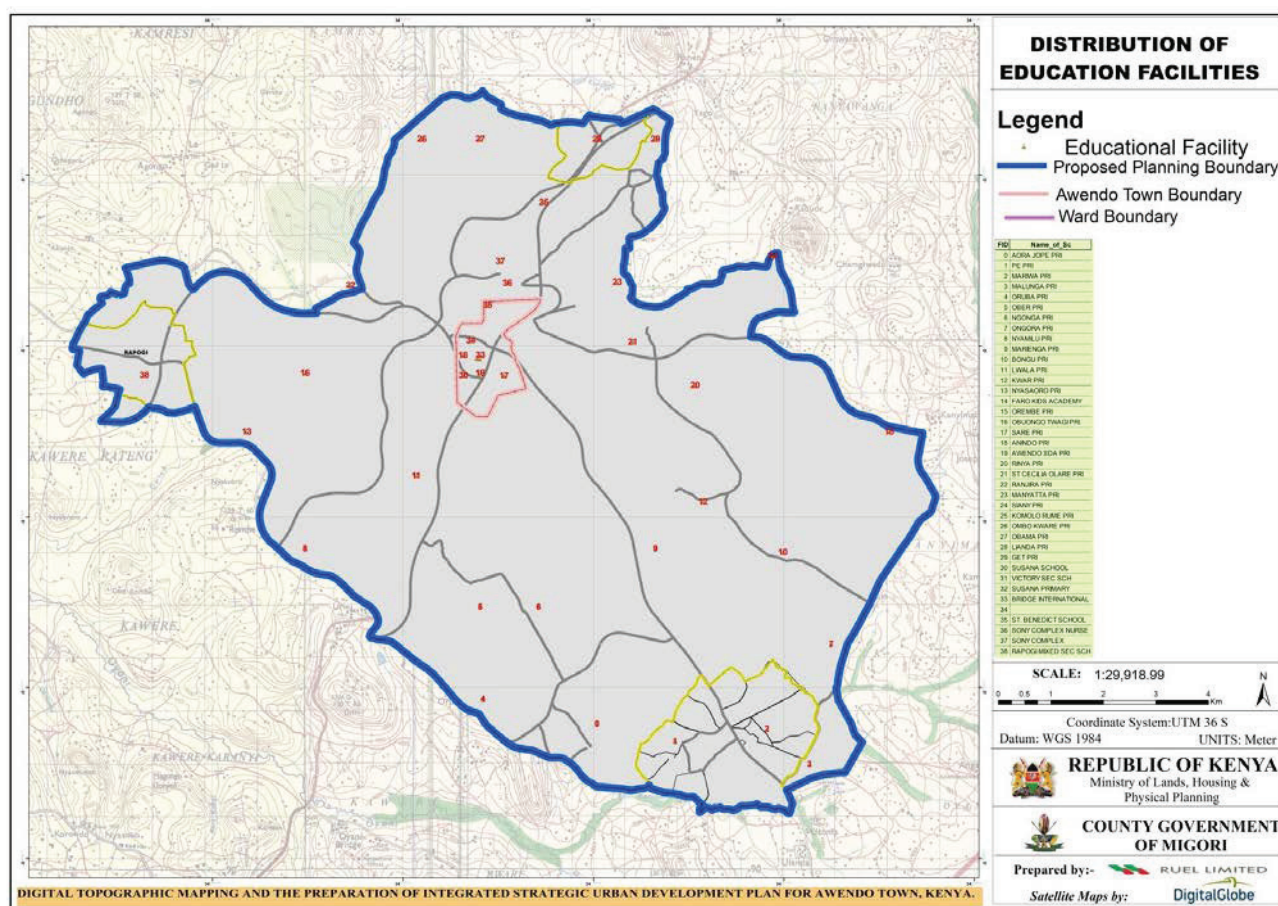


Figure 5- 3: Distribution of Educational Facilities in the Planning Area

5.4.2 Health Facilities

The increase in population will reciprocally increase demand on the health services. Health of a population is crucial to economic development. A healthy population will dedicate itself to engaging in productive activities in order to create wealth. An unhealthy population is usually a burden to the community. Health policy should focus on the following parameters:

1. Improve the health, wellbeing and independence of all persons;
2. Improve the quality of health in a sustainable, equitable and affordable manner;
3. Improve accessibility to health services.

It is important to ensure availability of requisite infrastructure in the health institutions apart from increasing the number of facilities at different levels i.e. dispensaries, health centers and hospitals.

Increase in population enhances chances of proliferation of communicable diseases. One of the main focuses of health delivery systems should be to address elimination or minimization of communicable diseases and child mortality. Distances travelled by sick persons should be minimal. In addition, suitably qualified staff should be engaged in all the health facilities. This include nursing personnel, clinical personnel and well qualified doctors.

Migori County has one GOK Referral Hospital, 2FBOs and 4 private hospitals; ten (10) GOK Sub County Hospitals, 9 Nursing homes; 25 GOK health centers, 10 private and 112 GOK dispensaries, 8 FBOs and 56 private clinics. Health services provision in the county are anchored on the three tiers i.e. community, primary care facilities and referral facilities based on the six policy objectives.

Awendo Township has 10 health facilities. These include four (4) government facilities, one (1) parastatal and five (5) private facilities. One advantage enjoyed by the health facilities in the planning area is that they occupy vast lands suitable for future expansion.

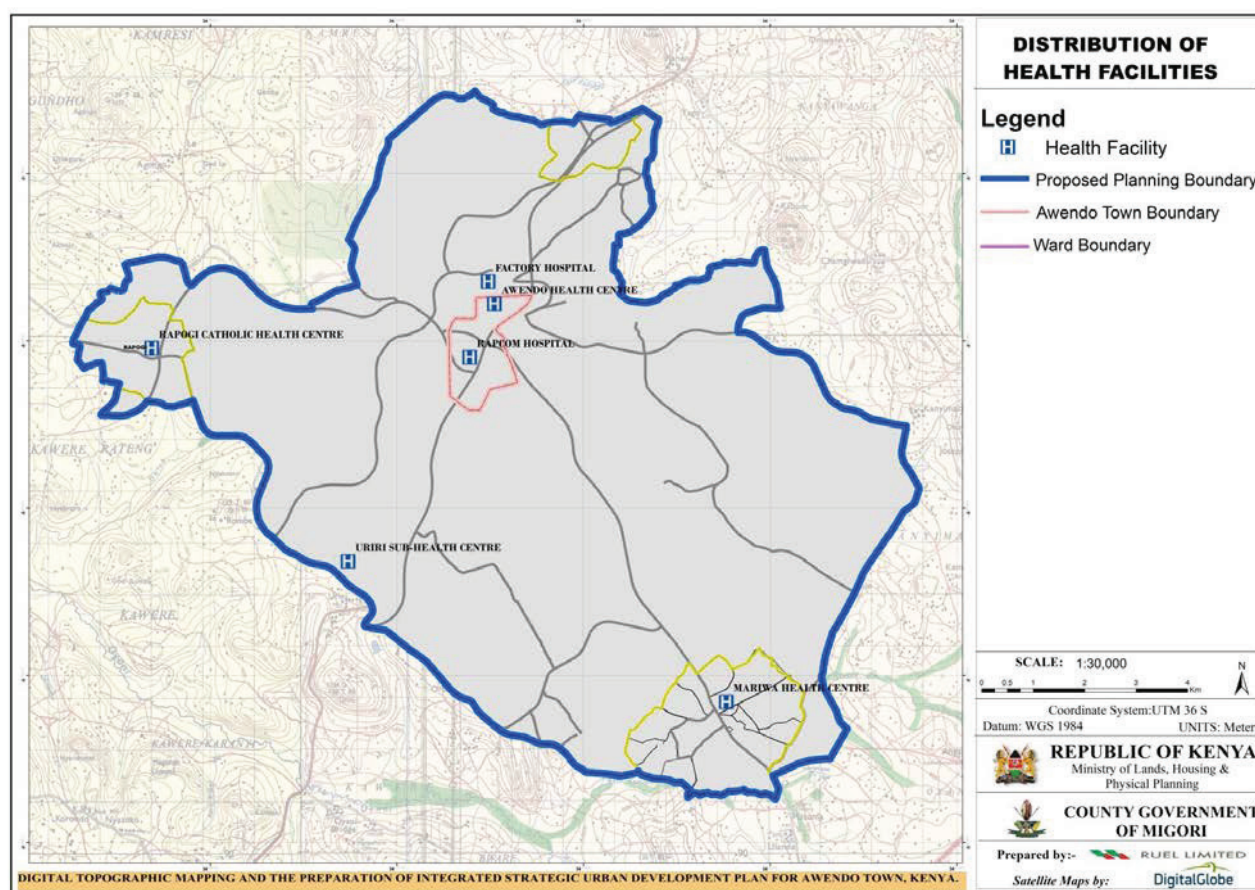


Figure 5- 4: Distribution of health facilities

Table 5- 7: Proposed social facilities

Goal: Access to quality social facilities				
Sub sector	Strategies	Projects	Quantity	Units
Education	Provide schools within walking distance	ECD	32	No
		Primary School	32	No
		Secondary School	14	No
		college	1	No
		University	1	No
Health	Quality health referral systems	Level 5: Secondary referral facilities	1	No
		Level 4: Primary referral facilities	3	No
		Level 3	10	No
		Level 2	20	No
	Alternative methods for disposal of dead persons	Cemetery	1	No
		Crematorium	1	No
Library/ Community Centers	Enhance community interaction	Town Library	1	No
		Community Library	2	No
OVC	Support to OVCs	Orphanage	1	No
Postal Services	Accessible postal facilities	Sub-Post Office in Mariwa and Rapogi	2	No
Security Services	Improve neighborhood security	Police Post (In neighborhoods)	3	No
Fire Safety	Strengthen fire safety infrastructure	Police station in Awendo town	1	No
		Fire station	1	No
		Fire Hydrant (every neighborhood)		

Recreation	Provide a beautiful livable environment	Neighborhood Park	5	No
		Neighbourhood Playground	7	No
		Community Center at kokuro	1	No
		Stadium at Kokuro	1	No

5.5 HOUSING AND INFORMAL SETTLEMENT PLAN

Housing is an integral element of a nation's economy. Its backward and forward linkages with other parts of the economy closely bond people's needs, demands and social processes with the supply of land, infrastructure, building materials, technology, labor, and housing finance. These linkages allow housing to act as an important engine for sustainable development and poverty reduction in both society and the economy. Operating within an overarching governance framework, defined by institutional and regulatory systems that enable society to build homes and neighbourhood, housing has an inescapable physical manifestation through the building of houses, dwellings, shelter, accommodation, site & services and/or residential units. Without a functioning housing sector, urban centers cannot be established or developed. A functioning housing sector offers appropriate, affordable housing and sustainable patterns of urbanization - which are critical for the future of our ever-urbanizing planet.

5.5.1 Future Housing Requirement

There is a lot of concentration of property development in the high-income category although the demand for housing is most acute in the middle and low income categories. Some of the reasons behind this include availability of mortgage finance to Kenyans at the higher income end and insufficient serviced land that could be set aside for low income housing. The National Housing Corporation, charged with provision of housing, develops housing units that are not affordable for low- and moderate-income families.

Existing regulations aimed at protecting tenants discourage landlords from providing formal low-income rentals. The Rent Restriction Act (Cap. 296) and the Landlord and Tenant Act provide protection for those households with rents at or below Kshs 2,500 a month (US\$27), such as notice requirements and limits on rent increases. Unfortunately, a side effect is that formal sector landlords avoid renting apartments at or below this level. Moreover, since this rent level was set in the 1980s, this will only apply to very low-rent units, which are the most likely to be unregistered and informal. There has been little development of public housing in the town and the private sector targets the market segment that would guarantee them high returns on investment.

5.5.2 Proposed Housing Strategy

Housing cost is the biggest constraint to development of affordable housing. To obtain a mortgage on the lowest-priced property, a borrower would need Kshs 1 million a year of formal income (Kshs 84,000 or US\$1,024 a month). The average annual income in the largest 15 urban areas is Kshs 21,748 a month (US\$265). This average income does not paint the full picture as the distribution of income is weighted toward top income earners. A more accurate picture of income can be seen in that three-quarters of households earn less than Kshs 22,500 a month (\$257) or Kshs 270,000 (\$3,078) a year. A family earning Kshs 22,500 a month (roughly the 75th income percentile) would only be able to afford a mortgage of Kshs 485,968 (US\$5,926). This means that the family purchasing.

A low-cost house (Kshs 2,000,000) would need to earn well into the top income quintile Interest rates are high- even when subsidized. The current interest rate for mortgages is approximately 18 percent- higher in some cases for a 20-year amortization period. On these terms, a family at the 75th income percentile with a monthly income of Kshs 22,500 per month could afford a mortgage with a principal of Kshs 485,968 (US\$5,926) if they spend 30 percent of their income on mortgage payments. The housing development in the town is driven by the private sector. They provide over 90% of the housing stock with the government institutions providing the rest. Strategies for housing must therefore be focused on the private sector providers. The County should develop policies that provide incentives for investment in quality housing for all the town residents. One component of housing that puts it out of reach of the urban poor is the cost of housing technology. This needs to be revised to encourage investment in low cost housing. It may also be imperative on the County Government to source for finance that targets housing for the low income.

Along with land, available and affordable housing finance is a fundamental limitation to affordable housing in Awendo.

5.5.3 Strategy for Informal Settlements

The slums and informal settlements that proliferate within and on the periphery of urban centers are a result of poorly functioning housing markets that do not provide a range of affordable housing alternatives, especially for low- and middle-income households Informal settlements can be defined as dense settlements comprising communities housed in self-constructed shelters under conditions of informal land tenure arrangements. They are a common feature in the Peri-urban environments as such they are prone to degradation of the local ecosystem, e.g., erosion, poor water quality, sanitation, and severe social problems (Nkwae 2006). A global report from United Nation Commission for Human Settlements (UNCHS) indicated that between 30 and 60 percent of residents of most large cities in the developing world live in informal settlements [UNDP, 1989]. Awendo town is not left out of the bracket as there is an informal settlement at Jiw-dendi which is within the planning area.

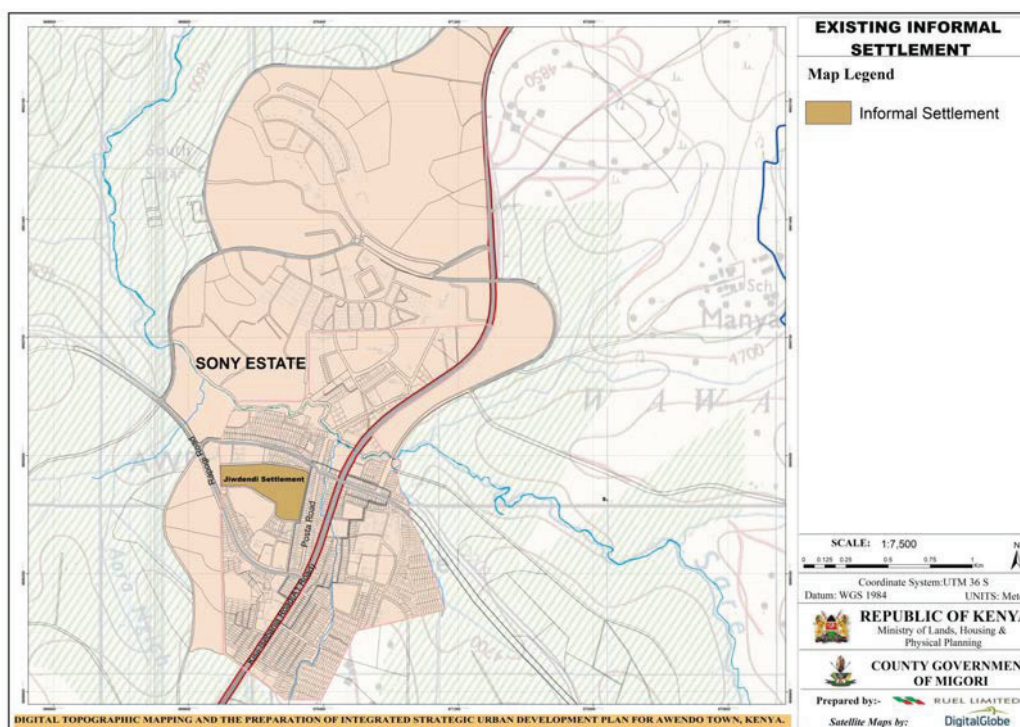


Figure 5- 5: Existing informal settlement

5.5.4 Housing Strategies

5.5.4.1 Housing Demand Projections

The demand for housing needs to be projected to allow for adequate provision of land for such expansion and facilities to support the housing demand. The following factors will be considered in projecting demand:

- The core urban population. We can then project separately for the Peri-urban population
- Assume a household size of four people (based on population census 2009)
- Awendo is projected to grow at 3.8 percent.

The information so generated would be used with the table below to distribute the demand by category based on current trends and extrapolated to a future time.

Table 5- 8: Housing Demand Projection

Projected urban population for 2038	54,096
Housing Demand (Urban Core)	13,524
Proposed Gross population density (units/ha) urban core	70
Total Land required for residential development (hectares) (70 units/ha) - urban core	193.2 ha
Projected peri urban population for 2038	58,101
Housing Demand (Total peri-Urban)	14,525
Proposed Gross population density (units/ha) -Peri urban	40
Total Land required for residential development (hectares) (40 units/ha) Peri-urban	363.13 ha
Total housing demand (urban core + Peri-urban)	28,049
Total Land required for residential development (hectares) (urban core+ Peri-urban)	556.325

5.5.5 Possible Housing Solutions

To address the Awendo urban housing challenges several thematic clusters are identified, including:

- Affordable housing including housing finance.
- Slum upgrading and prevention ensuring housing rights and preventing unlawful forced evictions.
- Sustainable housing including construction materials and practices.
- Urban planning and housing to ensure adequate supply of land for mixed uses.
- Urban economy and housing including the role of housing in the economy.
- Housing tenure types to ensure diversity to address different social group needs.
- Women, youth, special groups, legislation and housing rights sub-clusters and crosscutting in all the other clusters.

5.5.6 The Roles of the Actors

In the past, the private sector had for various reasons concentrated its efforts on medium and high cost housing. While government did not wish to closely direct private sector investment in housing, there was ample justification for involvement of the formal private sector in the implementation of low to medium cost housing. Since enormous financial, land and management resources were held at the domestic level by the private sector the following incentives would underpin a strategy for mobilizing these latent resources and enhancing the participation of this sector in housing development: Co-operating in the opening up of either private or public land for urban development, thus curbing land speculation and also injecting long-term money into the mortgages market to stimulate and back up increased private investment into housing

Table 5- 9: Housing and Informal Settlement Implementation Plan

Goal: Improve access to affordable housing				
Sub sector	Strategies	Projects	Quantity	Units
Infrastructure	Quality infrastructure	Urban Housing (low cost)	5000	No
	Road improvement to bitumen in residential areas (include Informal settlement)			
Housing Legislation	Facilitative legislation	By laws for affordable building material		
	By laws on tenure in Informal settlements			

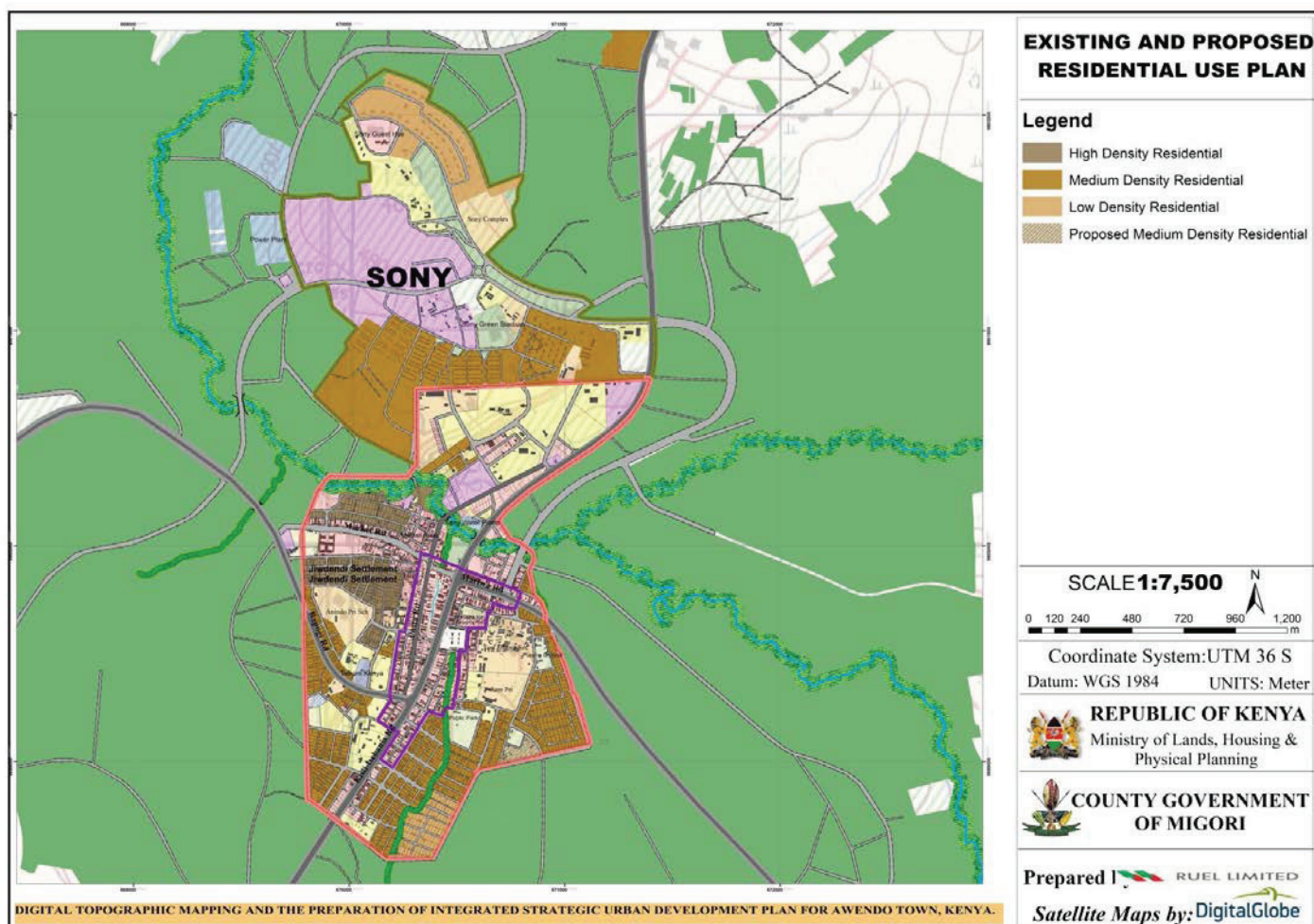


Figure 5- 6: Existing & proposed Residential Land Use

5.6 TRANSPORTATION

5.6.1 Introduction

The national road network is managed by the national government through three different authorities; the Kenya National Highways Authority (KeNHA), the Kenya Rural Roads Authority (KeRRA), and the Kenya Urban Roads Authority (KURA). Their mandate, as defined in the Kenya Roads Act 2007, is the management, development, rehabilitation and maintenance of different kinds of roads as below:

a) **KeNHA** is a state corporation responsible of international trunk roads linking centers of international importance and crossing international boundaries or terminating at international ports (Class A road), national trunk roads linking internationally important centers (Class B roads), and primarily roads linking provincially important centers to each other or two higher-class roads (Class C roads). In undertaking this mandate, the Authority propels the country to achieve its infrastructure goals espoused in the vision 2030.

b) **KeRRA** is a state corporation responsible of the rural road network in the country. KeRRA is responsible for the management, development, rehabilitation and maintenance of rural roads (D, E & Others).

c) **KURA** is responsible of all public roads in the cities and municipalities in Kenya except where those roads are national roads.

According to the Fourth Schedule of the Constitution of Kenya 2010, county roads, parking and public transport is the responsibility of the county governments. Consequently, the Ministry of Transport following the constitution and the Urban Areas and Cities Act, 2011 is seeking to devolve transport management to the county level.

In addition, the Urban Areas and Cities Act of 2011 (Art. 36 (1) (d) (iii)), stipulates that one of the objectives of the integrated urban areas and city development planning is to provide a basis for provision of physical and social infrastructure and transportation. This anchors transport infrastructure planning in the law.

5.6.2 Existing And Projected Traffic

5.6.2.1 a) Road network

The delineated planning area for Awendo Town has a total road network of approx. 88.5 km as indicated in the table below.

Table 5- 10: Road Surface Type

Road surface type	Approximate Length, Km
Paved	19
Gravel	5.5
Earth	60
Total	88.5

Classification of the roads

The categories of classified roads in the planning area as well as the corresponding lengths are shown in table below

Table 5- 11: Classification of the Roads in the Planning Area

Classes of Road	Approximate Length, Km
A1	7
C101	12
E6031	2.5
E6032	1.5
F6024	1
F6025	4.5
G	60
Total	88.5

Major roads

Awendo town is located along the main highway linking it to Kisii (A1 road). The road is to bitumen standard and narrow. KENHA are in the process of improving and expanding the road under "Sirare Corridor Accessibility and Road Safety Improvement Project (Scarsip): Isebania - Kisii - Ahero (A1) Road Project; Lot 1: Isebania - Kisii Section". This project will see the upgrade some of the roads in Awendo town to bitumen standard..

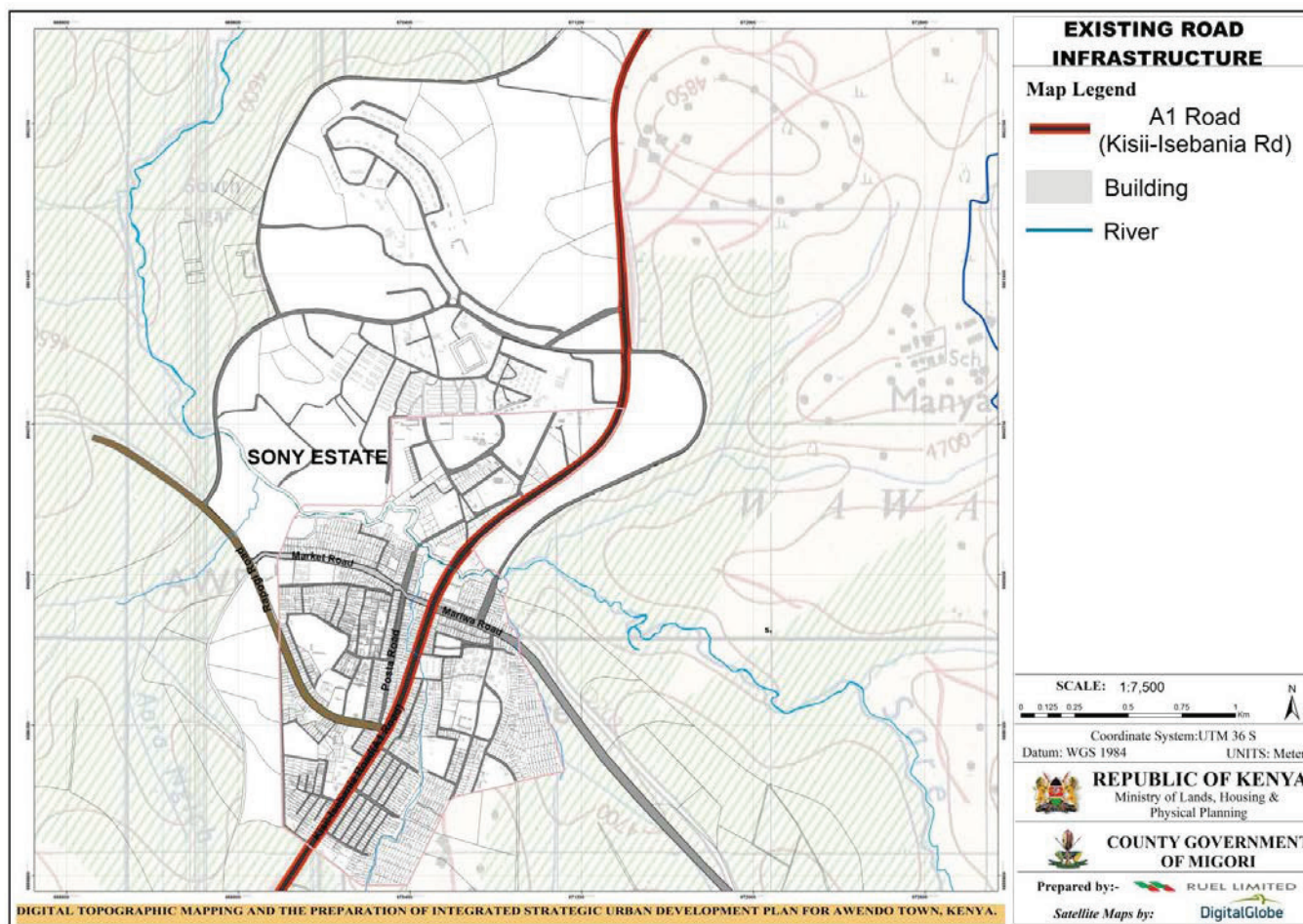


Figure 5- 7: Existing Road Infrastructure

Public Transport

The public transport service is managed by private operators without any public subsidies. Some of them are officially recognized by the public authority (buses, matatu, taxi and boda boda) but the “probox” are informal and illegal. Movement of people, goods and services using public transport contributes about 78% of the transport means in Awendo Town

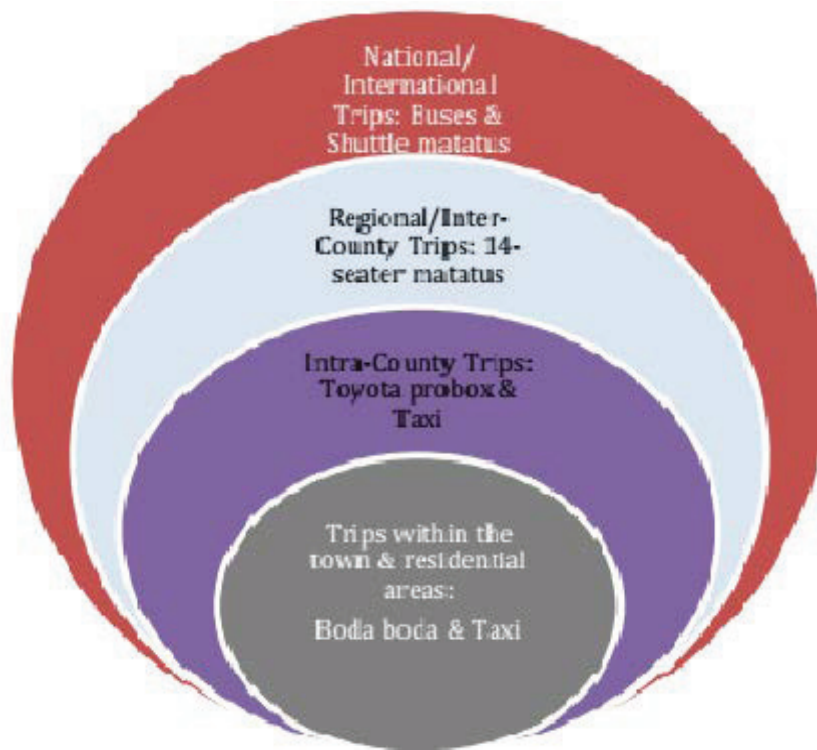


Figure 5- 8: public transport service in Awendo town

Motorized traffic counts

These were 12-hour categorized manual traffic counts undertaken from 7.00am to 7.00pm. These were then grossed up to 24-hour counts as outlined in the Overseas Road Note 40 using 24-hour conversion factors from the traffic study conducted for the design of the A1 road. The traffic categories were as recommended in the Kenya Road Design Manual as below:

- Motor Cycle
- tractors
- Saloon car
- Four-wheel drive (FWD)
- Pick-up/utility
- Matatu (14-seater)
- Minibus (25 - 30-seater)
- Large bus - typically with seat capacity > 40
- Light goods vehicle (LGV), 3 - 6 ton
- Medium truck (MGV), with 2 axles, typically 7 - 10 ton
- Heavy truck (3 axles), typically 12 - 15 ton capacity,
- Heavy truck (4 - 6 axles)

Non-Motorized Traffic

The town lacks non- motorized traffic facilities for cyclists, pedestrians and other road users.

Challenges and opportunities

Emerging urban sprawl along the main roads

Urban sprawl increases the commuting distances and makes the provision of transportation systems unnecessarily expensive. Moreover, it robs the urban areas the benefits of diversity of services, housing, medical care, schools, recreational facilities and other interests. The issue of urban sprawl is evident as more developments are coming up along the transport corridors. This trend will be controlled with emphasis on densification and development of the Nodes stemming the desire for sprawl. Development Control regulations shall also be put in place to reduce change of use from agricultural to residential.

Opportunities

- a) There is still space in Awendo core to promote NMT
- b) Densification of the secondary nodes
- c) Public transit oriented development

Inadequate local road network

Access roads are narrow and there is heavy encroachment on the right of way of most of them. This hampers their expansion

Have poor drainage and are thus not accessible throughout the rainy seasons. Lack traffic signs, road markings, street lights and traffic control devices thus making the roads unsafe and it also contribute to congestion. Parking facilities have not been provided to cater for the high levels of motorization that are expected as the towns grow.

Most sections of the towns have no provisions for NMT Existing NMT facilities are sometimes in disrepair and there is not a continuous network of infrastructures for pedestrians

Opportunities

- Room to provide higher accessibility
- Raising land value
- Improve road safety
- Potential for new investments
- Increasing the environmental friendly means of transport (cyclists and pedestrians)

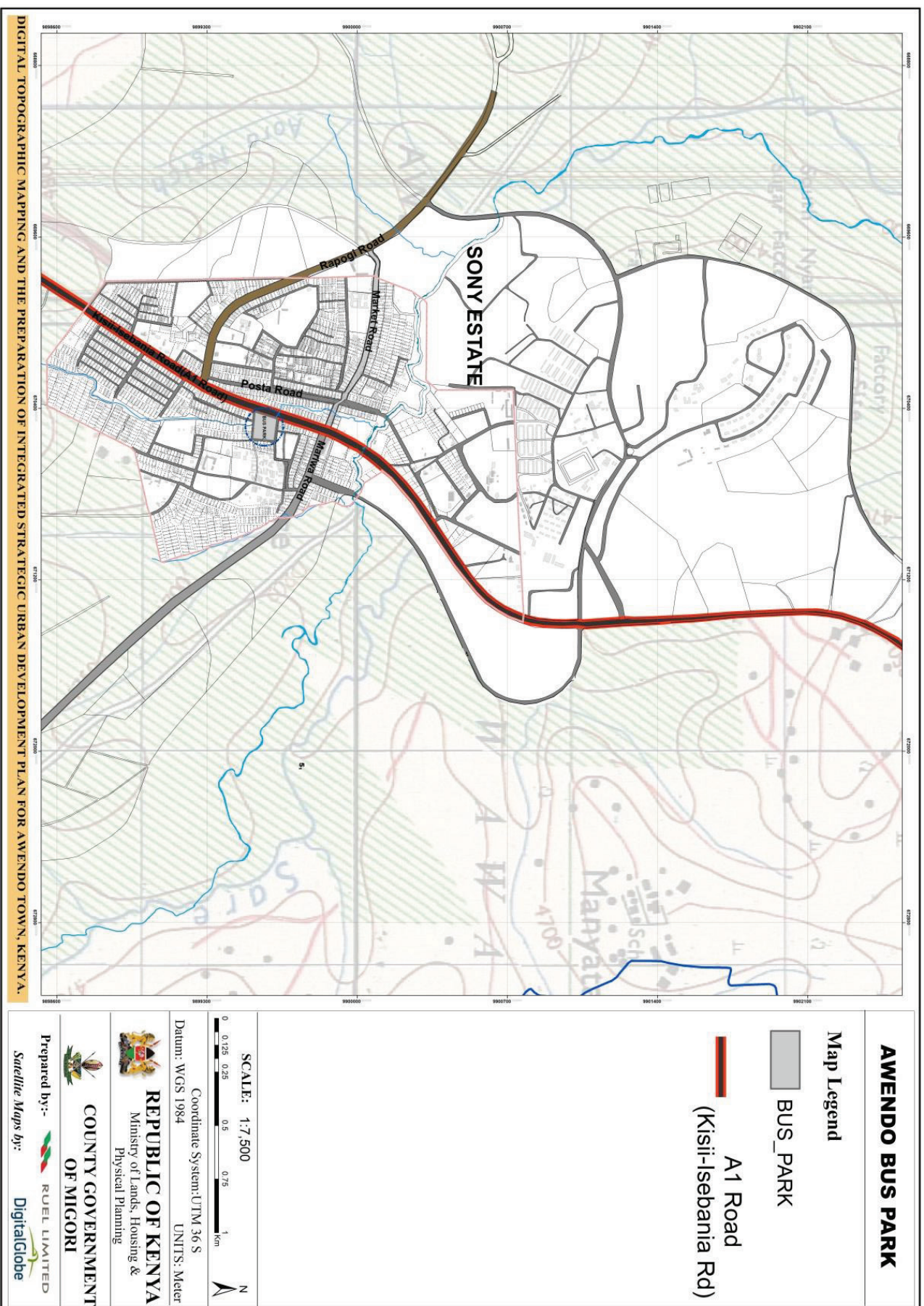


Figure 5- 9: Existing Bus Terminus

Lack of road usage awareness

The way of driving of the all motorized users is aggressive and don't respect the weakest users of the road. Pedestrians have never the priority to cross the roads so they cross anywhere creating more danger. The way of driving the PSVs is dangerous with unexpected stops and maneuvers and blocks the traffic flow.

Opportunities

- Improve road safety
- Room to provide smooth traffic flow

The goal and objectives of transport

The general goal is **providing sustainable, integrated and accessible urban transportation for all residents of the towns.**

To this end, the multimodal concept of the ISUD is aimed at achievement of the following objectives:

- Reducing and/or halting urban sprawl
- Provision of multimodal accessibility to the territory including people living with disabilities
- Minimizing of noise and environmental pollution
- Enhancing the quality of life
- Promotion of short distance towns supporting NMT
- Promotion of transit oriented development
- Provision of safe and secure transportation systems above all for NMT
- Provision of efficient public transport systems for all towns
- Reduction of the barrier effects of the various zoned areas
- Reduction of fatalities for road users road infrastructure
- Provision of efficient interconnectivity between the various zoned areas.

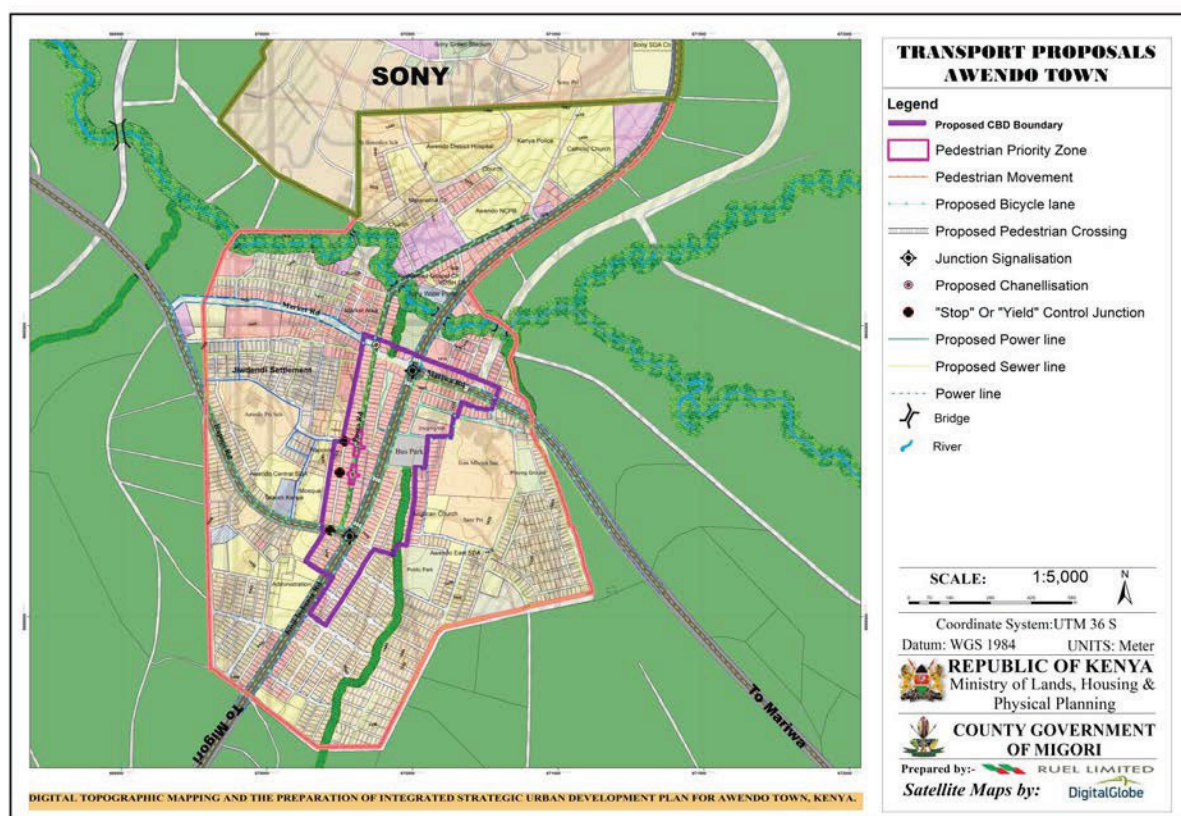


Figure 5- 10: Transport Proposal in Awendo Town

5.9 ENVIRONMENT AND DISASTER MANAGEMENT PLAN

5.9.1 Introduction

Social and economic development in Kenya has varying implications on the environment and social settings through specific direct and indirect interactions. Urban development world over has the highest level of interactions with the environment due to its land-intensive nature. In addition to land requirements, urban existence is dependent on natural resources to sustain the people living there.

Interactions of urban development and operations with the environment could be perceived in either of the following;

5.9.2 Major Environmental Issues

Land use planning has not been fully considered an integral component of infrastructure development in Urban Development in Kenya. This has led to a serious conflicts of social and economic development (residential areas, commercial premises, markets, public service areas, etc.) in connection with the services and amenities provision (access roads, drainage, water supplies, sanitation, schools, recreation areas and play grounds, etc.). Implications on the environment and social wellbeing are significant.

Most towns in the country including Awendo Town were initiated on the basis of their strategic locations and had an initial physical layout plans. The towns, however, are faced with serious challenge of uncontrolled mixed land use practices. Land use development is also more rapid than the provision of matching appropriate public amenities and services. Overall, there is notable failure to embrace land use planning as a basis for decision making in the development of land in the plan towns leading to a mixture of land use activities that make it difficult to determine the level and nature of services to be provided effectively undermining environmental quality. The mixed land developments have also resulted into the emergent of incompatible economic activities in residential suburbs, competition of services and amenities as well as undesirable human living standards. This is evident in all the planned towns. It is common for residents to consider these facilities as nuisance as opposed to important amenities and hence no one wants them within their localities. Without plan considerations dedicating suitable land zones for these amenities, it becomes major challenges in provisions thereafter.

5.9.3 Goal

Improving Urban Environment through Integrated Land Use Planning

5.9.4 Proposed Environment Management Strategy

In view of the above, the following considerations would be necessary to check development conflicts on the environment;

- a) Map out the sensitive area and delineate their boundaries with other land use features in Awendo town.
- b) Identify threats to sensitive areas from the land use practices for consideration in the harmonized integrated mitigation measures in the planning process,
- c) Establish landownership, social and economic activities for purposes of compensation where necessary if land use change will be found appropriate for the plan implementation. In this regard, the affected persons should be involved through the process,
- d) Control strip development to check on expanded environmental damage. This may be done through ensuring appropriate land parceling and strict land use control measures, Land use plans should always be subjected to Strategic Environmental Assessments (SEA) before approval and implementation. It will be necessary, therefore, to undertake a Strategic Environment (and Social) Assessment for the ISUD in Awendo town for compliance as well as establishing key environmental planning issues and long term recommendations,
- f) Land use plans are prepared for land alienation as Part Development Plans (PDPs) but should be guided by comprehensive Land Use Planning that is essential for a wider focus on environmental safeguards.
- g) The Integrated Strategic Urban Development Plans for Awendo Town should be pegged on the whole County Land Use Plans as well as the National Land Use Guidelines (if available). This is to ensure that associated environmental integration is takes into consideration cross-County boarders issues (remember environmental resources have no boundaries),
- h) Put in place mechanisms for the environmental practitioners to appreciate the role played in the planning process to segregate the various land use features as basis for mitigating negative impacts at the macro-level for effective enforcement of environmental safeguards on development activities,
- i) Landowners and developers do not appreciate the overriding interests associated with their developments vis-à-vis land use plans for the common good such as public hygiene and sanitation. Land use plans, therefore, should be readily available to the landowners and developers and infrastructural providers.

Conservation Area KR2 (River Basins)

This relates to River Sare that traverses the main town and flows eastwards from the higher regions of Awendo Hills and joins River Kuja. The river is a source of water for the population within and downstream of Awendo Town. While appreciating that it has not been adversely affected by urban development, it is at risk in future growth of the town compromising its suitability for

social and economic use. Sare River also contributes to the water supply of Awendo town. Based on that therefore a 30 meter buffer is proposed for the river.

Conservation Area KR6 (Waste Disposal Sites)

Waste management and disposal sites (including solid waste disposal locations and wastewater treatment plants) are sensitive zones due to the associated environmental and public health linkages. While the sewage treatment works are not define, it is also not clear what ultimate locations are currently earmarked for solid waste disposal. Once identified and confirmed, the locations will need to be delineated as sensitive areas for appropriate management with respect to neighboring land use features, environmental features and overall people welfare.

5.10 Specific Environmental Integration Actions

Following the situational analysis, Focus Group Discussions and professional observations, specific aspects of environmental integration have been established. It is also appreciated that environmental aspects are of cross cutting nature, implying every other component in the strategic planning process is required to tie with the conservation principles.

Table 5- 12: Specific Environmental Integration Strategies

Goal: Improving Urban Environment through Integrated Land Use Planning		
SUB SECTOR	STRATEGIES	PROJECTS
Legislative	Supportive legislative framework	By laws for EIA
Conservation	Conservation strategies for current and future development	Conservation area management plans
		Conserve riparian area along from the banks of Sare River banks along the entire river basin
		Conserve Public parks

5.10.1 Disaster Management

Disaster means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area;

Disaster management means a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient for:

- (a) Prevention of danger or threat of any disaster;
- (b) Mitigation or reduction of risk of any disaster or its severity or consequences; (c) capacity-building;
- (d) Preparedness to deal with any disaster;
- (e) Prompt response to any threatening disaster situation or disaster;
- (f) Assessing the severity or magnitude of effects of any disaster;
- (g) Evacuation, rescue and relief;
- (h) Rehabilitation and reconstruction;

Migori County has no legislation that will guide the process and institutions of disaster management. The infrastructures to support the process of disaster management are provided in this ISUDP. These include establishing and distribution health, fire brigade and police facilities. These are provided for in all the nodes. These units will be accessed through link to the key arterials in the town. Fire hydrants shall be provided in assessed strategic locations.

Table 5- 13: Disaster Management Strategies

Goal				
Sub Sector	Strategies	Projects	Quantity	Units
Disaster Management Committees	Operationalize disaster management framework	Disaster Management Committee	1	No
		Disaster Management Sub-Committee in Mariwa, Kokuro & Rapogi	3	No
		Disaster Management By-Law	1	No

6.1 INTRODUCTION

Specific areas have been identified that required a detailed intervention proposal based on the assessed priorities and overall vision of the town. This ISUDP has prioritized 3 issues/areas for action planning. These are accompanied by urban design to illustrate the options and are anchored within the framework of the Structure Plan.

Table 6- 1: Proposed action area plan and urban design

Subject	Action Area Plan and Urban Design
CBD Renewal	Design plan for CBD including pedestrianization of the CBD streets
Recreation and Environment	Provision of well-planned public recreation area and Nature trail along River Sare
Nodal Development	Decentralization of developments to Mariwa, Kokuro & Rapogi

6.2 ACTION AREA PLAN 1: CENTRAL BUSINESS DISTRICT

6.2.1 Existing Situation

This is the area that forms the core of Awendo town and whose loci is defined by plots within the 1st two streets bordering A1 road, Mariwa Road, Boda(Market Road), Posta Road and Rapogi Road. Within this area the plot sizes are well suitable for CBD development as the minimum sizes here are 0.025 (25X100 feet). However despite the prime location, most of the plots in this area are still under dilapidated structures which are used for both commercial and residential purposes. The buildings are small structures of single or double storey with small frontages due to the narrow plots. Only one road within the CBD is developed to bitumen standard. The rest are made of murram which has worn out due to harsh weather.

The CBD is strewn with dozens of kiosks which blocks pedestrians and other road users. There is no proper means of handling wastes within this area. The bus park is located right within this area making it very busy especially on peak hours.

The back streets/ service lanes are so narrow and others have been completely blocked. This state of affairs calls for necessary corrective measures so that we can make Awendo town to be a place where all admire.

6.2.2 Issues and Challenges

The following are issues and challenges in the CBD

- Decay of buildings and infrastructure
- Congestion on the narrow roads by competing traffic
- Inadequate parking on-street and off-street

6.2.3 Opportunities

The biggest opportunity is the desire by the County Government to create a whole new beautiful town. There are investors who could maximize returns on investment in an attractive new CBD

6.2.4 Objectives of the Action Area Plan

1. To create a post-modern nucleus that would position Awendo town as a key urban center in the region
2. To provide support infrastructure and services that would stimulate the renewal of the CBD\

6.2.5 Proposed Interventions

- Create pedestrian only streets with enhanced street furniture
- Create routes for NMT
- Encourage amalgamation of plots to allow for more functional building designs
- Upgrade the service infrastructure (water, sewer, electricity)
- Provide for public spaces
- Provide multi-level parking able to accommodate off-street parking within walking distance
- Legislate by-laws that would guide the urban renewal, Formulate and enact a by-law requiring a full Transportation Impact Assessment to be undertaken for all new developments with a Gross Floor Area of 500 square metres within the planning area.

6.2.6 Concepts in CBD Renewal/ Improvements

6.2.6.1 Pedestrian friendly: wide pavements

Rationale

Wide, well surfaced, footpaths can transform the experience of walking from a struggle to a pleasure. Moreover, in commercial areas they facilitate the development of ancillary uses such as cafes and kiosks.

Implementation

The contrast between the experiences of being in a town with wide footpaths with that of a cramped narrow one is striking. Not only is commerce easier, but the environment is more pleasant. There is no rule of thumb about the right width for a footpath, but history has shown that the majority of footpaths in Kenya's towns are much too narrow. This results in pushing and shoving, difficulties for people carrying loads, and so on.

Wide pavements allow trees to be planted along the road, thus providing shade for pedestrians. They also present opportunities for small businesses, such as kiosks, open-air restaurants and cafes.



Figure 6- 1: Wide Pavements

6.2.6.2 Pedestrian Friendly: Arcades

Rationale

Shelter from the sun and rain are both welcome throughout much of the year in Kenya. Shops should be required to provide canopies in front of the entrances. This has the dual advantage of protecting their windows from hot sun and making shopping less stressful for their customers. Combined with broad pavements these contribute to an environment that attracts customers.

Implementation

Commercial premises should be required to provide a canopy or other cover over part of the pavement – normally at least three meters. The upper floors can be built over the columns of the canopy, thus not foregoing land space. This recommendation should be combined with the wide pavements where appropriate



Figure 6- 2: Facade

6.2.6.3 Pedestrian friendly: narrow roads

Rationale

Wide roads are a threat to pedestrians and are extremely divisive. Although the arterial roads will have to be wide to accommodate public transport, other roads in commercial areas should be relatively narrow. This creates a form of traffic calming and allows pedestrians to cross in relative safety.

Implementation

Roads, which have small sharp curves and similar obstacles, reduce vehicle speed and place pedestrians and vehicles on a more even footing. The principle of traffic calming can be applied to commercial and residential streets. The Netherlands has pioneered the concept (known as Woonerf - residential place) in residential areas whereby cars are allowed, but the presence of street furniture and other obstacles means that they have to drive very slowly. The principle of the woonerf is illustrated in the diagram below.



Figure 6- 3: Narrow Roads

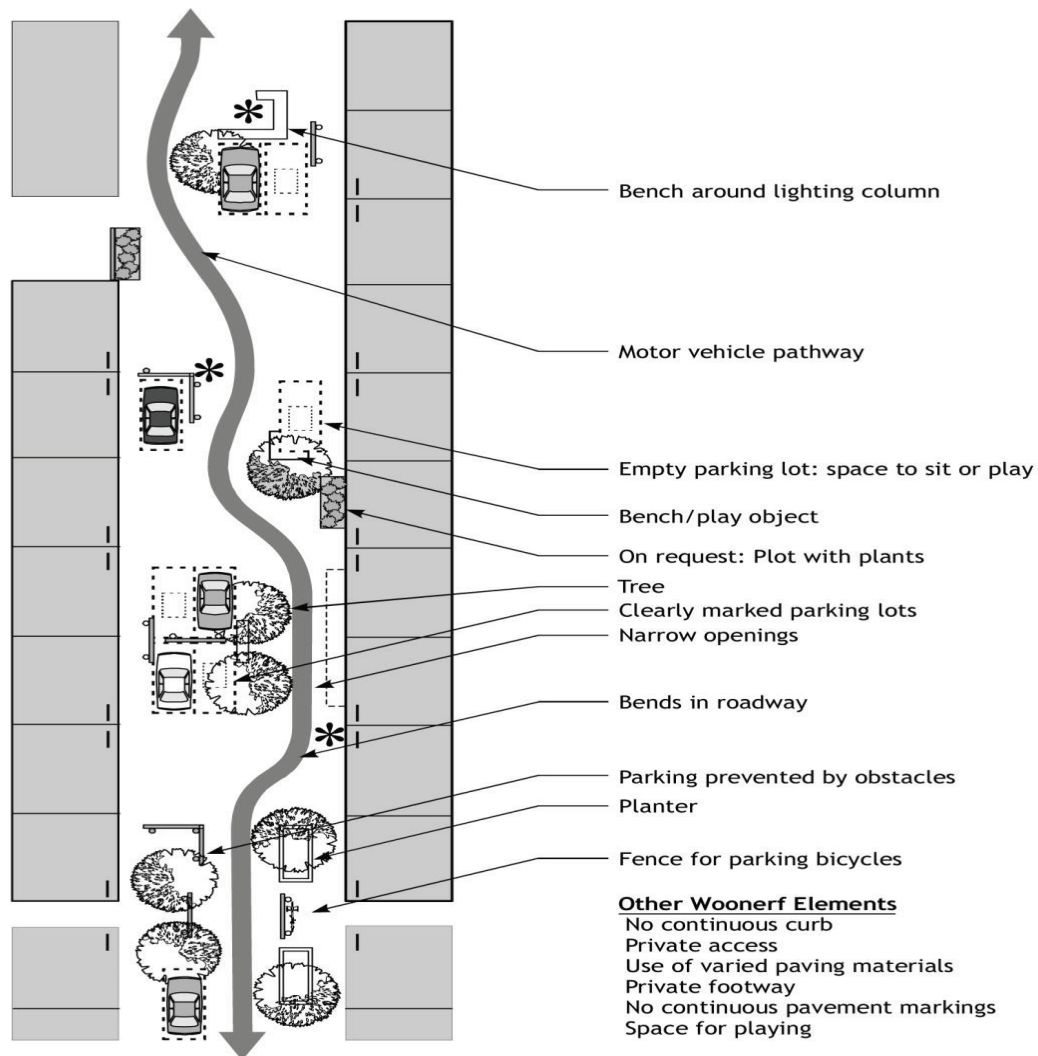


Figure 6- 4: Principle of the Woonerf

(Source: US Department of Transportation, Federal Highway Administration: University Course on Bicycle and Pedestrian Transportation, Lesson 20: Traffic Calming, Washington DC July 2006)

6.2.6.4 Mixed use

Rationale

Planning legislation was introduced when industries were noxious and noisy, and there was a demand for the quietness and simplicity of rural life as represented in the Garden City movement. An unintended consequence of this was the loss of interaction between different uses and the inconvenience and sterility of single-use zones. The powerful advocacy of Jane Jacobs in her book *The Life and death of Great American Cities* reminded the planning world that the richness of mixed uses brings life and convenience to urban areas. Planning legislation, however, has tended to be stuck in the single use mode of land-use planning, even though, in practice, mixed uses are inevitable.

Implementation

Zoning regulations need to specify that mixed uses are acceptable. An example is mixed residential and commercial, where the ground floor accommodation is typically commercial and the upper floors are residential. This drastically reduces travel time and expense for many people. Similarly commercial uses should be permitted in dwellings, either as small shops opening onto the street or as offices. Light Industrial uses should be permitted in residential plots, for example non-noisy activities such as tailoring and carpentry. Such measures stimulate the economy by reducing the barriers to entry for small entrepreneurs, and reduce the current tendency to flout regulations



Amalfi, Italy



Edinburgh, Scotland

Figure 6- 5: Mixed Use

6.2.6.5 Parking

Rationale

Parking provides one of the main revenues. But not only are parking spaces hard to find resulting in fuel and time being wasted searching for a place but also parked cars clutter the street. The time has come for parking to be planned for.

Implementation

Parking can no longer be left to chance: if the CBDs are to survive, it will be essential for proactive steps be taken to identify viable parking space. In existing towns, this might require construction of multi-storey car parks. There is little doubt that these can be self-financing. In newly developed areas, car parking should be designed so that car parks do not act as a barrier around the facilities it serves. The typical edge-of-town shopping mall, with its hectares of parking space illustrates the impact of this lack of proactive planning.

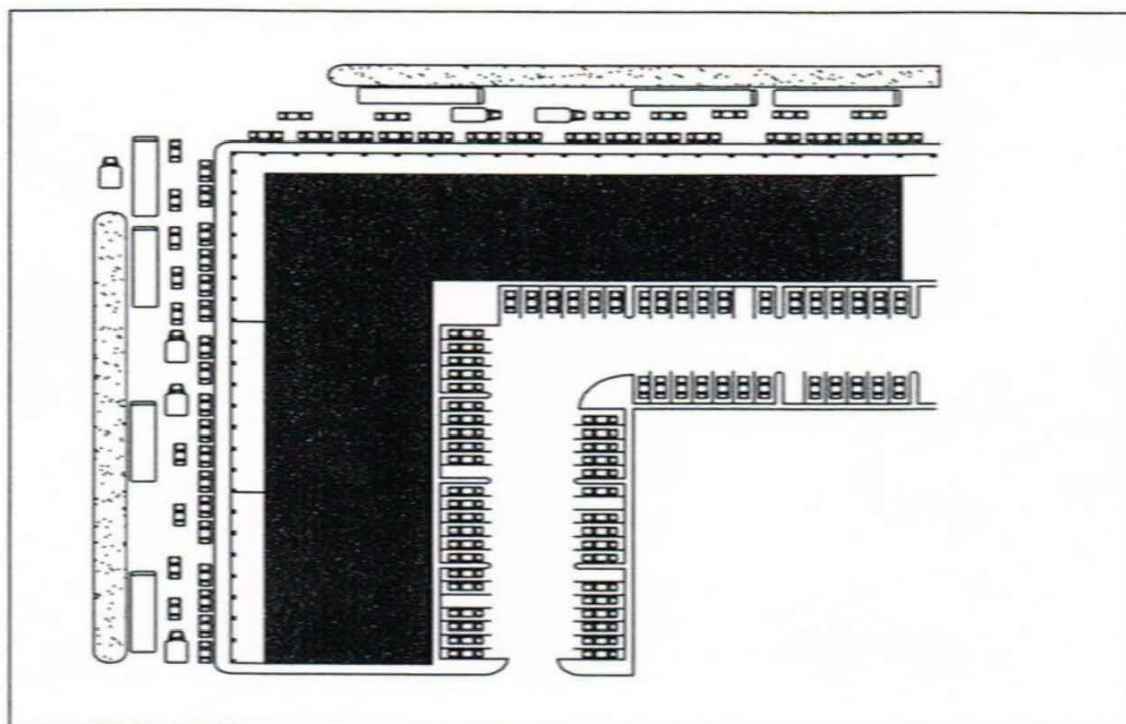


Figure 6- 6: Parking

A. PROPOSED CBD IMPROVEMENTS

Table 6- 2: Proposed CBD Improvements

NO	subject	Existing Situation	Proposed Improvements
1	A1 Road	- Narrow carriage way - No kerbs - No Provision for NMT - No Road signage - No street lights - No provision for bus stops - Non-channelized - T-junction	- Signalization - Introduction of two small and/or ghost roundabouts - Formulation of by-laws prohibiting stopping of PSVs at undesignated areas and - Strict enforcement of the same - Upgrading of the carriageway to standardized width - Provision of bus stops at appropriate locations
2	Posta Road Boda Road	- Dilapidated carriageways	- Pavement of the streets/roads - Removal of the kioks from the

	Rapogi Road	- Kiosks on the road reserve - Trading/sale of merchandize on the road edges - Congestion by human and vehicular traffic especially motorcycles - Flooding, lack of proper storm water drainages - Muddy road surface during wet weather vis avis dusty surface during dry weather	- road reserve - Relocation of trades to appropriate areas designated for trading activities - Construction of adequate storm water drainage channels - Integrating NMT
3	Street improvements	- Overcrowded streets, vehicles, motorcycles, human all compete for space - Front streets have no pavements and arcades - Back streets are littered with wastes - Blocked back streets - Unopened service lanes - Old buildings along the front streets - No street lighting - Streets not paved	- Provide pedestrian walkways - Design large streets to accommodate squares, arcades - Plant trees strategically to enhance aesthetics - Open the closed service lanes/back streets - The old buildings to be demolished and modern designs be adopted - Public Health regulations to be enforced regarding painting of old buildings - Provide adequate street lighting - Creative paving - landscaping with shade trees and flower beds, ramps for easy access for the physically challenged, shaded colonnades with shops and restaurants, - - Provision of amenities for pedestrians including ample shaded seating, drinking water fountains, tot lots for kids, street

			lights and poles, dust bins etc.
4	Enhancement of vertical/compact development	- Majority of the plots within the CBD are developed by row houses - Some of the plots remain undeveloped to date	- Formulation of zoning regulations to prohibiting single storey buildings within the CBD - Repossessing undeveloped plots
5	Transforming the CBD into a commercial hub	- The plots within the CBD are under mixed use- Residential at the back and shops in front - Few buildings with appropriate designs to accommodate banking halls, Supermarkets, stores, stalls etc - No enough commercial buildings - Informal business activities.	- Zoning the CBD under commercial use and transferring residential use to other parts of the town. Only commercial related uses to be accommodated within the CBD - The multi-storey buildings in the CBD to be designed with halls, and large spaces - Eradication of kiosks from the CBD
6	All road junctions within the CBD	Non-channelized T-junction Simple cross junction	- Signalization - Introduction of two small and/or ghost roundabouts - Formulation of by-laws prohibiting stopping of PSVs at undesignated areas and strict enforcement of the same - Channelization to reduce points of conflict - Provision of pedestrian raised crossings to allow access (and right of way) for pedestrians - Pedestrian crossing signs - 'STOP' signs to be installed on the minor streets - Mini-roundabouts

B. Proposed Pedestrianized streets

- (a) Posta Road
- (b) A1 Road

C. Other proposed NMT facilities

- (a) All streets within the CBD to have provisions for NMT paths.
- (b) A1 Road to be provided with pedestrian crossings

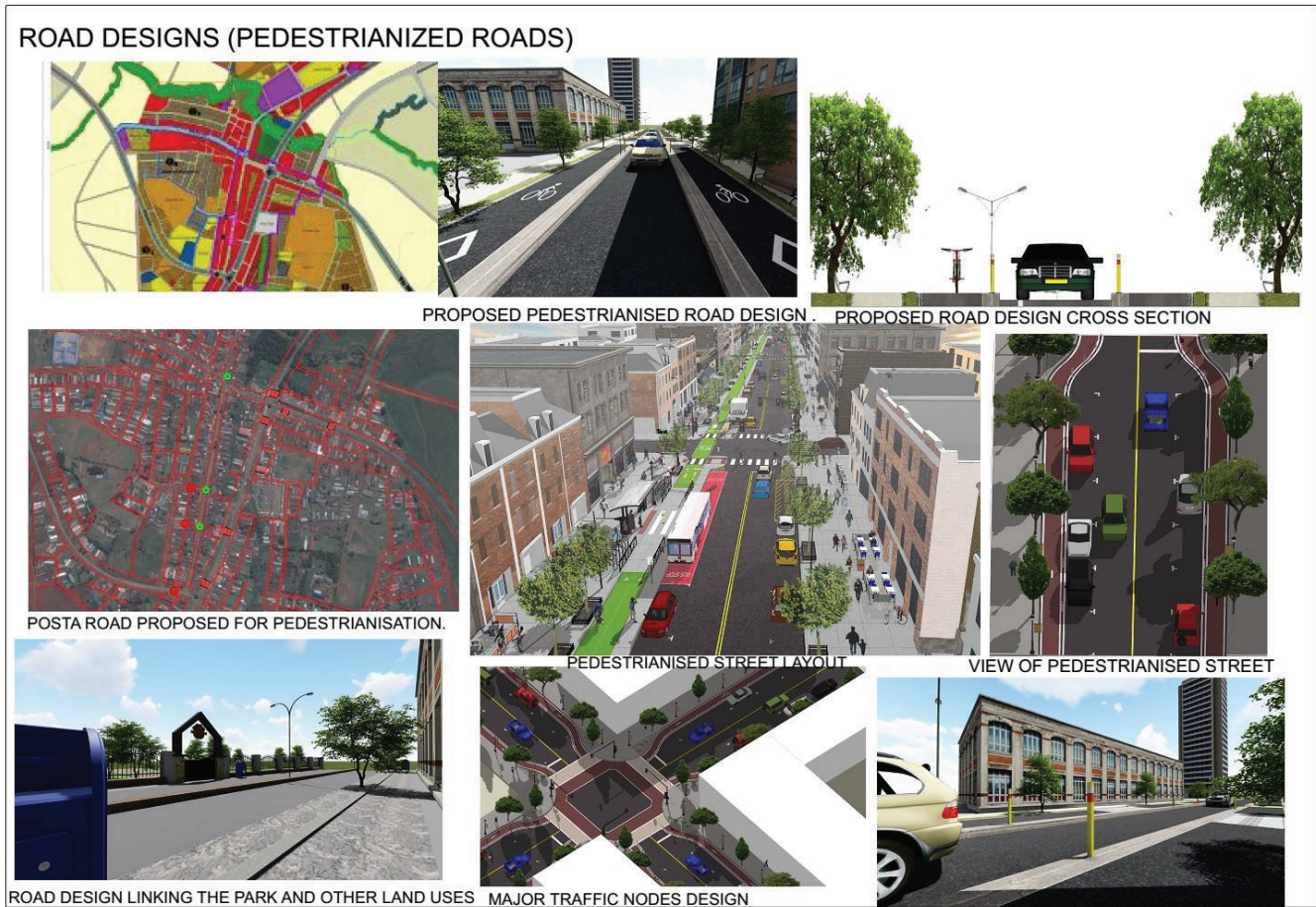


Figure 6- 7: Typical designs of Awendo CBD (Source-Author; 2018)

6.3 Action Area Plan 2: Recreation and Environment Strategy- Awendo Public Park and River Sare Protection

6.3.1 Overview

6.3.1.1 Recreational Areas:

Recreation is the sum total of all human, social-cultural and economic activities that enhances the therapeutic status of the mind. It brings a relaxation of the body and mind.

Recreational areas can be private or public. There is need to provide the facilities both in the rural and urban areas because of the following reasons:

Need for relaxation after a long day's work/break from routine

- Income generation/economic activities
- Social interaction
- Tourist attraction
- Set as carbon sinks/breathers
- preservation of socio-cultural and or religious values
- Environmental conservation-forest, trees, flowers planting
- Competing users due to population pressure hence overcrowding living conditions in the informal settlements.

Areas of recreation include:

- Areas of scenic beauty
- Areas of historic/cultural importance
- Unique physiographic features
- Parks, forests, water masses, etc.
- Play fields, stadia, green spaces, zoos, snake parks, museum, amusement parks, etc.
- Discotheques and cinema halls
- Conservation areas
- Road reserves

6.3.1.2 Demand for Recreational Facilities

There are several socio economic factors among the urban and rural population that suggest a real need for a generous provision of green spaces within the urban environment. These include:

(a) New urban population

The majority of adult population in urban areas is migrants from rural areas and shows a strong attachment to the land. The rural environment has been a formative influence in their lives.

(b) Low earnings

The majority of the population lack money for all but their basic needs. They are therefore essentially pedestrian and their recreation must be found within walking distance to their homes. They cannot afford much living space and tend to live in cramped overcrowded conditions. Some relief is necessary from the pressure generated by overcrowding.

(c) Population Structure

Majority of the population in major urban areas are under 25 years. Open spaces are therefore necessary for their health physical and psychological development. Overcrowded living conditions, lack variety in the environment and lack of opportunities for independent play and exploration during the early years of children tend to inhibit their intellectual development. It is therefore essential to provide opportunities for children to play in safe attractive and stimulating surroundings within the residential areas.

(d) Limitations on Public Expenditure

Public funds are limited and this could result in poverty of the man-made environment. A sensible landscaping policy could be one of the cheapest and most effective way of counteracting eyesores in the manmade environment; producing an urban environment in which it is attractive to live and work and providing areas of inexpensive recreational opportunity.

6.3.2 Recreation in the Urban Areas

Recreational areas are mainly meant to fulfill the physiological needs of the community which also promotes various socio cultural aspects and strengthens individual health. Recreational facilities include: major open spaces (parks and buffer zones), stadia, sports complexes, theatre, cinemas, restaurants, etc. These demand the market of a total urban population including local and foreign tourists. It is not possible to fix standards for open spaces at the urban level as these essentially develop from opportunities in the environment. However, specific recreational spaces are preferred to mere open spaces.

6.3.3. Awendo Public Park

Owing to the compact nature of the town and limited land for development it is preferred that the area which was proposed for stadium in the previous LPDP be converted into a public park. The reason behind this is that the park will accommodate more functions/activities than the stadium which will limit the number and type of recreational activities carried thereto.

The park will be able to provide a wide range of recreational opportunities such as:

- (i) Area for settling in quietly with scented gardens, color gardens, flower and shrub displays, small enclosures, etc.:
- (ii) Area for walking through such as quiet paths, shades avenues:
- (iii) Areas of flat expanse which encourage ball games, running about and exercising in addition to providing space for displays, fairs, shows, etc.;

- (iv) Arena for open air display of traditional dancing, plays, concerts, shows, mass meeting, etc.;
- (v) Children play grounds.



Figure 6- 8: Awendo Public Park Master Plan (Source-Author; 2018)



Figure 6- 9: Awendo Public Park- Action Area Plan (Source-Author; 2018)

6.3.4 River Sare Rehabilitation plan

The riparian areas of river Sare are faced with two major threats, one is pollution caused by poor waste disposal since the town lacks a waste management system, and the other is encroachment by buildings.

Awendo Town lacks sewerage system and majorly relies on septic tanks and pit latrines. Pit latrines are potential source of pollution to ground and surface water particularly during rainy season when such facilities overflows. The pollution results in eruption of waterborne diseases such as cholera, diarrhea, and Amoebic dysentery are clear demonstration of water contaminations.

Decomposition of solid waste crudely dumped on open spaces and along storm water drains causes water pollution. Inappropriate handling of organic solid waste (from markets, household and farms) that find their way to water bodies causing oxygen deficit for organisms like fish and other aquatic animals. In addition, washing of clothes and clothes along the road generates runoff which ends up in the river Sare.

Riparian management is one of major concerns in the planning area as in many cases the banks of the river have been built on or used for farming. The size of the area to be conserved (as riparian reserve) has been calculated based on the width of the river, which also involves water reservoirs protection as well. Planting of bamboo along the riverine area will help stabilize soils, restore nature and provide livelihood sources. Consideration should also be given to using the riparian reserves for public green space, including nature trails. In order to protect the river and to enhance its utility, a riparian reserve of 30 meters have been provided to as indicated in the figure

Table 6- 3: Goals, Strategies and Projects for the Environment (River Sare)

Goals	Strategies	Projects/ Programmes	No.	Unit	Remarks
A good living environment	Riverfront development of Sare River	Tree planting along river banks and on	6	Km (stretch)	Planting along river banks within the provided riparian reserve
		Construct small check dams to create water reservoirs for recreational purposes	2	No	Can be done along Sare river .Detailed analysis is needed for actual implementation
		Construct public promenades	3	km	Further analysis of slope and land suitability

					will be needed to identify the areas of public promenades along the rivers on riparian reserves
	Providing new open spaces	Create recreational open areas like parks, playground, etc.	6	%	This can be inform of nature trails along the river bank
	Regional approach to manage rivers	Landscape management to manage upstream pollution	-	-	Project can be completed through joint watershed management with coordination of Kisii County



Figure 6- 10: Typical design of River Sare Riparian Area (Source-Author; 2018)



Figure 6- 11: Typical design of River Sare Riparian Area (Source-Author; 2018)

6.4 ACTION AREA PLAN 3: MARIWA, KOKURO & RAPOGI NODAL CENTRES

6.4.1 Overview

As already highlighted in the previous chapters, Awendo town is structurally compact in nature. Indeed the compact nature of the town is rationally commendable and will have to continue thus. The main advantage of a compact form of development is that the 'provision of utilities and services is accomplished at a relatively lower cost' than if it were a scattered nature.

The town will continue to grow with the current structure until all the deferred land is brought under use. The outward expansion will however be constrained and restricted within the present boundary by the nucleus sugar plantations which wholly surround it. These plantations form the main cane supply to the factory and cannot be removed in favor of urban growth and, furthermore, the land hereunder belongs to the SONY Company. The implication is that there are no chances of the town growing beyond its current boundary delimited by the plantations. This will be an automatic check on its size and will most appropriately give opportunity for the smaller centers within the sugar-belt namely: Mariwa, Rapogi, and Kokuro to grow as they become the satellites of Awendo. That Awendo town is engulfed in the plantations; even if various public services were located therein it would be much to the benefit of the town's residents more than the rural hinterland. And that the hinterland population which used to be served by the center has been pushed further away from it to give room for the plantations.

The town has thus become 'remote' to the outermost rural populations. In view of this we suggest that to serve the rural folks more efficiently emphasis should not only be on Awendo town but should consider the other centers within the sugar-belt named above. These centers are 'closer' to the people than Awendo at least for the lower order services.

That Awendo's outward growth is limited; these centers can relieve it of any excess demand. At the moment they offer some residential places for some people who operate in Awendo town and that is an indication of the possibility of them developing as 'satellites' of Awendo. This plan recognizes that urban areas should not expand at the cost of agricultural land.

As a result of the high agricultural potential of the sugar belt and given that it is a specific region, there should be a rural-urban balance. This balance at such a regional level can only be achieved by developing the central places within the region as they are currently distributed, to serve the farming community herein and their own resident populations without over developing one at the expense of others.

This means that Awendo will continue to develop but it should not be strained to accommodate all investments as some of this can be directed to those other centers which ipso facto become its satellites. In essence development should 'leap-over' the 'green belt (the plantations) to the surrounding areas.

6.4.2 Objectives of the Action Area Plan

Develop the nodes as satellite centers of Awendo Town

6.4.3 Issues and Challenges

- Lack of specialized services like police, fire brigade, Public Park
- Spontaneous growth creating unplanned sprawl
- Unclear factors that would drive future growth

6.4.4 Opportunities

To bring services more close to the rural residents and to enhance Rural-Urban balance much focus will be on the nodal urban areas such as Mariwa, Kokuro and Rapogi. There is much space for development within the three centers unlike the case of Awendo town. The constrained horizontal growth of Awendo town beyond its current boundary makes it possible to channel future developments into these satellite urban areas. The catchment population around these centers is adequate to provide the required market base threshold.

The three nodal centers will provide a good linkage to Awendo town with its rich hinterland. In this plan we have developed them as Special Planning Areas with specific functions in each node to attract development.

6.4.5 Proposed Interventions

- Transport terminus
- Public park
- Police Station
- Covered Market with services
- Commercial Buildings with harmonious design
- Light industrial parks for SMEs
- Residential Designed Neighborhoods
- Centres for Education-University campus at Rapogi

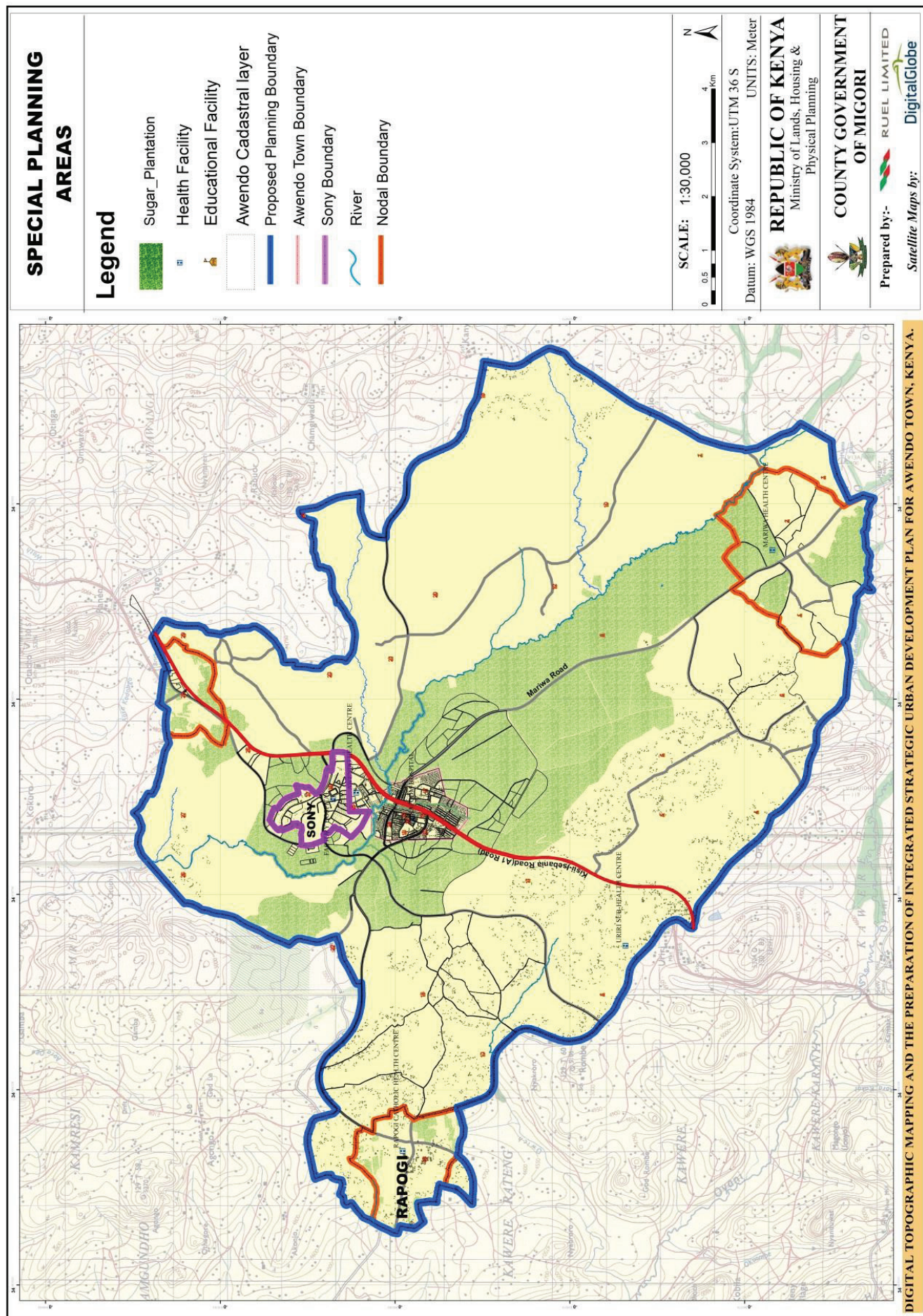


Figure 6- 12 Special planning Areas

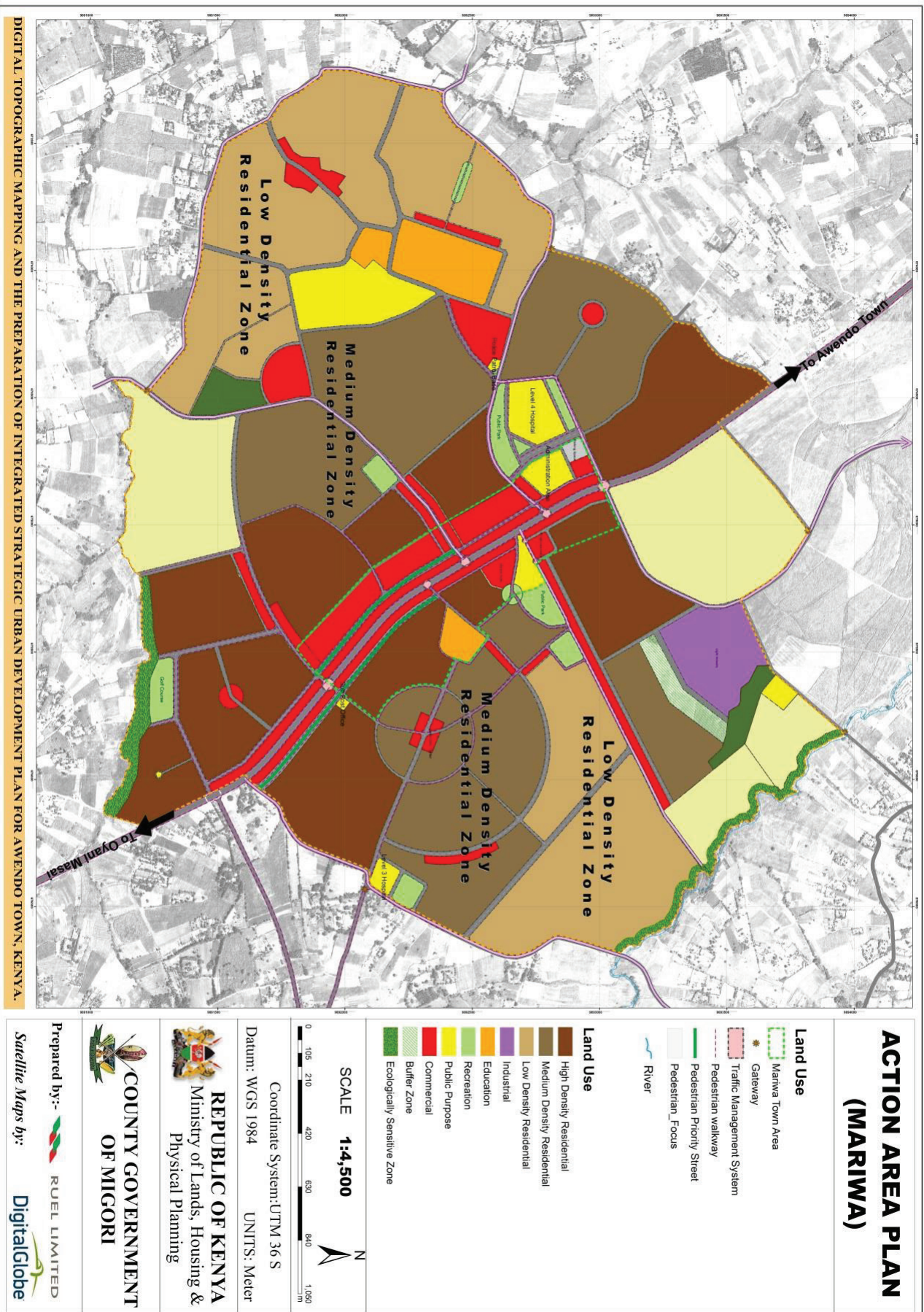


Figure 6- 14: Mariwa Action Area Plan

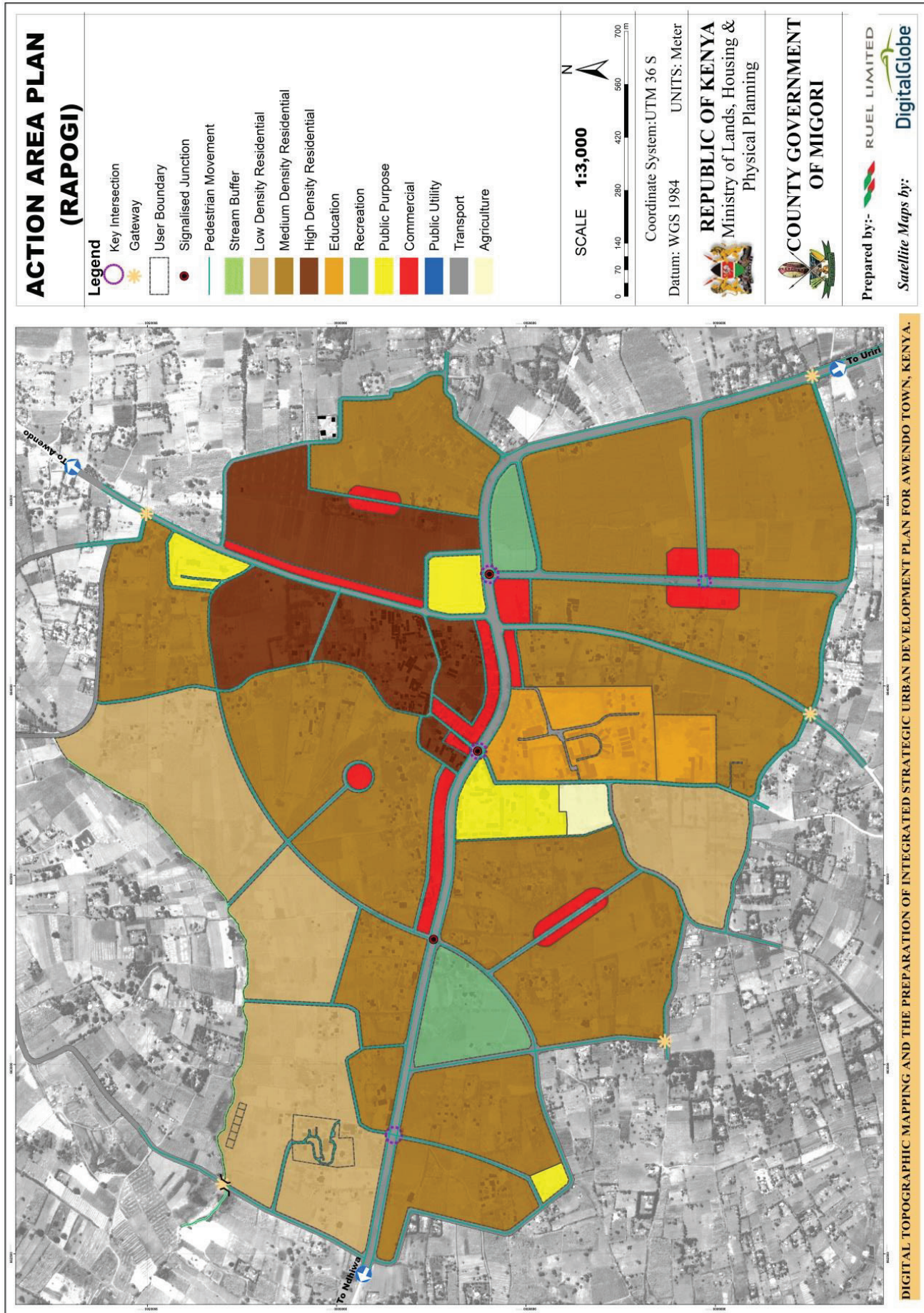


Figure 6- 15: Rapogi Action Area Plan

7.1 INTRODUCTION

Development controls have been defined as the mechanism through which entire process of urban development is regulated to achieve the objective of promoting overall benefit of the society and creating a distinct image of the town. It includes guiding the development and use of land, curbing misuse of land and promoting rational and orderly development of built environment. Development controls are required to meet situations and contexts which are generally static. In this context they tend to become too rigid and complex.

Looking at the far reaching impact and implications of the development controls on the growth and development, character, fabric and personality of an urban area, they need to be framed with great care and abundant caution. Considering the larger public interest and general welfare of the community, formulation of the development control should satisfy the basic requirements of the health, safety, convenience, economy and amenity.

7.2 BUILDING CONTROL STANDARDS

All the buildings are subjected to different development controls for regulating their design and construction. The application of the development controls have been largely dictated by the category of buildings, location of the site, size of the site and need to regulate the building design/architecture etc.

7.2.1 Residential Use

Categorization of the residential land use should be based on development density and level of services (to avoid segregation of people)

	Minimum Land Size	Maximum ground coverage	Plot Ratio
Low density Bungalow Maisonette	0.2	50% 50%	1.3
Medium density Bungalow Maisonette Multi-family dwelling	0.045	65% 65% 65%	1.4 1.4 1.4
High density Row housing Detached Semi-detached	0.03	70% 70% 70%	1.6 1.4

Mixed-use Regulations

Mixed-use development is a type of urban development that blends residential, commercial, cultural, institutional, or industrial uses, where those functions are physically and functionally integrated, and that provides pedestrian connections. Mixed-use development can take the form of a single building, a city block, or entire neighborhoods. The term may also be used more specifically to refer to a mixed-use real estate development project—a building, complex of buildings, or district of a town or city that is developed for mixed-use by a private developer, (quasi-) governmental agency, or a combination thereof. However, there are no clear regulations to control such development. It is appropriate therefore to provide guidance on such use. In areas with mixed use the predominant use (occupying 50%) shall determine the regulation applicable, in so far as heavy industrial use shall not be allowed in mixed use area. Efforts should be made to enhance mixed use in the Central Business District and the Nodes to make them active areas during day and night.

7.2.3 Commercial Streets and areas

The business districts offers commercial and other related services that are used by the population of the town or urban area as a whole including the inhabitants of its hinterland. The most important requirements for a town center are geographical centrality, accessibility to vehicles and pedestrians, ample parking space and have four different degrees of completeness in separating pedestrians from vehicles in a town center:-

- a) Remove through traffic by constructing a by-pass or relief road;
- b) Interrupt continuity of streets within the center by bollards or other means;
- c) Remove vehicles from street and provide vehicular access and parking at rear of buildings;
- d) Provide vertical separation of vehicles and pedestrians by constructing roads and pedestrians ways at different levels.

The minimum size for a commercial plot should be 0.045 hectares. Plot length versus the width should not be more than 1:3. Building lines should be observed where roads range between 6-18 meters wide. The building line shall be 6 m.

7.2.4 Industrial Development

Consideration include

- Excellent national/ international communication network;
- Links with other firms e.g. those firms which produce component parts for the same product or those involved in separate stages of the same industrial process.
- Accessibility to labor, communication routes, and ample supplies of power and water and sewage disposal facilities
- Separation from residential areas through buffer zones for heavy industries

Land Requirements

The total site area for a major industrial area would therefore probably lie between 500-1200 acres for a town with a population of 200,000 and 5000,000. It will provide between 20,000 and 50,000 jobs, based on an average industrial density of 40 workers per acre.

For light industrial area, the probable total area of each estate would range from 10-50 hectares, which would be sufficient to cater for 1500-7500 workers at a density of 60 workers per acre, with an area of 10- 20 small firms without creating congestion in the residential areas. A ratio of 1:3 should be maintained for light and heavy industry.

7.2.5 Educational Use

Pre-Schools

These should be established in residential areas or within existing primary schools and within walking distances for all pre-school pupils. It is desirable that a pre-primary school is attached to every primary school. These schools will therefore follow the same distribution pattern as primary school at 3500 catchment population. In addition, a kindergarten independent of primary school should be provided for 2500 catchment population.

Primary School

The idea here is to provide the neighborhoods with adequate land for primary schools with the future requirements being taken into account. It is recommended that one school would be required for a population of 3,500. It is suggested that an area of at least 3.25 Ha should be set aside, for every 3,500 population in urban areas and 4000 population in rural areas. Include an area of about 0.25 ha for a nursery school.

Secondary School

One school of 480 pupils would be required for a population of 8000. The distribution of secondary schools should therefore be on the basis of school/population ration of 1:8000. Unlike a primary school, a secondary school needs more land for laboratories (chemistry, physics and biology), workshops, and assembly hall and playground for varied games. The land provided, at a minimum of 4.5ha, should therefore be used economically so as to leave room for future expansion.

Secondary schools require location within residential areas related to principle pedestrian networks. At gross densities of 50 persons per hectare and above, each secondary school should be within an easy walking distance i.e. relative to pupils' ages of 500 - 600 meters. At gross densities lower than 50 persons per hectare pupils will probably be taken to school by car or by public transport and facilities for safe collection and parking should be available.

Colleges and University

These should be located in central location that would allow them be accessible to a wide catchment. Although located in the town they serve a regional catchment. Location should also consider expansion and provision of accommodation and services to the student community.

A master plan should be prepared in accordance with these standards and all applicable laws and designs in such a way that all including facilities and proposed developments are functionally related and compatible and all academic buildings, classrooms and other facilities are in close proximity to one another.

7.2.6 Health Facilities

Kenya's healthcare system is structured in a hierarchical manner that begins with primary healthcare, with the lowest unit being the community, and then graduates, with complicated cases being referred to higher levels of healthcare. Primary care units consist of dispensaries and health centers. The current structure consists of the following six levels:

- Level 1: Community
- Level 2: Dispensaries
- Level 3: Health centers
- Level 4: Primary referral facilities
- Level 5: Secondary referral facilities
- Level 6: Tertiary referral facilities

The town shall provide health care services up to Level 4 by year 2028. Each ward shall have Level 2 and 3.

7.2.7 Public Purpose

The size of plots, plot ratio and setbacks permissible in plots under public purpose shall be determined by the specific nature of the public purpose. As a guide however up to 15% of the developable land shall be allocated for public purpose. This should be distributed in Central locations depending on the nature of the activity.

7.2.8 Recreational Facilities

These include such facilities as major open spaces (parks and buffer zones), stadia, sports complexes, theatre, cinemas, restaurants, etc. These demand the market of a total urban population including local and foreign tourists. It is not possible to fix standards for open spaces at the urban level as these essentially develop from opportunities in the environment. However, specific recreational spaces are preferred to mere open spaces.

(a) Major Parks

Although each park will have its own special character as determined by its topography, historical associations and immediate surroundings, it should however be able to provide a wide range of recreational opportunities from among the following:-

- (i) Areas of visual relief screened from surroundings:
- (ii) Areas for setting in quietly with scented gardens, color gardens, flower and shrub displays, small enclosures, etc.

(b) Neighborhood Parks

These should be provided at best in association with Community Social Hall within residential neighborhoods.

7.2.9 Standard/ Norms for Fire Safety

The National Planning and Building Code 2009 provides for what is required for fire safety at different sites and situations.

Building material

Type of building materials or methods used should be in a position to resist fire in order to minimize the spread and intensity of fire.

Emergency Routes

Any building of a height more than three storey should be provided with not less than two escape routes as long as the exit is more than 30 meters. The route can be up to a maximum of 1900mm for 200 people but not less than 1100mm

Fire Hydrants

These should be provided within the various locations in the town. Hydrants should not be used for any other purpose other than fire protection without express permission from the Fire Department. Public fire hydrants should be located in streets or roads dedicated to public use, in any permanent amusement park or exhibition ground, shopping center or group housing, cluster housing, or town house complex ground or raised hydrants. They should be placed at a distance not greater than 90m from these facilities.

7.2.10 Standard/ Norms for Electricity Connections and Street Light

Power Connection

The KPLC has a responsibility of providing electricity connection to users. This is done on application and approval in which connections are effected on payment of necessary fees.

The Way-leave for transmission lines regulations are provided as follows:

Table 7- 1: Way Leaves

Capacity of Line	Way Leave
11KV	10m
33KV	20m
40KV	20m
66KV	30m
132KV Single Circuit Towers	50m
132KV Double Circuit Towers	60m

Street Lighting

Street lighting steel poles are placed at an interval distance of between 30m – 35m depending on the wattage used and height of the poles. The higher the wattage the greater the interval distance between the poles. The height of the poles depends on the design but average 8m from the ground. Flood lights have mast that go as high as 20 meters.

7.3 LAND USE ZONING REGULATIONS

Zoning is an exercise of a town's "police powers" to protect the public health, safety, and welfare. These powers are granted to towns by the State as an extension of its powers. It is this same set of powers that allow government to set speed limits on highways, require drivers of automobiles to be licensed and prohibit the use of flammable, celluloid film in movie theaters. As described below, the concept of the public's health, safety, and general welfare has expanded since the adoption of early zoning ordinances. Conventional zoning is the division of a town into districts for the purpose of regulating the use of private land. A zoning by-law consists of a text and a map or a series of maps. The map establishes the districts; the text, the land uses allowed in each district, and the standards that are applicable to each of the districts. Administration, enforcement, and appeal procedures, as well as procedures that govern proposals for changes to both the text and the map are established by the by-laws. The differences between the standards established for each zone should reflect the decisions of the community with regard to land use and will resultantly affect the way land is used and how the community grows.

7.3.1 Residential Use Zone

Activities allowed in Residential Zones

- i. Residences - Bungalows, multi-family dwellings (multi-storey flats/apartments), row housing, detached, semi-detached, residential-cum-work.
- ii. Hostels, rental houses, old age homes, community halls, police posts, guest houses (not exceeding 200 sq. in floor area),
- iii. Day care centers and kindergartens
- iv. Corner shops, small shopping centers, health facilities (dispensaries, nursing home, etc.)
- v. Educational buildings, religious premises, library, gymnasium, park, technical training centers, exhibition and art galleries, clubs, banks/ ATM, matatu stops/boda boda stands (not exceeding 100 sq.m in floor area), post offices, hostels of non-commercial nature

7.3.2 Commercial Use Zone

Activities allowed in Commercial Zones

In the Commercial Zone, building or premises shall normally be permitted only for the following purposes and accessory uses:

- i. Cinema Theatres subject to Cinema Rules issued from time to time, Assembly Halls, Colleges, Reading rooms, Higher Educational Technical and Research Institutions, Petrol Filling Stations, Automobile Show Rooms, Service Stations and Automobile Workshops with permission of parking vehicles occupying a site area not exceeding 200 sq.m, with installation not exceeding 10 H.P. All uses permitted with the special sanction of the Authority of Town Management Board.
- ii. Commercial and business uses including all shops, stores, markets and uses connected with the display and sale of merchandise, either wholesale or retail excluding explosive obnoxious products and other materials likely to cause health hazards not exceeding an area of 1000 sq.m.
- iii. Business Offices, Banks and other commercial and financial institutions occupying a floor area not exceeding 1000 sq.m.
- iv. Warehouses, repositories and other uses connecting with storage or wholesale trade occupying a floor area not exceeding 1000 sq.m but excluding storage of explosive or products which are either obnoxious or likely to cause health hazards.
- v. Manufacturing and service establishments and commercial uses using electric motors not exceeding 20 H.P. and/or employing not more than 20 workers excluding those that are obnoxious or hazardous nature by reason or odor, effluent, dust smoke, gas, vibration, noise etc. or otherwise likely to cause danger or nuisance to public health or amenity.
- vi. All uses permissible in residential zone are permissible in this zone.

7.3.3 Industrial Zone

Activities allowed in Industrial Zones

In Industrial Zone, buildings or premises shall be normally permitted for the following purposes and accessory uses:

- I. All uses permissible in the Commercial Use Zone with the special sanction of the Town Management Board, except residential uses.
- II. Residential buildings for security and other essential staff required to be maintained in the premises.
- III. All industries using electrical power utilizing machinery not exceeding 100 H.P. or with employees not exceeding 100 number, but excluding all industries of obnoxious and hazardous nature by reasons or odor, effluent, dust, smoke, gas, vibration etc. or otherwise likely to cause danger or nuisance to public health or amenity.

7.3.4 Institutional Area

Activities allowed in Institutional areas

In the Institutional area buildings and premises shall be normally permitted for the following purposes and accessory uses, where the site area does not exceed 5 Ha.

- I. Government and Semi-government Offices, Professional Offices
- II. Art Galleries, Museums, Aquarium, Public Libraries, Social and Cultural Institutions and Religious Buildings.
- III. Hospitals, Sanatorium and other Medical and Public Health Institutions.
- IV. Parks, Play Grounds, Swimming Pools and other Public and Semi-public open spaces
- V. Broadcasting Installations and Weather Station.
- VI. Public Utilities, Storage and Public Yards, Town and Community Facilities.
- VII. Installation of Electric Motors upto 20 H.P. may be permitted for the uses incidental to the uses mentioned in items (i) to (iv) above.
- VIII. Incidental residential uses for essential staff required to be maintained in the area.
- IX. Hospitals, Laboratories, Social and Cultural Conference Hall, Religious Centers, Guest Houses, Museum, Auditorium, Police Station, Jail, Fire Station.

7.3.5 Transportation Zone

Activities allowed in Transportation Zones

In the Transportation Zone buildings or premises shall be normally permitted only for roads, Goods Shed Terminals, bus stops, Bus Depot, Bus Terminals, Truck Terminals, Air Strip, Helipad, Warehouses, Storage, Container Freight Stations, Petrol Filling and Service Station.

7.3.6 Open Space and Recreational Zone

Activities allowed in Recreational Zones

In the Open Space and Recreational Zone, buildings or premises shall be normally permitted for the following purposes and accessory uses:

- 1) All Public and Semi-public, Town and Neighborhood Parks, Open Spaces, Play grounds, Zoological and Botanical gardens, Nurseries, Museums
- 2) Installation of Electric Motors not exceeding 5 H.P. may be permitted for pumping water for gardening purposes.

7.3.7 Agricultural Zone

Activities allowed in Agricultural Zones

In the Agricultural Zone buildings or premises shall be normally permitted only for the following purposes:

- i. All agriculture uses.
- ii. Farm-House, Building for Agricultural activities subject
- iii. Diary and Cattle Farms, Fish Farms.
- iv. Poultry Farms, Stud Farms.

- v. Forestry.
- vi. Storing and Drying of Fertilizers incidental to the agricultural activities.
- vii. Petrol Pumps.

7.3.8 Detailed Land Use Plan

The detailed land use plan clearly illustrates the proposed land uses in addition to the existing ones within Awendo Town as indicated in the figure below.

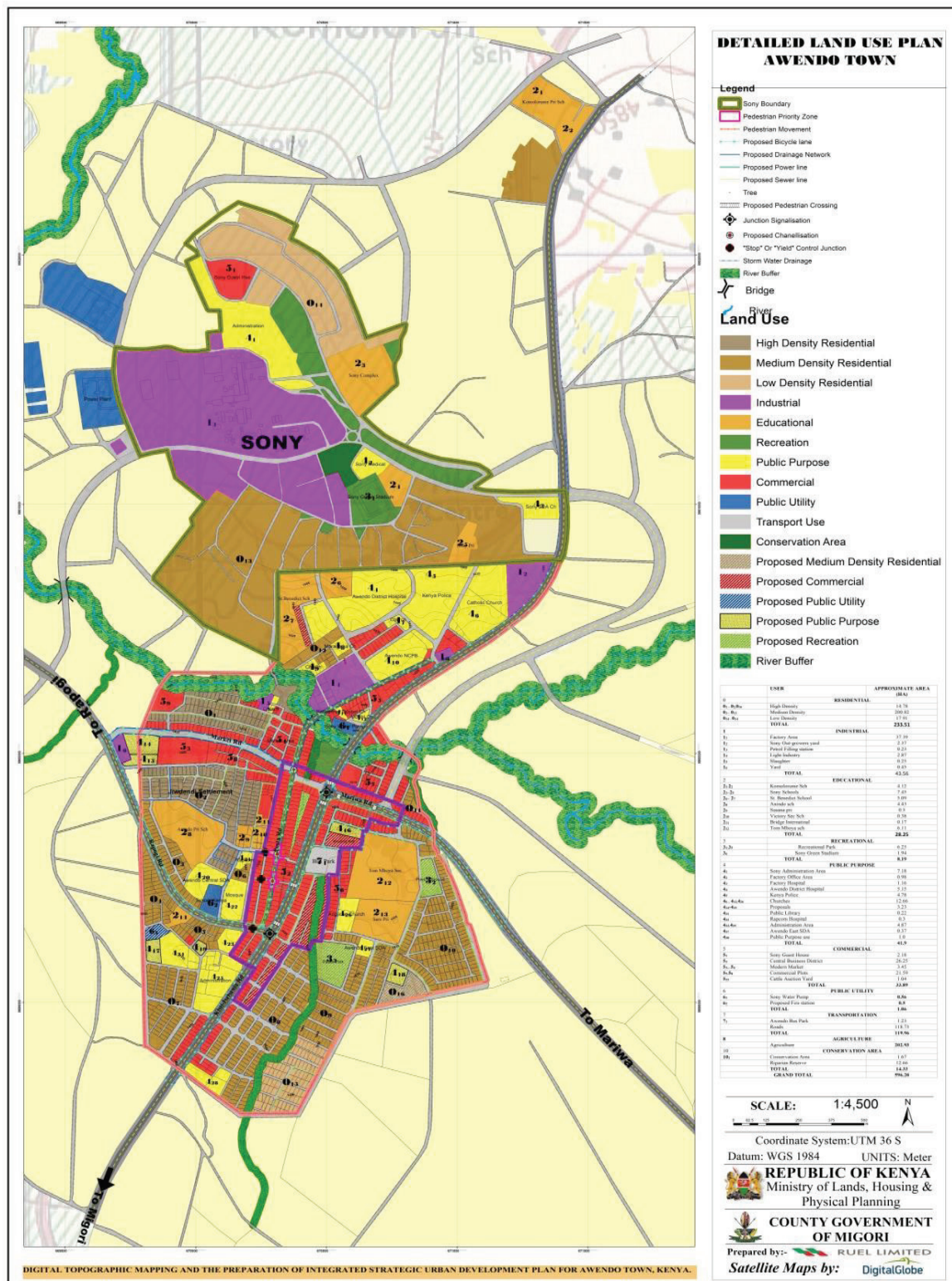


Figure 7-3: Detailed Land Use Plan

7.4 Land Use Regulations and Standards

Zoning regulations for various uses are presented below:

7.4.1 Residential Areas

The land use regulations in terms of plot size, plot coverage, density, plot ratio and set-backs are presented in tables below:

Table 7- 2: Table 9.1: Plot Coverage, Residential Density and Plot Ratio

Type of Dwelling		Plot size (m ²)	No of Dwellings per Ha	Persons/ ha	Maximum Plot Coverage (%)	Plot Ratio	No of Storeys
Bungalow detached	Low density	1000	10	40	50	1:1	2.0
	Medium density	500	16	64	65	1:1.3	2.0
	High density	285	35	140	70	1:1.75	2.5
Semidetached and row housing	Low density	417	20	80	50	1:1.5	3.0
	Medium density	333	32	128	65	1:2	3.1
	High density	250	70	280	70	1:2.8	4.0
Multi- Family dwellings	Low density	200	50	200	50	1:3	6.0
	Medium density	167.6	60	240	65	1:3.9	6.0
	High density	142.8	70	280	70	1:5	7.1
	Special Density (Rental Housing)	75	70	280	80	1:5.6	7.0
	Special Density (Low Cost Housing/ Urban Poor/ Informal Area)	65	70	280	80	1:4.8	6.0
Detached house in Agriculture Zone	Low density	1000		0	40	1:0.8	2.00
		500		0	50	1:1	2.00

Table 7- 3: Minimum setback of dwelling from plot lines

Type of dwelling		Zone code	Plot size (m ²)	Maximum plot coverage (%)	Set-backs		
					Front	Side	Rear
Bungalow detached	Low density	O ₁	1000	50	6	3	4.5
	Medium density	O ₂	500	65	6	3	3
	High density	O ₃	285	70	3	3	3
Semi-detached and row housing	Low density	O ₁	417	50	6	3	3
	Medium density	O ₂	333	65	3	3	3
	High density	O ₃	250	70	3	3	3
Multi-family dwellings	Low density	O ₁	200	50	3	3	3
	Medium density	O ₂	167.6	65	3	3	3
	High density	O ₃	142.8	70	3	1.5	1.5
	Special density (Rental housing)	O ₃	75	80	3	1.5	0
	Special density (Low cost housing/urban poor/ informal area)	O ₃	65	80	3	1.5	0

7.4.2 Educational Areas

The land use zones and regulation for each sub-category of educational zones related to plot size, ground coverage, plot ratio and number of floors are presented in table below:

Table 7- 4: Table 9.4: Land use zones and regulations for educational uses

Type of use proposed	Min. Plot Size (Ha)	Max. Ground Coverage %	Plot Ratio	Maximum no. floors allowed
All Existing	-	-	-	-
Primary Schools	3.25	20	0.4	2
Secondary Schools	3.4	30	0.6	3
Secondary Schools (2 streams)	3.5	30	0.6	3
Special schools	3	30	0.6	3
Youth polytechnic	4.5	30	0.6	3
Research Institute	10	60	1.8	4
University	50	40	1.2	4
Management training/teachers training institute	5	40	1.2	4
Medical training college	5	40	1.2	4

7.4.3 Public purpose areas

The land use zones and regulations for public purpose zones related to plot size, ground coverage, plot ratio and number of floors are presented in table below:

Table 7- 5; Land use zones and regulations for public purpose facilities

Use	Min. plot size (Ha)	Max. ground coverage %	Plot Ratio	Maximum no. floors allowed
Integrated office complex	20	25	1.2	5
Convention centre	10	30	1.2	4
Cultural centre	10	40	1.2	3
Fire station	0.4	30	1.2	4
Prison	16	40	1.2	3
Juvenile home	2	40	1.2	3
Police station	2	40	1.2	3
Rehabilitation centre	0.5	40	1.2	3
Sub town level community centre	5	30	1.2	4
Community hall	0.3	40	1.2	3
Orphanage home	1	40	1.2	3
Sub district level hospital	4	40	1.2	3
Basic health subcentre/nursing home	2	30	1	3
Communicable disease hospital	4	40	1.2	3
Dispensary	0.1	40	0.75	2
Veterinary hospital	5	30	1.2	4

7.4.4 Commercial Areas

The land use zones and regulation for commercial zones related to plot size, ground coverage, plot ratio and number of floors are presented in table below:

Table 7- 6: Land use zones and regulations for commercial areas

Use	Min. Plot Size (Ha)	Max. Ground Coverage %	Plot Ratio	Maximum no. floors allowed
All existing	-	-	-	-
Sub CBD	10	30	1.2	4
Informal markets	2	40	0.75	2
Commercial belt	-	30	1	3
Cluster centres	5	40	1	3
Warehouse	10	40	0.75	2

8.1 INTRODUCTION

This chapter highlights how the plan will be implemented over the plan period 2018-2038. It is envisioned that the implementation of the proposed projects will be enabled by array of different stakeholders- some contributing financial and material assistance while others infusing technical expertise.

8.2 PHYSICAL IMPLEMENTATION PLAN

The implementation plan indicates the time frame for implementing the various activities. The implementation plan shows the sectoral projects, management structures and institutional responsibilities and how the implementation will be guided. It includes stakeholder roles and responsibilities in plan implementation.

8.2.1 Phasing

The prioritizations of the projects are based on stakeholder prioritization. The projects are spread out in the 20 years in batches of five years for ease of management running up to year 2038. The proposed projects for implementation are presented in the table below.

IMPLEMENTATION MATRIX

Table 8- 1: Economic Development Implementation Plan

Projects	Quantity	Units	YEARS												Actors									
			Phase I				Phase II				Phase III					Phase IV								
			2018/20-2021/22				2022/23-2026/27					2027/28-2031/32						2032/33-2036/37						
Allocate land for new industrial areas	26	Ha																					LANDS DPT NLC NGOs NATIONAL GOVT	
Notification of the land demarcated for industrial development	1	No																						LANDS DPT
Allocate land for new commercial districts (Marwa, Kokuro, Rapogi)	55	Ha																						LANDS DPT NLC NGOs
Notification of the land demarcated for commercial development	1	No																						LANDS DPT
Electricity Supply in the proposed commercial and industrial area	5	km																						KPLC ENERGY DEPT.
Construct motorable Roads within proposed Industrial area	5	km																						ROADS & PUBLIC WORKS DPT. NATIONAL GOVT
Formulate county led SMEs policies	1	No																						COUNTY ASSEMBLY TRADE DPT. NGOs
Lower transaction costs (Policy)	1	No																						COUNTY ASSEMBLY TRADE DPT. NGOs
Policy on cottage industries and value	1	No																						COUNTY ASSEMBLY

Projects	Quantity	Units	YEARS												Actors	
			Phase I			Phase II			Phase III			Phase IV				
			2018/20-2021/22			2022/23-2026/27			2027/28-2031/32			2032/33-2036/37				
chain development															TRADE DPT. NGOs	
Establish County led SMEs oriented financial institution	1	No														COUNTY ASSEMBLY TRADE DPT. NGOs
Allocate Juakali traders designated areas in Mariwa, Kokuro, Rapogi and urban core	16	ha														LANDS DPT. NLC
Training & capacity building on products improvement through County Trade dpt (2 per annum)	36	No														TRADE DPT. NGOs
Develop a Town Investment Policy	1	No														TRADE DPT. COUNTY ASSEMBLY
Give incentives to investors including serviced land and tax holidays (Policy)	1	No														TRADE DPT. COUNTY ASSEMBLY

Table 8- 2: Environment Projects Implementation Plan

Projects	Quantity	Units	YEARS								Actors		
			Phase I		Phase II		Phase III		Phase IV				
			2018/20-2021/22		2022/23-2026/27		2027/28-2031/32		2032/33-2036/37				
By laws for EIA	1	No											COUNTY ASSEMBLY ENVIRONMENT DEPT NEMA
Conservation area management plans	3	No											ENVIRONMENT DEPT LANDS DEPT NEMA

Projects	Quantit y	Units	YEARS												Actors																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Table 8- 3: Recreation Projects Implementation Plan

Projects	Quantity	Units	YEARS												Actors																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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Table 8-13: Socio-Cultural Development Implementation Plan

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9.1 Introduction

The capital investment plan provides a detailed understanding of the proposed and anticipated investments that will be turned into tangible capital assets during the implementation of the plan. It in detail outlines the ongoing as well as proposed projects within the context of the ISUDP. It also provides for the budgetary allocation in terms of financing and land requirements, as well as the proposed timelines for each of the programs.

Table 9- 1: summary of projects.

SECTOR	NO. OF PROJECTS	ESTIMATED COST KSH (MILLIONS)	% OF TOTAL COST
Land	1	1,000	7.91
Environment	9	357	2.82
Water	3	106	4.30
Housing	3	6,001	47.46
Transportation	3	935.5	7.40
Health	4	2,650	20.96
Education	3	486.8	3.85
Recreation	4	364	2.88
Administration	4	83.97	0.66
Community facilities	5	97	0.77
Energy	2	123.8	0.98
TOTAL COST		12,643.07	100

Table 9- 2: Spatial Distribution of projects

AREA	NO. OF PROJECTS	ESTIMATED COST (MILLION)	% OF TOTAL COST
Awendo	28	5679.05	44.92
Mariwa	25	2369.94	18.74
Rapogi	22	2254.64	17.83
Kokuro	21	2339.44	18.51
TOTAL COST		12643.07	100

Table 9- 3: Detailed projects per sector

SECTOR	PROJECTS	AREA				ESTIMATED COST(MILLION)
		AWENDO (Quantity)	KOKURO (Quantity)	MARIWA (Quantity)	RAPOGI (Quantity)	
ENVIRONMENT	Fire station	1	0	0	0	26.5
	Fire Hydrant	1	0	0	0	2
	Landfill	0	0	1	0	40
	Waste Transfer Station	5	2	2	1	3
	Surface Run Off Catchments	0	1	1	1	45
	Sewerage System	1	0	0	0	250
WATER	Conservation Plan	1				20
	Water Reticulation					500
	Installation of water storage tanks	1	1	1	1	14
	Upgrade of the River Sare Water Treatment works	1				30
HOUSING	Construction of Low cost Housing Units.	2500	833	833	833	5000
	Slum Upgrading	1				1000
TRANSPORTATION	Road Improvement to Bitumen	15	17	20	25	806
	CBD Improvement (Awendo)	4.055 km				127
HEALTH	Level 5	1	0	0	0	200
	Level 4	1	0	1	1	450
	Level 3	0	3	4	3	1000
	Level 2	5	5	5	5	1000
EDUCATION	ECD	16	4	6	6	76.8
	Primary schools	16	4	6	6	256

	Secondary schools	7	1	3	3	154
RECREATION	Stadium	0	1	0	0	200
	Neighborhood Playground	2	2	2	1	84
	Social Hall	1	1	1	1	20
	Neighborhood Park	2	1	1	1	60
	Awendo Public Park	1				20
ADMINISTRATION	Sub-Post Office			1	1	4
	Patrol Base	1				1
	Police Post	0	1	1	1	6
	GIS Unit	1				25
	Planning & Development Control Unit	1				5
	Policies and Legislations & staff remuneration	-	-	-	-	42.97
COMMUNITY FACILITIES	Orphanage	0	0	0	1	15
	Post Office			1	1	4
	Community Center	1	1		1	10
	Community Library			1	1	8
	Town Library	1				5
	Cemetery			1		5
	Ward level market	1			1	2
	Slaughter House			1		2
	Shopping mall	2	2	2	1	35
	Neighborhood shopping Centers	10	4	4	4	16
INDUSTRIAL	Light Industry		4Ha		4Ha	24
	Medium Industry			10Ha		50
ENERGY	Electricity Supply		2km	1.5km	1.5km	5
	Grid Network connection		100%	100%	100%	9
	Street Lighting					9.8

Project proposals

The proposed projects for Implementation are presented as highlighted below.

Environment.

This sector involves setting up a fire station and fire hydrant, establishment of a waste transfer stations, waste management site, Surface runoff catchment, laying out an effective sewerage system and sewer treatment plant, constituting by laws on disaster management and EIA and finally preparation of conservation plan.

Water.

Upgrading the existing water treatment works, installation of water tanks at strategic points and establishment of an effective water supply system.

Lands.

Land Banking

The land for banking will be procured over the plan period in the second phase of five years in the plan period. The estimated land required for banking is 100 Ha.

Housing

Construction of low cost housing-establishment of affordable housing in the residential zones. Slum Upgrading-Upgrading of Jiwdendi Settlement area.

By Laws-For affordable building materials and by law on tenure in informal settlement.

Transport.

This sector includes road Improvement to Bitumen standard. Total road to be paved within the Awendo CBD is 4.055Km.

Traffic signalization- Signalisation in key junctions along A1 Road, that is, A1-Mariwa Rd Junction, Market Rd-A1 Road junction.

CBD Improvement; Pavement of Poster Road(0.63km) and Rapogi Road(1.2km), Removal of Kiosks from the road reserves, Relocation of traders to appropriate areas, Integration of NMT, provision of street furniture, Urban greening

Health

Upgrading of the Existing health facility (Awendo Level 4 Hospital to Level 5.

Establishment of level 4, 3 and 2 health facility in the Nodal centers, that is, Kokuro, Mariwa and Rapogi.

Education.

Improving the efficiency of the existing educational facilities and enhancing the services thereto. Establishment of additional educational facilities/amenities.

Recreation.

Establishment of a stadium, Play Grounds, Neighborhood Parks and social hall.

Administration.

Planning Unit, GIS Unit, Policing, Post Office.

Community Facilities.

Projects hereto include setting up of an Orphanage, Post Office, Community Center, Library and Cemetery.

Energy

Setting up an effective Electricity Supply and street lighting. The streets to be lit herein are Posta Road, Market Road, Rapogi Road and other CBD roads totaling to a length of 4.055Km.

(Financial strategy

This section provides the details of the estimated projects costs. It also proposes a strategy on how to raise the required funds from various sources.

Budget allocations

Sub sector	Strategies	Projects	Quantity	Units
Education	Provide schools within walking distance	ECD	32	No
		Primary School	32	No
		Secondary School	14	No
		college	1	No
		University	1	No
Health	Quality health referral systems	Level 5: Secondary referral facilities	1	No
		Level 4: Primary referral facilities	3	No
		Level 3	10	No
		Level 2	20	No
	Alternative methods for disposal of dead persons	Cemetery	1	No
		Crematorium	1	No
Library/ Community Centers	Enhance community interaction	Town Library	1	No
		Community Library	2	No
OVC	Support to OVCs	Orphanage	1	No
Postal Services	Accessible postal facilities	Sub-Post Office in Mariwa and Rapogi	2	No
Security Services	Improve neighborhood security	Police Post (In neighborhoods)	3	No

Fire Safety	Strengthen fire safety infrastructure	Police station in Awendo town	1	No
		Fire station	1	No
		Fire Hydrant (every neighborhood)		
Recreation	Provide a beautiful livable environment	Neighborhood Park	5	No
		Neighbourhood Playground	7	No
		Community Center at kokuro	1	No
		Stadium at Kokuro	1	No

10.1 INTRODUCTION

What gets monitored gets done. This is the principle under which the monitoring and review plan is developed. The regular monitoring will make the projects more responsive to emerging needs of the town's residents. Long range plan needs to be reviewed every five years as there are likely to be many unforeseen changes during implementation. The monitoring and review plan are meant to ensure:

- Effective implementation of the plan within the plan period
- Timely response to the changing socio-economic needs of the people of the city
- Checking unintended growth outside the framework of the ISUDP
- Review of the appropriateness of the plan policies and the proposals.

10.2 PROCEDURE FOR MONITORING

10.2.1 Monitoring Unit

A dedicated Monitoring Unit with modern data processing facilities should be set up in the County Physical Planning Department which would be responsible for collection and analysis of monitoring data and preparing regular briefs for sharing with the CEC in charge of Lands and Physical Planning and the town committee through the Town Manager.

10.2.2 Steering Committee

A high-level Steering committee under the Town Manager is also proposed to be set up for periodic review and monitoring of the plan. The committee would be responsible to the Town Management Board and provide quarterly reports to the Executive Committee of the County.

To enable this, support systems will be established by the Town committee to facilitate access to information and resources for effective monitoring

10.2.3 Citizen Ward Committee for Plan Implementation

It is proposed that for follow up planning and integrated implementation of the ISUDP, the Citizen Ward Committee are formed to work with Ward Administrators in following planning indicators set out in this ISUDP

10.2.4 Planning Indicators

The following would be the indicators of physical and socio-economic changes to be monitored periodically.

1. Demographic changes
2. Land use pattern and Development
3. Housing increase, distribution and actors:
4. Social Infrastructure and services in terms of quantity and quality
5. Transport Provision in terms of modes, infrastructure, use and access
6. Economic Aspects focusing on change in households by income, expenditure,
7. Employment; development of new employment areas and enhanced informal sector.
8. Environment quality, conservation and management
9. Natural Disasters prevention and mitigation

10.2.5 Spatial Monitoring

A GIS database built from the mapping exercise has been created as part of the ISUD Plan. The GIS is to be used as a monitoring tool for ISUD-Plan. A GIS Unit shall be set up in the County Planning Department to manage the database which it shall regularly update to track project implementation. Links shall be created between the spatial components and the revenue data base for purposes on also monitoring spatial development and finance.

10.2.6 Financial Monitoring

The Steering Committee will prepare an Annual Financial Report anchored on the Capital Investment Plan. The report shall be presented as part of the Project Reporting structure to the County Government. The Town Management Board shall strengthen the Town

Finance Department with a clear mandate on monitoring ISUDP financial implementation.

10.2.7 Public Participation

Citizen Participation shall be an integral part of monitoring. The Citizen Ward Committee will provide a regular briefing at each ward level and get feedback to help monitor implementation of the ISUDP. This will include the various stages of designing, implementing and maintaining any project.

10.2.8 Review

A midterm review of the ISUDP shall ensure adjustments if needed in the Plan implementation. This would address unforeseen events or policy changes that have direct effect on the Plan. The Steering Committee will drive this process with participation of the Citizen Ward Committees

10.2.9 Implementation Direction

Awendo ISUDP sets the direction for the development for the next 20 years. After approval and adoption of the ISUDP the subsequent phase will include the following key tasks:

- Prepare Strategic Environment Assessment Plan for Awendo ISUDP
- Strengthen the Planning Department in terms of human resources, resources and logistics.
- Establish Land Bank and develop measures to manage it.
- Implement priority projects after securing funds
- Prescribe Urban Design By-laws to guide and oversee physical developments.

REPUBLIC OF KENYA



MIGORI COUNTY GOVERNMENT

MINISTRY OF LANDS, HOUSING AND PHYSICAL PLANNING

Telegrams: "MIGORI COUNTY" Migori

Physical Planning Office
P.O. Box 195-40400
SUNA-MIGORI

05/06/2018

The Lead Consultant
Ruel Limited
P.O Box 27782-00506
Watermark Business Park
Langata Road, Karen.
NAIROBI

Dear Sir,

RE: EVALUATION REPORT OF THE DRAFT ISUDP FOR AWENDO TOWN

The above subject matter refers.

This is to inform you that the draft Awendo ISUDP you submitted was reviewed, and various comments made. You are therefore required to effect the necessary adjustments to ensure production of a quality plan that will guide proper urban development and investments in Awendo town.

We look forward to speedy the finalization of the plan of the town.

Herein attached, kindly find the report of the same.

COUNTY PHYSICAL PLANNING
Yours,
OFFICER

05 JUN 2018
Josephine Omwanda
County Physical Planner
P. O. Box 195 - 40400, SUNA

Cc: Director – Lands, Housing & Physical Planning
Chief Officer - Lands, Housing & Physical Planning

REPUBLIC OF KENYA



MIGORI COUNTY GOVERNMENT

DEPARTMENT OF LANDS, HOUSING AND PHYSICAL PLANNING

Telegrams: "MIGORI COUNTY" Migori

PHYSICAL PLANNING OFFICE
P.O. BOX 195-40400
SUNA
DATE: 22/06/2018

TO

THE SUB-COUNTY ADMINISTRATOR
AWENDO SUBCOUNTY

**RE: INVITATION TO STAKEHOLDER VALIDATION WORKSHOP FOR
INTEGRATED STRATEGIC URBAN DEVELOPMENT PLAN (ISUDP) FOR
AWENDO TOWN.**

The above subject matter refers.

RUEL LTD was contracted to prepare the plan for Awendo town which will guide developments in the town for the next two decades. The plan covers Awendo town plus its nodal centres of Mariwa, Kokuro and Rapogi. To this end the consultant has arranged for a stakeholder workshop which will take place on **Wednesday 28th June 2018 At THE LOFT HOTEL**, Awendo Town as from 0900 hours. The main aim of the workshop will be to give the stakeholders opportunity to validate the proposals contained in the plan.

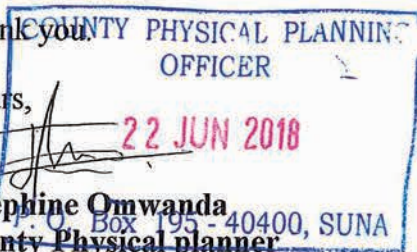
The purpose of this letter is to officially invite you to the said workshop, and to have the honor of inviting other participants as indicated in the attached list.

Thank you.

Yours,

Josephine Omwanda

County Physical planner



Cc: Director – Lands, Housing & Physical Planning
Chief Officer - Lands, Housing & Physical Planning

REPUBLIC OF KENYA



MIGORI COUNTY GOVERNMENT

Telegrams: "MIGORI COUNTY" Migori
Tel: +254-059-20928
E-mail: migoricountygov@gmail.com

DIRECTOR OF PSM
P O BOX 195 - 40405,
SUNA - MIGORI
DATE: 25/6/2018

TO _____

AWENDO SUB COUNTY

**RE: INVITATION TO A STAKEHOLDERS VALIDATION WORKSHOP FOR
INTEGRATED STRATEGIC URBAN DEVELOPMENT PLAN [ISUDP] FOR AWENDO
TOWN**

The above subject matter refers

You are kindly invited to attend the above mentioned workshop which is scheduled for 28th June 2018 at **THE LOFT HOTEL – AWENDO TOWN** starting from 9.00a.m.

Kindly keep time

JOHN OKELO
SUB COUNTY ADMINISTRATOR
AWENDO SUB COUNTY



CC – CHIEF OFFICER – PUBLIC SERVICE MANAGEMENT MIGORI COUNTY
PLANNER MIGORI COUNTY GOVERNMENT

AWENDO TOWN ISUDP VALIDATION WORKSHOP

LIST OF STAKEHOLDERS

S/NO	CATEGORY	DESIGNATION	NUMBER
	PUBLIC SECTOR AGENCY	WARD ADMIN	2
		MCA	2
		DCC-AWENDO	1
		AREA CHIEF	2
		SUB-COUNTY WATER OFFICER	1
		SUB-COUNTY LANDS RATES OFFICER	2
		SUB-COUNTY LAND SURVEYOR	2
		SUB-COUNTY EDUCATION OFFICER	1
		SUB-COUNTY ENERGY OFFICER	1
		SUB- COUNTY PUBLIC HEALTH OFFICER	1
		SUB-COUNTY ENVIRONMENT OFFICER	1
		ADMIN. -AWENDO HEALTH CENTRE	1
		POLICE	3
		REPRESENTATIVE SONY SUGAR	1
	PUBLIC SERVICE	REPRESENTATIVE KPLC	1
3	PROVIDERS	REPRESENTATIVE MATATU ASSOCIATIONS	2
		REPRESENTATIVE MARKET ASSOCIATIONS	2
		REPRESENTATIVE BODABODA ASSOCIATIONS	3

3	PRIVATE SECTOR	REPRESENTATIVE BUSINESS COMMUNITY	2
		REPRESENTATIVE YOUTHS	3
		REPRESENTATIVE PEOPLE WITH DISABILITY	2
		REPRESENTATIVE JUAKALI/ SMEs	2
4	FAITH BASED ORGANIZATION	REPRESENTATIVE MUSLIM COMMUNITY	1
		REPRESENTATIVE CATHOLIC COMMUNITY	1
		REPRESENTATIVE PROTESTANTS	4
5	NGOs	REPRESENTATIVE OF LOCAL NGOs	2
6	FARMERS	REP. SUBSISTENCE FARMERS	2
		REP. SUGARCANE FARMERS	3
7	PROFESSIONAL BODIES	KNUT	1
		KUPPET	1
		OPINION LEADERS	3
		ISK-INSTITUTION OF SURVEYORS OF KENYA	2

AWENDO ISUDP VALIDATION REPORT

Introduction

This is a report for the presentation of the Awendo ISUDP to the stakeholders for validation and adoption that was held at the loft hotel, Awendo on 28th June 2018.

Purpose of the workshop

Being the final of series of workshops, the final workshop was meant to:

- I. Present the final ISUDP to the stakeholders
- II. Give stakeholders an opportunity to inspect the final ISUDP
- III. Present an opportunity to the stakeholders to validate the ISUDP
- IV. Present stakeholders an opportunity to adopt the ISUDP.

Attendance

The workshop was attended by several stakeholders drawn from both the national and county government, faith based organizations, non-state actors, business community, special interest groups, political leaders, boda boda associations among others.

Proceedings

The workshop was officially opened by the Sub county administrator who welcomed stakeholders as well as the consultants to the workshop. After introductions, the consultants presented the final ISUDP to the stakeholders. Presentations were made through the use of PowerPoint as well as the use of printed maps and reports.

The consults gone highlights on the following:

1. The plan
2. The process of preparing the plan
3. The outputs of the plan
4. Details of the plan

Q & A session

After the presentation by the consultant team, a question and answer session followed where stakeholders were given an opportunity to seek clarification from the consultants

A total of 18 items for clarification were raised by the stakeholders. The consultants gave satisfactory responses after which follow-up questions were raised and appropriate responses given.

Lunch break

After the Q & A session, the stakeholders proceeded to take lunch.

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Way forward

After deliberations, the way forward session began. Some of the major points raised were: Stakeholders mostly felt that Rapogi should not have been part of the Awendo ISUDP since it is located in Uiri Sub County.

In response, stakeholders were advised on the need to view the plan as futuristic and one that is not confined to Awendo town only.

Director's remarks

The director lands thanked the participants for attending the workshop. He emphasized on the

importance of planning and explained to the participants that once the plan will be completed and approved, the challenges that have in the past bedeviled Awendo town will be addressed. He urged the stakeholders to present their honest opinion so that the plan can be enriched further.

Adoption

The plan was unanimously adopted by the members present. Majority of the members remarked that the plan would be good for the town and ought to be implemented there were also avenues for comments that would enhance preparation of the final plan.

Closing remarks

Having achieved the objectives of the day, the workshop was called off at 0330 hours.

Appendices

1. List of photos
2. Attendance list
3. Workshop programme



A snap of the key stakeholders listening to the presentation by the Consultant and taking part in the same.



A section of the stakeholders following the presentation from the consultants



The consultant introducing the stakeholders to the planning area.



A section of the stakeholders following the presentation of the draft ISUDP for Awendo Town.



Stakeholders viewing the Draft Awendo Structure plan, detailed land use plan, and action area plan for Mariwa, Kokuro and Rapogi.

NAME	GENDER	ORGANIZATION	SIGN
PETER RABU	M ✓	WATER ✓	
SAMUEL O. DBUU	M ✓	FEDERATION ✓	
George O. Othieno	M ✓	Boda Boda	
Alfred O. Othiko	M ✓	Matatu	
PETER O. OCHOLA	M ✓	Boda Boda	
KENARD OKELO	M ✓	Boda Boda	
TITO JARED	M ✓	Disability	
John Othman Othman	M ✓	MACHAKOS	
Michael Agwaga	M ✓	Business	
KORDON OKECH	M ✓	Business	
Victor Othman Othman	M ✓	Youth	
Muhammad Ismael	M ✓	Muslims	
Rev. ISAIAH O. OGUTHI	M ✓	Church Rep.	
JOSEPH OROIS OROIS	M ✓	Y. COUNCIL	
JACOB W. WAKUTHU	M ✓	POLICE ✓	
ELIAS OPIYO	M ✓	POLICE ✓	
WANSALA WALTER	M ✓	EDUCATION ✓	
REV. DAN RANGILI	M ✓	PASTOR	
PAUL O. OGENDO	M ✓	INFERIOR (CHIEF)	
Jim Tuma	M ✓	WARD MANAGER	
JOHN OKOTH OKELO	M	SCA - AREA	
PAX O. LWAGA	M	CHIEF ✓	
DAVIS OMBABA	M	P.H.O ✓	
SIGANO JOSEPH	M	P. PLANNER	
JAEL A. OROIS	F ✓	LANDS	
WINNIE J. OMONDI	F ✓	YOUTH	
HELLEN A. OROIS	F ✓	LANDS	
MRS. DYANA LOYCE	F ✓	WOMEN	
CHRISTOPHER KARIUKU	M	planner	
PETER C. KALIMAN	M	DC's OFFICE	
HEEMA WICHE	F ✓	ACC	
KENNETH OKECH	M ✓	CONST. OFFICE	
RAJENDRA OKECH HASSAN	M ✓	LAND	
CAROLINE N. KIMENI	F	ACTUARY	
OWAGA KENNEDY OTENO	M	P. PLANNER	
MARION AUJOR OLAND	F	P. PLANNER	
PETER ODHAMBO	M ✓	Lands	
JAEL A. OUSI	F ✓	LANDS	
KHEIR SHEM	M ✓	E. SAKWA WARD OFFICE	
CELING AWINDA	F ✓	DAPC	

David Totari	M	NPS ✓	Amma S
STEPHEN ABOLO OUKU	M.	LADS ✓	Jim
PETER AKELLO	M X	RUEL LTD	Amma S
TOBIAS ODONTO	M. ✓	COURT COURT	Engt
William OCHIRING	m ✓		Engt
How School	m	C H ✓	Engt
Steve Ogutu	M ✓	MIGORI COUNTY	Engt
Linus ODERA	M	MIGORI COUNTY	Engt
Hon. Hershon Omi	M.	MCA ✓	Engt
Kennedy Omi	M ✓	W. Manager	Engt
Dennis Omi	M. ✓	Mig. County	Engt
DEWSON OLUCHIMBOYA	M.	MIGORI	Engt
Elisha Mutula Danyang	M ✓	MIGORI COUNTY	Engt
Angweny Othman Othman	M ✓	MIGORI County	Engt
JOSHUA ABOLO	M ✓	MIGORI County	Engt
ELLY ODHAMBO	M ✓	MIGORI County	Engt
NEADA ELIAKIM	M ✓	AWENDO SUB-CO	Engt
Victor Odingi Otieno	Youth Leader	Engt	
Kenneth Odingi	CONSI Rep	Engt	
NEEMA WECH	MINISTRY OF INTERIOR	Engt	
PETER C. KALIMAN	DCCS OFFICE	Engt	
George S. Otieno	Boda Boda Sector	Engt	
Bernard Okeno	Boda Boda	Engt	
PETER OMILO OCHIMBO	Boda Boda	Engt	
Tito Jared	SCD Disability	Engt	
Rev. Dan O. Kangili	Pastor PFA	Engt	
JACOB W. WALUKHA	POLICE	Engt	
ELIAS OPIYO	POLICE	Engt	
CELINE AUNDA	DAPC	Engt	
TOBIAS ODONTO	N/S WARD AUNDA	Engt	
William OCHIRING	Business Rep	Engt	
PETER AKELLO	RUEL LTD	Engt	
Michael Akwang	Business Com.	Engt	
DAVID TOTARI	POLICE	Engt	
Rev ISAIAH OGUTU - PFA CHURCH		Engt	
Muhammed Ali Isq	Maschins Lida	Engt	
ALFREDO. OPIKO	MAJATU	Engt	
JOSEPH OBOJE OCHIMBO	o/m x chairman	Engt	
Hon. Hershon Omi	MCA	Engt	
MARION A. CLANG	P. PLANNER	Engt	

AWENDO ISUDP

**INTERGRATED STRATEGIC
URBAN DEVELOPMENT PLAN
2018 - 2038**

