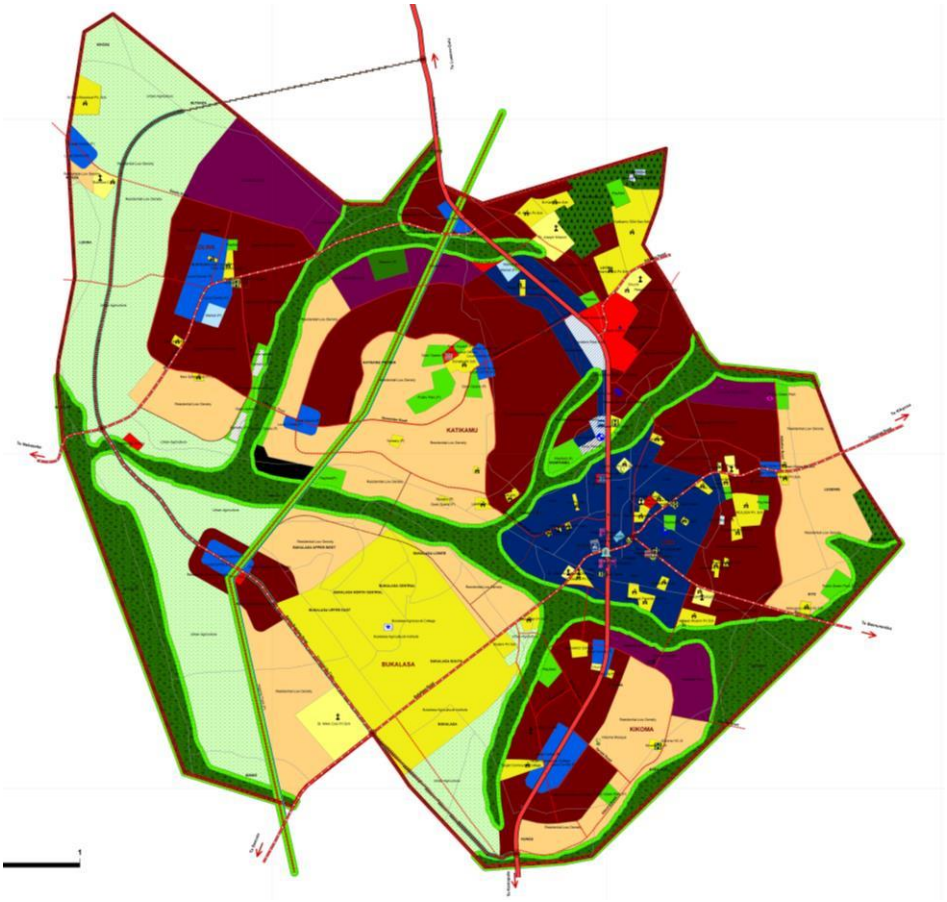
THE REPUBLIC OF UGANDA

**WOBULENZI TOWN COUNCIL**

# CONSULTANCY SERVICES FOR THE PREPARATION OF A PHYSICAL DEVELOPMENT PLAN (STRUCTURE AND DETAILED PLAN) FOR WOBLENZI TOWN COUNCIL




## FINAL PHYSICAL DEVELOPMENT PLAN REPORT

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ACRONYMS

| | |
|---|---|
| CBD | Central Business District |
| CBOs | Community Based Organizations |
| DWD | Directorate of Water Development |
| EIA | Environmental Impact Assessment |
| EMP | Environment Management Plan |
| GIS | Geographical Information Systems |
| GPS | Global Positioning System |
| MTN | Mobile Telecommunication Network |
| MoLG | Ministry of Local Government |
| MoLHUD | Ministry of Land Housing and Urban Development |
| NGOs | Non-Governmental Organizations |
| UTL | Uganda Telecom Limited |
| DWD | Directorate of Water Development |
| RGC | Rural Growth Centre |
| RTK | Real Time Kinetic |
| GPS | Global Positioning System |
| PC | Personal Computer |

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*1.1 Document Overview*

This Physical Plan Report has been prepared in response to the provision of consultancy services for the preparation of a physical Development Plan for Wobulenzi Town Council.

*1.2 Back ground to the Planning area*

Wobulenzi started as a small township in 1925 and during the 1960s and 70s the area saw the emergence of the Indian community who prospered development through the establishment of Agro-processing factories. The Town however attained a Town Council status in 1997 being curved from Katikamu Sub County with the coming into force of the Decentralization statute (1993). To date Wobulenzi remains an important township along Kampala Gulu Highway and it is the main business catchment centre in the greater Luweero District.

*1.3 Background to the activity*

Wobulenzi Town Council realized the need to prepare a new physical development Plan for the town after the expiry of the previous one. In an effort to perform the aforementioned, the Town Council therefore, mobilized and secured funds the activity and contracted Realtek Consults Ltd. to execute the assignment.

*1.4 Location*

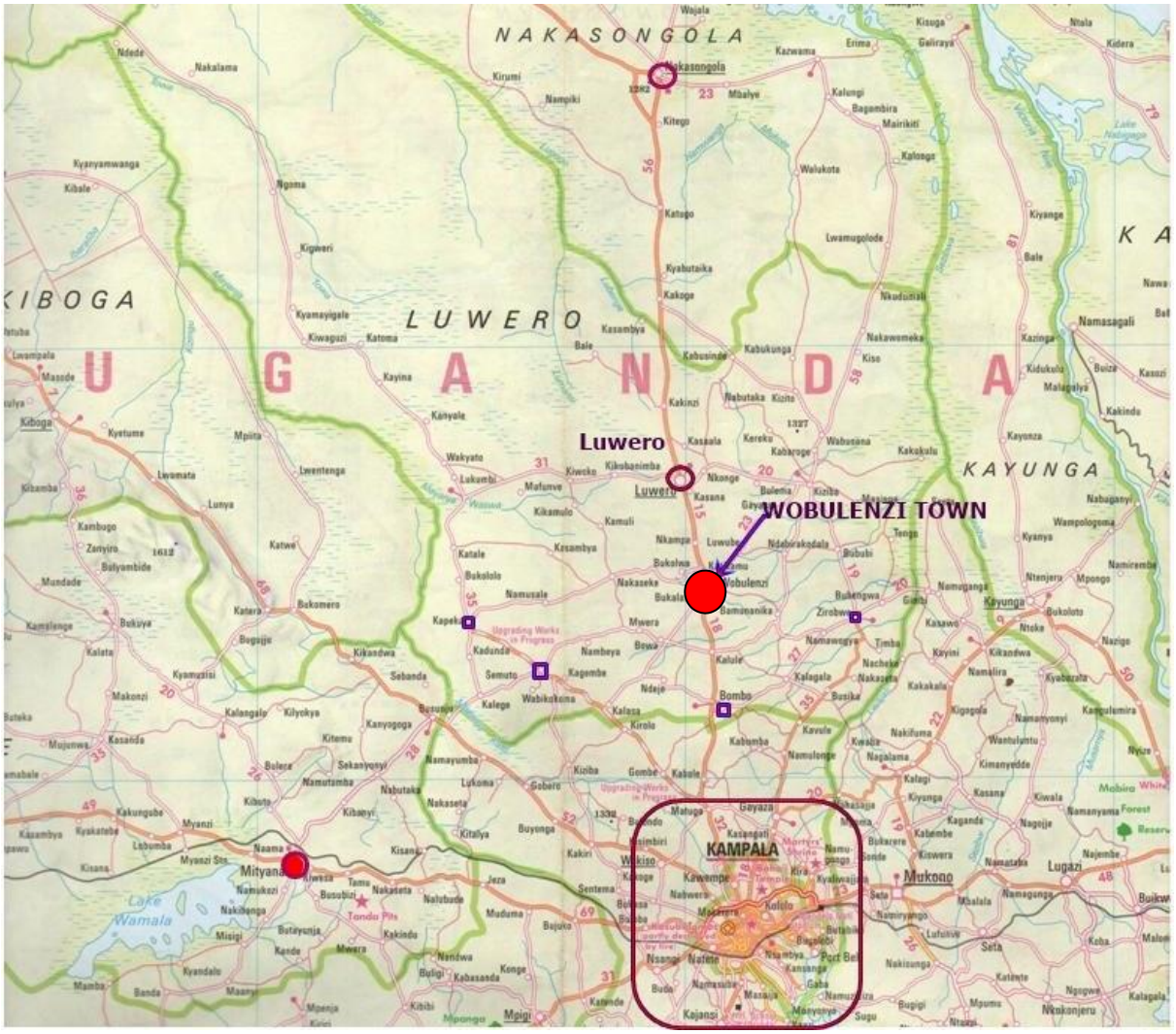


Figure 1: Regional context of Wobulenzi town in relation to Kampala capital city and other towns

Wobulenzi Town Council is located in Luweero District 48 km North of Kampala capital city the main Capital of Uganda along Kampala Gulu Highway, 13 km to Luwero town, 20 km to Kapeeka, 17km to Semuto and 17 km to Zilobwe as shown in the figure above.

*1.5 Objective of the assignment*

The major objective of this assignment is to guide the spatial land-use development of
Wobulenzi Town council through a physical development plan.

*1.6 Scope of Work*

*1.6.1 General Requirements*

The consultant shall undertake all necessary consultations to include the following;

1. Mobilize and consult stakeholders in the planning process
2. Develop and support appropriate participatory methodology to ensure communication, consultation and consensus building among stakeholders
3. Prepare a Physical development plan for the town. The plan will be a guide to investment area priorities, while providing a basis for coordinating decisions.
4. Prepare a detailed Local physical development plan for the town through a consultative process.

*1.6.2Detailed Outline of Activities*

The scope of activities to be performed by the consultant include among others the following;

a) Come up with appropriate methodology for the assignment
b) Survey and mapping of the site and project boundary, all permanent structure/buildings, roads, physical and natural physical features among others
c) Carry out socio economic analysis surveys and analysis
d) Conduct Environmental studies for the area
e) Prepare topographic maps, produce base maps, existing land-use maps and thematic drawings relating to the town
f) Propose alternative physical and local physical development plan and accompanying reports
*g) Proposal for solid waste material and waste water disposal*
*h) Proposals for water supply to the town and the routing*
i) Prepare guidelines for implementation of the physical development plan
j) Deposition of the plans for the required statutory period and
k) Presentation to the stakeholders for approval.

*1.7 METHODOLOGY*

The methodology to executing the assignment shall comprise of the following;

*1.7.1 Mobilisation and Preliminary Client Consultations*

After contract signing, Realtek Consult Ltd, mobilized the key personnel and made preliminary consultations with the client. A meeting was arranged for the Client to brief the consultant team with emphasis on project deliverables and timeliness.

*1.7.2 Field Reconnaissance Visits*

Reconnaissance surveys were done to establish the administrative boundaries of the planning area. The consultants together with key personnel in the Town Council conducted transect walks to establish the physical planning boundaries of the area.

*1.7.3 Literature Review*

Documents and literature including Wobulenzi Town Council Five Year Development Plan (2015-2016-2019-20), the Cadastre surveys of the planning area, Google Image of the planning area, the National Physical Planning Standards and Guidelines 2011and the Physical Planning Act 2010 and other laws governing physical planning in Uganda were reviewed by the consultant.

*1.7.4 Consultative Meetings*

Consultative meetings were held with both the Town Council technocrats and with the community stakeholders at all levels at agreed venues. The meetings were aimed at identifying key physical issues affecting the communities so as to furnish the planning team with the required information (wish list) needed for the planning of the area. Community participation formed a basis for community involvement, acceptance which will necessitate adherence to the prepared plans during the implementation stage.

Figure 2: Showing Consultations with key stakeholders

*1.7.5 Physical Surveys*

These comprised of both the topographic and the land-use surveys. The physical planners traversed the planning area and established the planning boundaries and the existing land-uses of the area.

*1.7.6 Topographic survey*

The land surveyor conducted the topographic surveys and updated the physical features of the planning area. This aided the preparation of the topographic map that was used in the preparation of the base Map.

*1.7.7 Preparation of Base Maps*

The base maps were prepared from the topographic maps comprising of the existing land use situation and various thematic maps.

*1.7.8 Generation of Structure Plan alternatives*

Structure plan alternatives were prepared and presented to the stakeholders for selection of the preferred alternative. Enhancements were done on the preferred alternative to come up with a draft Structure plan for deposit.

1.7.9 Detailed plan Preparation

After the preparation of the structure plan, the Consultant embarked on the preparation of the detailed plan. The area for the detailed plan was delineated and agreed upon by all the concerned parties. A detailed plan area was delineated based on the draft structure plan and subsequently a detailed plan was evolved.

1.7.10 Physical Plan Deposit

The plans were put on deposit at convenient places within the town Council for a mandatory period of 90 days (structure Plan) and six weeks (detailed plan). The aim is for the Public to view and make comments/suggestions for improvements in the final plan.

1.7.10 Plan Presentation for approval

Upon completion of the deposit period, the consultant incorporated the comments raised during the deposit period and made arrangements for presentation of the plan for approval to the Physical Planning Committee and the Wobulenzi Town Council Committee for approval and subsequent recommendation to the National Physical Planning Board. Upon adoption of the plan by the Council the plan will then be forwarded to the National Physical Planning Board for approval consideration.

1.7.11 Previous Planning Intervention in the planning area

The 2004-2014 Wobulenzi Structure Plan and detailed plan *(shown in figure 3 and 4 below)* was the main planning tool being used by the Town Council in implementing the land-use decisions. The plan was found obsolete as it lacked up-to-date information to guide the planning exercise. Never the less other key features like the roads the schools, some cadastre information and other public infrastructure could be referenced on the Plan. This plan was reviewed and incorporated in to the newly proposed physical development plan of the town council.

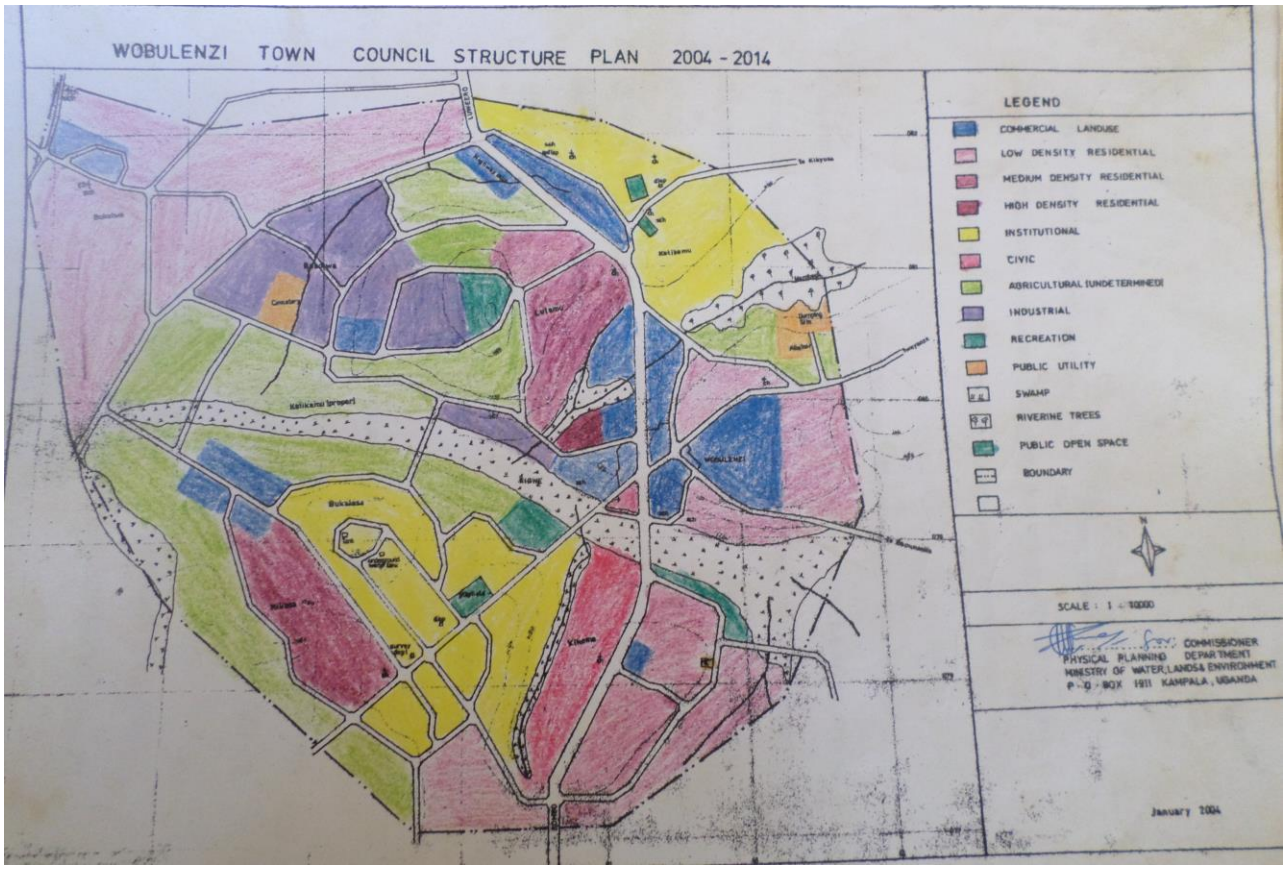


**Figure 3: 2004-2014 Wobulenzi Town Council Structure Plan**

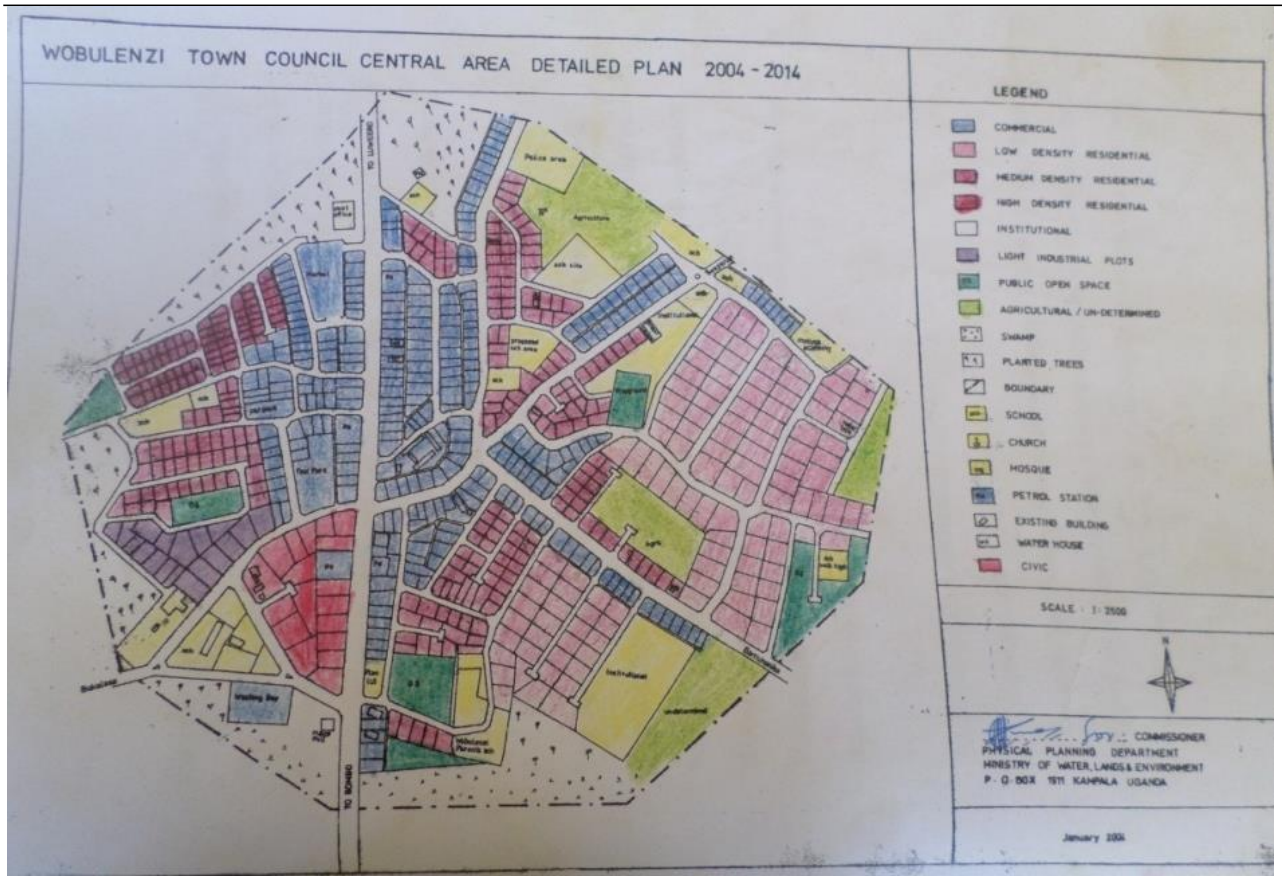


**Figure 4: 2004-2014 Wobulenzi Town Council Detailed Plan**

## 2.1 Legal Framework

The various laws that guide physical planning activities in Uganda were reviewed by the Consultant during the preparation of Wobulenzi Physical Development Plan (2016 – 2026). These are subsequently presented as follows

### 2.1.1 The Constitution of the Republic of Uganda 1995

This is the supreme law of the Republic of Uganda. It has several provisions that are relevant to Physical planning in the country. The constitution stipulates that, "the state shall take all the necessary steps to involve the people in the formulation and implementation of development plans and programs in relation to matters that affect them". This forms the basis for community participation in the planning process.
Article 39 provides that every Ugandan has a right to a clean and healthy environment. Article 245 stipulates that Parliament shall by law provide measures intended to protect and preserve the environment from abuse, pollution and degradation and to manage the environment for sustainable development. Therefore, physical planning of Wobulenzi Town Council is within the requirements of the Constitution as it aims at improving the living environment of the town.

Article 237 of the Constitution makes provision for land ownership. Clause 2 of the same article creates a trust over particular kinds of land. Article 237(2)(b) stipulates that the Government or a local government as determined by Parliament by law shall hold in trust for the people and protect natural features like lakes, rivers, wetlands, forest reserves, game reserves, national parks and any land to be reserved for ecological and tourism purposes for the common good of all citizens.
Article 237(7) of the constitution gives Parliament the mandate to make laws to enable urban authorities to enforce and implement planning and development.

### 2.1.2 The Physical Planning Act 2010

This is the major Act relating to physical Planning in Uganda. This act is a revision of the Town and Country Planning Act Cap 30 (1964). The law aims at consolidating the provisions for the orderly and progressive development of land, towns and other areas whether rural or urban.
Like the Town and Country Planning Act, the Physical Planning Act 2010, also encourages participatory planning through the representations made by the public during the deposit of both the structure and detailed Plans. Section 20 of the Physical planning Act provides that the Physical planning Board shall publish a notice in the gazette and any other manner as it may consider appropriate for the display of the completed draft physical development plans. This notice serves to invite the public to inspect the prepared plans and give their comments or representations against the draft plan in writing or through open hearing within a period of 90 days from the date of publication or by the date specified in the notice.
The Act also allows for the establishment of physical planning committees at all levels of local authority governance.

### 2.1.3 The Local Governments Act, 1997

This Act defines the structures, powers and functions of local governments. The Act influences planning in several ways. It makes the provisions for planning powers in the district and lower boards
Part IV of the local Government Act sections 31(3) 36(1,3) gives urban boards planning autonomy and further defines the planning authority in the district as the district board and how it shall carry out planning in relation to guide lines of The National Planning Authority which provides: -

31 (3) Urban boards shall have autonomy over their planning and financial management when carrying out the functions and services specified under part 3 of the second schedule.
36 (1). The district board shall be the planning authority of a district.
36(3). The district board shall prepare comprehensive and integrated development plans incorporating plans for lower local governments for submission to the national planning authority, and lower local governments shall prepare plans incorporating plans of lower boards in their respective areas of jurisdiction.
Part 3 of the Local Governments Act provides for the Functions and services, for which urban boards are responsible to include but not limited to,
(1) Establish, acquire, erect, maintain, promote, assist or control with participation of the citizens-
Lighting of streets and public places.
Clinics, dispensaries, health and inoculation centers
c) Sanitary services for the removal and disposal of night soil, rubbish and carcasses of dead animals and all kinds of refuse.
(2) Establish, maintain or control public parks, gardens and recreation grounds on any land vested in connection with or for purposes of that public park, garden, or recreation ground to: - Reserve any portion of the Public Park, garden, or recreation ground for any specific purposes, exclude the public from those portions and provide for the renting and hiring to the public, clubs or other organizations.

### 2.1.4 The Uganda Land Act Cap 227 1998

This Act provides for the management and tenure of land. It spells out the land tenure systems and all other procedures relating to land management in country.
According to section 42, the government or local government may acquire land in accordance with articles 26 and 237 (2) of the constitution. This section is especially relevant to compulsory acquisition of land as spelt out in the 1995 constitution of the Republic of Uganda.
Section 43 provides for a person who owns or occupies land to manage and utilize the land in accordance with the Forest Act, the mining Act, the National Environment Act, the Water act, the Uganda wildlife Act and any other law.
As regards section 44, the government or local government shall hold in trust for the people and protect natural lakes, rivers, ground water, natural ponds, natural streams, forest reserves, national park sand any other land reserved for ecological and touristic purposes for the common good of the citizens of Uganda. Physical planning is one of the preliminary steps through which this mandate can be exercised.
Section 45 reinstates the Town and Country Planning Act 1964 as the major law relating to use of land. The section states that, "any use of land shall conform to the provisions of the Town and Country Planning Act 1964 and any other law relating to the use of land."
Section 70 (2) of the land Act states that nothing in shall prevent the reasonable use by an occupier of land of any waters referred in subsection (1) for domestic, small-scale agricultural, or pastoral purposes. This section is relevant since physical planning involves planning for the sustainable use and conservation of such waters.
According to the land Act section 73 (1), where it is necessary to execute public works on any land, an authorized undertaker shall enter into mutual agreement with the occupier or owner of the land in accordance with this Act; and where no agreement is reached, the minister may compulsorily acquire the land in accordance with section 42.sections 73(2) to 73(4) provide for the rights of the authorized undertakers and the issues relating to compensation.

### 2.1.5 The Public Health Act Cap.269

The objective of the Act is to consolidate the law regarding conservation and preservation of public health. In particular, it deals with building regulations, sanitation and the control of nuisances.

The Act empowers the local authorities to ensure that the general health standards stipulated by the Act are adhered to through specific regulations.
The Act empowers the minister of health to prohibit erection of premises, which do not meet the minimum standards stipulated in the Act and other regulations. The Act is of relevance to Planning because it spells out minimum standards and ensures proper public health through the various sections.

2.1.6 The Forest Act 1999

This Act provides for the protection, management and proper utilization of forest resources. Section 3 of the Act empowers the minister by statutory order to declare any area to be a central forest reserve or a local forest reserve or to have an adequate forest estate after instituting such inquiries, as he or she may deem fit. Section 9(2) empowers the local authority with the approval of the minister to make rules for protection, management and utilization of any village forest reserve within its area of jurisdiction.

2.1.7 National Environment Statute, Cap 153 1998

The National Environment Act provides tools for environmental management that hitherto had not been deployed, including EIAs. The Act imposes a mandatory duty on a project developer to have an Environmental Impact Assessment (EIA) conducted before a project is commenced. The Third Schedule to the Act made under section 18 of the Act specifies the types of projects to be subjected to EIAs. An EIA should be conducted for planned activities that may, are likely to, or will have significant impacts on the environment. The EIA required should be appropriate to the scale and possible effects of the project, and therefore the National Environment Act and the Environment Impact Assessment Regulations, 1998 recognises three levels of EIA:

- an environment impact review shall be required for small scale activities that may have significant impact;
- Environmental impact evaluation for activities that are likely to have significant impacts; and
- Environmental impact study for activities that will have significant impacts.

Determination of the level of the EIA required is done through the screening stage, and the EIA Guidelines provide a checklist where environmental factors potentially affected are listed.

Section 35 of the Environment Act prohibits any activity not being a traditional activity, in a wetland without the prior written approval of the Authority given in consultation with the lead agency responsible. *The National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, 2000* stipulates in regulation 34 that a developer who desires to conduct a project which may have adverse impacts on a wetland, river bank or lake shore shall carry out an environmental impact assessment in accordance with the provisions of the Environment Act. Such developer is required in terms of regulation 34(2) to carry out annual audits and monitoring on such activities. A permit must be obtained before any of the activities listed in the Second Schedule to the Regulations can be undertaken (regulation 12). Cultivation, drainage, commercial exploitation of wetland resources and sewerage filtration are some of the activities listed in the second schedule. River banks and lake shores are held in trust by Government for the common good of the citizens of Uganda (regulation 18). Government is prohibited from leasing or otherwise alienating any river bank or lake shore. According to regulation 19, the provisions of these regulations seek to give effect to Article 237(2) of the Constitution.

2.1.8 Water Act, Cap 152

The Water Act, Cap 152 provides for the use, protection and management of water resources and supply. The objectives of the Act are to promote the rational management and use of waters of Uganda through the introduction and application of standards and techniques, the coordination of all public and private activities that may influence water

quality and quantity and to allow for the orderly development and use of water resources for such activities as generation of hydro-electric or geothermal energy. Promotion of the provision of a clean, safe and sufficient supply of water for domestic purposes to all persons is a major objective of the Act (section 4).

The Act gives general rights to use water that naturally exists on the land to the occupier of that land for domestic use, fire fighting or irrigating a subsistence garden. Water that exists under the land occupied may be used by the occupier with the approval of the water authority responsible for the area. The general rights to use water do not as such authorize a person to construct any works. According to section 6 of the Act, no person acquires any rights to use water or to construct or operate any works unless authorized under Part II of this Act. Water is defined to include surface waters whether contained in a river, stream, lakes, swamp or elsewhere on the surface of land, groundwater, and such water as the Minister may from time to time declare to be water (Section 7). Thus, unless a person is an occupier of land on which surface water exists, water may not be used for any purpose without the approval of an authority. The general rights to use surface water are limited to domestic use and fire fighting once again indicating the importance attached to water supply for domestic purposes.

Section 18 makes it clear that a person is not allowed to construct or operate any works unless he has a permit granted for that purpose by the Director, DWD. Construction is defined to include alteration, improvement, maintenance and repair. The Act ensures the control of water pollution and promotes the safe storage, treatment, discharge and disposal of waste which may pollute waters or otherwise harm the environment and human health. This Act is relevant to this study by way of safeguarding potential significant impact on water resources in the proposed project area, highlighting the priority accorded to domestic use which is widely defined, and other regulatory requirements. The detailed provisions regarding acquisition of permits are contained in The Water Resources Regulations, 1998.

As regards industrial and other activities that would result in the generation of effluent and waste water, the provisions of The Water (Waste Discharge) Regulations, 1998 that makes provision for waste water discharge permits and related matters should be considered, in addition to the effluent discharge standards prescribed under the National Environment Act, Cap 153. In the event that the developer seeks to construct a private sewer or establish a sewerage works, the provisions of The Sewerage Regulations, 1999 should be taken into account.

### 2.1.9 The 1942 Markets Act

The Act provides for the establishment and management of markets.
It states that no person or authority other than

1) the administration of a district;
2) a municipal council;
3) a town council, shall establish or maintain a market .

The administration of a district may establish and maintain markets within the area of its jurisdiction and shall control and manage such markets or shall vest their control and management in such person or authority as it may deem fit; except that in the urban areas mentioned in the Schedule to this Act, markets shall be established, maintained, controlled and managed by the municipal council or town council, as the case may be, established in the area.

2. Any authority specified in subsection (1) may in its discretion disestablish any market established by it.

3. The person or body managing or controlling a market shall be known as the market authority.

4. The Minister may, if he or she considers it expedient so to do, by statutory instrument vary the Schedule to this Act by adding or removing the name of any urban area.

2.1.10 Waste Management Regulations 1999

Regulation 12 (1) prohibits industries from discharging or disposing wastes into the environment unless the wastes are treated and in a manner approved by the lead agency in consultation with the authority.

Regulation 14 (3) gives the location specifications of the waste treatment plant or disposal site shall and that it shall among others ensure the following;

- The waste treatment plant or disposal site should be located within a radius of at least 1km away from a residential, commercial and water sources.
- The waste treatment plant or disposal site must be enclosed and secure from scavengers.
- Disposal site has hazard and safety signs at appropriate places indicating the Nature of operations it carries out.

The above conditions ought to be considered both during the locating and setting out the site for waste disposal.

2.1.11 Investment Code Act, Cap 92

The Investment Code Act sets out the procedure for acquisition of an investment license and the kind of information to be included therein in Part III of the Act. It makes provision for the Investment Authority as a corporate body and distinguishes between foreign and non-foreign investors. The Act in section 18 (2) (d) requires the investor to take necessary steps to ensure that the operations of the business enterprise do not cause injury to the ecology or environment.

2.1.12. The National Policy for the Conservation and Management of Wetland Resources 1995

The National Policy for the Conservation and Management of Wetland Resources 1995 was put in place to curtail the rampant loss of wetland resources and ensure that benefits from wetlands are sustainable and equitably distributed to all the people of Uganda.

Among other things and in line with the National Environment Management Policy 1995, the wetland policy calls for the application of environmental impact assessment procedures on all activities to be carried out in a wetland to ensure that wetland development is well planned and managed. This policy is applicable to the situation where wetlands exist.

*2.2 Institutional Frame Work*

2.2.1 The Ministry of Local Government

The Ministry of Local Government supervises, regulates and advises the Urban Boards on matters of Finance, Planning and Control of development Projects. This is the overall body/agency that regulates and coordinates the activities of local authorities.

2.2.2 National Planning Authority (NPA)

The Authority is mandated to coordinate and harmonize development planning in the country (Part II of the NPA Act 2002). The body prepares National Development Plans that are supposed to be followed when implementing projects.

2.2.3 The National Physical Planning Board

The Physical Planning act 2010 provides for the establishment of National Physical Planning (NPPB) Board. The board is responsible for overseeing physical planning activities in the country and recommend to the Minister for approval of structure plans.

2.2.4 Ministry of Lands, Housing and Urban Development

The Ministry is responsible for physical planning activities in Uganda. It is the technical arm of physical planning in the country and the all local authorities work in consultation with the ministry on issues related to physical planning. The Ministry of lands Housing and Urban development Provides essential services for Local Governments such as mappings, cadastres and Development Plans

3.2.5 Ministry of Water and Environment (MWE)

Ministry of Water, Lands and Environment is the parent ministry as far as environmental issues are concerned. The Ministry has a lot of interests in this project since land use change is likely to lead to environmental impacts both positive and negative ones. The Ministry is responsible for overseeing the development and management of the water resources and enforces environment protection measures.

2.2.6 National Environment Management Authority (NEMA)

Under the National Environment Statute, 1995 (GoU, 1995) the National Environment Management Authority (NEMA) is the principal agency in Uganda responsible for the management of the environment. The institution coordinates monitors and supervises all activities in the field of the environment (GoU, 1995). NEMA falls under the Ministry of Water, Lands and Environment, but has a cross-sectoral mandate to review and approve Environmental Impact Studies submitted to it. NEMA has issued guidelines on EIAs (NEMA 1997), and the Environmental Impact Assessment Regulations (GoU, 1998) was approved by the Act of Parliament. The actual implementation of the EIA process remains a function of the relevant line ministries and departments, the private sector, NGOs and the general public. NEMA is therefore the institution responsible for overseeing and conducting all aspects of the environment and in the country.

2.2.7 The Uganda Wildlife Authority

This is a body corporate responsible for the management of wildlife in Uganda. Among others UWA is responsible for identifying and recommending areas for declaration as wildlife conservation areas and the revocation of such declaration. UWA is therefore the lead agency when it comes to wildlife management issues. These guidelines make EIA compulsory for any investor intending to implement any development policy, program or project in protected area.

2.2.8 Directorate of Water Development

The Water Statute, 1995 (GoU- 1995b) created the Directorate of Water Development which provides for the use, protection and management of water resources and supply in Uganda.
The main function of the water regulatory body is to promote the rational management and use of the waters of Uganda through the introduction and application of standards and techniques, the coordination of all public and private activities that may influence water quality and quantity and to allow for the orderly development and use of water resources including such activities as irrigation and water for industrial use.

2.2.9 Wobulenzi Town Council

According to the local Government Act 1997 Urban Councils are responsible for provision of urban services in their area of jurisidiction. The Organisation of the Town Council is such that at the top of the administration is the Town Clerk and the political head is the mayor (Chair person LC III). The functions of the Town Council among others include; Development control, management of public markets, Taxi Park collection of local revenue, administering public health, provision of Educational services and opening up and maintenance of roads etc.

2.2.10. The Uganda Land Commission

This is the institution responsible for the sustainable management of land in Uganda. The functions of the commission include among others to hold and manage land in Uganda, which is vested in or acquired by the Government in accordance with the Constitution.

2.2.12. The District Land Board

This is the institution is responsible for land issues at the local government level. These allocate and settle land disputes with in their areas of jurisdiction. According to the Land Act CAP 227 District Land Boards are composed of 5 persons and one third of these persons ought to be women. The board is mandated with the following roles;

- To hold and allocate land in the district
- To facilitate the registration and transfer of interests in land.
- To cause surveys, plans, maps, drawings and estimates to be made by its officers or agents.
- To compile maintain and review annually a list of rates of compensation
- To convert leaseholds to other types of land tenure holdings within the Law.

Under this chapter the current state of the environment of WTC and surrounding areas were studied. This chapter provides information on the findings including physical, biological and the socio-economic/cultural environment of the area. Evaluation of the environmental impacts of the Plan activities was carried out on the basis of this chapter.

*3.1 The Physical Environment*

3.1.1 Temperature

Wobulenzi Town Council experiences both a wet and dry temperature with the maximum dry mean temperature of 29.5$^{o}$

3.7.9.2 Rainfall

Normally Wobulenzi Town Council experiences two rainfall seasons a year twice thus in the month of April – May and October to November. The dry months are January – February and July to August.However, of recent unpredicted variations have occurred, hence altering traditional patterns. The Annual rainfall is above 1300 mm peak.

3.2.2 Topography

The Council is endowed with flat-bottomed valleys and relatively hilly areas; hilly areas include Katikamu, Kisaawe and Bukalasa.

3.2.3 Geology and seismicity

Figure 5 below shows that the site lies within an earthquake zone of very low intensity and frequency ("Seismic code of practice for Structural designs", Uganda National Bureau of Standards, First Edition: June 2003).

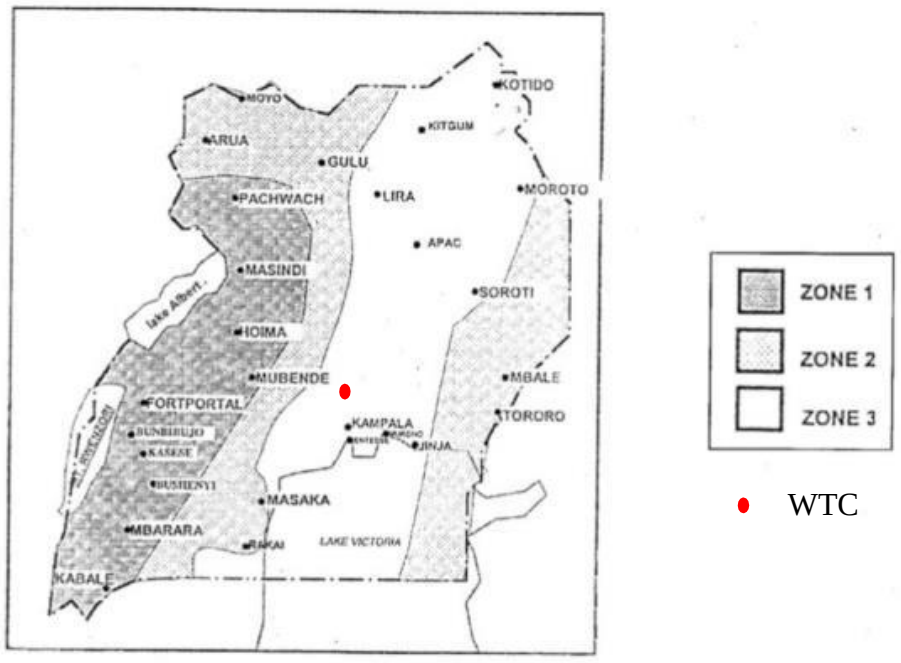


Figure 5: Seismic Zoning of Uganda

Uganda has experienced a series of earthquakes of varying magnitude during the past century; the major ones are given in Table 3.1 below.

Table 1 : A Record of some of the Major Earthquake Occurrences in Uganda (1945 to Date)

| DATE | EPICENTRE | MAGNITUDE (*ON THE RICHTER SCALE*) | REMARKS |
|---|---|---|---|
| 3rd/07/2013 | Hoima, Hoima District | 5.7 (Moderate) | *9 km depth* |
| 2nd/07/2013 | Hoima, Hoima District | 5.2 (Moderate) | *9 km depth* |
| 15th/03/2011 | Hoima, Hoima District | 5.1 (Moderate) | *10 km depth* |
| 27th/12/2010 | Jinja, Jinja District | 4.5 (Moderate) | *10 km depth* |
| 15th/06/2007 | Hoima, Hoima District | 5.9 (Moderate) | *24 km depth* |
| 27th/04/2006 | Hima, Kasese District | 5.2 (Moderate) | *10 km depth* |
| 5th/08/2003 | Bugiri, Rukungiri District | 5.2 (Moderate) | *10 km depth* |
| 29th/06/2001 | Kasese, Kasese District | 5.3 (Moderate) | *10 km depth* |
| 24th/03/1996 | Fort Portal, Kabarole District | 5.4 (Moderate) | *10 km depth* |
| 31st/08/1994 | Hoima, Hoima District | 5.0 (Moderate) | *10 km depth* |
| 5th/02/1994 | Kagoma Village of Kisomoro Sub-county in Bundibugyo, Bundibugyo District | 6.2 (Strong) | *14 km depth; 8 deaths, 2693 building damaged or destroyed; damage was estimated at $60 millions.* |
| 9th/10/1991 | Hoima, Hoima District | 5.7 (Moderate) | *33 km depth* |
| 11th/08/1990 | Njeru, Bwiikwe District | 4.4 (Moderate) | *33 km depth* |
| 15th/01/1983 | Hima, Kasese District | 5.2 (Moderate) | *10 km depth* |
| 14th/12/1979 | Hoima, Hoima District | 5.0 (Moderate) | *33 km depth* |
| 29th/12/1977 | Kasese, Kasese District | 5.4 (Moderate) | *33 km depth* |
| 28th/12/1977 | Paidha, Nebbi District | 5.2 (Moderate) | *33 km depth* |
| 25th/04/1974 | Bundibugyo, Bundibugyo District | 5.0 (Moderate) | *33 km depth* |
| 20th/03/1966 | Toro | 6.8 (Strong) | *36 km depth; 157 deaths (104 in Uganda, 1 in Tanzania & 52 in DRC), 1323 injuries and 6752 huts and houses damaged or destroyed; the damage was estimated at £1 million.* |
| 18th/05/1945 | Masaka | 6.0 (Strong) | *5 deaths, 8 injuries, and some houses destroyed.* |

*Source: Uganda Seismic Safety Association and the internet*

3.2.4 Soils

Wobulenzi Town Council generally possesses good quality soils with red grave soil dominating. The soil in the wet lands of Kiggwe and Lumansi are of clay type.

3.2.5 Hydrology:

The major source of safe water in the Town Council is the tap water being supplied by National Water and Sewerage Corporation which has coverage of 80%. The major swamps in the town which drain the waters are Kiggwe and Lumansi wetlands.

### *3.3 Ecological Resources*

Most of the areas within the CBD were cleared of their original vegetation cover during preparations to construct the buildings thereof. Vegetation cover found in the CBD is dominated by exotic planted species. Similarly, most of the country side was cleared of its original vegetation cover, during preparation of grounds for subsistence agriculture. Ecologically sensitive environments within the Council can only be found in some of the wetland areas in the Council.

3.4 Socio-Economic Environment

3.4.1 Human Population

According to the 2014 population and housing Census survey, Wobulenzi has a Population of 27,027 persons comprising of 14,750 females and 12,277 males. The total number of household is 6,992 and the average household size is 3.8 (see table below).

*Table 2: Population of Wobulenzi Town Council*

| WOBULENZI T.C. | HOUSEHOLDS | | POPULATION | | |
|---|---|---|---|---|---|
| | Number | Average Size | Males | Females | Total |
| | 6,992 | 3.8 | 12,277 | 14,750 | 27,027 |

3.4.1.1 Population Projection

Based on the 2014 results a ten year population projection of the Town Council was developed using the exponential growth formula below;

$PN=PO\ (1+r\ \%)^{n}$

Where;

r = annual rate of growth (3.0%)
Pn = Projected population
Po = population in the base year
n = number of intermediary years.

Table 3: Projected Population to 2026

| **Wobulenzi T/C** | **Current Population 2016** | | **Total** 2016 | **Projected Population 2026** | | **Total 2026** |
|---|---|---|---|---|---|---|
| | Male | Female | | Male | Female | |
| | 12,277 | 14,750 | 27,027 | 17826 | 21417 | **39243** |

*3.4.2 Administrative Units of the planning area*

Wobulenzi Town Council (WTC) is divided into 6(six),administrative units (Wards) namely: Wobulenzi East, Wobulenzi West, Bukalasa Parish, Katikamu Parish, Bukolwa parish and Wobulenzi Central Parish. Further still, the Town Council is sub-divided into 27 LCI Villages (see Table 1.1 below). The Headquarters of the Town are located in Katikamu Proper of Bukolwa Parish.

Table 4: The Wards and Cells of Wobulenzi Town Council

| No. | Name of wards | Cells per ward |
|---|---|---|
| 1 | Katikamu | - Luyima<br>- Galla<br>- SDA<br>- Lutaamu<br>- Kasenene |
| 2 | Bukolwa | - Proper<br>- Lusia<br>- Gwaffu<br>- Central |
| 3 | Wobulenzi East | - Nakasero<br>- Kisaawe<br>- Kigulu<br>- Kitante |
| 4 | Wobulenzi West | - Nakadingidi<br>- Modern<br>- Sikanusu<br>- Wampamba |
| 5 | Wobulenzi Central | - Katale<br>- Luzzi<br>- Kikoma<br>- Kikasa |
| 6 | Bukalasa | - Bukalasa upper East<br>- Bukalasa upper west<br>- Bukalasa South central<br>- Bukalas Central<br>- Bukalasa North Central |

*3.4.3* Major Economic activities

The economy of Wobulenzi Town is largely dependent on informal activities mainly, trade and business within the core of town and subsistence farming at the periphery of the town. The survey conducted about the economic activities and the main sources of employment in the Township revealed that trade and business (43.4%) was the biggest source of employment to the town dwellers, followed by those employed in the subsistence farming r (37.6%), civil service, private schools banking and NGOs (15.5%), while others that included brick making metal fabrication and carpentry was 3.5% see figure 10 below.

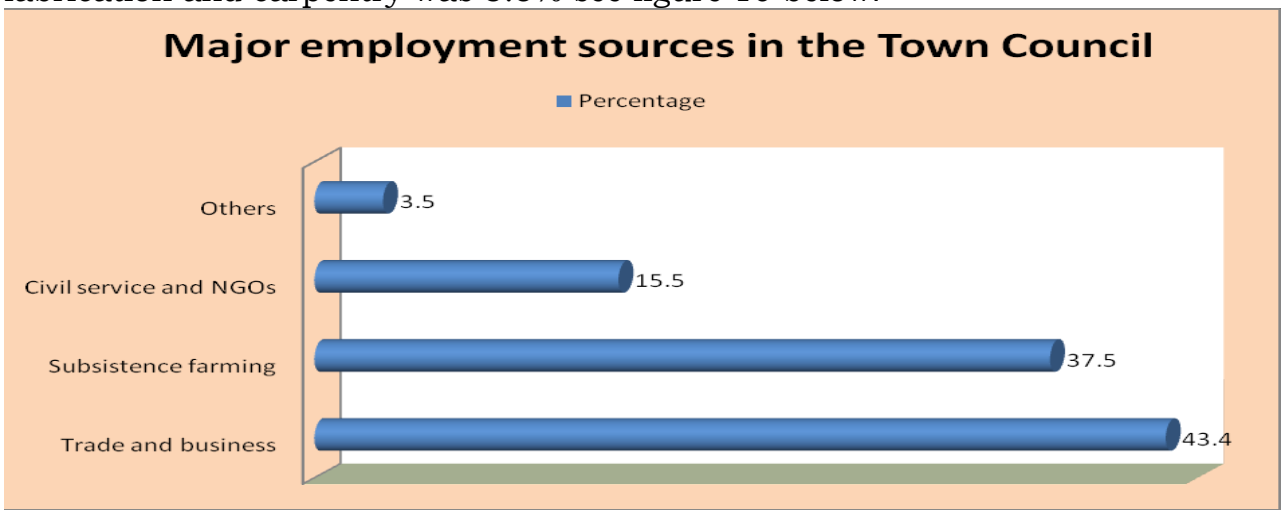


Figure 6: Showing Major employment sources in the Town.

3.3.4 Tribes and Languages

The socio- economic survey that was conducted revealed that; majority (62.8) of the residents in Wobulenzi Town Council were baganda followed by Basoga (9.1%),

Banyankole 4.7%, Nubians 4.3, Bakiga 3.6%, Itesots and Banyarwanda both constituted 2.0% Lugbara, 1.6% while the other tribes that included Samya, Jaluo, Japadola, Langi and Batoro comprised of 3.6%. See figure 7 below;

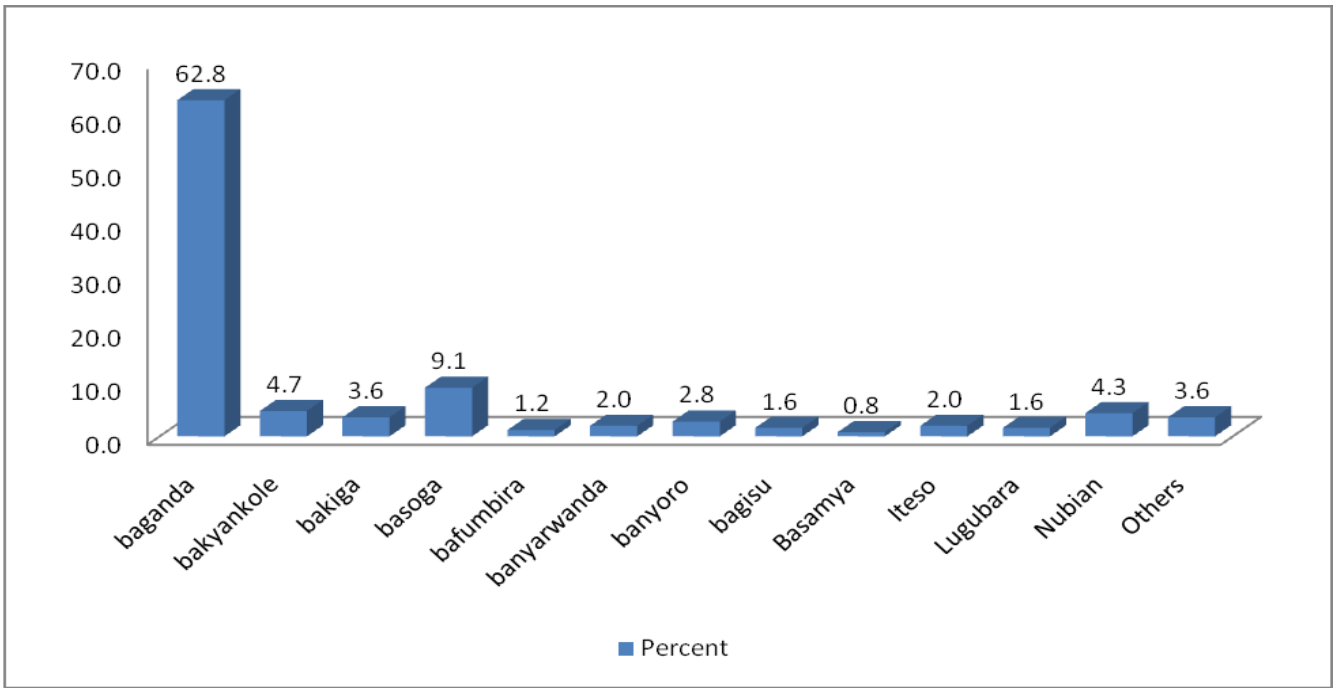


Figure 7: Showing the tribes in the Planning area

3.3.5 Level of Education

The level of education of the respondents was conducted and the results obtained revealed that; majority 39.1% of the respondents had attained secondary education, 31.2% had attained primary education, 20.2% had attained post secondary education, while 9.5% had not attained any level of education.

Table 5: Educational levels

| School attendance/Level of education | Frequency | Percentages |
|---|---|---|
| Primary | 79 | 31.2 |
| Secondary | 99 | 39.1 |
| Post-secondary / Technical level | 51 | 20.2 |
| None | 24 | 9.5 |
| Total | 253 | 100.0 |

*Source: Analyzed by the Consultant*

3.3.6 Religious sects

There are several religious sects in the Town Council, a survey conducted about the religious affiliations of the people of Wobulenzi revealed that majority of the town inhabitants were Catholics (36.0%) followed by the Anglicans with 28.5%, Born again Christians constituted 12.3% while the seventh day Adventists were 4.3% and the others that included the believers in the African Tradition and the pagans comprised of 1.2% *see table below*

Table 6: Showing the religious affiliations of the population of Wobulenzi Town

| Religion | Frequency | Percent |
|---|---|---|
| Catholic | 91 | 36.0 |

| | | |
|---|---|---|
| Protestant | 72 | 28.5 |
| Moslem | 46 | 18.2 |
| Born Again Christians | 31 | 12.3 |
| SDA | 9 | 3.6 |
| Others | 5 | 1.6 |
| Total | 253 | 100 |

3.3.7 Health and Diseases in the Town Council

A survey was undertaken to investigate the nature of diseases that have grossly affected the population of Wobulenzi Town in the last five years and the following was established; majority (66.0%) of the survey population said that Malaria had grossly affected them, 9.9% said typhoid had affected them, 9.1% of the responds said that it was flue and cold that had affected them most, 5.1% said that HIV/AIDS had grossly affected their households, 4.3% said that it was Tuberculosis that had affected them most, while 3.2% said it was High blood pressure and 2.4% said they had not suffered from any of the diseases (see figure 13 below)

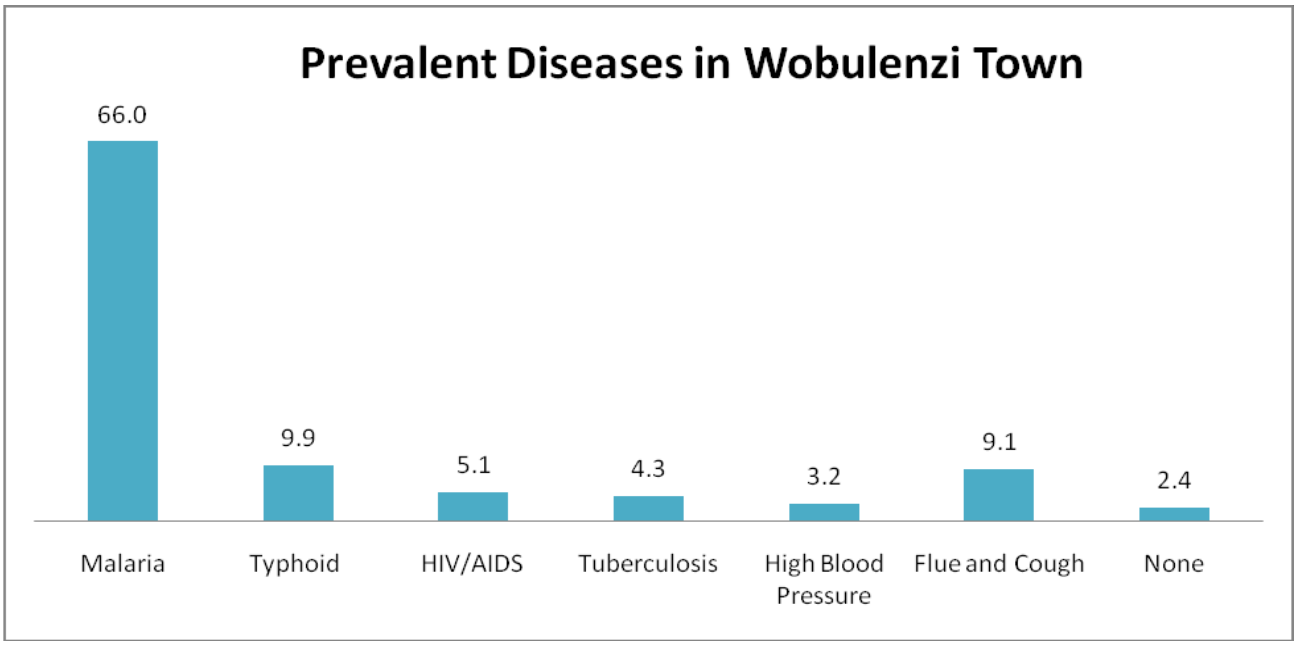


Figure 8: Showing the Prevalent diseases Wobulenzi town

*3.3.7.1 Level of use of the Health care facilities*

The study investigated into the health facilities that are mainly used by the Town Council residents and the following was established; majority of the respondents (51.0%) accessed their health services through private clinics, 48.2used the Government health units, for health services while 0.8% used other services such as the local herbalists for health services provision see table below.

**Table 7: Showing access to Health care facilities in the Town**

| Health Facility | Frequency | Percent |
|---|---|---|
| Government health unit | 122 | 48.2 |
| Private clinic | 129 | 51.0 |
| others | 2 | 0.8 |
| Total | 253 | 100.0 |

3.3.7.2 Problems associated with the health facilities in the Town Council

The study further probed into the problems associated with the health facilities in the Town Council and the majority of the respondents 36.6% said that insufficient drugs especially in the government owned health facilities was one of the main problems, 24.2% said that there was too much congestion at the facilities, 11.4% said that there were inadequate number of the medical personnel at the facilities, 13.4% said that the services were expensive especially those who used private clinics, 6.6% said that they travelled long distances to reach the facilities, 4.5% said that the health facilities especially the government facilities were poorly managed whereas 3.3 said that they had no problem with the health facilities and services in the Town Council. The above phenomenon is summarised in the figure below;

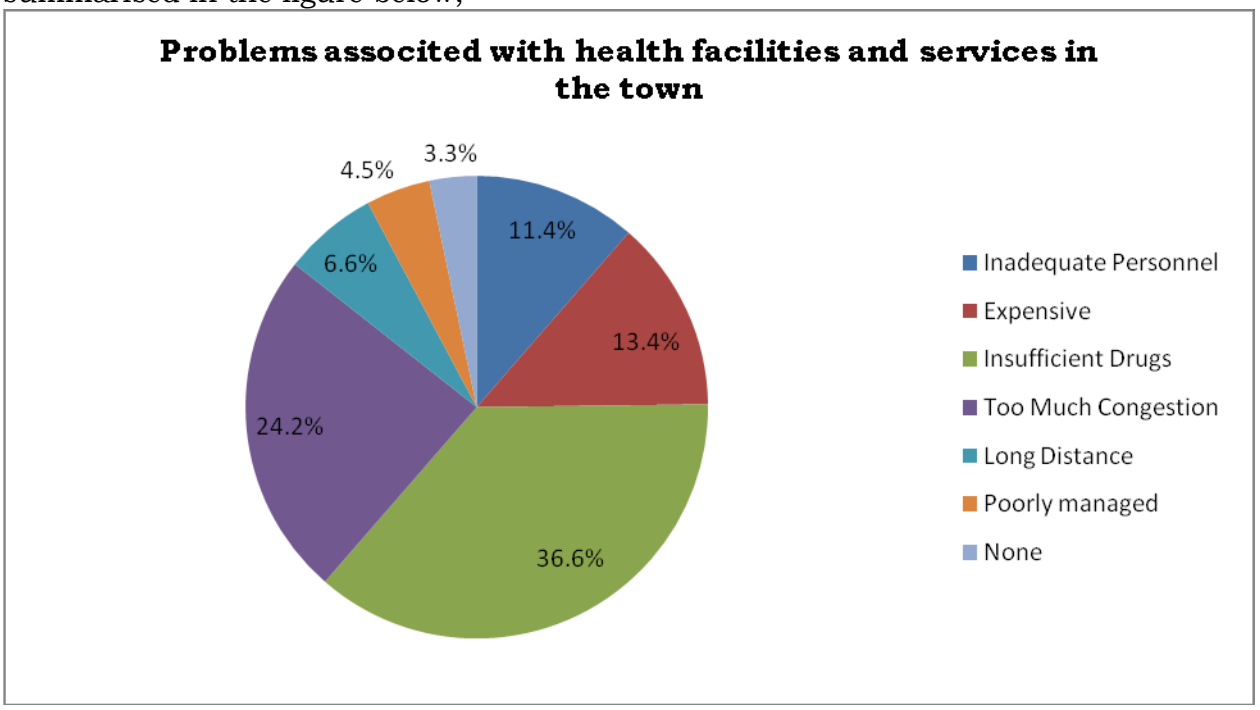


Figure 9: Showing problems associated with the health facilities in the Town Council

3.3.8 Educational facilities in the Town Council

There are a reasonable number of educational facilities ranging from primary, secondary and tertiary institutions with in the Town Council, the estimated number of the education facilities in the planning area are shown in the table below.

Table 8: showing educational facilities in the Planning area

| Type of the education facility | No of facility |
|---|---|
| Primary | 35 |
| Secondary | 10 |
| Tertiary | 05 |
| University | 35 |

- the education facilities most especially the primary and secondary schools within the current boundaries of the town Council are adequate
- Kindergartens are needed
- The vocational training institutes are needed to impart skills to the youthful population and contribute to their development.

3.3.8.2 Means of transport to the educational facilities

The survey findings about the means of transport used by the residents to access the education facilities indicated that majority (70.4%) walked to the schools, 16.8% used motor cycles, 6.3% used bicycles, 2.5% used private cars, while, 3.9% used public motor cars/taxi to and from the education facilities (see figure 15 below).

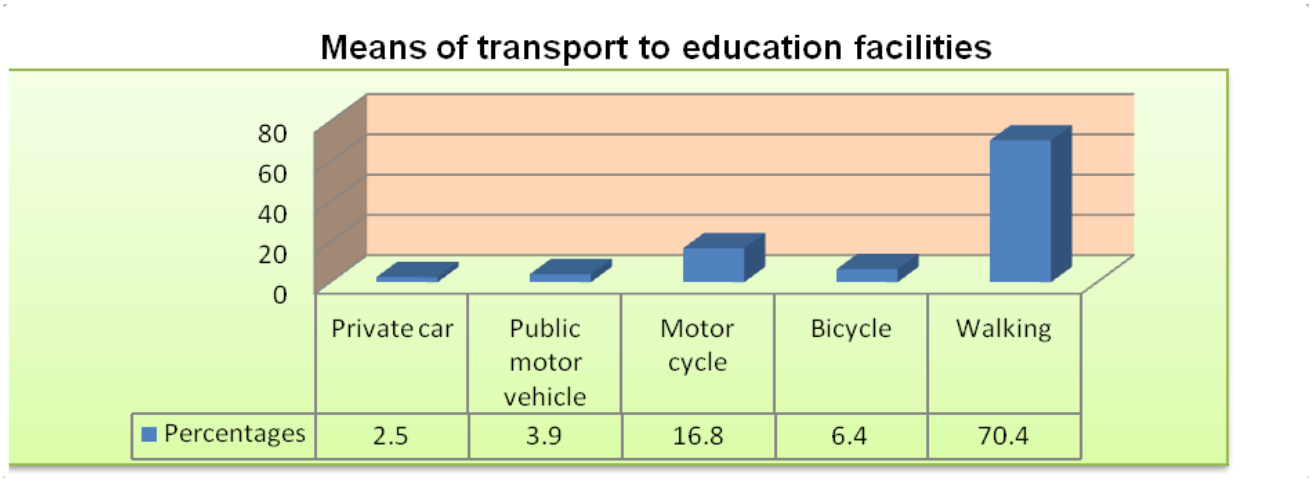


Figure 10: Showing the means of transport to education facilities

3.3.9 Sources of Energy in the Town Council

The study focused on the two sources thus;

1) Energy used for cooking and
2) the energy source for lighting

3.3.9.1 Source of Energy used for cooking

The surveys conducted on the energy source used for cooking established that; Majority (70.0%) of the residents used charcoal as their source of energy used for cooking, followed by firewood, 19%, electricity (6.9%), paraffin (1.9%), Bio gas 1.1% while those that used natural constituted 0.8% as shown in the figure below

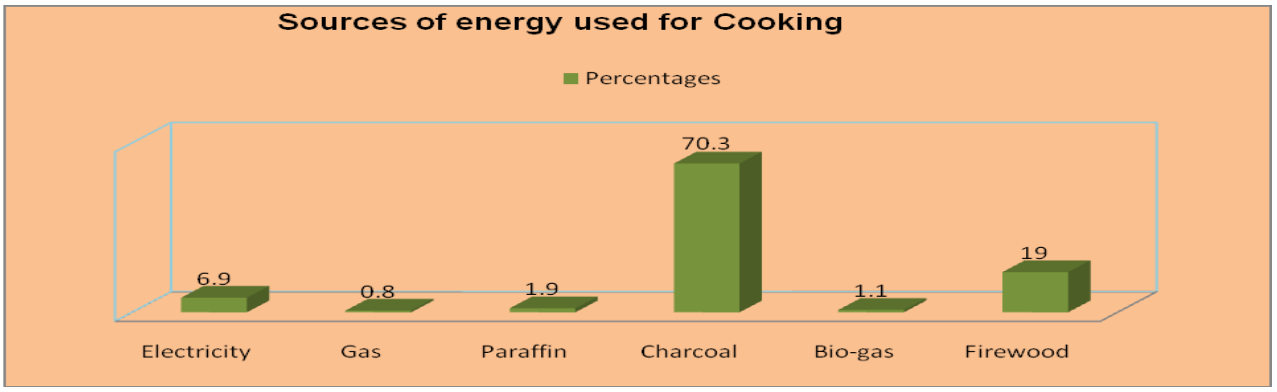


Figure 11: Showing the sources of energy for Cooking

3.3.9.2 Source of Energy used for lighting

As far as the sources of energy for lighting are concerned majority (54.7) used electricity, 41.2% used paraffin, 1.7% while 1.7 comprised of other lighting sources that include candles, torches and solar lamps.

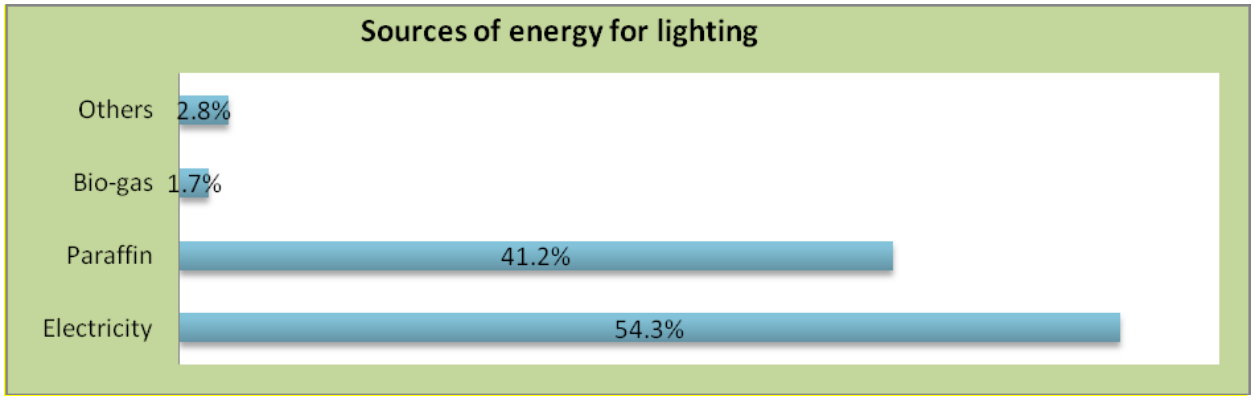


**Figure 12: Showing the sources of energy for lighting in the town**

3.3.10 Sanitation

The sanitation coverage in the Town Council has been fluctuating with changes in weather. It often improves during dry season and decreases during the rainy season. The average household latrine coverage and safe Water is yet to be established. Further a survey that was conducted about the key problems associated with the sanitary facilities revealed that in households where pit latrines exist, their state left a lot to be desired and a good number of latrines are a health hazard. The table below explains the above phenomenon.

Table 9: Problems associated with sanitary facilities in the Town Council

| Problem associated to the facility | Frequency | Percentages |
|---|---|---|
| Crowded | 53 | 20.9 |
| Full | 19 | 7.5 |
| Dirty | 81 | 32.0 |
| Dangerous structure | 25 | 9.9 |
| No privacy | 8 | 3.2 |
| None | 67 | 26.5 |
| Total | 253 | 100 |

3.3.11 Poverty and livelihood analysis

Poverty is viewed as lack of means to satisfy basic material and social needs, as well as a feeling of powerlessness. There is gender and location specific variations in the way the local people define poverty. Source of monetary livelihood and comfort of accommodation like good sanitation are paramount in urban areas while possession of productive assets like land and livestock are more critical in the rural areas. Women are concerned more with lack of land, water, family planning services resulting in large family size, lacking assistance, household food and poor welfare of children when they define poverty. Men relate poverty mostly to the inability to engage in meaningful employment and lack of productive assets. To the youth, the degree and extend of social connectedness and family welfare indicate the level of poverty. Therefore, the strategy to address poverty requires multi-faceted approaches. The indicators of poverty in Wobulenzi Town Council include the following; lack of food, clothing, shelter, money and inability to send children to school or access to health services. The major causes of poverty in the household include;

- Natural calamities like drought, flood, and hail storms.
- Drunkardness and drug abuse among the community especially the youth.
- Corruption tendencies in both government and community levels
- High unemployment levels among the youths
- Poor health among the population caused by high morbidity and mortality
- Extended families and polygamous life with large family sizes
- Poor conditions of social infrastructure and other amenities like electricity and water
- Ignorance and low levels of education with in Wobulenzi Town Council,
- High levels of unemployment:
- Negative attitudes towards government programmes, such as universal education, and end up having uneducated children
- Lack of control over property especially for the case of women, some of the traditional cultures have also contributed to poverty increase since women are not entitled to property ownership and you find in some place women are more educated than men, but since they are denied that chance they end up remaining behind.
- Laziness is also a problem to our community more especially among the youth who spend most of their time involved in gambling, activities mainly in the areas of Modern, Nakadingidi in Wobulenzi Trading Centre,

Table 10: Poverty dimensions as experienced by different groups in Wobulenzi Town council.

| Social Group | Poverty trend / Indicator | Cause | Effect | Possible Intervention |
|---|---|---|---|---|
| Women (mainly those without formal employment and with no education at all). | Lack of access to productive resource e.g Land, capital and real residential property. | Culture where men own and control land. Men control the produce. Secondly women have lagged behind due to education levels and exposure. | Those categories live in the viscous cycle of poverty thus they are the poorest of the poor | - Fair distribution of land and enforcing the land law<br>- Sensitization and advocacy for cultural change |
| PWDs, and Elderly | Poor Health and physical weakness deteriorates all | HIV/AIDs has left elderly and children and children headed | Increase dependency on the incomes of | Sensitization on HIV/AIDS preventive measures. Put in place orphanage centres to |

| Social Group | Poverty trend / Indicator | Cause | Effect | Possible Intervention |
|---|---|---|---|---|
| | the time and their incomes are not stable. | families in the area. Causing the depletion in the already low incomes and hence deep poverty | the elderly and child headed families. | assist the child headed families. Embracing Bonnabaggawale |
| Women | Gender women are excessively poor compared to men | Lack of access to productive resources land, culture, women don"t own resources women have smaller businesses compared to men | There is a likely hood of women remaining backward. | Gender awareness campaigns. Women empowerment microfinance. |
| OVCs, Women, Elderly | Dependency syndrome and apathy of the communities are hampering the would be productive communities as they always hope they will get free things | People neglect work ignorance hoping that the government will give them things | | Sensitization and mobilization of people to work and to engage in Government programmes. |

3.3.12 Gender and HIV Aids issues in the Town Council

3.3.12.1 Gender

There is lack of ownership and access to productive assets that is to say house, domestic animals, utensils such as hoes, televisions, land to mention but a few. In most cases men more control and power women over assets at home because. For instance if a man divorces a woman, she"s told to leave with nothing meaning that she does not own anything in a marital home. Thus a gender gap arises due to lack of ownership of productive assets.

There is also limited participation in decision making that is to say women are not allowed to participate in any matters concerning power relations for example if it comes say wanting to sell something that is a goat, cow. She has to first ask permission from the husband and his the one to decide whether the goat should be sold or not. Therefore she is limited to decide on what she wants to do.

There is also a heavy workload for woman for example the women are perform almost all the house work which includes digging, cooking, washing clothes, taking children to school and cleaning the house whereas the men are just resting

3.3.12.2 HIV/AIDS

The current status and trends of HIV/AIDs epidemics in urban areas in Uganda poses a significant challenge to the national AIDS response, epidemic trends over the last 5 years

show that HIV Prevalence has been persistently higher 20 to 50% in urban areas compared to rural areas. (UNAIDS African cities and HIV 2009)

Wobulenzi Town Council recognizes the steady increase in HIV/AIDs prevalence specifically among the most risk populations (orphans, children and women). HIV/AIDS poses a big challenge to the development of the Town Council. Every household has at least lost a member, relative, or a friend to HIV and AIDS. Despite the high level of awareness about the scourge, there is still a big gap between knowledge and desired the behavioral change.

Wobulenzi Town Council committed to supporting HIV/AIDs prevention interventions through the following ways;

1. The Town Council has created a budget line for HIV/ AIDs in the administrative work plans and budgets for Wobulenzi
2. Mobilised and allocated resources from different sources to support HIV/ AIDs programmes in Wobulezi Town Council communities.
3. Condoms are regularly distributed to individuals at Health Centres, market places, entertainment places, hotels, lodges and guest houses, taxi operators and Boda Boda cyclists to ensure safety and strengthening the response of the community to the epidemic.
4. Voluntary counseling and Testing. This is often done at Katikamu Health Centre where counseling and Testing facilities have been established.
5. The Town Council has in partnership with the civil based organizations has developed a mechanism for identifying of households that require support.
6. Designed interventions that can end affected households to improve their household income.
7. Lobbied the corporate enterprise and other private agencies to provide the required support to the affected household.
8. The council under AMICALL Programme has strengthened and boosted the activities of AIDS TASK FORCE after the official of the AMICALL Programme in Wobulenzi Town Council.

3.3.12.2.1 WAY FORWARD ON THE POSSIBLE ACTION OR RESPONSE.

1. Train Wobulenzi Town Council technical staff and Councilors on HIV/AIDs mainstreaming/ control.
2. Establish Wobulenzi Town Council HIV/AIDs data bank.
3. Reports on HIV Performance and appraise HIV Focal person on HIV/AIDs work.
4. Formulate and disseminate HIV/AIDs related policies (bye- laws) to all stake holders in Wobulenzi Town Council.
5. Collect, analyze and disseminate HIV/AIDs related data to stake holders for planning purposes and decision making.

*3.4.4 EXISTING LANDUSE*

The major landuse in the planning area entail: Commercial, residential, institutional, Industrial, civic and subsistence agriculture.

3.4.1 Commercial

The activities carried out in the Central Business District of Wobulenzi are typical of those found in major towns of Uganda; The CBD consists of administrative and civic uses, institutional, Taxi Park, Petrol staions, Banks, commercial and residential buildings and roads. Other significant land-uses include service lines, such as optic fibre, water mains and power lines

Figure 13:Showing the Central Business District of Wobulenzi Town Council

3.4.2 The residential Landuse

Residential areas form a major landuse in the Town Council. Most of the residential settlements have grown organically without any form of planning. The areas of Kigulu Zone, Katale, Luzzi Kikoma,Kikasa Nakadingidi Katikamu Proper are the most affected places with informal settlements. Some of the planned settlements are those within the immediate vicinity of the CBD. The residential settlements existed in form of temporary, semi permanent and permanent within the Town Council.

3.4.2.1 Nature of Housing

Wobulenzi town has a mixture of housing settlements comprising of permanent, semi permanent and temporary housing structures *(see figure below).* A survey that was conducted about the nature of housing in the Town Council identified that permanent housing structures were the majority in the town and comprised of 89.7%, followed by the semi permanent housing structures that comprised of 8.3% while the temporary housing structures were the least and comprised of 2.0% as shown in the table below.

Table 11: Showing the housing types in the town

| Nature of shelter | Frequency | Percentages |
|---|---|---|
| Permanent | 227 | 89.7 |
| Semi-permanent | 21 | 8.3 |
| Temporary | 5 | 2.0 |
| Total | 253 | 100.0 |

*Source: Analysed by the consultant*

3.4.2.2 Type of housing units

A survey that was carried out to establish the housing conditions in the town with a focus on the housing characteristics such as typology, nature, and materials used for construction revealed that tenements were the most dormant (49.8%) type of housing units, followed by Bungalows 49.4% and others to include detached units 0.8% as indicated in the table below;

Table 12: Type of residential units in the Town Council

| Type of unit | Frequency | Percent |
|---|---|---|
| Tenements (Muzigo) | 126 | 49.8 |
| Bungalow | 125 | 49.4 |
| Others | 2 | 0.8 |

| Type of unit | Frequency | Percent |
|---|---|---|
| Tenements (Muzigo) | 126 | 49.8 |
| Bungalow | 125 | 49.4 |
| Others | 2 | 0.8 |
| Total | 253 | 100.0 |

3.4.2.3 Roofing Materials

The roofing materials that were mainly used by the residents for their housing structures included; iron sheets, grass, papyrus, old tins, tiles etc. A survey that was conducted on the roofing materials of the housing units in the Town Council established that the major roofing material used was iron sheets comprising of 85.6% followed by Old tins with 12.6%, while cement roof had 1.6% and asbestos constituted 0.4% see Table below.

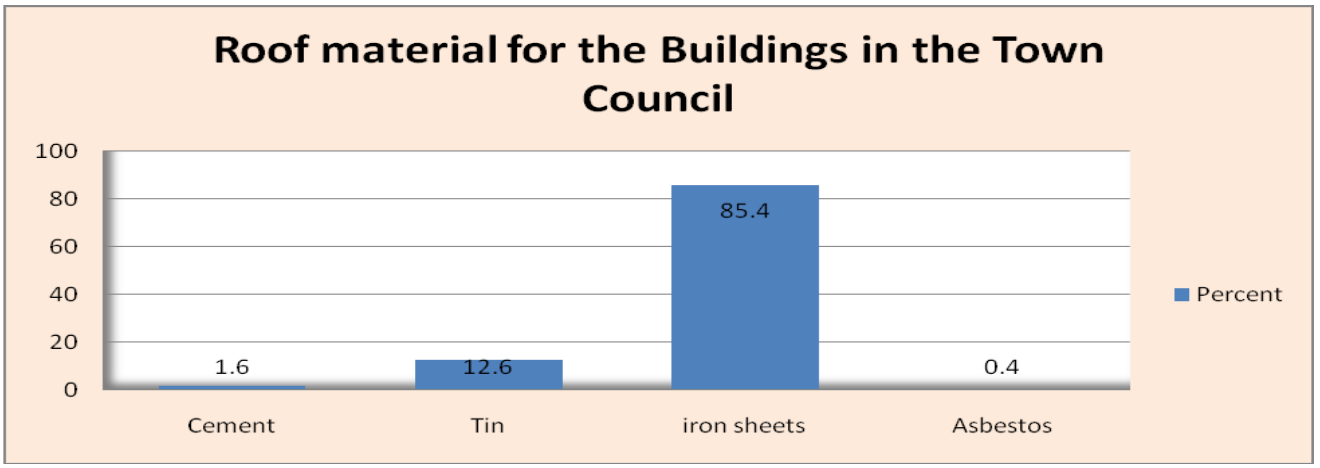


Figure 14: Showing the roofing Materials for the housing Units in the town

3.4.2.5 Wall Materials

The study identified that burnt bricks were the most (79.4%) widely used type of wall materials for the housing units in the Town Council, followed by Mud Bricks (12.3%),mud & wattle constituted 4.7%, stones (4.7%) while Raffia constituted 0.8% as illustrated in the figure below

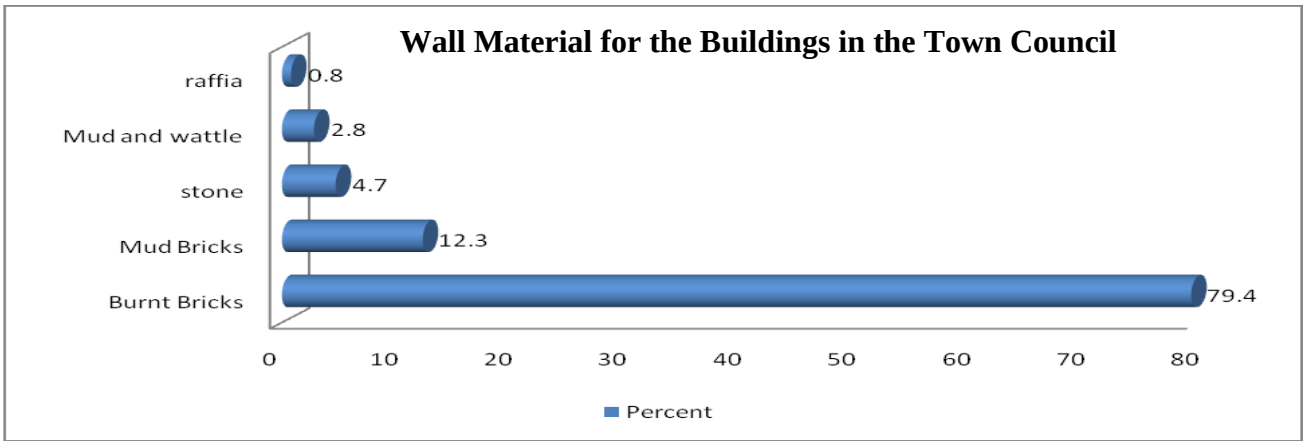


Figure 15: Showing the wall material for the housing units in the Town Council

3.4.2.6 Type of floor material

Floor material is the general term for a permanent covering of a floor. Floor covering is a term to generically describe any finish material applied over a floor structure to provide a walking surface. The survey investigations conducted on the floor materials of the housing

structures in Wobulenzi identified cement screed and earth screed and tiled surfaces as the floor materials for the housing units in the Town. Further investigations disclosed that, cement screed was the most highly used form of floor material and constituted 84.2% while earth screed constituted 9.9% and Tiles constituted 6%. The figure below explains the above phenomenon.

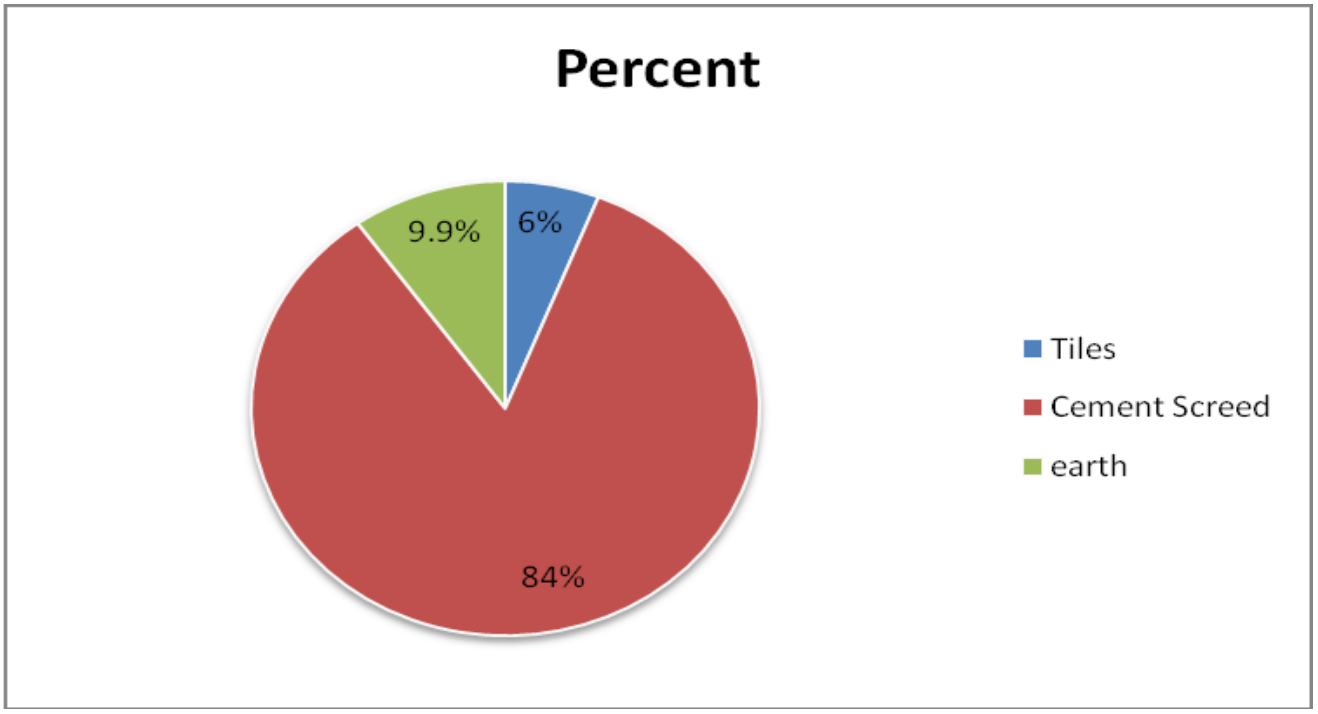


Figure 16: Type of floor material for the housing structures in the Town Council

3.4.3 Religious places of worship

There are numerous worship places in the town council that included; the cathedrals, churches and Mosques. These were widely built in the various parts of the town. The prominent religious institutions included; St Paul Church of Uganda (see figure below), St Kizito Catholic Parish in Katikamu (see figure below), Mosques and many Pentecostal Churches distributed within the town Council.



Figure 17: A Shows St. Kizito Catholic Church and B **St. Paul's CoU Wobulenzi**

*3.4.4 Health facilities and services*

This sector works for the welfare of the Town Council citizens by supporting specifically the health promotion and disease preventive interventions of primary healthcare as well as the related environment protection interventions. Since its inception as a Town Council, there are three health centres that have been built and supported by Luweero District Local Government. These include; Bukolwa Health Centre II, Kikoma Health Centre III and Bukalasa health centre III (see figure below).

Figure 18: Blue arrow Bukalasa Health Centre III and Red arrow Bukolwa Health Centre II

3.4.5 Sports and recreation facilities

The sports and recreation facilities in Wobulenzi town entail the football play fields (see figure 24 below), the hotels, recreational gardens and the play fields that are widely located in the various educational institutions within the Town Council. The Figure below shows an existing football play field located in Kigulu Zone Wobulenzi T/C Owned by Mr. Matovu Joseph who intends to develop the area into a modern Stadium.

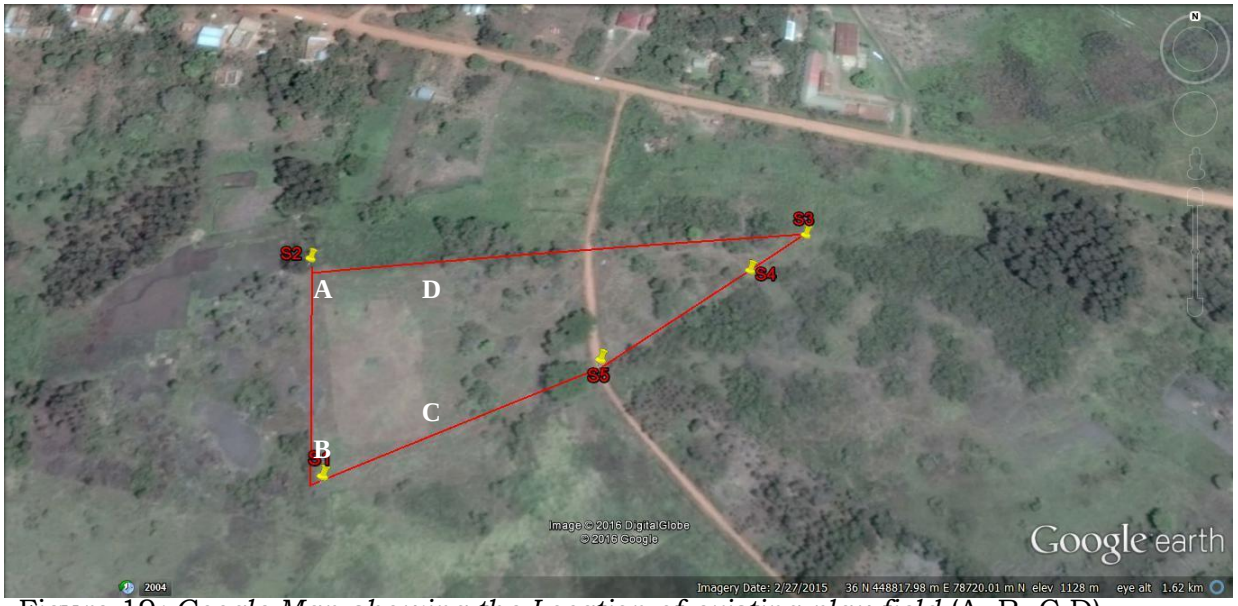


Figure 19*: Google Map showing the Location of existing play field* (A, B, C,D) *and RED enclosed area shows proposed site for stadium development*
*Source: Taken from the field by the consultant)*

3.4.6 The civic and administration areas

The Civic centre comprises of; the Town Council office Head quarters, the Police Station, the Magistrate Court and the District Land offices at Bukalasa.

Figure 2021: Civic Institutions in the Planning Area

3.4.7 Transport infrastructure

3.4.7.1 Road Network

Wobulenzi Town Council is mainly served by an earth/gravel road network with a total length of 40km. it was noted that most of earth roads within the Council lack properly constructed drainage channels; where drainage channels exist, they are blocked. The Town Road Network is in very bad shape, and the following ought to be done:

- Surfacing in busy commercial areas.
- Spot improvement/graveling
- Unblocking culverts
- Bush clearing.
- Road marking.

The Urban road Grant under the Poverty Action Fund (PAF) has greatly helped in surfacing of Police road.

3.4.7.2 Taxi Park

Wobulenzi Town Council has an established Taxi Park *(See fig below)* located within the CBD. It is well accessed from both its entry and exit points.


Figure 22: Showing Wobulenzi Taxi Park

3.4.8 The abattoir

The abattoir is located in Kigulu Cell, Katikamu Ward of WTC (see figure below); co-ordinates: 36 N 448682 m E 80354 m N. On average, 7 heads of cattle and 1 goat are slaughtered at this abattoir per day and about 90 jerry cans (1,800 litres) of water are used to clean this abattoir daily. Presently, all liquid wastes flow down to the bushes and wind up into Nambaga wetland located in the valley below the abattoir.

Figure 23: The WTC Abattoir in Kigulu Cell, Katikamu Ward

3.4.9 Utility Services in the Town

3.4.9.1 Electricity power supply

Wobulenzi Town Council is hooked to the national Power grid. Infrastructure for the distribution of electricity is well laid along all the major access roads within the town (see figure below). In addition generators and solar energy is also used by the residents to supplement the erratic the Hydro-electricity power supply.

Figure 2425: Red arrow Showing Electricity transmission lines and blue arrow showing solar power installation at Bukolwa Health Centre II

3.4.9.2 Water supply sources and Water resources

Wobulenzi Town Council has a piped water system supplied by the National Water and Sewerage Corporation (NWSC). Piped water is extracted at Katikamu which is located within the confines of the Town council (see figure below). Although piped water exists, other water sources that include; borehole, protected springs, open wells, swamps etc are also widely used by the residents of Wobulenzi. However, sometimes access and the amount needed for piped water are compromised due to the problem of affordability of the water tariff as a result people resort to other sources mentioned above, which sometimes

are contaminated. Table 14 below shows the access to water by source which indicates that over 55.7 % of the town dwellers is without access to piped water supply.

Table 13: Showing the sources of water in the Town Council

| Source of water used | Frequency | Percent |
|---|---|---|
| protected spring | 8 | 3.2 |
| unprotected spring | 18 | 7.1 |
| Bore hole | 95 | 37.5 |
| Public tap | 91 | 36.0 |
| in house connection | 21 | 8.3 |
| water vendors | 11 | 4.3 |
| Rain water harvesting | 9 | 3.6 |
| Total | 253 | 100 |

*Source: analysed data by the Consultant*

Figure 26: Piped water extraction area at Katikamu

3.4.9.3 Telecommunication

The available mobile telecommunication networks include Airtel, MTN, UTL, Orange and Warid Telecom. However despite the fact that these networks are available, it was observed that the use of MTN and Airtel mobile phone network was more convenient in the area compared to the rest of the service providers as their airtime was widely available in the shops.

3.4.9.4 Sewage management

WTC does not have a Common Effluent Treatment Plant (CETP). Individual property owners have localised sewage management systems and these include mostly pit latrines and, in a few cases, septic tank – soak pit systems. This poses adanger of over pollution of soils and surface- and ground-water.

The Council authority ought to construct common Effluent Treatment Plants (ETPs) into which all sewage (wastewater and human waste) generated in the Council would be discharged for treatment to NEMA recommended levels.

3.4.9.6 Solid waste management

Whereas the Council has a dumping ground, there remains one big challenge, namely: developing the site into a properly constructed dumpsite. The existing solid waste dumping

site is also located next to the town abattoir thus the need to relocate the dump site to another area since the two are incompatible landuses that cannot coexist in close proximity.

Table 14: Major methods of garbage disposal

| Disposal Methods | Frequency | Percentage |
|---|---|---|
| polythene bags | 18 | 7.1 |
| dust bin | 39 | 15.4 |
| open dump | 40 | 15.8 |
| mobile skip | 9 | 3.6 |
| fixed skip | 4 | 1.6 |
| kerb side | 11 | 4.3 |
| Garbage burning | 79 | 31.2 |
| Disposing in the garden | 53 | 20.9 |
| Total | 253 | 100.0 |

Ways of managing waste dumping sites

There are two possible ways of managing wastes, namely:

- Through construction of a landfill; or
- Through construction of a composting plant

4.2.1 Sustainable technology

Presently, a number of towns in the country have adopted and acquired composting plants as opposed to landfills. Realtek Consultants Ltd., therefore, proposes that a similar technology be adopted because it is sustainable: wastes are turned into useful manure which would be bought by the local people in the country side which would translate into more income for the Council. Irrespective of adopted technology, however, there will remain two other challenges, namely:

- Management of non-biodegradable materials at the compost plant; and
- The high costs of collection of wastes throughout the entire Council.

4.2.2 Management of non-biodegradable materials

When waste materials are brought at the compost Plant, they are sorted by the Plant staff into biodegradables and non-biodegradables. The biodegradables are composted into manure while the non- biodegradables are left heaped at the compound for the Plant.

There is ready market for most of the non-biodegradable materials: metals are sought after by scrap dealers while plastics are sought after by quite a number of manufacturing companies that deal in plastics. The Council would turn this into a source of revenue.

4.2.3 Collection costs

The Council"s Environment Management Plan highlights a number of challenges as far as waste management practices are concerned and gives recommendations.

It is hereby further recommended that on implementation of the proposed Plan, the Council adopts KCCA style: affluent zones and industrial areas would manage their wastes on a self basis; facility owners/managers would hire private garbage managers/collectors who would dispose of such wastes at waste dumpsite / Compost Plant in Kigulu Zone, Katikamu Parish. The Council would only manage wastes generated in zones for the poor.

*The existing Landuse Map*

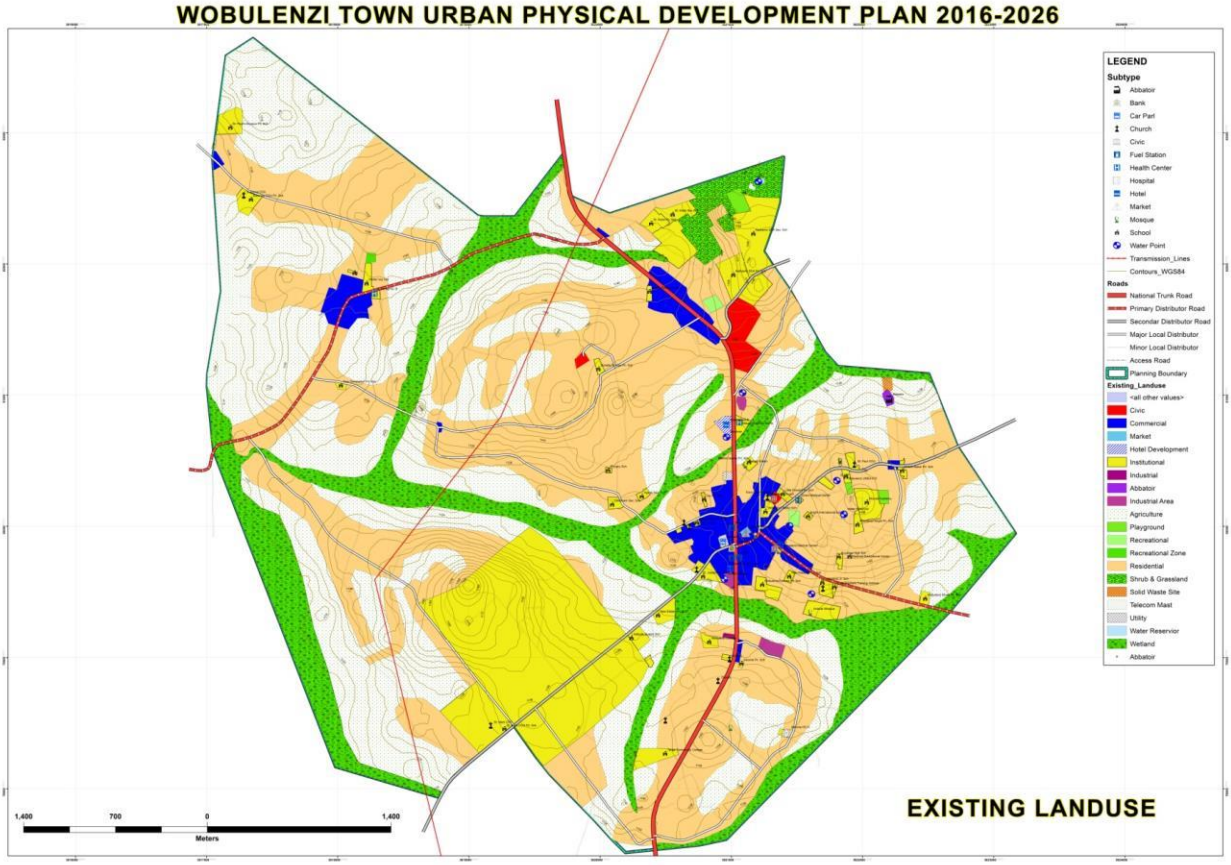


*Figure 27: Existing Landuse Map*

## *3.5 DEVELOPMENT POTENTIALS AND CONSTRAINTS*

### 3.5.1 Potentials

There are several potentials that can attract development in the town council and these include among others the following;

- The Town Council is located close to Kampala City and lies along the Major highway to the North, that makes it easy to develop trade and commerce.
- Key Educational institutions like Bukalasa Agricultural College and nearness to Kampala University Luweero Campus
- Existance of the Land offices at Bukalasa
- The existence of electricity in the town
- Piped water by National Water and Swerage Corporation

### 3.5.2 Constraints to development in the Town Council

The constraints to development in the Wobulenzi town include among others the following;

- Poor and inadequate physical infrastructure: Physical infrastructure plays a key role in the movement of goods and services as well as factors of production from supply to places of demand (markets). The inadequate and poor physical infrastructure conditions constraint production in many sectors of the economy.
- Inadequate funding to implement activities: There is limited revenue/ funds to implement development projects in the Town Council. This is further worsened by the delayed and inadequate release of the Central Government transfers.

- Low Business and Entrepreneurial Skills: The poor business and entrepreneurial attitudes of our people which must be fought in order to achieve socio-economic transformation

*3.5.3 SWOT analysis*

The table SWOT analysis of the town is presented in the below;

Table 15: SWOT Analysis of the town

| Strengths | Weaknesses | Opportunities | Threats |
|---|---|---|---|
| - Availability of some infrastructure such as roads, Taxi park and Market<br>- Vibrant commercial activities<br>- Existence of a Gulu Highway<br>- Proximity to lake Kampala City<br>- Availability of land for town expansion<br>- It has committed technical staff to ensure orderly development<br>- Educational institutions<br>- Has an established CBD<br>- Ready Market for fresh fruits especially Mangoes and Pineapples | - Poor garbage management<br>- Delayed implementation of projects due to delayed release of funds.<br>- Limited local revenues generated<br>- Poor drainage of the town<br>- No gazetted Industrial area | - Funding of projects by NGOs<br>- Existence of the National road fund.<br>- Internal revenue collection<br>- Has favorable climate for agriculture<br>- The town is connected to the National Power Grid.<br>- Availability of Piped Water<br>- Proximity to Kampala University Luweero Branch<br>- Beneficiary of the Luweero Ruwenzori Program | - Large alien population<br>- Health hazards such as HIV/AIDS<br>- Unfavorable land tenure system<br>- Increasing crime levels<br>- Reliance on Grants for implementation of Programs.<br>- Rampant growth of Slums.<br>- Unemployment most especially among the youth.<br>- High population growth rate<br>- Encroachment on wetlands for development |

Table 16: Showing wish list of stakeholders

| Stakeholders | Identified Planning Problems | Wish List of Stakeholders |
|---|---|---|
| ▪ Focused Group Discussions and Community dialogues with the Community and results obtained from the Socio-economic Surveys during field work surveys | ▪ High rates of poverty<br>▪ No solid waste disposal system<br>▪ No street light<br>▪ Poor condition of roads<br>▪ Insufficient drainage system<br>▪ taxi park<br>▪ On street parking of trailers<br>▪ No Public Cemetery<br>▪ Limited funds to implement the plans<br>▪ Insufficient recreation facilities<br>▪ Un employment most especially among the youth | ▪ Development of a good road network;<br>▪ Creation of parks and play grounds for children;<br>▪ Provision of Drainage network;<br>▪ Planning for more access roads<br>▪ Planning for designated areas for residential, Commercial and Industrial<br>▪ Garbage collection centres<br>▪ Rehabilitation of public toilets<br>▪ Provision and Tightening of Security<br>▪ improve on the education system<br>▪ Equip existing health facilities<br>▪ sensitization of people about hygiene<br>▪ Extension of electricity to areas that are not serviced<br>▪ Job creation for the unemployed residents<br>▪ Provision of more public toilets<br>▪ Planning for piped water extension to all areas<br>▪ Job creation<br>▪ Provision of good quality Education<br>▪ Provision of street lights /security lights<br>▪ Introduction of public garbage bins<br>▪ Restrict noise polluters especially public speakers |

## *4. STRATEGIC PLANNING INTERVENTIONS IN THE PLANNING PROCESS*

### *4.1 Integration of the Uganda Vision 2040 into the Physical Planning of Wobulenzi*

#### 4.1.1 Vision Statement

„„A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years**" .**

#### 4.1.2 Opportunities for development as per the Vision

According to Vision 2040 the following are highlighted as key opportunities for development of Uganda"s economy;

- Oil and gas,
- tourism,
- minerals,
- ICT business,
- abundant labour force,
- geographical location and trade,
- water resources,
- Industrialization and agriculture.

Whilst providing the required Infrastructure for (energy, transport, water, oil and gas)

#### 4.1.3 Key flagship projects to streamline the Implementation of the Vision

Uganda Vision 2040 identified the following key core projects that need to be streamlined for the implementation of the Vision.

- Five regional cities (Gulu, Mbale, Kampala, Mbarara, and Arua) and five strategic cities (Hoima, Nakasongola, Fortportal, Moroto, and Jinja);
- Four international airports;
- A standard gauge railway network with high speed trains;
- Oil Refinery and associated pipeline infrastructure;
- Multi-lane paved national road network linking major towns, cities and other strategic locations;
- Globally competitive skills development centres;
- Science and Technology parks in each regional city;
- International and national referral hospitals in each regional cities

#### 4.1.4 Key issues to note from Vision 2040 that apply to the physical planning of Wobulenzi Town Council

Based on the Vision 2040 the physical planning of Wobulenzi needs to consider the following;

- Agro processing industries
- It is strategically located to excel in Agriculture trade
- competitive skills development centers to empower the youth
- A good road network the links the National Roads

*4.2 THE PHYSICAL PLANNING VISION*

The vision is to „"plan Wobulenzi town as a Town to excel in Agricultural trade and commerce within Greater Luwero Sub region

4.2.1 Mission

The mission is to ‘‘facilitate the equitable distribution of public infrastructure to stimulate sustainable growth of the town.

*4.2.2 Planning Goal*

To achieve, an economically viable, livable, well serviced and accessible town that will enhance people"s livelihoods translate and spur local tourism.

*4.3 PLANNING PRINCIPLES AND CONCEPTUAL DEVELOPMENT*

4.3.1 Planning Principles

The preparation of this physical development plan is based on but not limited to the following planning principles;

- Community participation: Basing on this principle, stakeholders and the general community of Wobulenzi were consulted right from the project inception, the draft alternative stage, and Plan deposit stage to the approval stage. project. This process enabled to produce an output generally accepted and owned by general community of the Town Council.

- Neighborhood concept: This principle is applied to promote self-sustaining landuse zones and neighborhoods.

- Interconnectivity: Different parts of the planning area are connected through the road hierarchy. That is, Secondary roads, local roads and access roads.

- Environmental Quality: The plan takes into consideration the well being of the environment addressing issues on preservation, conservation and improvement of the physical environment.

- Promotion of employment opportunities: Employment centers planned to include a commercial area and industrial areas. Accessibility has been created by the new proposed roads to promote easy transportation of agricultural produce to the market.

- Compatibility of uses: This principle has been applied in the detailed plan by locating land uses that derive some benefits from the other next to each other for instance residential use next to the commercial area since the commercial acts as an employment centre to the residents

- Places for people: For places to be well-used and well-loved, they must be safe, comfortable, varied and attractive. They also need to be distinctive and offer choice, and variety. Vibrant places offer opportunities for meeting people; such spaces include public open spaces, community centers, markets and institutions among others.

- Enrich the existing: New development should enrich the quality of existing urban places. This means encouraging a distinctive response that arises from and complements its setting.

- Make connections: Places need to be easy to get to and integrated physically and visually with their surroundings. This requires attention of how to get around on foot, by bicycle, public transport and the car – in that order.

- Design for change: New development needs to be flexible enough to respond to future changes in use, life style and demography. This means designing for energy and resource efficiency, creating flexibility in the use of property, public spaces and service infrastructure and introducing new approaches to transportation, traffic management and parking.

### 4.3.2 Conceptual development of the plan

Application of the concept; Based on the existing settlement pattern, transport connectors in peripheral of planning boundary, the slope analysis of the planning area and other urban planning principles, were used to generate the planning concepts for Wobulenzi physical plan. The figures below explain the above phenomenon.

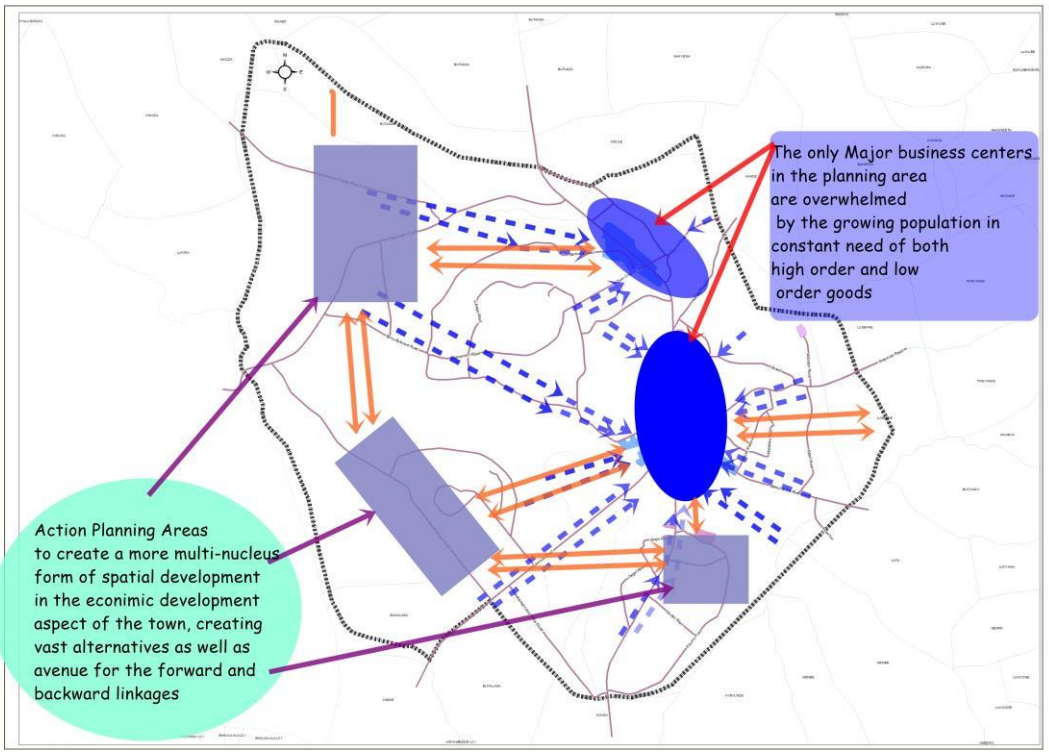


Figure 28: Multifunctional spatial Development

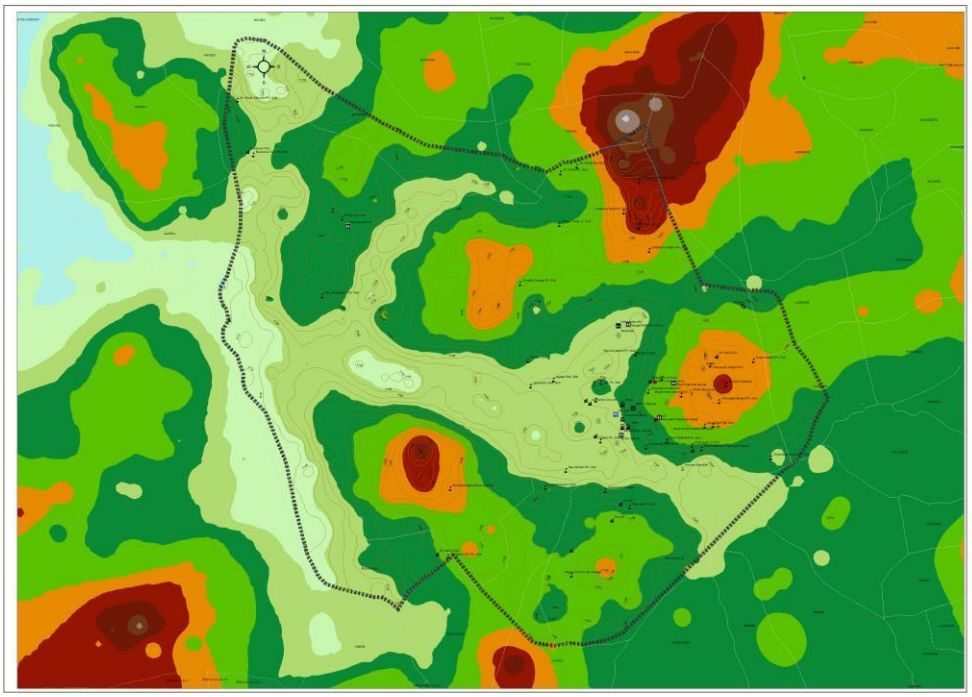

Figure 29: Slope settlement analysis

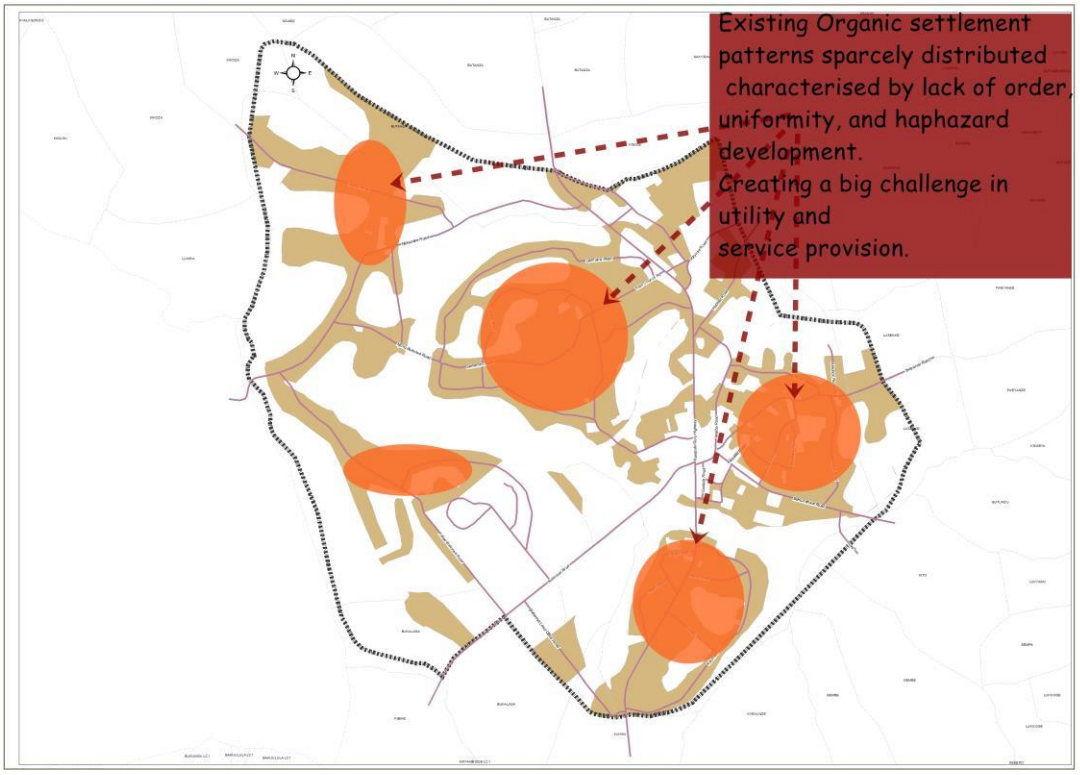


Figure 30: Observation of the existing settlement pattern

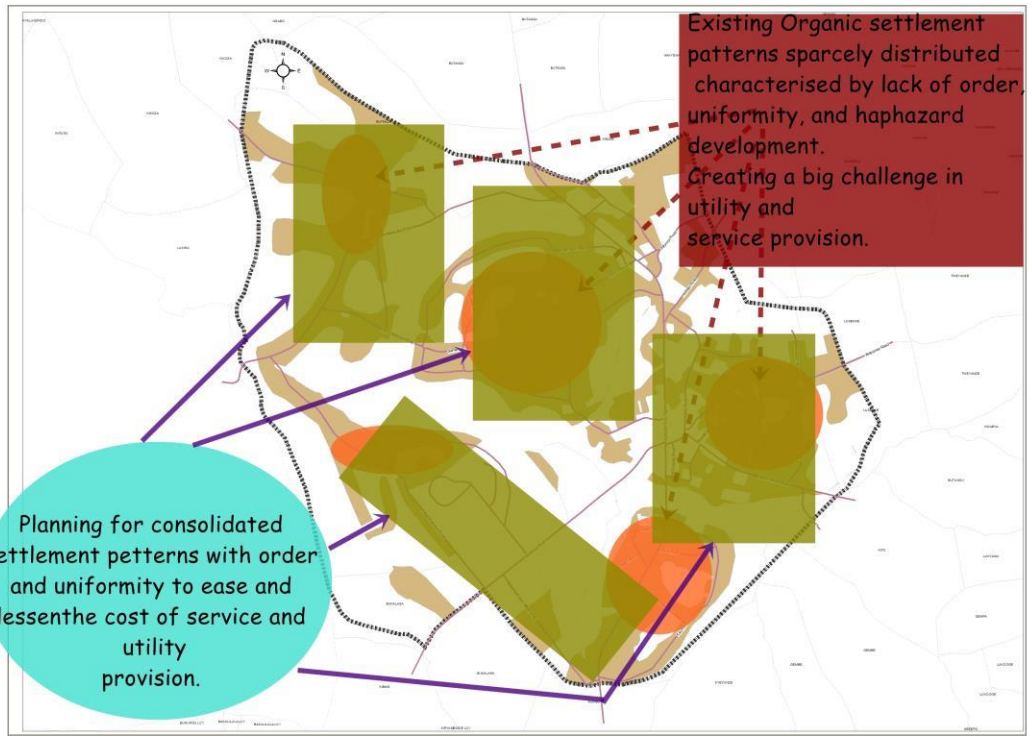


Figure 31: Consolidated development as opposed to sparse development

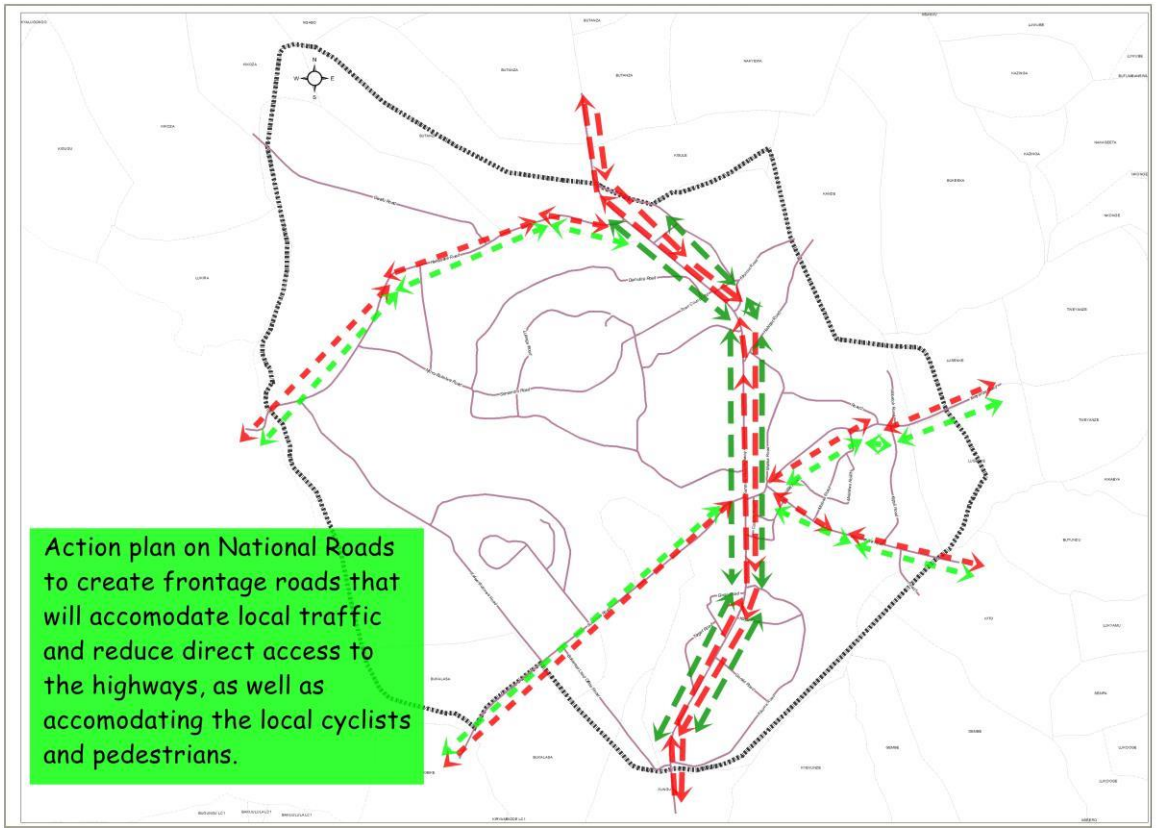


Figure 32: Shows Action plan on National Roads

*4.4 THE PHYSICAL DEVELOPMENT PLAN PROPOSALS*

4.4.2 The Alternative Physical Development Proposals

In the preparation of the physical development plan, two alternative Physical development plans were prepared thus alternative one and two. These were presented to the stakeholders for selection of the most suitable and preferred alternative. After the presentation alternative one was generally preferred and accepted by the stakeholders upon. The selected alternative was to be improved upon based on the comments raised during the stakeholders meeting. The two alternative plans are shown in figures 43 and 44 respectively below;

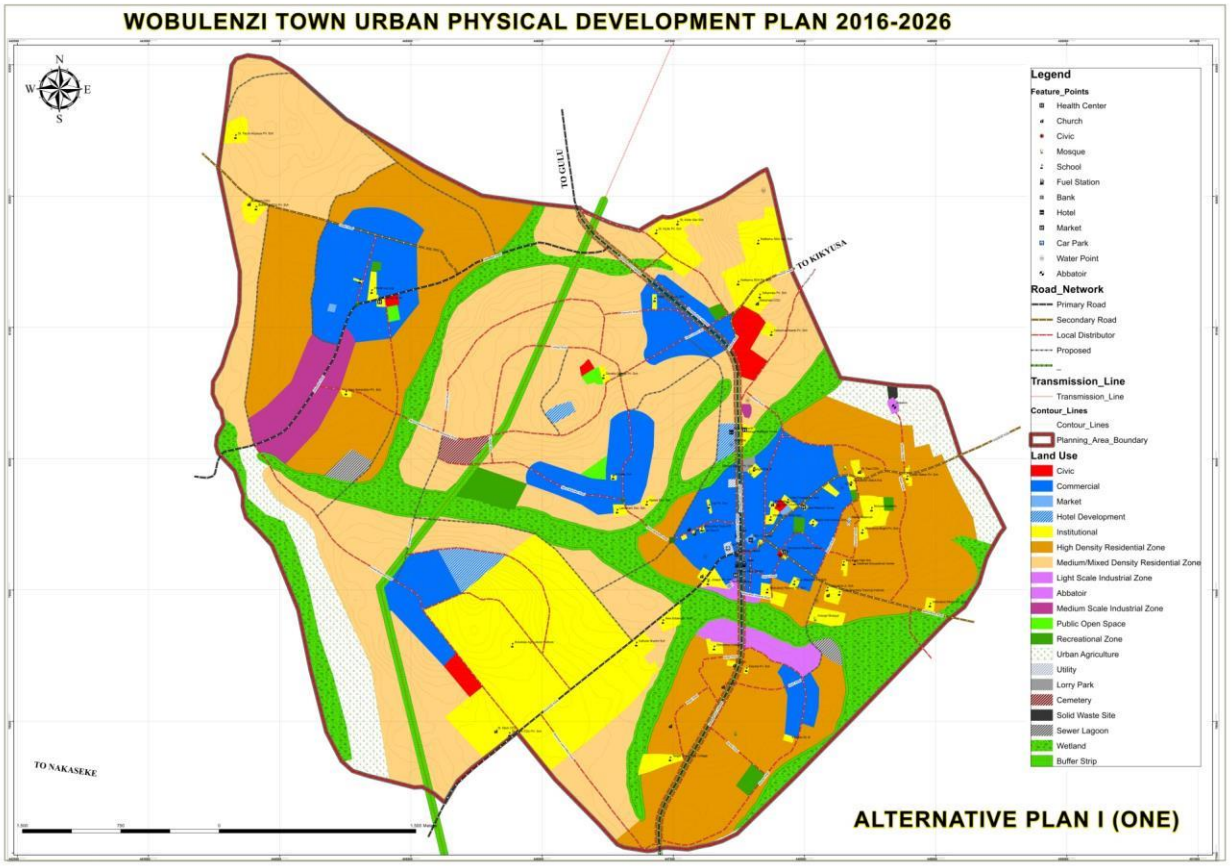


Figure 33: Showing Alternative Physical Plan One

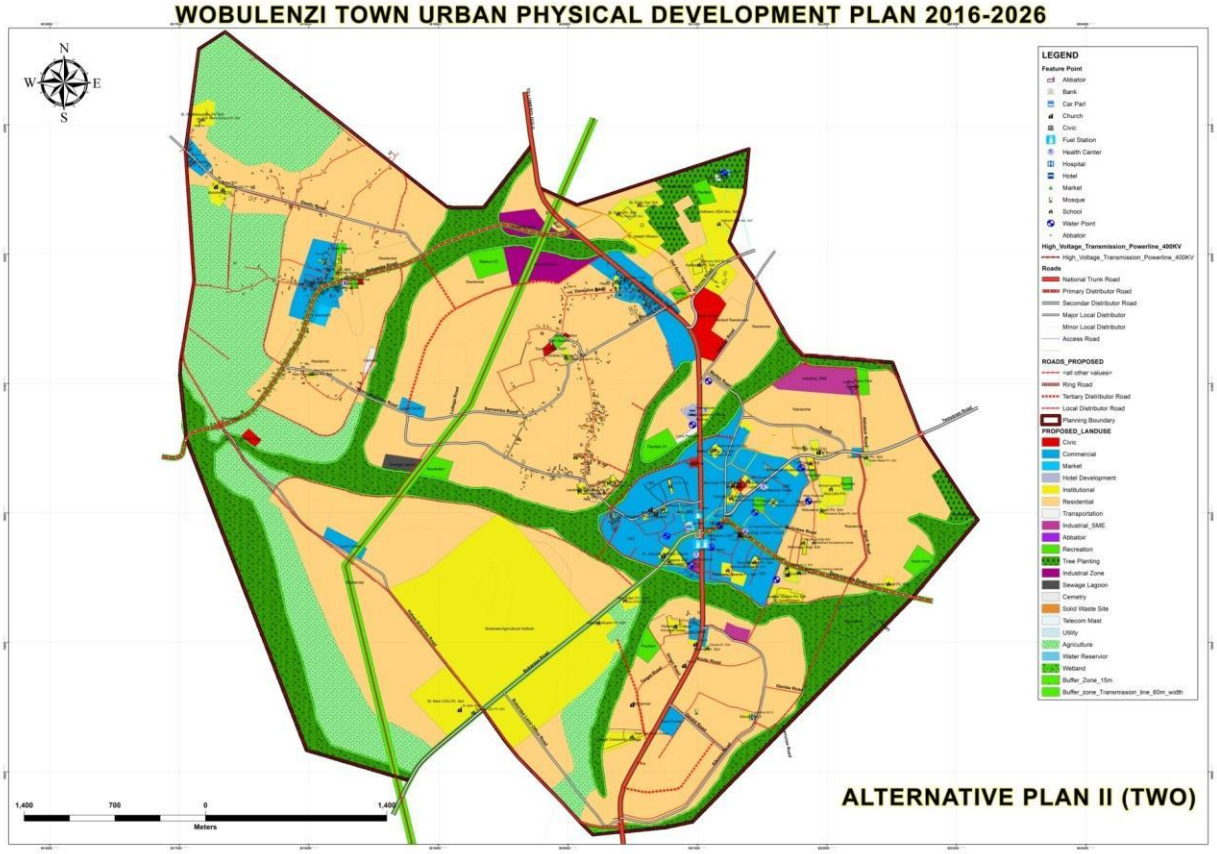


Figure 34: Showing Alternative Physical Plan TWO

### 4.4.3 The Proposed Physical Development Plan

Having selected Alternative two of the physical development plan, enhancements were undertaken based on the comments raised by the stakeholders and further consultations made by the consultant. The result of which was the proposed physical development plan given below

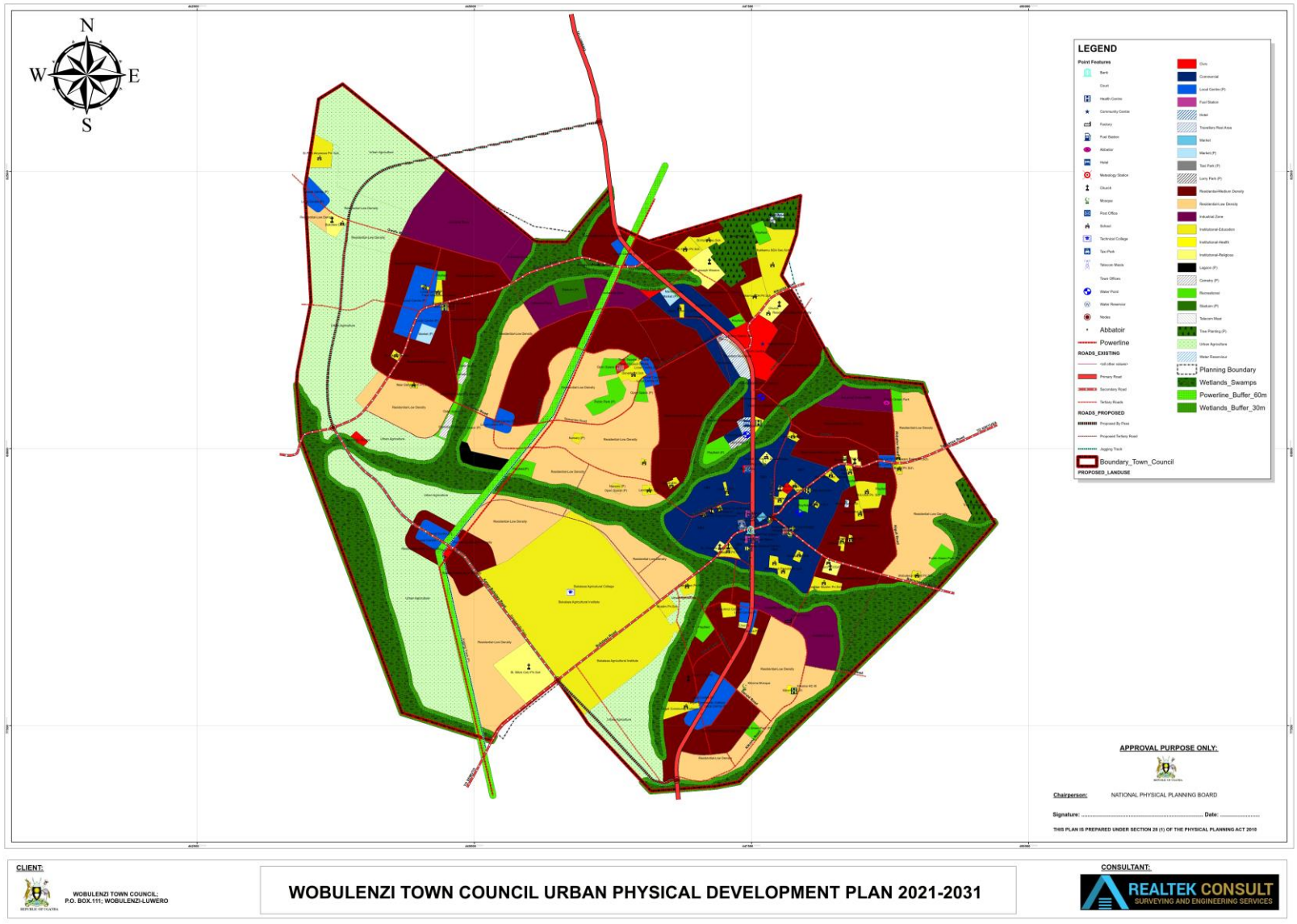


Figure 35: Showing the proposed Urban Physical Development Plan

Table 17: Proposed Landuse coverages

| Landuse | Area-sq.M | Area-Acres | percentages-% |
|---|---|---|---|
| **Cemetery (P)** | 36998.6 | 9.14254 | 0.15 |
| **Civic** | 23659.07 | 5.846283 | 0.10 |
| **Civic-Metrology** | 13707.5 | 3.3872 | 0.06 |
| **Civic-Police Station** | 56413.36 | 13.94006 | 0.23 |
| **Commercial** | 1767958.67 | 436.87208 | 7.19 |
| **Fuel Station** | 12728.07 | 3.145173 | 0.05 |
| **Hotel** | 18490.2 | 4.56903 | 0.08 |
| **Industrial Zone** | 868687 | 214.6574 | 3.53 |
| **Institutional-Education** | 2435325.33 | 601.783089 | 9.90 |
| **Institutional-Health** | 35332.02 | 8.730717 | 0.14 |
| **Institutional-Religious** | 360568.3 | 89.098392 | 1.47 |
| **Lagoon (P)** | 77940.4 | 19.2595 | 0.32 |
| **Local Commercial Centre (P)** | 550396.17 | 136.00595 | 2.24 |
| **Lorry Park (P)** | 19497.7 | 4.81798 | 0.08 |
| **Market** | 4286.11 | 1.05912 | 0.02 |
| **Market (P)** | 35397.8 | 8.74698 | 0.14 |
| **Recreational** | 420607.54 | 103.93439 | 1.71 |
| **Residential-Low Density** | 4598934.48 | 1136.42106 | 18.69 |
| **Residential-Medium Density** | 5218795.42 | 1289.59361 | 21.21 |
| **Stadium (P)** | 60292.8 | 14.8987 | 0.25 |
| **Taxi Park (P)** | 6338.67 | 1.56632 | 0.03 |
| **Telecom Mast** | 2102.55 | 0.519552 | 0.01 |
| **Travelers Rest Area** | 145797 | 36.0272 | 0.59 |
| **Tree Planting (P)** | 365334.9 | 90.27618 | 1.48 |
| **Urban Agriculture** | 4283632.2 | 1058.5078 | 17.41 |
| **Water Reservoirs** | 5484.47 | 1.355241 | 0.02 |
| **Youth Centre** | 112257 | 27.7392 | 0.46 |
| **Wetland** | 3065521.913 | 757.5061912 | 12.46 |
| GRAND TOTAL | 24602485.24 | 6079.406938 | 100.00 |

4.3.1 Description of the proposed land uses

4.4.3.1.1 Commercial Zone

In both alternatives the existing commercial centre of the town was maintained and expanded to cater for the future expansion of the CBD. In addition local centers were proposed and planned to serve the commercial interests of communities that are in the outskirts. The major aim was to decongest the CBD and decentralize services to all parts of the Town Council. At a detailed level, the standard size for a commercial plot is 15X30m (50ft X100ft). The planned activities in the commercial zone shall entail hotels and lodging facilities, petrol stations, banking facilities, markets, Taxi Park and shops. Mixed use development proposals that integrate the commercial activities with the residential settlements are highly encouraged in this plan.

4.4.2.1.1 Permitted Uses in the Commercial Zone

The Permitted uses in the commercial area include the following;

1) Petrol Stations
2) Banks
3) Commercial premises to include both retail and whole sale shops
4) Car garages
5) Accommodation facilities like lodges, Hotels, Motels Guesthouses
6) Entertainment places like Bars, , Night clubs, cinema halls etc
7) Markets
8) Premises for conducting
9) official business (offices)
10) Motor Showrooms
11) Places of worship like churches and mosques
12) Services like clinics and police station
13) Community facilities like community halls and social centers

4.4.2.2 Residential /settlement areas

Residential/ settlement areas were proposed in both alternatives. The residential zones are specifically planned to mainly entail housing/accommodation as the major activity however other activities that enhance human settlement like urban agriculture, laundry shops, day care centers, apartment cottages a few shops etc are permitted in this zone at a minimal scale. The plot size for residential landuse is 20x30m as the minimum size and 25X 35 as the maximum.

4.4.2.2.1 Permitted uses in the residential zone

The permitted uses in the residential zone shall among others include the following;

1) Commercial Shops
2) Assisted Living or Elderly Home
3) Child Daycare \ Preschool
4) Cleaning \ Laundry Shop,
5) Communication Service Facilities
6) Apartment Cottages
7) Cyber Café Daycare Center
8) Drug Store or Pharmacy
9) General Store
10) Grocery Store

11) Clinics
12) High School
13) Household Appliance and Furniture Repair
14) Places of Worship
15) Property Management
16) Public Transport Facility

4.4.2.3 Industrial zone

Industrial zones were proposed in both of the physical development Plan alternatives. In alternative one, two industrial zones were proposed, surrounding the site for the sewage lagoon site. The proposal for the industrial zones was aimed at directing the future industrial development needs of the town council and also to increase the employment opportunities in the planning area. The recommended plot sizes/standards in the industrial zone are to be not less than 30X60m (100ft x200ft).

4.4.2.4 Civic

In both alternatives the existing land zoned for CIVIC development was maintained and these included; the land that hosts the Town Council, Land Offices and Magistrate Court are maintained while a new area for the location of a police station was proposed.

4.4.2.5 Educational facilities

The existing educational facilities were maintained in both alternatives and new ones were proposed as shown in the plan alternatives given above.

4.4.2.6 Health Institutions

The existing Health centers were maintained in both plan alternatives and new proposals were made to cater for the future development of the health institutions in the Town Council.

4.4.2.7 Religious centers and places of worship

The existing religious institutions were maintained and integrated into the physical development plan. These institutions are planned to continue providing the same services as before.

4.4.2.8 Parks/ Recreational grounds

The primary uses in these areas include playgrounds, recreational parks, and other areas for outdoor activities, sports centers, sports pitches, outdoor recreation and landscaped areas. High standards of accessibility are essential in this zone. Accessibility standard is related to the use of that particular open space. For example, local amenity areas and playgrounds may require emphasis on access for pedestrians and cyclists. Sports Centers serving a wider catchments area like stadia and the golf course will require accessibility by public transport and car users. Recreational grounds are shaded green color on the Physical Development Plan

4.4.2.8.1 Purpose of Parks and recreational zones

The purpose of this zone is:

1) To provide for the active and passive recreational needs of the City and the protection of its bountiful natural resources as well as to protect the natural and aesthetic qualities of the area for the general welfare of the community.
2) To provide for, protect and improve the provision, attractiveness, accessibility and amenity value of public open space and amenity areas.
3) To provide for, protect and improve the provision, attractiveness and accessibility of public open space intended for use of recreational or amenity purposes. Only development that is incidental to, or contributes to the enjoyment of open space, amenity or recreational facilities will be permitted within this zone.
4) To preserve and provide for recreational amenities. The objective seeks to provide recreational and amenity resources for urban and rural populations subject to strict development controls. Only community facilities and other recreational uses will be considered and encouraged by the Planning Authority.

4.4.2.9. Roads and transport Infrastructure

The proposed physical plan provides for an efficient and sustainable road net work that links to the existing ones. All existing roads in the town councilwere mapped, aligned and integrated into the proposed physical development plan. Other new roads were proposed with a purpose of improving accessibility to all parts of the town *(see figure below) in addition s*ome of the existing foot paths were upgraded into motorable roads. Service lanes and walkways are to be developed in the Commercial zone (CBD) of the town to ease loading, offloading and provision of service utilities. The table below shows the proposed road types and sizes.

Table 18: Proposed road types and size

| S/No | Road type | Road width (m) | Carriage way (m) |
|---|---|---|---|
| 1 | Primary road | 50 | 30 |
| 2 | Secondary road | 30 | 20 |
| 3 | Local distributor/ tertiary | 30 | 10 |
| 4 | Access commercial | 20 | 10 |
| 5 | Access residential | 15 | 8 |
| 6 | Cul-de- sacs | 10 | 5 |
| 8 | Service lane | 6 | 6 |
| 9 | Foot paths/ precincts | 2 | 2 |

*Source Analyzed by the Consultant*

4.4.2.10 Waste management

Solid waste management was identified as one of the key challenges faced by the Town Council. As regards waste management, the town council has a solid waste dumping ground located at Kigulu zone near the abattoir site. However the new proposal suggests for the relocation of the solid waste dumping ground to an area that shall be acquired outside the town Council boundaries.

4.4.2.11 Water

The plan takes care of the distribution of piped water to all parts of the town; in addition all new piped water connections and extensions are proposed to follow the existing and the proposed roads. It should be noted however that all the other existing water sources like the protected springs, the borehole etc. were mapped and included in the plan.

4.4.2.12 Green Energy Proposals and the environmental Plan

Proposal for the green energy sustainability of the town were put in to consideration during the preparation of this physical development plan. The plan supports the development of green energy proposals as follows;

- Inclusion of buffer zones on environmentally sensitive areas
- Tree lined avenues
- Public parks and open spaces were proposed with a purpose of enhancing the environment.
- Planting of trees at house compounds and at all public facilities
- The use of solar energy mainly for lighting and biogas energy for cooking is encouraged in the town council

4.4.2.13 Environment and Natural Resources

The plan takes into account of the environmental issues and extra precautions were put into consideration to protect and preserve the natural resources in the Town Council *(see figure below).* Further buffer zones were proposed on all the natural resources within the planning area. The figure below shows the proposed environmental and natural resource Plan.

4.4.2.14 Electricity / power

The Power infrastructure is planned to be incorporated along the existing and proposed roads. Additionally, other sources of energy such as use of solar energy and biogas are encouraged to supplement the existing power supply.

4.4.2.16
Markets

The markets that exist in the Town Council were mapped and integrated into the new physical development Plan. Additionally the Friday Market that has previously been taking place along the reserve of Kampala Gulu Highway was relocated to a new permanent settlement as indicated in the plan. The plan also makes proposals for local markets in the various wards of Town Council as a means to enhance the economic livelihoods of the residents

4.4.2.17 Town abattoir site

The abattoir site was maintained at its current location and an industrial has been proposed next to it for compatibility reasons.

4.4.2.18
Cemetery

This was one of the landuses that were largely lacking in the Town Council. During the feasibility consultations it was identified that land for a Cemetery was largely needed by the communities of the Town Council. The Physical Plan provides land for the location of the Cemetery and it is to be located in Bukolwa.

4.4.2.20 Tourism Development Proposals

The tourism development proposals in this plan include; the green belts, the tree lined avenues most especially within the streets of the CBD, proposed Hotel sites and the

buffer zones on the environmentally sensitive areas

4.4.2.21 Sewerage system

The Town Council lacks a sewer system; however based on the field surveys made by the consultant, an alternative site for the establishment of a sewer lagoon was identified as indicated in the physical development plan. Further studies would, however, have to be

taken to identify the most suitable sites for construction of ETPs. Before construction of the proposed ETP at the selected site, WTC would have to carry out EIA; proper consideration to the health risks and quality restrictions would have to be a part of the assessment. Amongst the issues to be considered in the EIA would be land ownership, odour management, soil and vegetation protection, groundwater protection, prevention of public health risks, ecologically sustainable development and water quality management for any adjacent waterways.

The proposed ETP design would be based on at least 0.08kg of BOD5 and 0.09kg of suspended solids per capita per day, unless information is got (preferably from similar towns in Uganda) to justify alternate designs.

4.4.2.21.1 Alternative Technologies for a Suitable ETP

The consultant critically looked at the available technologies for an ETP; below is the analysis and recommendations.

Tables 18 and 19 below summarise the advantages of the various wastewater treatment technologies. In general, the advantages of using natural biological processes relate to their "low-tech/no-tech" nature, which means that these systems are relatively easy to construct and operate, and to their low cost, which makes them attractive to communities with limited budgets. However, their simplicity and low cost may be deceptive in that the systems require frequent inspections and constant maintenance to ensure smooth operation. Concerns include hydraulic overloading and excessive plant growth. For this reason, and also because of the land requirements for biologically based technologies, many communities prefer mechanically-based technologies, which tend to require less land and permit better control of the operation. However, these systems generally have a high cost and require more skilled personnel to operate them.

Table 19: Advantages and Disadvantages of the various Sewage Treatment Systems

| TREATMENT TYPE | ADVANTAGES | DISADVANTAGES |
|---|---|---|
| *Aquatic Systems* | | |
| Stabilization lagoons | ▪ Low capital cost<br>▪ Low operation and maintenance costs<br>▪ Low technical manpower requirement | ▪ Requires a large area of land<br>▪ May produce undesirable odours |
| Aerated lagoons | ▪ Requires relatively little land area<br>▪ Produces few undesirable odours | ▪ Requires mechanical devices to aerate the basins<br>▪ Produces effluents with a high suspended solids concentration |
| *Terrestrial Systems* | | |
| Septic tanks | ▪ Can be used by individual households<br>▪ Easy to operate and maintain<br>▪ Can be built in rural areas | ▪ Provides a low treatment efficiency<br>▪ Must be pumped occasionally<br>▪ Requires a landfill/composting plant for periodic disposal of sludge and septage |
| Constructed wetlands | ▪ Removes up to 70% of solids and bacteria<br>▪ Minimal capital cost<br>▪ Low operation and maintenance requirements and costs | ▪ Remains largely experimental<br>▪ Requires periodic removal of excess plant material<br>▪ Best used in areas where suitable native plants are available |
| *Mechanical Systems* | | |
| Filtration systems | ▪ Minimal land requirements; can be used for household-scale treatment<br>▪ Relatively low cost<br>▪ Easy to operate | ▪ Requires mechanical devices |
| Vertical biological reactors | ▪ Highly efficient treatment method<br>▪ Requires little land area<br>▪ Applicable to small communities for local-scale treatment and to big cities for regional-scale treatment | ▪ High cost<br>▪ Complex technology<br>▪ Requires technically skilled manpower for operation and maintenance<br>▪ Needs spare-parts-availability<br>▪ Has a high energy requirement |
| Activated sludge | ▪ Highly efficient treatment method<br>▪ Requires little land area<br>▪ Applicable to small communities for local-scale treatment and to big cities for regional-scale treatment | ▪ High cost<br>▪ Requires sludge disposal area (sludge is usually land-spread)<br>▪ Requires technically skilled manpower for operation and maintenance |

Table 20: **Comparison of the various Sewage Treatment Systems**

| | Criteria | Package Plant | Activated Sludge Plant | Extended Aeration Activated Sludge | Biological Filter | | Aerated Lagoon System | Waste Stabilization Pond |
|---|---|---|---|---|---|---|---|---|
| Plant Performance | BOD removal | F | F | F | F | G | G | G |
| | FC removal | P | P | F | P | F | G | G |
| | SS removal | F | G | G | G | G | F | F |
| | Helminth removal | P | F | P | P | F | F | G |
| | Virus removal | P | F | P | P | F | G | G |
| Economic Factors | Simple and cheap construction | P | P | P | P | F | F | G |
| | Simple operation | P | P | P | F | F | P | G |
| | Land requirement | G | G | G | G | G | F | P |
| | Maintenance costs | P | P | P | F | P | P | G |
| | Energy demand | P | P | P | F | P | P | G |
| | Sludge removal costs | P | F | F | F | P | F | G |

*Key: FC = Faecal Coliforms; SS = Suspended Solids; G = Good; F = Fair; and P = Poor*

Clearly, Tables 18 & 19 above show that the best sewage treatment system for the proposed Plan would be a waste stabilisation pond system.

Waste Stabilization Ponds (WSPs) would be the most suitable option; WSPs are large, shallow basins in which raw sewage is treated entirely by natural processes involving both algae and bacteria. They represent one of the most cost-effective, reliable and easily-operated methods for treating domestic and industrial wastewater. Waste stabilization ponds are very effective in the removal of faecal coliform bacteria. Sunlight energy is the only requirement for its operation. Further, it requires minimum supervision for daily operation, by simply cleaning the outlets and inlet works. The temperature and duration of sunlight in tropical countries offer an excellent opportunity for high efficiency and satisfactory performance for this type of water-cleaning system. They are well-suited for low-income tropical countries where conventional wastewater treatment cannot be achieved due to the lack of a reliable energy source. Further, the advantage of these systems, in terms of removal of pathogens, is one of the most important reasons for its use. The common practice in the design of the WSP is not based on nutrient removal; rather, it is based on BOD and faecal coliform removal. It must be noted that the choice of the ETP to be used always winds in the consideration of the receptor of the final effluent of the system.

*5.1 Introduction*

The detailed plan is prepared in conformity with the proposed Structure plan. The detailed plan is based on the existing town layout with minimal alterations made to align the existing access roads to conform to the acceptable standards.

*5.2 Objectives of the detailed plan*

The development of this detailed plan was based on the following aims and objectives:

- To Streamline the implementation of the structure plan
- To avert the upsurge of unplanned developments in the town.
- To clearly demarcated plot area boundaries
- To define plot densities (floor area ratio, plot coverage, setbacks, frontage)
- To ease access to property

*5.3 Area Coverage and detailed plan area*

The Detailed Plan area is approximately 8.5 square kilometers. It comprehensively covers the areas of Katikamu, Bukolwa, and part of the CBD as shown in figure 48 below.

*5.4 The Proposed Detailed Plan*

The proposed detailed plan is given in 48 below;

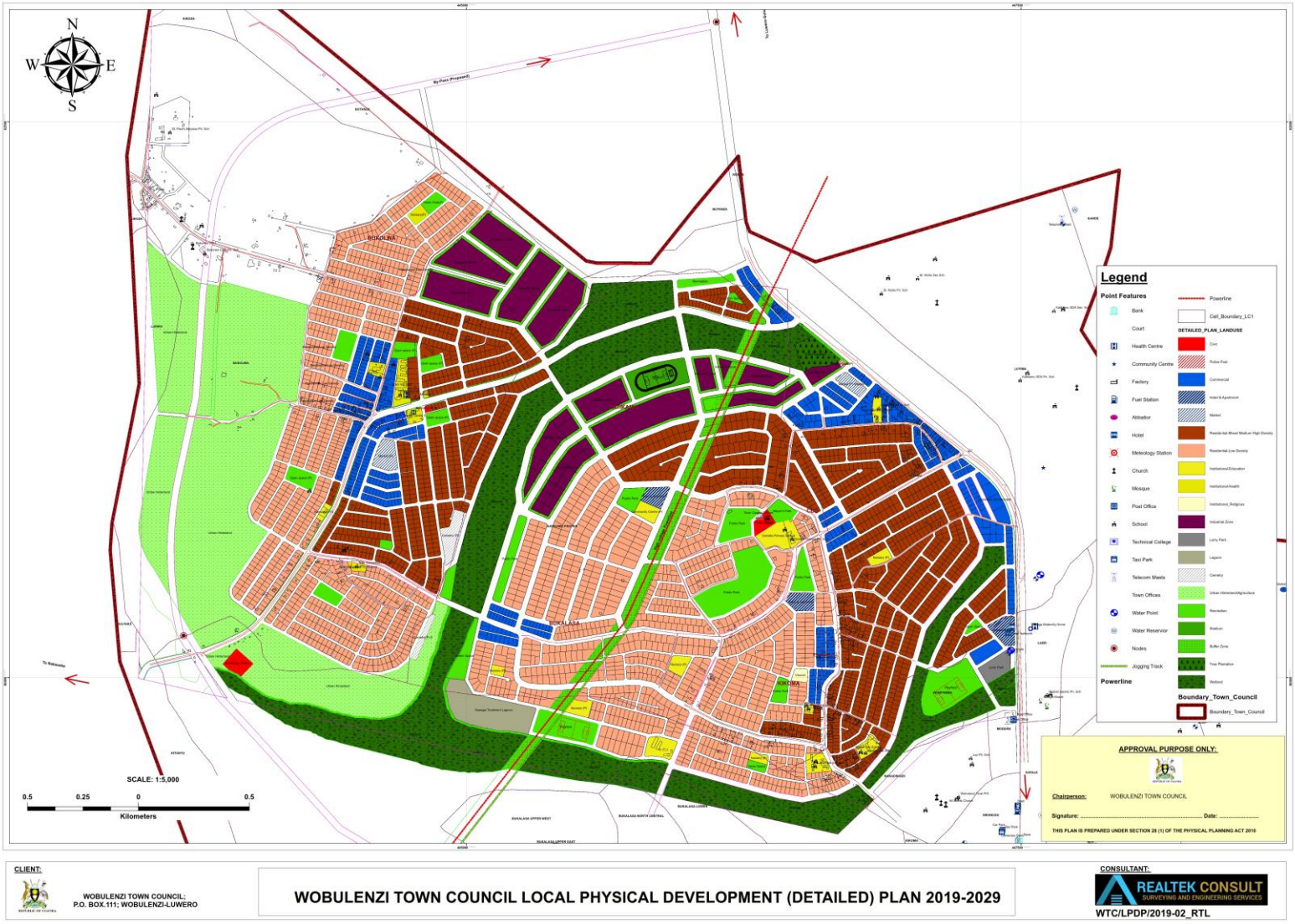


Figure 36: Wobulenzi (Katikamu and Bukolwa) Detailed Plan

# 6. EVALUATION OF THE ENVIRONMENTAL ISSUES

## 6.1 ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES

This chapter identifies and evaluates significant environmental consequences of the proposed land development. A number of positive impacts have been identified and would be enhanced during project implementation. Where potentially significant adverse impacts were identified, mitigation measures to avoid, reduce and minimise these impacts have been suggested; some of them would be incorporated into the designs while others would be implemented during other phases of the proposed development. Monitoring initiatives have also been suggested.

### *6.2 Drainage*

As mentioned earlier, most of the roads within the Council lack drainage facilities, resulting into rapid damage of such roads.

WTC authorities ought to come up with a Drainage Master Plan which would be incorporated in the Physical Plan.

### *6.3 Wetland degradation and pollution of water*

Wetlands serve vital functions including storing runoff, regenerating groundwater, filtering sediments and pollutants, and providing habitat for aquatic species and wildlife. All the swamps in WTC (including Lumansi, Nakagolo, Kiggwe, Nambaga and Nakijalu) are all degraded through the following ways:

- Construction of buildings (residential, commercial houses and Pentecostal churches especially in Kiggwe swamp).
- Some of the local people carryout subsistent farming in these swamps while those living near or within these wetlands deposit their garbage therein. This has not only choked the flow of water but also polluted the swamp water which is also used by the surrounding residents.
- Many wetlands / swamps have been encroached on by brick makers who normally leave gaping holes which act as breeding grounds for mosquitoes.
- Many of these wetlands / swamps are used as dumping grounds for human excreta thereby contaminating the water, a health risk for the surrounding communities.

The Council has been taking the following measures (and the Consultant hereby calls for sustained efforts to continue the same) to curb wetland degradation:

- Constant sensitisation of the affected communities through all stakeholders.
- Issuance of letters of eviction to would be developers to leave.
- Constant monitoring by the Planning and Health departments to improved the surveillance drive.

It must be noted, however, that site clearance and subsequent construction works (of say roads during the Implementation of the proposed Plan) could damage the surrounding wetlands in the following ways:

- Heavy machinery could crush wetland vegetation and wetland soils.

- Wetland soils, especially very peaty soils could easily be compacted, increasing runoff, blocking flows, and greatly reducing the wetland"s water holding capacities.

- The construction of roads could change the quantity or direction of water flow, causing permanent damage to wetland soils and vegetation.

- Construction and maintenance equipment could stir up sediments, endangering fish and other aquatic life.

- Vehicles and construction equipment could introduce exotic plant species. With few natural controls, these species could out-compete high-quality native vegetation, destroying valuable wildlife habitat; the wetlands within WTC are habitats to herps and amphibians.

Any of these activities would impair or limit wetland functions and compromise the quality of water in wetlands. Organic soils consist of layers of decomposed plant material that formed very slowly. Disturbed wetland soils are not easily repaired. Severe soil disturbances could permanently alter the affected wetland hydrology. A secondary effect of disturbance would be the opportunistic spread of invasive weedy species which provide little food and habitat for aquatic life. Besides, some of the local people collect their water (for home consumption) from these swamps.

### 6.3.1 Suggested Mitigation Measures

The design and management of the construction process will ensure that the normal flow in these wetlands would be maintained. A Soil and Water Management Plan complying with erosion and sediment control guidelines will be prepared and implemented. Key sediment runoff control initiatives will include the following:

- The construction area footprint will be restricted as much as practical to minimising areas of disturbance and much of the construction will be carried out in staked out areas of the wetlands.

- Key phase of the construction sequence will be timed to coincide with lower rainfall periods (January – February and June – July) as much as is practical.

- Directional bunds and grades would be used to direct runoff water to appropriately-sized sediment retention ponds.

- The water detained in sediment ponds would be reused on the construction site where possible, or progressively released back into the wetlands under a water quality management plan.

- Stockpiled top soil would be kept at a practical distance from the wetlands and would be protected by bunded and lined enclosures.

- Vegetation on banks or steep slopes would be cut just above base height to maintain the root mass.

- Vegetation clearing would be staged so that only the area required for construction works would initially be cleared then the remainder would be cleared progressively and as late as possible in the construction sequence.

- The construction footprint area would be progressively reshaped and re-vegetated with

native species as work phases would be completed.

The Project Contractor would, wherever possible:

- Span such wetlands.
- Limit construction to months of limited growth (droughts e.g January to February and July to August) because during such times the plants that get to new areas will most likely dry out.
- Carefully clean construction equipment after working in areas infested by water hyacinth or other known invasive, exotic species. The Project Contractor would prepare and implement a program to monitor and control declared and aggressive aquatic weeds, such as Water Hyacinth. This program would include a survey to determine the distribution and abundance of declared weeds within the project area.
- Introduce snag habitats in appropriate places within the wetlands; this would involve the placement of hollow snags and piles of logs in areas identified as most potentially suitable for fish and other species, such as snakes. The Project Contractor would develop a fish transfer system in conjunction with experts from the Fisheries Department of the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF). This would include physical translocation of specimens of the species of interest. The Project Contractor would regularly monitor the efficacy of the fish transfer process to ensure his objectives would be achieved.
- Prepare and implement a program to identify operational activities that could aid in the management of habitat diversity.

Considering that the local people in WTC rely, to some extent, on the swamps in the area as their source of water, it is imperative that the Council formulates a Stormwater Quality Control bylaw. The bylaw would aim at encouraging and requiring, in some cases, the implementation of structural stormwater treatment measures on new development sites. This bylaw could be developed with consideration to existing bylaws (if any) of a similar nature, particularly those of Luwero District. The bylaw would affect the large majority of new commercial, industrial and multi-unit residential developments to be built in the Council during the implementation of the proposed Plan. WTC authorities could integrate the bylaw provisions into a Development Control Plan for the Council.

It must also be noted that it is the responsibility of WTC to formulate and achieve consistent stormwater management objectives for developments in their area of jurisdiction so as to achieve a coordinated approach to stormwater management, and hence, good quality water in the swamps found within the confines of the Council. Hence, WTC ought to formulate a Stormwater Management Plan (SMP) which would incorporate the following:

- Surface drainage and flood protection;
- The preservation or rehabilitation of natural systems;
- Protection of aquatic habitat and biota;

- Reduction of stormwater pollutants;
- Erosion and sediment controls;

- Enhanced aesthetics and recreational opportunities;
- Reuse of stormwater as a valuable resource (surface water quality);
- Environmental and ecological protection and management;
- The management of existing stormwater structures within the Council;
- A comprehensive community education (awareness raising and action) program;
- Adequate allocation of funds (by WTC) to the sector; and
- A commitment (by WTC) to manage Stormwater.

The primary goal of the proposed SMP would be to facilitate the coordinated management of stormwater within WTC so as to maximise ecological sustainability and the socio-economic benefits of sound stormwater management practices. Ensuring that any new developments in the area fulfil the objectives of the SMP would provide the Council with significant leverage in accomplishing catchment-wide stormwater management objectives.

The Council Engineering Department would plan, design and operate a stormwater drainage system based on the varying flow rates and pollutant loads in the different parts of the Council, (as illustrated in Figure 36 below) so as to achieve the above mentioned objectives. It must be noted that the more impervious a catchment, the greater the energy in the runoff and the greater can be its potential to mobilise pollutants as it flows.

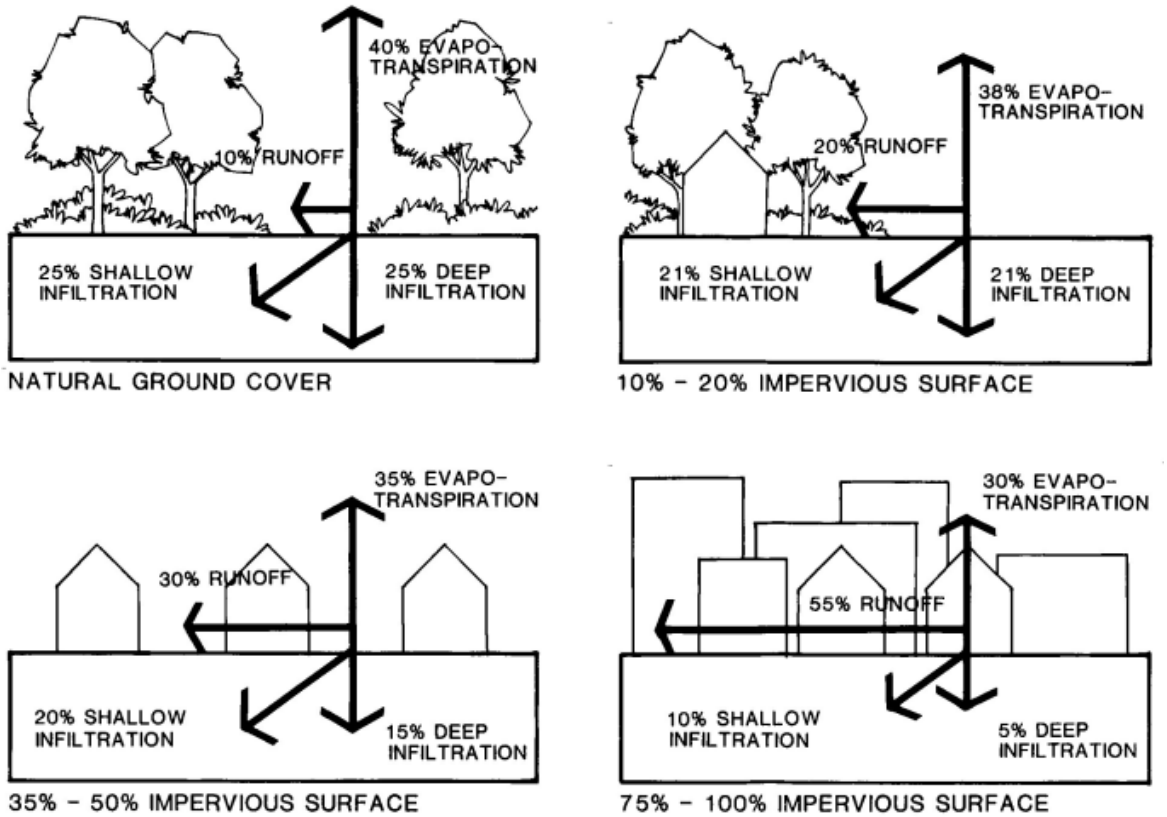

Figure 37: Changes in Runoff Flows Resulting from Paved Surfaces (Source: Livingston and McCarron, 1992)

All actions from each Stormwater Management Plan would have to be ranked before being listed in the Management Plan and included within the Council"s annual capital works programme for funding.

This would create a conundrum for Council to fast-track actions into the Council Management Plan (see Figure 8 below), as each action would be workshopped through a committee to maintain transparency and objectivity.

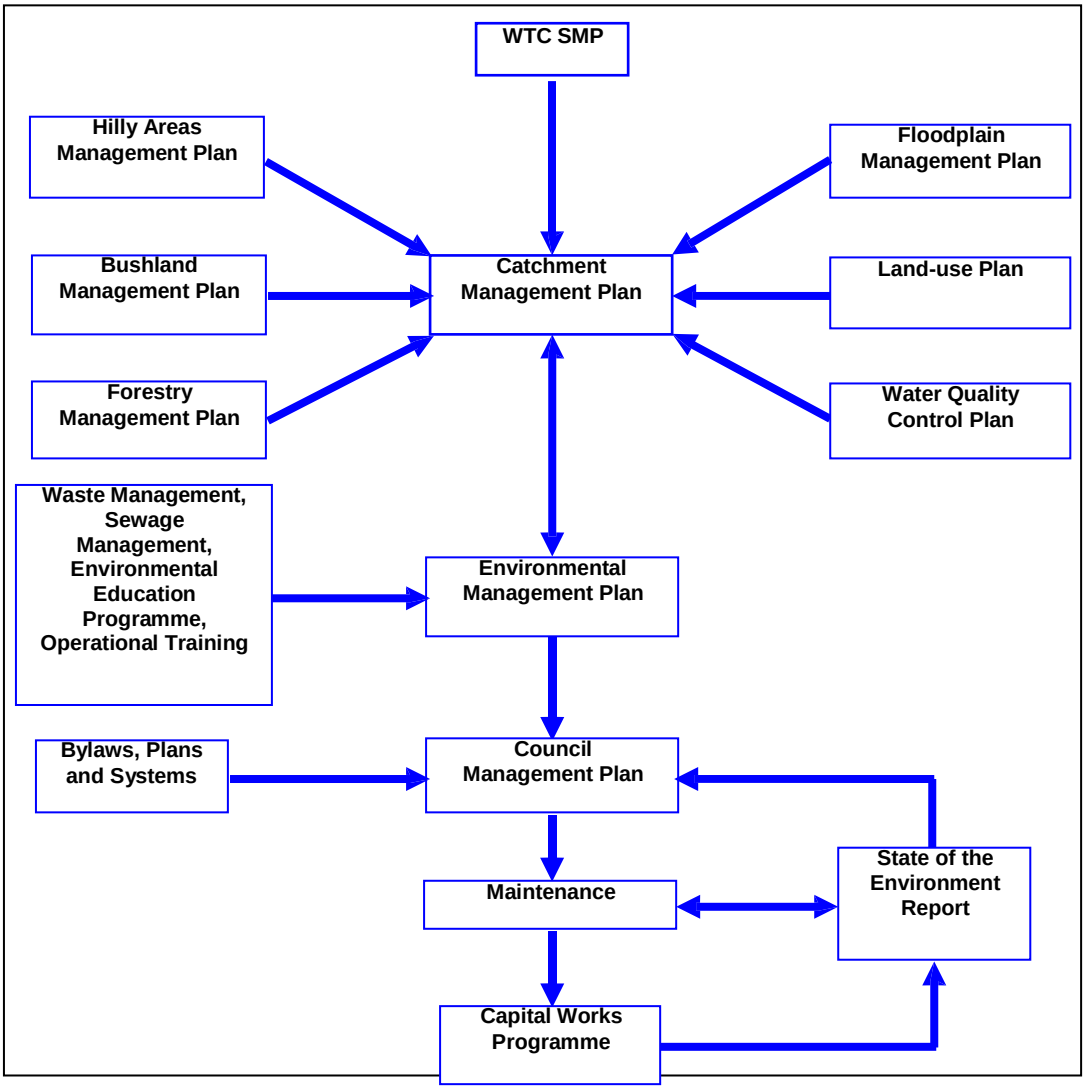


Figure 38: Integration of the Stormwater Management Plan into WTC Management Structures

Departmental fragmentation within the Council can be a major constraint to the implementation of the Stormwater Management Plan. An internal implementation Taskforce representing all Council departments should reduce duplication of responsibilities and facilitate the integration of actions. The implementation of the actions is contingent upon the financial and human resources of all concerned departments (Engineering, Environment and Public Health) as far as stormwater management is concerned. It must be noted that without senior management and political commitment to the implementation of the SMP, the Plan could stagnate. It is, therefore, imperative that a committee involving senior management of each of the concerned departments is set up to effect the implementation of the proposed Plan; only then could the actions be considered for funding and put to Council for consideration.

It is also important to note that gaining community support is probably the most important consideration in the process. Massive finances for education and sensitization coupled with tree growing campaigns and active law enforcement would be critical in the successful implementation of the Plan. However, local people participation emerges as a complex issue relating to considerations of empowerment and social justice, community capacity building, patriotism, human and social capital, and collaborative local action. It must be noted, though, that all of these considerations are inextricably linked to concepts of sustainability and the common good.

- The benefits of the Stormwater Management Plan would include the following:
- Increased Council‟s capacity in managing the stormwater quality;
- Increased recognition of stormwater as an issue in the Council;
- Increased focus on source control and preventative action solutions;
- Development of catchment-based relationships between Officers in different Council Departments;
- Ownership of the process by Officers and commitment to see that it proceeds effectively.

*6.4 Loss of food crops*

One of the first major activities, during the implementation phase, would be clearances. This could result in the removal/destruction of food crops on especially some remote areas (far from the town centre) of WTC.

6.4.1 Suggested Mitigation Measures

People who planted food crops within the confines of the Council, especially in areas to be immediately cleared, would be allowed to harvest it but no one would be allowed to plant any new crops in such areas; fortunately, the local people are well informed about the proposed development and welcomed it. Hence no annual food crop losses are expected as a result of the proposed development; WTC would, however, compensate the local people for any perennial crop losses. WTC authorities would carry out mass sensitisation campaigns (in churches, mosques, markets, and on radios) during which the local people would be urged to stop practicing agriculture within the confines of the Council.

*6.5 Loss of vegetation cover, and increase in volume of storm-water and soil erosion*

The existing green cover within the confines of WTC decreases the speed of run-off and eventually encourages some rainwater to infiltrate into the ground after a storm. The removal of the green cover during the implementation of the proposed land development Plan, therefore, would increase surface run-off from the cleared areas, which could result in increased soil erosion in the Council.

6.5.1 Suggested Mitigation Measures

The vegetation within WTC is composed of mostly plant species that are similar to those in the surrounding areas. Its loss, therefore, would have no impact on the local/national ecology.

WTC could develop by-laws requiring that all developers within the confines of the Council seek NEMA approval before seeking approval by the Council authorities. This move would give the Council authorities more power to regulate developments on slopes of hills found in the Town Council thereby minimising massive green cover loss and possible mudslides in the area. Hence, prior to implementation of any project within the Council, an Environmental Impact Assessment would have to be carried out in which detailed erosion and sediment control plans would be prepared. A Certificate of Approval from NEMA would have to be attached to the Drawing Plans forwarded for approval in the Physical Planning

Department of WTC, short of which no approval would be granted. Projects would be developed in a manner that would minimise the potential for soil erosion and water pollution and also place less strain on the immediate ecosystems. This would also mean less impact on residents surrounding the developments.

*6.6 Disruption of public utilities*

Considering that land within the Council would be zoned (and demarcated into plots) for various specific uses and that some of the existing service lines (such as piped water mains from NWSC and electricity power lines for UMEME) pass through private and/or public properties within the Council, the proposed programme would require that service providers (existing and new – such as telecommunication companies which may be interested in laying optic fibre internet cables) align their service networks along the roads in WTC. This exercise could result in temporary disconnection of the respective surrounding communities from such services.

6.6.1Suggested Mitigation Measures

The service providers (UMEME and NWSC) would forewarn the surrounding communities of impending disconnections so as to minimise annoyance.

The service providers would ensure that the period of disconnection would be as short as possible.

The timing of disconnection would have to be such that only a few people would be affected.

*6.7 Air pollution*

Air pollution issues would arise from agitation of dust due to construction trucks' movements along haulage routes within WTC; loading / unloading of earth materials within the TC; and exhaust emissions from construction vehicles and equipment.

6.7.1 Suggested Mitigation Measures

The Contractor would:

- Take advantage of trucks destined for collection of materials to take away solid wastes. This would reduce on the level of emissions due to use of a large fleet of vehicles on site.
- Sprinkle the stockpiles of soil on site with water and re-vegetate unused opened areas. Water sprinkling of re-vegetated areas would continue until complete nurturing of the green cover would be ensured.
- Use techniques such as the use of ultra low sulphur diesel, fitting all machinery with Diesel Particulate Filters (DPF), and use energy saving methods whilst operating the machinery.
- Cover earth materials with tarpaulin during transportation to minimise their falling off trucks.
- Fill trucks only up to the maximum recommended levels.
- Ensure that his construction trucks and/or equipments are regularly serviced to minimise exhaust emissions.

A set of development specifications and guidelines are stipulated below;

*7.1 Setbacks for dwellings*

The setbacks of the proposed dwelling units are as indicated in the table below;

Table 21: Setbacks of dwellings

| Function | Minimum set back (meters) | | |
|---|---|---|---|
| | front | Sides | Back (rear) |
| Commercial | 2 | 0 | 5 |
| Low density (grade A) | 8 | 3 | 12 |
| Medium density(grade B) | 6 | 2 | 8 |
| High density (grade C) | 3 | 2 | 2 |

*Source: National Physical Planning Guidelines 2011*

The above table shows minimum distances from any side of the plot to the respective side of the building. Set back are given in order to control intensity of development and to promote porosity.
Note;

All residential buildings of more than 2 (two) floors should have an additional set back from boundaries of 1-5m per additional floor.

The frontage of 2 m is for a covered walk way or canopy and has to continue to the end of the boundary

The rear building line for the commercial plots of 5m is to leave sufficient space for septic tank, soak pit, car parking and any rear services. The figure below shows the setbacks for a standard commercial plot

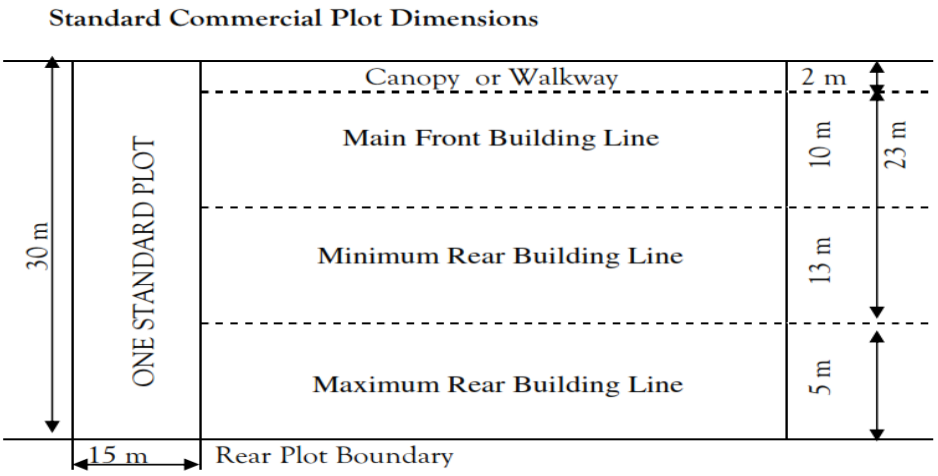


Figure 39*: Showing the site development standards for a Commercial area*

*7.2 Site Standards for residential Development*

Developers, who would express interest in purchasing bigger plots than those provided for by the standards, are encouraged to consider plot amalgamation to meet their interest. The figure below, shows the site development standards for the residential areas

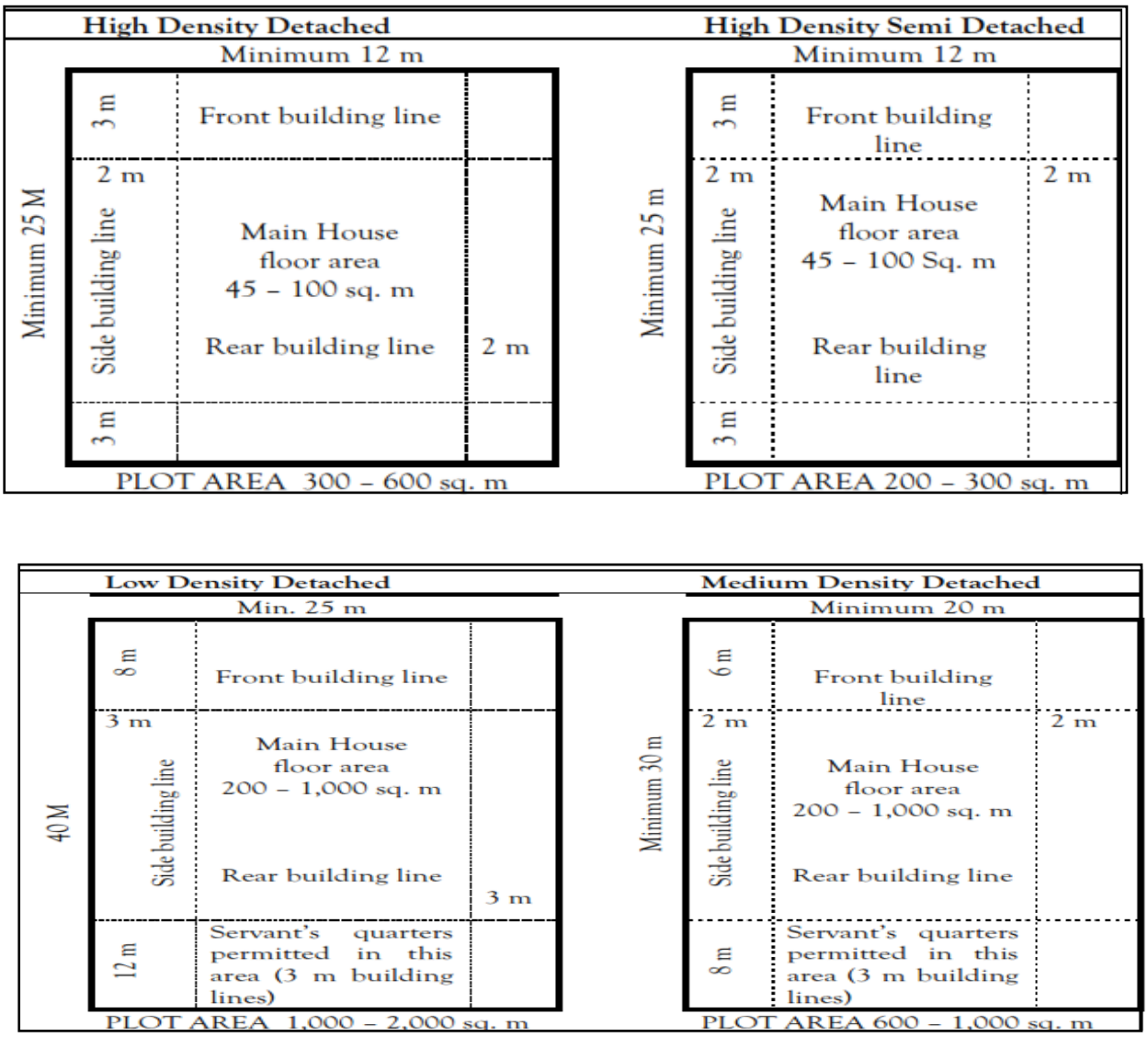


Figure 40*: Showing the site Development standards for the residential areas (Source National Physical Planning Standards 2011)*

*7.3 Vehicle parking requirements*

7.3.1 On street Parking

It is a common practice to park vehicles on the street. This is acceptable if the street is wide enough and lightly trafficked. Elsewhere on street parking should be discouraged because it leads to reduced flow of traffic and is likely to cause accidents. In order to practice on street parking it is advised that the council clearly marks out the parking spaces on the carriage way in the color specified by the town engineer.

7.3.2 Off street parking

The parking lot requirements for off street parking are given in the table below;

Table 22: Parking Space Requirements for off street parking

| Activity area | Consideration |
|---|---|
| Residential | A minimum of two parking spaces for each low density plot should be provided and one car parking space for a medium density plot whereas it is not mandatory to provide parking spaces for high density plots, these settlements should have a common parking lot. |
| Commercial | Four parking spaces for every 100sqm of floor area |
| Industrial Development | Three (3) car parking lots for the first 750 $m^2$ and one car parking lot for every additional 609.5 $m^2$ |
| Hotels and motels | One car parking lot for every three bed rooms of the hotel and one parking space for every three managerial staff are adequate. However if the hotel has bars, restaurants and is also used for functions the parking spaces used for these functions should be assessed separately and added on |
| Restaurants and club houses | One car lot for every sixth seat of a patron |
| Community centre and place of worship | One car parking space for every 10 people |
| Warehouses | One car parking space per 30$m^2$ of gross floor space plus one additional space for every two employees on the largest work shift. |

*7.4 Key Issues to Consider during development approval*

- For every Low density domestic plots the setbacks should be increased by 10 to 20 percent.
- Fence or boundary walls and hedges should be sited on the property line on the front of the plot boundary.
- Gates on any fence or boundary walls ought to open inwards and not outwards on the access road
- Boundary walls facing the road should not exceed a height of 150cm and no garage ramp should encroach on the road reserve.
- All buildings containing more than four flours must have provision for an elevator
- All Public buildings must have ramps to facilitate PWD accessibility and mobility.
- Residential Direct access on primary and secondary roads is prohibited

*8.1 Introduction*

Wobulenzi Town Council Physical Development plan 2014-2024 is a specific landuse proposal for the aimed at realizing orderly development of the town. A strategy for the implementation is therefore needed to guide the implementation exercise.

Implementation of projects depends upon the resources available to the Town Council authority. Therefore a resource analysis for the Local authority is necessary if a realistic implementation strategy is to be identified.

Implementation of the plan begins at a time when the plan has been approved by the National Physical Planning Board (NPPB) and it will be spearheaded by the local authority (Wobulenzi Town Council).

*8.2 Legal and Institutional Frame Work for plan Implementation*

As far as the preparation and implementation of the physical development plan is concerned, there are various institutions and laws that are important.

8.2.1 Legal frame work

The legal frame work gives guidelines for the implementation of physical development plan in a legal context. It thus provides a set of laws that are of specific relevance to physical planning. These laws include but are not limited to; The Constitution o f the Republic of Uganda, 1995, The Physical Planning Act 2010, The Local Governments Act, 1997, The Uganda Land Act Cap 227 1998, The Public Health Act Cap.269, Waste Management Regulations 1999. Understanding the above laws is important for a smooth implementation process. It is also advised that the Town Council involves in capacity building for its technical staff to properly understand these laws as this will make their work easier. A step should also be taken further to sensitize the local community about the relevant laws concerning physical planning.

8.2.2 Institutional frame work for implementation

The following institutions have a stake in the implementation of the plan. Their duties, powers and obligations can be applied in physical planning. These institutions include; MoLHUD, MoLG, land boards, National Physical planning Board administration and respective local council land committees, Physical Planning Committees, Non Government Organizations, NEMA, and National Planning Authority.

*8.3 Actors in the Implementation Process*

The implementation of the plan will involve both the public and private sector. There is therefore need for interdependence of both the public and private sector agencies during the implementation process of the plan. The duty of the public sector is to provide an enabling environment for the active participation of the private sector.

The role of Non Government Organizations as well as donor funding will provide important starting points for successful plan implementation. The Town Council needs to make efforts to attract donors and NGOs to participate in implementation of the plan. The table below shows the various actors and their roles in the implementation process.

Table 23: The Key Actors in a Planning Process and their Roles

| S/No | Actors | Roles |
|---|---|---|
| 1 | Central or national government | ▪ Invoke a national law, only where the situation warrants.<br>▪ Mobilize the relevant government agencies to undertake, commission, and supervise planning.<br>▪ Provide funding or support for accessing international funding.<br>▪ Provide specialized technical expertise if required. Ensure public investments conform to plans and codes<br>▪ Provide legal mandate for the plans.<br>▪ Create the policy environment in which the plans are prepared. |
| | Local government | ▪ Carry out the planning process at the local level.<br>▪ Create structures to enable meaningful community participation.<br>▪ Be committed to implementing plans prepared with community participation.<br>▪ Approve plans and establish the regulatory framework for implementation.<br>▪ Carry out communications campaigns and training programs to ensure compliance with plans and codes.<br>▪ Review and approve building plans, enforce building codes and land use regulations, carry out inspection, and administer sanctions |
| 3 | Community | ▪ Participate in the land use, physical, and strategic planning processes.<br>▪ Develop a collective vision for the future of the community.<br>▪ Arrive at consensus on policy issues that cut across communities.<br>▪ Where relevant, prepare community-level detailed plans in conformity with larger Policies |
| 4 | Project facilitators (planners, nongovernmental organizations [NGOs], and other intermediaries) | ▪ Interpret government policies to set out the agenda for planning.<br>▪ Educate the community on planning imperatives and the policy framework.<br>▪ Interpret technical information and offer viable choices to government and communities to enable informed decision making.<br>▪ Develop and carry out projects that comply with plans and codes. |
| 5 | Technical experts/ Consultants | ▪ Carry out technical investigations, data collection, and analysis to support planning.<br>▪ Develop technical recommendations and options.<br>▪ Assist with implementation of plans and codes |

*Source: Analyzed by the Consultant*

*8.4 Implementation Strategies*

8.4.1 Implementation Time Frame and Development Priority

The implementation period for the detailed plan is five years. It is thus imperative that Priority projects are clearly identified and phased for implementation to spearhead the

development of the town, given the financial constraints to the council, not all proposals in this plan can be implemented at the same time hence the need for phasing and prioritizing the implementation of the plan.

#### 8.4.1.1 Phasing

Phasing is an integral and vital part of land use proposals put forward to guide the development. To enable essential services and communication network to be developed strategically, economically and in an orderly manner, provision of this requires effective coordination of service providers. Land-use developed can be phased in to three development options that is to say short term, medium term and long term as indicated in table 21 below. Phasing of land-use developments turns out to be most viable alternative as no wholesale development may be possible at once

Table 24: Detailed Plan Implementation Development options

| S/No | Phase of development | Period |
|---|---|---|
| 1 | Phase ONE Short Term | 2016-2020 |
| 2 | Phase TWO Medium Term | 2019-2022 |
| 3 | Phase TREE Long Term | Beyond 2022 |

*Source: Compiled by the Consultant*

Plan Financing

Financing for the implementation of this Physical Development Plan will be mainly through local revenues and grants of Wobulenzi Town Council, CBOs, development partners and the private sector.

### 8.4.2 Implementation Strategy and Costs

Strategies and the costs for the Implementation activities of the physical plan were evolved from the key development priorities of Wobulenzi Town Council based on the annual fiscal budgets and the Five Year Development Plan as summarized in the table below

Table 25: Implementation Strategy

| *ISSUE/ACTIVITY STRATEGIES* | *TIME FRAME* | EST.COST (UGX)000 | *SOURCE OF FUNDS* | *RESPONSIBLE ORGAN* |
|---|---|---|---|---|
| Capacity Development | | | | |
| • Sensitize key stakeholders on land use changes and plan<br>• implementation<br>• Training of core staff | 2029- 2030 (throughout the implementation period) | 90,000 | • Local Revenue<br>• Unconditional Grant | • WTC |
| Detailed Planning of other parts that are not covered in the detailed plan | | | | |
| • Prepare remaining planning area detailed plans<br>• Sensitize the land lords and other relevant stakeholders on implementation of the detailed plans.<br>• Procure a consultant | 2020-2024 | 70,000 | • Local Revenue<br>• Central Government Support<br>• Donor Funds | • WTC<br>• MoLG<br>• UN HABITAT |
| TRANSPORT DEVELOPMENT | | | | |
| • Survey and peg planned roads | 2020- 2024 | 70,000 | • URF<br>• DONORS FUNDS<br>• GoU<br>• Local Revenue | • WTC<br>• PPP |
| • Surfacing of the Taxi Park<br>• Compensate land for the land for proposed ring roads .<br>• Open surveyed roads (Those above)<br>• Procure consultant to Design the infrastructure | 2020-2025 | 250,000 | | |
| Preparation of Drainage Master Plan | | | | |
| • Consultancy services for the preparation of Drainage Master Plan<br>• Securing of Contractor to construct the drainage system of the town | 2020-2023 | 300.000 | • Local Revenue<br>• GoU Support<br>• Donor Funds | • WTC<br>• DONOR Agencies |
| SOCIAL SERVICES IMPROVEMENT | | | | |
| • Survey of sites for social services<br>• Compensation of land owners<br>• Procure consultant for Designs<br>• Procure contractor to implement project | 2020-202024 | 7,500,000 | | • MoH, MoGLSD, WTC<br>• PPP, PS |
| IMPROVEMENT IN URBAN LOCAL ECONOMY | | | | |

| | | | | |
|---|---|---|---|---|
| • Survey land for commercial, industrial land uses<br>• Encourage PPP<br>• Establish industrial parks<br>• Instituting mechanisms on urban agriculture | 2025-2030 | 70,000 | • Local Revenue | • WTC<br>• PPP<br>• PSF<br>• UIA |
| DEVELOPMENT OF RECREATIONAL FACILTIES | | | | |
| • Survey all planned public spaces, play grounds, and sporting sites<br>• Compensate land<br>• Encourage private developer to invest in this sector | 2020-2023 | 100,000<br>350,0000 | • Local Revenue | • WTC<br>• PPP |
| • DEVELOPMENT of PROPOSED MARKETS | | | | |
| • Purchase of land for the proposed markets<br>• Preparation of architectural plans<br>• Construction of markets in all wards | 2020-2030(throughout implementation period) | 240,000<br><br><br>250,000 | • Local Revenue | • WTC<br>• PPP |
| • PROMOTION OF ENVIRONMENT SUSTAINABILITY | | | | |
| • Map out and survey environmental fragile sites<br>• Plant trees along all major roads, open spaces and in buffer zones.<br>• Have policy on green coverage on individual plot development | 2020-2023 (Short Term) | 100,000 | • Local Revenue<br>• Environmental Protection Funds | • NEMA<br>• WTC<br>• PPP<br>• MoWE<br>• NGOS |
| DEVELOPMENT OF SANITATION | | | | |
| • Survey sewer lines, lagoon site, Water mains<br>• Design water treatment plant<br>• Prepare waste water master plans | 2024-2027 (Mid Term) | 500.000 | • WB<br>• Local Revenue<br>• Grants | • NWSC<br>• WTC |
| MONITORING AND EVALUATION OF THE PHYSICAL DEVELOPMENT PLANS | | | | |
| • Annual Monitoring and Evaluation | | 60.000 | • Local Revenue<br>• Grants | • WTC<br>• MLHUD |

*8.5 MONITORING AND EVALUATION STRATEGY*

8.5.1 Monitoring

Monitoring plays an integral part in the plan implementation process and it involves continuous and systematic checking on the progress of the implementation process. Monitoring ensures implementation of the plan as per the desired objectives. Monitoring is usually done through a systematic and continuous data collection and analysis exercise. The information obtained is used for decision making and management control.

8.5.1.1 Purpose of Monitoring

Monitoring ensures the following;

- Keeping track and progress towards achieving the set objectives
- Ensures the most effective and efficient use of resources (human, financial, time and material)
- Reducing waste of resources and time by taking corrective measures
- Enable one to solve emerging project short falls and problems
- Helps in making informed decisions regarding operations management and service delivery
- Provides accountability and greater transparency for beneficiaries and stakeholders
- Motivation of staff and volunteers by knowing their out puts and achievements

8.5.1.2 Proposed Strategies for monitoring.

- Observing and noting how the project is proceeding.
- Identification of problems or setbacks.
- Provision of feedback.
- Identifying and documenting inputs and outcomes.
- Field visits.

8.5.2 Evaluation

Evaluation is an exercise that assesses, appraises or determines the worth, value, quality and impact of the project, program or plan. It involves comparing the present situation with the past baseline position in order to find out the extent to which the plan has achieved its intended purpose. Results of the evaluation will be an important input in the design and formulation of a new development plan since it helps to check if the goals and objectives are being achieved and if the problems have been solved.

8.5.2.1 Purpose of Evaluation

Evaluation enables the plan implementers to establish the following;

- Check if the established objectives are being achieved or about to be achieved
- Find out if the objectives are still relevant to the situation and the needs of the target beneficiaries
- To make sure project implementers are accountable to the community beneficiaries

8.5.2.2 Strategies proposed for evaluation.

The strategies proposed for plan evaluation are as listed below;

- Progress reports.
- Audit and Accountability reports.
- Logical frame work matrices

## *10.1 RECOMMENDATIONS*

Physical Planning is a continuous process and cyclic in nature. This implies that the activity requires constant field checks for effective development Control. The following recommendations are crucial for the implementation of the plan.

### 10.1.1 Technical Recommendations

- There is need for the Town Council Technical Planning Committee to prepare annual work plans linked to the implementation strategy outlined in this physical Development Plan report.
- Developing institutionalized coordination mechanisms particularly to link the decision-making processes about budgets and infrastructure improvement and development with those of land management. This will also help in ensuring transparency as well as accountability;
- The design of the roads within the town council should entail separation of the motorized transport modes from the green modes
- All development within the jurisdiction of the Town Council should be submitted to the council for scrutiny and approval by the physical planning committee. In regard of the above there is thus a need to carry out site inspection before the plan approvals are made.
- As far as addressing Urban Sprawl is concerned the following is recommended
    1) The Design principle of densification is recommended to address urban sprawl
    2) Mixed use as opposed to segregation
    3) Urban regeneration or renewal in areas which are already existing for specific zoned land uses can be converted to suitable urban uses
- As far as preserving the proposed forests is concerned, the local Authority will have to purchase the land earmarked for forest development and propose bye laws to govern their existence.
- There is need for the Town Council to secure funds for the detailed planning of other areas that are not covered by the detailed plan
- Drainage was identified as a key problem in the town, there is therefore need for the Town Council authority to prepare a drainage master plan
- It is also recommended that the Council carries out sensitization campaigns about the physical planning out activities.
- Environmentally sensitive areas ought to be preserved and conserved as per the plan and any developments therein must go through Environmental screening to identify possible project consequences and develop mitigation measures.
- To minimize the cost of development and compensation, Wobulenzi Town Council ought to involve the land owners in the development process. This can be achieved by declaring some of the developing corridors as concession for development through

people's participation where landowners will become development partners and share the development cost through contribution of a portion of their land. Lobbying and soliciting for funds from donors communities to implement the plans is necessary to avail the local authority with adequate funds to implement the plans.

- All implementation of the planned projects should go through Environment impact assessment screening to identify possible consequences and develop mitigation measures.
- Small home-based industries can also be permitted in residential zones as part of the premises given the fact that they are not likely to cause interference, nuisance or annoyance to the neighbors. This is allowed for economic and convenience reasons.
- Wobulenzi Town Council should take initiatives to review the performance and functioning of the plan during the planning period. It should also make arrangement for regular updating of the plan. Provision should also be made to prepare fresh plans on expiry of a plan period.

10.1.2 General Recommendations

- During the surveys it was established that malaria was the major disease affecting the community of Wobulenzi Town, there is thus need for the council to lay strategies to reduce the spread of malaria; these may entail the following;
  - Campaigns to use Mosquito Nets
  - Clearing of Bushes
  - Desilting the drainage channels to avoid stagnant water
- Generating political will to have due regard to the proposals of the new Plan through orientation/briefing to the elected representatives about the Physical Planning and its role in achieving the desired quality of life of Wobulenzi town residents and future generations, dissemination of progress on implementation of the plan, and creating awareness among the communities;
- Lobbying and soliciting for funds from donors communities to implement the plans is necessary to avail the Town Council with adequate funds to implement the plans.

*10.2 CONCLUSIONS*

This Physical Development Plan gives a broad framework of landuse proposals, strategies and policy recommendations for the orderly and improved development of Wobulenzi Town, geared at meeting the development needs of the area by the year 2025.

The main factor considered during the preparation of this physical Development plan was consultation of the key stakeholders/plan beneficiaries. This was in a bid to popularize the planning exercise and gain meaningful planning proposals that would aid the future development of the town, thus the Contents of plan is a true representation of the planning needs of the inhabitants of Wobulenzi Town Council

This plan takes into account the existing situation and makes new and better proposals to modify on the existing conditions. This was geared at making low cost sustainable plans that can easily be developed and implemented using the limited available resources.

This Physical Development plan will facilitate the creation of good urban living environment beneficial to all socio-income groups. The put forward proposals however,

provide a framework on which a more comprehensive development of Wobulenzi Town will be based.

The plan shall be a guide to investment area priorities, policy frame work for orderly development, and shall provide a basis for coordinating planning decisions. The plan shall also serve as a basis for development permissions in Wobulenzi Town and thus all development procedures in the town ought to adequately follow the proposed plan so as to achieve orderly development

The capacity of Town Council's Sector Departments needs to be strengthened by providing the required staffing and training. The capacities of these agencies need to be strengthened for plan implementation, participatory approaches, resource mobilization, project planning, implementation, monitoring, review and evaluation.

In summary the Physical Development Plan (Structure Plan) shall become a policy framework that will guide land use development in the town for the next ten years (2016 - 2026) and is subject for review at the end of the said planning period.