THE REPUBLIC OF UGANDA

MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT

NATIONAL PHYSICAL PLANNING STANDARDS AND GUIDELINES

Second Edition

2022

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List of Acronyms

CAA	Civil Aviation Authority
CAD	Computer-Aided Design
CAO	Chief Administrative Officer
CAP	Chapter
CBOs	Community-Based Organizations
EAC	East African Community
EIAs	Environmental Impact Assessments
ERA	Electricity Regulation Authority
ERT	Energy for Rural Transformation
GIS	Geographical Information Systems
GOU	Government of Uganda
GPS	Global Positioning Systems
Ha	Hectare
ICT	Information, Communication, and Technology
IT	Information Technology
Km	Kilometer
LCs	Local Councils
LG	Local Government
LGA	Local Government Act
LGDP	Local Government Development Plans
LGs	Local Governments
SDG	Sustainable Development Goals
MoEMD	Ministry of Energy and Mineral Development
MoLHUD	Ministry of Lands, Housing and Urban Development
MoTW	Ministry of Tourism and Wildlife
MZOs	Ministerial Zonal Offices
NDP	National Development Plan
NEA	National Environment Act
NEMA	National Environment Management Authority
NGOs	Non-Government Organizations
NPDP	National Physical Development Plan
NPPB	National Physical Planning Board
NPPS&Gs	National Physical Planning Standards and Guidelines
NWSC	National Water and Sewage Corporation
PDP	Physical Development Plan
PPA	Physical Planning Act
PPCs	Physical Planning Committees
PPP	Private-Public Partnership
REA	Rural Electricity Agency
REB	Rural Electrification Board
REF	Rural Electrification Fund
RPDP	Regional Physical Development Plans
SAS	Senior Assistant Secretary
SIPs	Sector Investment Plans
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TC	Town Council
ToR	Terms of Reference
TPC	Technical Planning Committee
UBOS	Uganda Bureau of Statistics
UCC	Uganda Communication Commission
UEB	Uganda Electricity Board
UEGCL	Uganda Electricity Generation Company Limited
UETCL	Uganda Electricity Transmission Company Limited
UN	United Nations
UNESCO	United Nations Education
UNHCR	United Nations Refugee Agency
UNRA	Uganda National Roads Authority
URECL	Uganda Rural Electrification Company Limited

UTL	Uganda Telecom
UWA	Uganda Wildlife Authority

Foreword

Government of Uganda is cognizant of the fact that physical planning is an important function in the management of land resources under any tenure. It is against this background that a number of policies, laws and guidelines have been prepared to support physical planning in the country.

The Physical Planning Standards and Guidelines is one of the tools government has identified to further strengthen the physical planning function in the country. They are intended to guide the preparation and implementation of physical development plans with the basic aim of ensuring, orderly, coordinated and efficient land use development.

Whereas preparation of the first edition of the National Physical Planning Standards and Guidelines was highly welcome, government realized that there were a number of challenges that were identified in ensuring compliance therein. It will be noted that the circumstances in the country have changed tremendously over the years and therefore it is imperative that the National Physical Planning Standards and Guidelines too are revised to reflect the current realities. This second edition therefore, has been formulated as a framework to further guide the preparation and implementation process of the physical development plans.

One fundamental element of these standards and guidelines is the involvement of all State and Non-state actors in addressing physical planning issues. Indeed it forms an essential part of government's commitment of involving all stakeholders in the management of land resources.

These standards will provide invaluable information to professionals in the field of; Architecture, physical planning, land surveying, engineering, valuation and all any other in the built environment.

Finally, I would like to extend my gratitude to the Uganda Support to Municipal Infrastructure Development project for having supported the standards and guidelines development process, both financially and technically. Furthermore, the views received from stakeholders, through the nationwide consultations, enriched this document and I anticipate that this edition will go a long way in addressing the land use planning and regulatory processes as provided for in the Land Policy of 2013.

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Preface

CHAPTER ONE

1. Introduction and Background to the study

1.1. Introduction

Land is the most essential pillar of human existence and national development and is usually a political issue with the potential to be volatile. This is because it is a scarce commodity which needs to be managed effectively through proper planning. Government, therefore, prioritizes physical planning as a key strategy in ensuring sustainable and resilient urban and rural development.

The MoLHUD found it imperative to review the NPPS&Gs (2011) to match with the current trends and emerging issues. The primary role of the National Physical Planning Standards and Guidelines (NPPS&Gs) is to guide the preparation and implementation of physical development plans, with the basic aim of ensuring orderly, coordinated, and efficient development. The standards and guidelines are as a result of the merging of social, economic, physical infrastructure provision, environment and natural resources management sectors for ease of implementation and enforcement. The reviewed standard and guidelines provide a criterion for determining the scale, location, and size requirements of various land uses and facilities in both urban and rural areas.

1.2. Rationale

The Physical Planning Guidelines and Standards are intended to guide the processes of preparing and implementing physical development plans. This would require consolidating existing standards relating to the land use, environment, social, economic, utilities and infrastructure provision from key sectors. The new Standards and Guidelines are developed to take care of peculiarities in the country, the emerging global trends, challenges, obligations and to integrate best practices. It was therefore imperative that National Planning Standards were revised to reflect the current realities. NPPS&Gs is a critical tool in the following aspects:

- Supports Forward Planning - by providing equitable basis for allocating scarce land resources and locational guidelines for various types of land uses and facilities.
- A Tool and Guide to Development Control - by providing guidance on the scale, intensity, and site requirements of developments as well as the supporting facilities required.
- Tool and Guide for Plan Implementation – by providing a yardstick to measure the sufficiency of land for various uses and adequacy of facilities to serve a planning area and its population.
- Facilitates Raising Quality of Life – by providing guidelines on environmental planning and conservation of our natural landscape, habitats, cultural heritage, and townscape.

1.3. Aims and objectives

- To ensure optimum use of land for agriculture, forestry, industry, human settlement, infrastructure and services and other competing land uses.
- To standardize land use planning processes, procedures and operations regarding efficient and optimal use of land.
- To guide land managers, land use planners and all practitioners at all levels in the process of land use planning to ensure equitable and balanced spatial distribution of development.
- To resolve land-use disputes that may arise among the users.
- To enable land users particularly investors, have the same understanding in implementing Policies and strategies related to land management.
- To promote sustainable land management.
- To provide a number of tools and resources that could be of practical use by land use planners.

1.4. Targeted Users of the standards and guidelines

No	User	Area of application
1	Natural resource managers (Physical Planner, environmentalist, land surveyors, foresters, agriculturalists)	• Preparing and implementing PDPs • Guiding development control • Dispute resolution • Sensitization • Natural resource management
2	Planning Agencies / Local Governments	• Approval of development applications • Preparation of plans • Enforcement of development control
3	NPPB/Cabinet	• Approval of plans • Formulation of planning regulations • Oversight on the implementation of PDPs • Monitoring and evaluation
4	Ministries, departments and agencies, NGOs	• Oversight / supervision • Enforcing land use regulation and compliance • Monitoring and evaluation
5	Other practitioners in built environment	• Understand and apply the requirements for different developments
6	Community, developers and investors	• Understand and apply the requirements for different developments.
7	Training institutions	• Compliment the curriculum for training of professionals in the built environment.

CHAPTER TWO

2. Land use Zoning Guidelines and Planning Standards

This chapter provides guidelines and standards for the different land use zones, development and management in both urban and rural settings.

2.1. Guidelines for Development Zones

The development zones identified in this guideline include; Rural I, Rural II and Urban to take care of the different levels of development. These development zones are meant to take care of the different requirements at the different planning levels (national, district, urban and local). There are basically three development zones i.e., Rural I, II and Urban. Determination of the application of either zone is based on the scale and level of development in a given area.

2.1.1. Rural I

Rural I is largely un developed area and is proposed for use for low-intensity agriculture where the area under agriculture should not exceed 0.7 hectares for a given area not to destroy the use to include a low concentration of agriculture, grazing and shift cultivation. This zone may include protected areas (natural forests, game reserves, national parks, open water sources etc.). The zone may be supported by centralized community facilities i.e., schools, hospitals, religious facilities among others based on the availability of the requisite population. Furthermore, village settlements and cottage industries accruing from the products of the agricultural activities are permitted. The purpose of this zone is mainly land banking.

Extractive industries in appropriate measures shall be acceptable but subject to an environmental and social safeguard that should satisfy the regulatory authority. Below are restricted uses in the zone.

Table 1: Restricted uses in Rural I development zone

Restricted Uses
▪ Massive Residential Development ▪ Large scale industrial Development ▪ Large scale commercial development ▪ Mass transport Facilities ▪ Large scale warehousing ▪ Large scale Animal husbandry

2.1.2. Rural II

Rural II is moderately developed and is proposed to be used for intensive agriculture, animal husbandry and plantation, characterized by use of large amounts of labour and capital relative to the land area. These areas are characterized with high-quality fertile soils suitable for intensive agricultural activities or those related to it. Flood protection works are permitted in this zone as well as irrigation projects. This zone shall be located further away from urban settlements with pockets of settlements to take care of farm workers. Below are restricted uses in the zone.

Table 2: Restricted uses in Rural II development zone

Prohibited Uses
▪ Massive Residential Development ▪ Industrial Development ▪ Extractive industries

▪ Large scale commercial development

For Rural I and II, the land use classifications shall be limited to agriculture, protected areas and settlements. Further classification of land use in these zones is not permitted.

2.1.3. Urban

This zone also referred to as built-up is largely developed with varying land use classifications and a highly pronounced human footprint. The land uses herein includes the different residential, commercial, industrial, institutional subzones among others. The zone has all guidelines pertaining to land use and the standards for the different subzones.

2.1.3.1. Residential Zone

2.1.3.1.1. Residential Zones A

Land in residential zone A is proposed for low-density residential development with a minimum housing density of 5 dwelling units per hectare. The predominant development is detached houses, with plot sizes of not less than 2,000m². Official residences, educational (nursery), child care facilities may be permitted depending on the location and size of the development proposed. Home businesses with 2 - 5 employees, clinics, pharmacies, regulated commercial and surgeries may be permitted but shall be limited to 250m² in Gross Floor Area (GFA). Below are the prohibited uses in the zone.

Table 3: Restricted uses in Residential zone A

Prohibited Uses
▪ Block of flats/ apartments /social housing ▪ Transportation for haulage ▪ Animal Husbandry ▪ Industrial development ▪ Commercial Development over 250m² ▪ Bars and discotheques ▪ Warehousing ▪ Mixed use development

2.1.3.1.2. Residential Zone B

Land in residential zone B is proposed for Medium Density Residential with a housing density varying between 5 (minimum) and 10 (maximum) dwelling units per hectare. The development comprises a mixture of detached, semi-detached (duplex), row (terraced), and compound houses with minimum plot size of 1,000 m² and maximum plot size of 2,000m². Some small retail development would be permissible in this zone in selected areas to accommodate the day-to-day shopping needs of the population. To ensure that an adequate level of amenity is achieved, small areas of public open spaces are intermixed within the development. Major transportation activities are excluded from the zone to minimize traffic congestion and preserve the residential character of the zone. Below are prohibited uses in the zone.

Table 4: Restricted uses in Residential zone B

Prohibited Uses

▪ Major commercial activities ▪ Major industrial activities ▪ Transportation for haulage ▪ Animal Husbandry ▪ Industrial development ▪ Commercial Development over 250m²

2.1.3.1.3. Residential Zone C

Land in residential zone C is proposed for medium Density with densities not exceeding 402 persons per hectare. The development will take the form of flats or apartments of minimum 4 dwelling units for 2 and 3 bedroomed units with a minimum plot area of 1,012m² and 2,024m² respectively. The plot must have sufficient spatial separation between buildings to maintain ventilation, privacy, and light. The grounds shall be landscaped and provision shall be made for car parking. Exceptions to the density restriction may be allowed in central urban areas where the development is adjacent to public parks and gardens or other open spaces. In all such developments, adequate parking facilities will be required, providing a minimum of one parking space for each unit.

It is intended that Residential Zone C be located predominantly in inner-city areas and developing areas close to major roads to make maximum use of existing services and transport facilities in these areas. Ground floor units may be used for small-scale business enterprises and shops servicing a local community. The maximum height or number of stories will be determined by the Statutory Planning Committees depending on the location (e.g., near a flight path height restriction will be imposed or height restrictions may be imposed for reasons of the desired form of the urban landscape). In all cases, the maximum number of stories where no elevator is provided will be four (4). Below are prohibited uses in the zone.

Table 5: Restricted uses in Residential zone C

Prohibited Uses
▪ Industrial development ▪ Large scale commercial development except for shops on the ground level ▪ Animal husbandry ▪ Cemetery & Crematorium ▪ Transport uses ▪ Warehousing ▪ Major sports and Recreation Facilities

2.1.3.1.4. Residential Zone D

Land in Residential zone D is proposed for institutional or community development to include residential hostels, and guesthouses. The size of the site to be developed will be a minimum of 800m² to 1,000m², the nature and type of accommodation facilities to be provided, as well as car parking and open space requirements will be determined by the Planning Authority in collaboration with the owner/ developer. The zone is proposed to be located in the inner-city area, on major roads close to public transport, near universities and other tertiary institutions and schools, or adjacent to facilities they service. Some mixed land uses may be permitted in the case of hotel development, but it is generally intended that commercial and industrial development be excluded from the zone. Landscaping to improve amenity and privacy will be encouraged. Below are prohibited uses in the zone.

Table 6: Prohibited uses in Residential zone D

Prohibited Uses
▪ Industrial development

▪ Commercial development ▪ Animal husbandry ▪ Cemetery & Crematorium ▪ Transport uses and warehousing ▪ Major sports and Recreation Facilities like stadiums, central parks ▪ Community facilities or public places of worship except on a site zoned for that purpose, but not in residential buildings ▪ Markets over 1,000m²

2.1.3.1.5. Residential Zone E

Land in Residential Zone E is proposed for residential development with high densities in excess of 50 dwellings per hectare. The minimum plot size on which development will be approved is 200m² (minimum) and 300m²(maximum). To ensure adequate provision of public open space and parking, these will be provided as shared facilities to maximize space utilization. Roads, footpaths and parking areas should also be provided adequately. The zone embodies the informal sector housing areas, which can be upgraded to meet the minimum space requirements.

These zones are located near major business centers and traffic corridors to facilitate easy access and reduce transport costs. Public transport facilities, educational, public open spaces, local markets, and mixed uses will be provided to enhance livability. Gradually, it is expected that many of these areas will undergo extensive environmental upgrading in due to the nature of land holdings and development patterns in this zone that don't permit significant reduction in housing density. Mixed residential development will be permitted with the encouragement of the first-floor residential and small-scale ground-floor business enterprises. Due to the dense built-up character of the zone, there will be a need to make provision for small scale open spaces for public use. Special provisions will also be given to traffic management to reduce congestion. Below are prohibited uses in the zone.

Table 7: Prohibited uses in Residential zone E

Prohibited Uses
▪ All industrial development ▪ Commercial development except as noted in column 1 ▪ Animal husbandry ▪ Cemetery & Crematorium ▪ Transport depots ▪ warehousing ▪ Major sports and Recreation Facilities

2.1.3.1.6. Redevelopment/ Renewal/ Upgrading

Land in this residential zone is proposed for Low-cost high-density residential. It is often characterized by the inhabitants living in uncertain conditions such as overcrowding, inefficient use of land and unauthorized land conversion, no services, poor waste management, urban poverty, inadequate basic infrastructure and housing as well as generating other environmental impacts. These areas are sometimes referred to as slums.

Since full-scale redevelopment of the area would be constrained by high displacement and social costs, it is essential to adopt an upgrading strategy that will reduce costs arising out of

demolitions, displacement, and relocation of people. Emphasis will be placed on Sites and Services and guided self-upgrading.

For the strategy above to be achieved, community awareness, participation of both political and technical is paramount. Guidelines provided in residential zone E shall apply in this zone. Below are prohibited uses in the zone.

Urban informal settlements should be upgraded to ensure an agreed standard of service provision for their residents and this is provided the neighborhood is on suitable land which is non-hazardous land, i.e.;

i. Not prone to flooding
ii. Not on weak soil
iii. Not on sloped terrain steeper than 30º.

In case an area must be cleared from existing development for one of the above three reasons, it must not be re-developed. Areas should be environmentally protected from polluting industrial operations, and from newly built structures. Trees, green areas, and spaces shall be preserved and restored. Planning shall follow the procedures of a specific Physical Development Plan and urban planning operations as applicable and determined by the respective implementing orders.

Site improvement on the settlement shall ensure;

- The protection of human health and natural resources.
- Ensure that storm-water is managed in a way that prevents, controls, and cleans storm-water runoff, reduces flooding, erosion, and sedimentation.
- Ensure no built structures are added in historic flooding areas.
- Manage liquid waste in a way that protects the environment from its effects.
- Organize solid waste at household through service providers.

Table 8: Prohibited uses in Redevelopment Zones

Prohibited uses
▪ Massive infrastructural development that will relocate many people ▪ Large markets ▪ Cemeteries and crematoriums

2.1.3.1.7. Refugee Settlement/IDP camps and Resettlement for PAPs in disaster areas

For this land use, preparation of a Settlement Physical Development Plan before habitation is a requirement and it should have the following:

- Should be adaptable and capable of responding to changes in a crisis.
- Should not exceed 225 hectares maximum. In case of an influx, adjustment in the standard can be considered with approval from NPPB.
- Settlements should be people-centered, promoting self-reliance and enabling communities to develop suitable solutions themselves.
- Should take into account the characteristics and identity of the area, the environment, the people and their habitat.
- Plan for infrastructure improvements that meet the National and regional development plans and priorities.

- Locate in a site, not at risk of natural disaster impacts such as floods and landslides.
- Consider the carrying capacity of the site about access to sufficient water, fuels, and land for livelihoods
- Minimize and mitigate risk of conflict between the host community and displaced population over access to natural resources.
- Ensure equitable access to basic services for both the displaced population and host community
- Prioritize the development and upgrading of existing services over the creation of new parallel services
- Covered living area of 3.5m² per person minimum
- Minimum ceiling height of 2 meters at highest point
- Camp settlement Size 45m² per person (including auxiliary services)
- No camp should have more than 50,000 people

2.1.3.2. Mixed land Use in a business Zone (BM)

Is-in a broad sense - any urban, village development, or even a single building, that blends a combination of residential, commercial, cultural, institutional, or industrial uses, where those functions are physically and functionally integrated, and that provides pedestrian connections.

The design of mixed land use developments should aim at providing safety, amenity, accessibility, energy conservation, environmental protection and compatibility for all users. Mixed-use concentrated development should preferably be located near transit, be seen as a key "smart growth" tool to reduce auto dependence and preserve green space and natural resources.

2.1.3.3. Vending Business Zone (IBZ)

This zone is meant to take care of roadside vending or roadside informal commercial activities. The proposed site size is 30m² where up to 4 (four) kiosks can fit. The pedestrian hawkers should not obstruct traffic and thus should only be allowed along major pedestrian routes but not along major roads. In instances where kiosks are acceptable, they should not be placed less than 3 meters from the edge of the adjoining road reserve or footpath for safety and should not obstruct the free flow of vehicular and pedestrian traffic. For more details on the placement of vending devices /activities along road reserves refer to the Urban Roads Design Manual 2022.

2.2. Planning Standards for residential developments

2.2.1. Recommended Maximum Occupancy Rates

The proposed occupancy rates for the residents are from 2 persons per room in Low-density areas to 6 persons per room in high-density areas for both the Urban and the rural.

2.2.2. Residential Densities

The standards given herein refer to Gross Population Densities (Advisory).

Gross Population Densities for Urban Areas

a) Residential Zone A (Low Density) - 30 persons per Ha.
b) Residential Zone B (Medium Density) - 30 persons per ha Minimum and 60 persons per Ha maximum.
c) Residential Zone C (Medium Density) - not exceeding 402 persons per Ha.

d) Residential Zone E High Density (including high rise apartments) - excess of 50 dwelling units per Ha.

2.2.3. Residential Neighborhood

For planning purposes, the boundaries of a residential neighborhood are determined by significant landmarks such as natural physical barriers or by major roads. It should also be defined by the projected catchment population of between 5,000 persons and 15,000 persons in urban areas.

2.2.3.1. Incremental housing (under slum upgrade)

Slum upgrading can range from the installation of basic infrastructure and improvements to streets, access-ways, and upgrading dwelling units, to providing basic services such as garbage collection, health, education amenities, environmental education, land tenure regularization, income generation, suppressing crime and lawlessness.

2.2.3.2. Minimum standards for access to infrastructure and facilities for upgraded neighborhoods

The following are proposed minimum standards to be applied for the provision of service and infrastructure in upgraded neighborhoods.

i. Provision of minimum 1 public toilet (4 stance) per settlement for every 500 residents.
ii. Provision of potable water at a distance of 250 meters for 2,000 inhabitants.
iii. Access to a plot by at least a footpath
iv. Provision of a road within 500 meters.
v. Every road shall have a properly dimensioned stormwater channel.
vi. Every household in the settlement shall undertake the proper evacuation of solid and liquid waste.
vii. Every household shall undertake measures for the proper control of erosion from stormwater and liquid waste by the provision of proper water outlets that drain to the main stormwater channel.
viii. The electricity provider shall be responsible for the safety in areas of electricity cable networks. No open wiring and underground placement of cables shall be allowed.
ix. Sewers must be protected in a way safe for passer-by and particularly children during stormwater flushes.
x. Safe bridging passageways shall be provided following the course of footpaths.
xi. Every plot should be accessible for emergency services and public transport within 500 meters to 1km from every plot.
xii. The PPC may propose to the local authority to waive the standard width recommendations for access roads following a road where there is insufficient space or where the intervention would cause unjustifiable displacement.

2.2.3.3. Basic Supportive facilities to be provided for upgraded neighborhoods

A designated residential neighborhood must have the following basic public facilities –

i. A nursery
ii. A primary school
iii. Access to a secondary school providing for both O and A level sections
iv. Access vocational school

v. A neighborhood shopping Centre or a local market with attached retail shops adjacent to a parking space.
vi. Access to a health facility
vii. Public open space for outdoor meetings, or other activities such as a football field and a children's play area or playlot.
viii. A Community Center
ix. Public refuse space/sanitary area

2.2.4. Plot Shape for residential zones

To encourage more efficient use of land, we recommend minimum and maximum plot sizes for the residential densities. All plots to be developed should be rectangular with their frontages shorter than the depth of the plots. This will ensure not only infrastructure costs per plot are minimized but also create some form of uniformity. Permitted plot coverage varies according to the different residential densities proposed.

2.2.5. Building Line and Setbacks:

To ensure safety, privacy, health, aesthetics, and amenity, buildings must be set back from the plot boundaries following the recommended standards. The walls of the buildings must not be placed beyond the recommended building line (i.e., it should be either on or behind the defined building line)

- Setbacks shall be 3 meters
- Building lines must strictly be observed

2.2.6. Plot Access:

Every plot must have easy and direct vehicular access to a road. This shall also be in line with section 28 of the Public Health Act which states that "a building shall not be erected on any plot which has no proper and sufficient access to a road or road reserve".

- Permission for house development should not be granted until there is clear evidence provided showing access to a road or road reserve.
- In Low and Medium density residential-density developments, private driveways leading to the house should be minimum of 3 meters wide.
- The turning space at the end of the driveway should be sufficient enough to enable easy turning of cars.
- The corner radii at the junction of the driveway and the access road should be 3 meters.
- Where the driveway crosses a stormwater drain, a culvert should be constructed.
- For corner plots, access should be gained at the end of the plot away from the corner.
- Where there are sharp corners, plots should be accessed through a smaller connector road.

Table 9: Summary of Residential Land use standards

Type of residential	Minimum	Maximum	Minimum Plot length (meters)	Minimum Plot width (meters)	Plot coverage
Residential A Low Density	2,000m².	-	50	40	20% built, 60% green, and 20% paved
Residential B Medium Density	1,000 m²	2,000m²	40	25	40% built, 30% green and 30% paved.
Residential C Medium Density	1,012 m²	2,024m²	40	25.3	60% built, 20% green and 20%

					paved.
Residential E High Density	200m²	300m²	20	10	75 %built,15% green and 10% paved.

Table 10: Additional standards

Description	Residential A Low Density	Residential B Medium Density	Residential C Medium Density	Residential E High Density
Minimum Building Lines				
(a). Front	8 meters	3 meters	3 meters	3 meters
(b). Side	3 meters	2 meters	2 meters	2 meters
(c). Rear	3 meters	2 meters	2 meters	2 meters
(d). Domestic Staff Quarters	12 meters from main house	10 meters from main house	-	-
Building Materials	Permanent	Permanent		
Roofing Finish	Cooler blocks or tiles	Permanent non-reflective	-	-
Water Supply	Piped to house & Servant quarter.	Piped to house		
Sanitation	Sewer or septic tank	Sewer or septic tank	-	-
Onsite Parking Spaces (Minimum)	1 slot per unit/household	-	-	-
Design of Vehicular Access (Minimum)	3m width	3m width	-	-
Corner Radii need to review	3m width	3m width	-	-
Parameters for Vertical Buildings (Units)	-	-	-	-

2.2.7. Site Amalgamation

In special circumstances, two or more sites may be combined to obtain the minimum site area for development; especially where the use of an existing site has changed. Standards of the requisite residential development shall apply.

2.2.8. Densification

Is the increased use of space both horizontally and vertically, within existing areas/properties and new developments, accompanied by an increased number of units and/or population threshold. Population density depends on both dwelling unit density and household size.

2.2.8.1. Forms of densification

Densification in Urban areas

(Dwelling/Hectare) – Low building height and High plot coverage

(Dwelling/Hectare) – Medium building height and medium Plot Coverage

Densification in Rural Areas

- Single-family (on a parcel): traditional bungalow and detached house types with a reduced open space;
- A perimeter block enclosing a reduced open space or courtyard: it will mostly house Multifamily house residents.

Table 11: General Considerations for Densifications

LEVEL OF DENSIFICATION	CONSIDERATION
Intended For Medium to high levels of densification	**Access to public transport system (for existing or planned)** Medium to high levels of densification should be aligned with existing/proposed public transport routes. This is essential for housing development targeted at lower-income earners, who are unable to afford the costs of private transport. It should not however be an overriding consideration for middle and high-income earners, as the residents are likely to make greater use of private transport.
	Land use integration Preferably medium to high levels of densification should be located near places of employment, social services, and community facilities.
	Access and proximity to public open spaces Medium to high-density development should have access to urban open spaces (such as squares), recreational green spaces (parks and sports fields), and/or natural open space (nature reserves) to provide physical and psychological relief from high-density living environments.
All forms of densification	**Infrastructural capacity** Densification should not be supported where water, wastewater, and stormwater capacity are reaching points of absolute constraint, and the cost implications of rectifying the situation are too high for the private sector or are not provided for in the local government's capital budget.

2.2.8.2. Densification Indicators

For this purpose, a variety of measures will be used to calculate and compare built form and population densities. Some of the commonly used measures are dwelling unit density (gross/net), population density, and gross base density. Other guiding indicators will include plot size and population. The table below describes these measures in more detail

Indicator	Definition	Planning Hierarchy Application
Housing Unit /Ha	Housing (Dwelling) units per hectare.	N/A
Population Density (Persons Per Ha)	A number of people per hectare.	Calculated by multiplying the number of units by an appropriate average household size
Gross Density (Housing unit /Ha	The number of housing units per hectare of land is calculated in a designated area based on land use for residential purposes and other land uses, such as industry, commerce, education, transport, and parks.	The designated area can be the city, municipality, or town boundary. This will be used for comparative analysis in National and District land use planning. (Excluded are non-extractives and non-urban land uses, such as agricultural land and protected areas.
Net Density (Housing unit/Ha)	The number of housing units per hectare of land is calculated based on land used for residential purposes.	To be used for comparative analysis in Physical Development plans, Detailed plans, and Action Area/Subdivision plans.
Building Density (%)	The ratio of total building floor area to the corresponding site/parcel area	To be used in the building permit approval process based on zoning

2.2.8.3. Other Considerations under densification

To calculate the number of levels for densification, the following must be taken into consideration: Total landcover of the land use; Plot size in m²; Plot coverage; Built space (Area per household); Total number of persons; Total number of households.

2.2.8.4. Circulation in residential neighbourhoods

Irrespective of the densities of different residential zones, the adequate circulation level recommended is between 25 - 30% of the total planning area/residential zone.

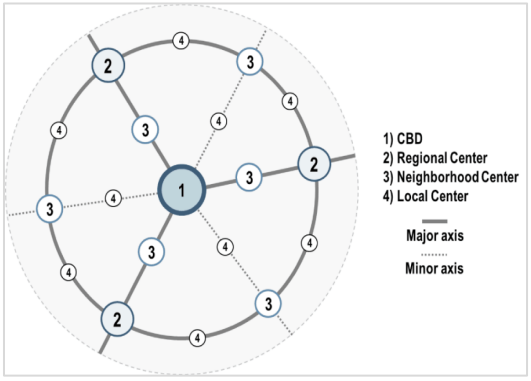
2.3. Commercial Zone

The standards and zoning guidelines provide for the criteria for determining the scale, zoning/location, site and space requirements for commercial use/activities, the required infrastructure, and facilities.

2.3.1. Hierarchy of Commercial Use/Centers and Zoning Guidelines

The hierarchy of commercial use/centers covered under these standards and guidelines covers the following: Main center/Central Business District (CBD); Sub-regional/Metropolitan Commercial Centers; Intermediate center/Community Commercial Centre; Local Commercial Centre; Neighborhood Commercial Center; Corner Shop; Mixed Use Zone; Informal Business Zone (BL) and Markets.

2.3.1.1. Main Center/Central Business District/Town Center



The Central Business District (CBD)/Town Center (TC) is the commercial and business center of a city/town, often referred to as the 'financial district'. Geographically it often coincides with the city centre or down town, however these concepts are not mutually exclusive. The shape and type of a CBD will always closely reflect the city's/town's history. To ensure the zone functions efficiently, strict measures will be applied to traffic management, servicing and building design. The standards of engineering services will be high to ensure that businesses have a reliable supply of electricity, water, ICT access and waste management. Aesthetics in the CBD must be enhanced through the development of a network of public open spaces and landscaping as part of the street furniture.

Table 12: Permissible and prohibited uses in the CBD

Permitted Uses	Prohibited Uses
➢ Commercial facilities; including wholesale markets, supermarkets, shopping malls and premises for the sale of goods to retailers, but excluding warehouses and distribution depots ➢ Non-agricultural activities. ➢ Show rooms for manufactured goods ➢ Community services; hospitals, universities, colleges, restaurants, banks, post offices, Clinics, pharmacies, police stations, telecommunication, community halls, fire stations, child care centers ➢ Service stations; Fuel and Service Stations. ➢ Offices and business facilities development	➢ Single unit residential development ➢ Heavy and medium industrial development maize mills, wood/furniture workshops, garages, etc. ➢ Major Warehousing ➢ Animal husbandry ➢ Agricultural activities requiring more than 50m²

Permitted Uses	Prohibited Uses
➢ High-tech industries ➢ Accommodation and convention facilities; Hotels, Motels, rest houses, lodges and guesthouses, hostels, conference facilities, recreational and entertainment facilities. ➢ Residences; City Center Residences, Selective Residential and High-rise flats and apartments ➢ Entertainment; Bars, nightclubs, cinemas. ➢ Public open spaces, leisure facilities ➢ Places of worship; churches, mosques. ➢ Transportation network; terminals, car parks, pedestrian and cycling routes.	➢ Cemeteries/ Crematorium ➢ Animal slaughterhouses ➢ Mining and quarrying ➢ Primary and secondary schools ➢ Retail Markets

2.3.1.2. Regional/metropolitan Commercial Centers

The Regional Commercial Center functions as a center for the dispersal of economic activities, employment generation, and traffic movement in a city and/or in the metropolitan area. The role and function of these centers are to provide wholesale and retail facilities for the whole metropolitan and large regional areas. The zone will be strategically located to ensure ease of access and egress to transportation facilities. Other permissible and prohibited uses in this zone are indicated in the table of development below.

Table 13: Developments, Permissible and prohibited uses in Regional/metropolitan Commercial Centres

Functions and permitted uses	Prohibited Uses
➢ Subregional markets for agricultural products ➢ Bulk breaking warehouses for manufactures and raw products ➢ Cold storage facilities ➢ Offices of the local administration ➢ Professional offices ➢ Sub-branch offices ➢ Major retail stores ➢ Service industries- Mechanics, Artisans ➢ Recreational Facilities ➢ Community Facilities ➢ Health Facilities ➢ Police facilities ➢ Parking Facilities ➢ Loading /offloading bays ➢ Fuel and Service Stations	➢ Low-density residential development ➢ Heavy industrial development ➢ Animal husbandry ➢ Cemeteries/ Crematorium ➢ Animal slaughterhouses

2.3.1.3. Intermediate Commercial Center

Intermediate centers provide low order goods and should be located along the Inner and Mid Ring areas after the CBD/Main center to provide lower focal service located within a 2km walking radius such as public services, commerce, and emergency services in an organized and accessible manner.

Table 14: Permissible uses in Intermediate Centres

Functions and permitted uses	Requirement
➢ Offices and business facilities. ➢ Commercial facilities including wholesale markets. ➢ Light and high-tech industries. ➢ Storage and logistic areas. ➢ Appropriate public services. ➢ Convention facilities ➢ Appropriate recreation, Hotels and entertainment facilities. ➢ Emergency and police services.	Compatibility zoning must be adhered to

➢ Alternative residential densities and types corresponding to the planned commercial, industrial and agricultural functions. ➢ Recreational and required services (educational, health, religious. security, communal facilities. ➢ Public parks, open spaces including pedestrian and cycling routes ➢ Transportation network including terminals, pedestrian and cycling routes. ➢ Main market.	

2.3.1.4. Local Commercial Center within the urban periphery and rural area

The center usually services the surrounding neighborhoods within a 2-5 km range but can also play an intercepting role in passing traffic to other suburbs. It could be located on major collector roads in suburbs or township areas offering high visibility and accessibility to passing traffic intended for the suburb(s) in the immediate and neighborhood vicinity. They are small-scale businesses, community essential services, and commercial centers within the built urban tissue and rural clustered settlements. Should be located at the periphery after or between the intermediate center and within a 2 km walking distance with emphasis on accessibility by NMT and BRT, and private vehicle.

Table 15: Permissible and prohibited uses in the Local Centre

Functions and permitted uses	Prohibited Uses
➢ Shopping areas including neighbourhood markets and storage for raw produce. ➢ Public services and institutions. ➢ Offices and business facilities. ➢ Transportation terminals. ➢ Emergency and police services. ➢ Mixed-use - commercial, service industries and residential. ➢ Light industrial sites. ➢ Residential densities corresponding to the planned commercial, industrial and agricultural functions. ➢ Recreational and required social services.	Industrial parks not permitted in the zone

2.3.1.5. Mixed Commercial Zone

Land in a Mixed Commercial Zone is intended for lower intensity commercial business development and retail display on the fringe of the Central Business District and adjacent to major arterial roads. Commercial activities under this category takes the predominant use (60 - 70%). It is usually surrounded by residential developments, predominantly free standing with adequate provision for car parking and access.

2.3.1.5.1. Permitted Combinations of Mixed Uses with commercial

The different permitted combinations of mixed land uses include:

i. Commercial and Residential Use

Residential uses will only be permitted above ground floor level. Examples include;

- Small general dealers' shop on the ground floor of a residential development, flats above shops in a business centre.
- Residential, commercial and civic/community land use by introducing residential land use in a business centre by vertical densification.

ii. Commercial and Industrial

Commercial and industrial land use involving non-polluting and non-disturbing light and service industry;

- Industrial plant or a place where products are manufactured and also are sold to the general public such as cottage and small Industry, service Industry
- Small workshops and services will be permitted only on plots designated for such purposes. Warehouses should be located in industrial areas.

iii. Commercial, Offices and services

- Offices will not normally be permitted at ground floor level on main shopping streets in the major commercial centres.
- Hotels/Restaurants/Bars are permitted on plots designated for shops and must have on-site car parking, servicing areas to the approval of the local authority.
- Churches will be permitted only on plots designated for such purposes. Location of churches on commercial buildings is not permitted.

iv. Social facilities, markets and garages within commercial zones

- Social facilities, markets and garages will be expected to locate within commercial areas only on sites designated for these particular purposes. Generally, these non – retail uses should be sited on secondary streets in the commercial area.

Table 16: Developments, Permissible and prohibited uses in the Mixed Commercial Zone

Functions and permitted uses	Prohibited Uses
➢ Commercial offices. ➢ Local government offices. ➢ Professional Offices. ➢ Agencies display. ➢ Markets. ➢ Child Care Centre. ➢ Car Park. ➢ Medical Clinics. ➢ Motor Sales and Services. ➢ Fuel and Service Station. ➢ Service industries. ➢ Cottage industries.	➢ Industrial development involving repair works. ➢ Dwelling at ground level ➢ Animal husbandry ➢ Wholesale Market over 1 ha

Table 17: Standards for commercial use

Urban/ Rural	Urban area hierarchy	Parameter		Standards as they apply to level/class of Commercial Center				
				Metropolitan Center	CBD	Intermediate Center	Local Center	Trading Center
Urban	Metropolitan Area	Catchment area		Average radius of primary trade area; 5 - 10km	Average radius of primary trade area; 3 - 4km	Average radius of primary trade area; 2.5 - 3km	Average radius of primary trade area; 2.5 - 3km	-
		Catchment population to be served		1,000,000	>200,000	10,000	1,000	-
		Size of zone/Center		0.8Ha/1,000 persons in a range of 0.4 to 0.8 Ha/1,000 persons	0.4Ha/1,000 persons in a range of 0.2 to 0.6 Ha/1,000 persons	3.6 - 7.5 ha	2.0 – 5.0ha	-
		Size of plot for commercial facility	Plot for large facility/mall			450 – 1000m²		-
			Plot for medium facility/mall	-	-	-	-	-

			Plot for small commercial building	450 – 1000m²	450 – 1000m²	450 – 1000m²	450 -600m²	-
Rural	Trading Center	Catchment area (max walking distance from house)						1.0 – 1.5km
		Catchment population to be served						1,000 persons
		Size of zone						2km²
		Commercial plot size						300 - 450m²

2.4. Markets

Most commercial areas have a site zoned for a market, and markets will only be permitted on such designated plots. Market sites must contain provisions for customer parking (if there is no public car park), servicing and deliveries. Markets must be provided with adequate piped water supply, sanitation facilities, crèche, drainage, and waste disposal, as well as covered and hygienic stalls, all to the approval of the local authority.

2.4.1. Hierarchy

The Uganda Law Reform Commission and Ministry of Local Government report on the review of the Markets Act, CAP 94 of July 2013 adopts/grades the markets into various labels in order to ensure a clear distinction and the standards specify the type of requirements that each of the grades is expected to have. The following grades and hierarchy are adopted in these standards;

- Grades 'A; City/Municipal markets (Central and Specialized Markets)
- Grade B; Division/ Sub- County
- Grade C; Town Council Parish level/Town Boards
- Grade D; village markets, rural markets
- Supermarkets
- Cross-border markets
- Others: Roadside markets; Farmers markets; Village markets; Mobile markets: satellite, auction, hawkers, private and, temporary markets, monthly, weekly, daily, produce markets, markets dealing in animals and industrial merchandise.

2.4.2. Standards and guidelines for markets

2.4.2.1. Grade A Market – City/Municipal Markets

Table 18: Location and space standards for Grade A market(s)

Market type in the Hierarchy	Parameter	Standards as they apply to the market	Guidelines and requirements
Main/Central/Wholesale Market	Location within planning area	• Centrally located in relation to catchment area • In close proximity to highways, good access to major roads and public transport terminal	• Central markets will be developed along with produce storage facilities to improve wholesale trading facilities and producer market access.
	Catchment area	N/A	
	Catchment population (minimum)	Up to 30,000 persons	
	Size	1 – 3 ha in developed urban areas. Parking space; of not less than 10% of total area	Accommodate basic site facilities: firefighting facilities, telephone; water; electricity; and public toilets. Shopping Facilities: Large department

			stores; general merchandise and Hard ware stores; restaurants, hotels, and a variety of service enterprises and various small stores and shops.
	Parking	20% - 50% extra space required for car parking (18azette. 0.3 ha).	
	Height	2 floors (maximum)	The upper floor is for storage
	Building area coverage (%)	80%	20% is reserved for landscaping and parking.

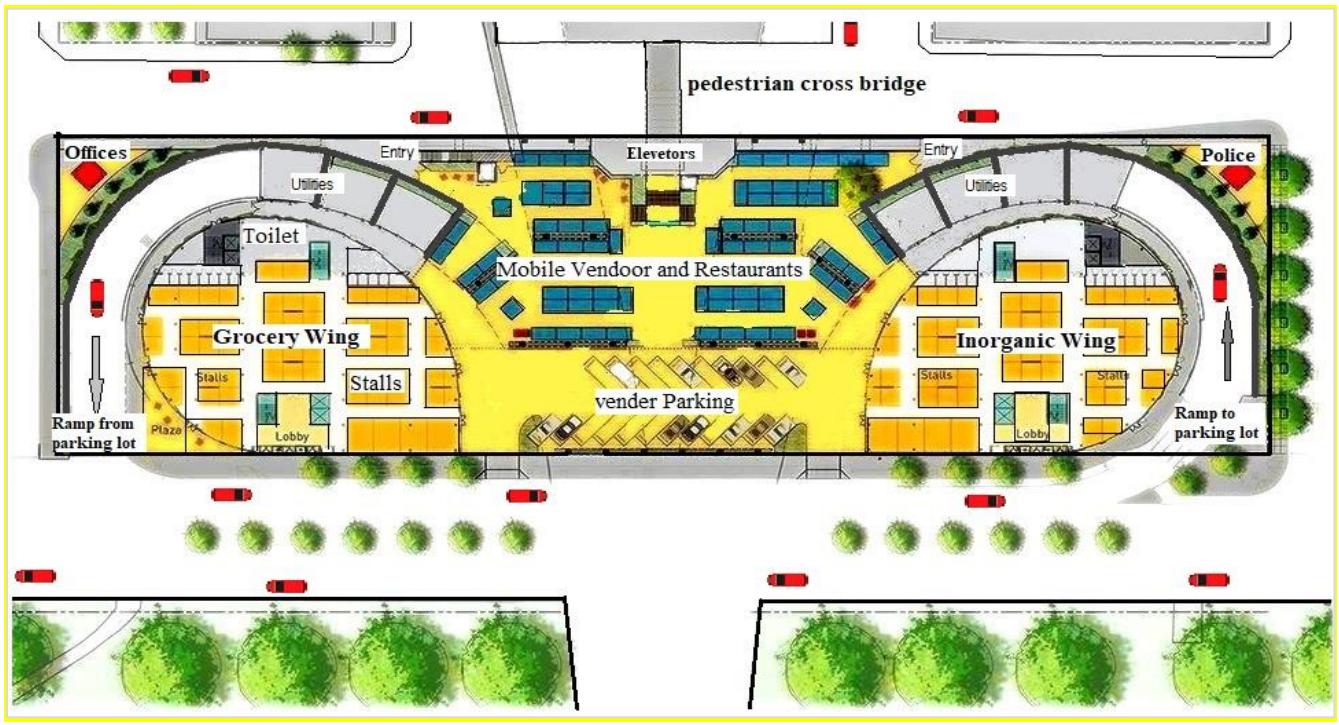


Figure 1: Municipal/City central wholesale market having 2-5 floors with parking lots on the upper floors, (1-3Ha)

2.4.2.1.1. Grade B Markets – Division/Sub-County level Markets

Grade B market(s) will be expected to have permanent structures, utilities (water and power), sanitation facilities, loading and offloading grounds, land for expansion, drainage system, eating places and a police post.

Table 19: Location and space standards for Grade B market(s)

Market type in the Hierarchy	Parameters	Standards as they apply to the market	Guidelines and requirements
Division, sub-county, (Community market)	Location within planning area	Centrally located in relation to catchment area In close proximity to major roads	
	Catchment area (max walking distance from house)	3 kms	
	Gross area/1,000 Persons (m^2)	0.4 – 0.5 Ha	
	Catchment population	20,000	
	Size	0.5 – 1.5 Ha	
	Facilities, infrastructure and services		Specialized wings/sections for fresh produce, dairy, meat, fish, clothing & footwear, basic household goods, materials,

			music, games, etc., each with appropriate requirements (delivery access, refrigeration, storage units, etc.); Pre-planned long-term upgrade to open shopping mall.
	Building Height	1 floor	
	Building area coverage (%)	80%	20% will be reserved for parking and green.

2.4.2.2. Grade C Markets – Town Council, Ward, Town Boards level

Comprise markets specializing in a variety of goods. Grade C market will be expected to have land, offices, security and sanitation facilities.

Table 20: Location and space standards for Grade C market(s)

Market type in the Hierarchy	Parameters and requirements	Standards as they apply to the market
Town Council, Ward or Town Board	Location within planning area	Within proximity of residential area
	Catchment area (max walking distance from house)	2 kms
	Catchment population	10,000 persons
	Size	0.5 – 1 Ha
	Parking	20%
	Height	N/A
	Building area coverage (%)	70%
	Landscaping (%)	10%

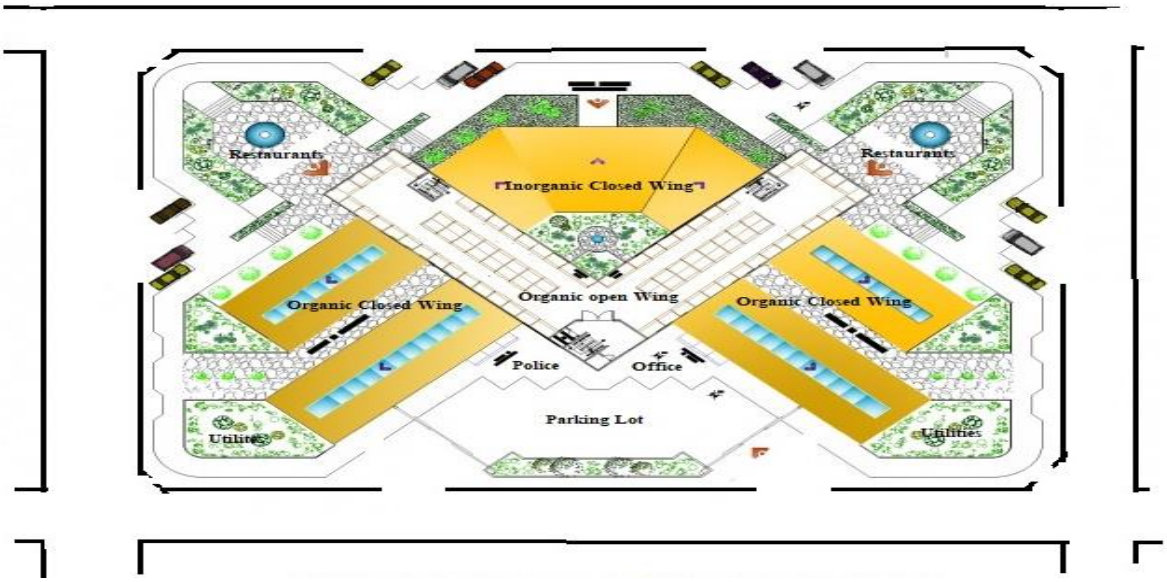


Figure 2: Grade B and C markets

2.4.2.3. Grade D Markets

Grade D markets are expected to have land, offices, security and sanitation facilities.

Table 21: Location and space standards for Grade D market(s)

Market type in the Hierarchy	Parameters and requirements	Standards as they apply to the market
Local centre market	Location within planning area	Within proximity of residential area
	Catchment area (max walking distance from house)	1 km
	Catchment population	5,000 persons
	Size	2,000 – 2,500 m² (0.4 Ha)

Neighborhood/ village Market	Parking	1,000 m² (0.1 Ha)
	Building area coverage (%)	80%
	Location in the planning area	• One in each residential precinct • In close proximity to public transport stops with high NMT access
	Catchment area	0.5km
	Catchment population	500 persons
	Size	2,000 – 2,500 m² (0.4 Ha)
	Parking	1,000 m² (0.1 Ha)
	Height	N/A
	Building area coverage (%)	80%

2.4.2.4. Cross-border markets

A cross-border market functions as a center for dispersal of economic activities, employment generation, and traffic movement across borders. The intended activities in the zone include sub-regional distribution outlets, markets, bulk breaking warehousing, cold storage facilities, major retail stores, professional offices, sub-branch offices for government agencies, transit accommodation, service industries, recreation centers, leisure and community facilities.

2.4.2.4.1. Cross Border Market Location and Space Requirements

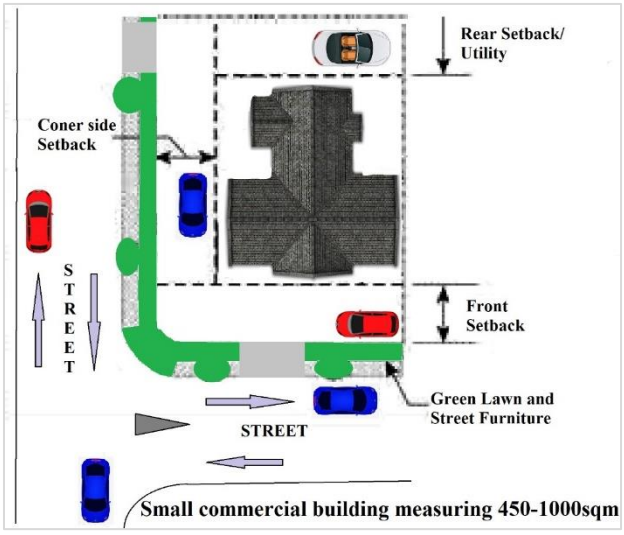
Table 22: Space requirements for Cross Border Market

Market type	Parameters and facility requirements	Standards as they apply to the market (Ac)
Cross border market	Location within planning area	Designated border post area
	Catchment population	N/A
	Size	50 – 100 Acres
	Parking	50%
	Height	N/A
	Building area coverage (%)	20%
	Landscaping	30%

Figure 3: Cross border markets

2.4.2.5. Street Vending and Road side Markets

The activity involves street vending of articles, goods, wares, food items or merchandise of everyday use or offering services to the general public in a street, lane, side walk, footpath, pavement, public park or any other public place or private area, without having a permanent built-up structure, or in a temporary built-up structure or by moving from place to place. Though it may appear illegal, street vending is a reality that provides survival for the poor which can't be ignored. The three basic categories of street vendors are; a) Stationary, b) Roving and c) Mobile.



Street vending will vary in terms of scale, timing, location, remuneration, workforce and types of goods sold and services provided. Availability of an acceptable site of operation is a pre-condition for compliance with various statues relating to business operation. These standards and guidelines provide location and space requirements on authorized sites. The use of these standards should

be in tandem with the Urban Roads Manual, 2022.

2.4.2.5.1. Roadside Markets

These markets are gazetted to operate on specific days and in specific locations over a specified period of time, after which it is disbanded until the next planned date. Street trading can only take place under the authority of a license/consent by the local authority with an adopted licensing scheme for the street along which trading takes place.

2.4.2.6. Planning norms for Urban Street Vendors and markets

- Incorporation of vendors in planning to provide suggestions for improving street vending with regards to registration process, site allocation and operating charges according to location, size and services provided.
- Planning provisions in PDPs/ Zonal/ Local/ Layout development plans to be 'inclusive' and address the requirements of space for street vending through reservation of space.
- Demarcation of Vending Zones in urban PDPs shall be indicated as 'Restriction free vending zones', 'Restricted Vending Zones' and 'No-vending zones'. Guidelines for locating zones include the following:
  - Provide locations in response to the patterns of demand for their goods/ services.
  - A schedule for regulating entry of street vendors into the identified street vending zones shall be formulated by the authorities.
  - Time restrictions on vending should be in accordance with the need for ensuring non-congestion of public spaces/ maintaining public hygiene without being ad-hoc, arbitrary or discriminatory.
  - Attempts should be made to provide ample parking areas for mobile vendors for security of their vehicles and wares at night on payment of suitable fees.
  - Mobile vending should be permitted in all areas even outside the 'Vendors Markets', unless designated as 'No- vending zone' in the zonal, local area or layout plans. '
  - Restricted Vending zones' may be notified in terms of both location and time. Locations designated as 'No vending zones' shall be fully justified.

2.4.2.7. Guidelines for Infrastructure and Service Requirements and provision

The following basic civic facilities shall be provided in Vending Zones/ Vendor's markets:

- Markets should be located in places that are accessible to the public and close to public transport services. Markets in urban areas should be located on secondary streets in the case of commercial areas.
- There should be a reasonable distance between an established market and a new market for example say 2km.
- Local authority to provide licensing and infrastructural support regarding standardized shelves and tables, framework for managing street vending, regulating issues such as crime, public toilets and solid waste management.
- Aesthetic design of mobile stalls/ push carts
- Support facilities; electricity outlets, safe drinking water, protective covers, storage facilities and parking areas among others.

2.4.2.8. Local/Corner Shop

The facility aims at satisfying the local needs of the residents within one or two adjoining neighbourhoods. Such a facility could be a single building or a few buildings located in close proximity to each other to provide a single destination. This facility could consist of one tenant or a number of small tenants. The function offered by the shop/s is mainly express convenience and caters mainly for daily requirements such as milk and bread purchases, a café/small food store, takeaway foods, local restaurants, a drug shop, butchery, hairdresser, dry cleaner could be accommodated.

Table 23: Description, characteristics and Size standards for a Local Shop

Type of Commercial center	Parameter	Standards as they apply to level/class of Commercial activity	Guidelines and Recommendations
Local Shops	Location	near a village, clinic or health post and adjacent to the village square.	Requires facility to be situated along access road and at convenient central location
	Catchment area	0.5km	
	Catchment population	500 persons	
	Size of land	0.25 – 1 acre minimum	Basic site facilities: Electricity, water and storage facility.
	Plot Size and Shape	15m x 30m (minimum)	To accommodate one minimum standard building structure of between 10 and 18 m long plus a front canopy and rear space for septic tank and soak pit.

2.4.2.9. Guidelines for Access to Utilities for commercial use

- All commercial plots must be served by piped water supply, or any other suitable supply, to the approval of the appropriate water authority.
- Surface water run-off from buildings and hard surfaces must drain into the nearby drainage channel or soak – away pit to the approval of the local authority.
- Commercial developments must have water–borne toilet facilities drained to a septic tank and soak pit within the plot, connected to a sewage lagoon or central sewer line system, to the approval of the local authority. Septic tanks must be positioned so that they are accessible for emptying by a cesspool emptier.
- Any refuse must be stored in proper containers for collection to the approval of a local authority.
- The rear yards on standard commercial plots may be enclosed by a fence or wall not exceeding 2m in height. On the larger, non-standard plots any fences or walls along the road frontage must be set back 0.5m inside the plot and be screened by a hedge or other landscaping.
- Landscaping is not necessary on standard commercial plots however it is required for developments on the larger plots and a landscape plan must form part of the development application.

Table 24: General Standards and Guidelines for Commercial Areas

Building line	Standard	Guideline

Front	2m	This frontage space is for a covered walkway or Canopy of 2m depth which then come right to the plot boundary. In the absence of a Canopy this frontage space must be paved.
Side	2m	Retail and service industry frontage should be continuous. The buildings will be provided with walkways at certain points for accessibility. It is not essential for buildings on adjoining plots to have party walls but they must be close enough together to give the appearance of a continuous building frontage. Narrow gaps between buildings should preferably be closed by a front wall to prevent accumulation of rubbish at the front. Canopies should be physically linked so that customers can proceed along the canopies from one shop to the next without having to go out or to the highway. Landscaping should be undertaken to facilitate same level and linkage. Any forms of physical separations between canopies creating an impression of "fencing off" shall not be permissible.
Rear	5m (standard plot) 3m (nonstandard plot)	On a standard commercial plot, leave sufficient space for septic tanks, soak pit, storage, car parking and any rear servicing.
Plot Coverage	(80%)	
Plot Ratio	75% GFA	
Plot Access		All commercial plots must have direct access by road for vehicles and public walkways for pedestrians for visibility of the building/site, access to public transport and general traffic flow. A service lane must be provided in the rear side to cater for loading and off-loading of goods and clearance of wastes.
Car parking/Service Area		All commercial developments should have adequate on – site parking space for employees, customers and visitors. This requirement may be waived if there is sufficient parking space available on – street or in the nearby public off – street car parks.

In certain circumstances, such as small shops and service industry on standard commercial plots with no rear access, it may be acceptable for the premises to be serviced from the public streets or car park, across the footway. The parking requirements for different types of commercial uses are specified in the table below.

Table 25: Parking requirements for different types of commercial use/activities

Type of Commercial activity	Proposed parking spaces
Banks	1 space per 25m² of gross floor area plus 5 stacking spaces per drive-up window.
Offices	1 car park for every 40m² of office space with a minimum of 1 car park per office, except in the CBD where the standard is one car park space per 200m².
On plot parking for commercial buildings	1 space per 40m² of GFA.
Shopping centre	4.4 spaces per 100 m² of gross leasable floor area (i.e., 1 space per 23 m²).
Motor showroom	0.75 spaces per 100m² site area plus 6 spaces per service bay.
Car tires retail outlet	3 spaces per 100m² GFA.
Roadside stall	4 spaces minimum.
Drive in liquor store	Sufficient to avoid queuing onto public road.
Drive in take-away	12 spaces per 100m² GFA plus 1 space per 5 seats (internal and external), or 1 space per 2 seats (internal only) 1 space per 3 seats (internal and external) plus queuing area for 5 to 12 cars will be sufficient.
Drive-in take-away food outlets of developments with no on-site seating	12 spaces per 100m² GFA.
Restaurants	15 spaces per 100m² GFA, or 1 space per 3 seats, whichever is greater.
Licensed Clubs, Dance Halls and Discotheques	One parking space per 20m² of gross public floor space.

Type of Commercial activity	Proposed parking spaces
Markets	2.5 spaces per stall (customers only).
Bulky goods retail stores	1 space per 40m² of GFA and/or comparisons should be drawn with similar developments.
Video Stores	6.1 spaces per 100m² GFA.
Industrial areas	For every 100m² of gross floor space, provide two parking spaces plus 1 parking space for every 2 employees of the largest work shift.
Business parks	0.5 spaces per 100m² of total GFA or 1.8 spaces per 100m² gross leasable office/showroom area plus 1.2 spaces per 100m² of gross leasable factory/warehouse area
Doctors Surgeries, Clinics and Health Centres	Two parking spaces per consulting room plus one parking space for every 4 staff members and 3 additional parking spaces (9m x 3m) for ambulances for polyclinics will be sufficient.
Hospitals	1 car parking space for every 3 to 12 beds. 2-5 parking spaces for people with physically impaired in the visitors parking yard. Hospitals with Accident and Emergency departments require 8 additional parking spaces (9m x 3m) for ambulances Hospitals without accident and emergency departments, 3 additional parking spaces (9m x 3m) for ambulances
Child care centers	1 space for every 4 children in attendance
Fuel service stations and convenience stores	A minimum of 6 spaces per service bay plus 5 spaces per 100m² of gross floor area for the convenience store If there is a restaurant at the station, then 15 spaces per 100m² or 1 space per 3 seats will be sufficient.
Warehouses	One parking space per 30m² of gross floor space plus 1 space for every 2 employees on the largest work shift
Bars	One parking space per 15m² of gross public floor space
Worshipping place	Minimum parking of 1 car parking space for every 2 worshippers
On plot parking for office buildings	5 parking space per 1,000m² of total gross floor area
On plot parking for hotels and motels	One parking space for every two bedrooms One parking space for every three managerial staff

Table 26: Minimum Off-Street Parking Space for commercial zones

Type of use	One parking space shall be provided for every
Theatres and auditoriums	20 seats of accommodation
Retail business	45 m² of sales area
Restaurants	15 seats of accommodation
Hostels	4 guest rooms
Industrial buildings	100 employees in the industry
Wholesale and warehouse buildings	90 m² of storage floor space
Multi-family dwellings	4 dwellings units
Lodging establishments and tourist homes	5 guest rooms

Table 27: Space dimensions by vehicle type in commercial zones

Minimum Parking	Space for Each Car or Truck	Remarks
Car	3m x 6m	When individual parking space is required
	2.5m x 6 m	When parking lots for community parking are required
Truck	3.75m x 7.75m	

2.5. Petroleum products filling outlets and select stores

2.5.1. Statutory Control

The specified standards are based on standards contained in the Physical Planning (Planning Conditions for Location of Fuel Stations) Regulations, 2022 developed by the Ministry of Lands Housing and Urban Development.

2.5.2. Description, Characteristics, Building Infrastructure and Minimum Plot Requirements

An office block shall not be provided at the outlet. The building shall be attractive sand Crete, concrete, burnt brick structure or other fire-resistant building material with aluminum, galvanized or tiled roof and should incorporate the following;

- A store, salesroom, toilet and change room facilities.
- A retail express convenience' store/facility consisting of a small store offering a variety of mainly daily purchased consumer goods representing ±80% of all sale operated by filling station personnel only, and mostly operated on a 24-hour basis.
- Parking and a 24-hour secure environment.

2.5.2.1. Guidelines and Standards for fuel filling outlets

- A fuel station shall not be located less than 200 m from any public institution and semi-public buildings such as schools, places of worship, public libraries, auditoriums, hospitals, clinics, theatres, public playgrounds, However, other small and medium commercial activities may be located within the specified limits.
- A fuel station shall not be located in or close to a sensitive ecosystem such as national park, lake, river, stream, historical site or major aquifer.
- A fuel station shall not be located less than 200 meters from a high-density residential area to create a buffer zone. – The buffer zone can be devoted to any non-residential land use. In view of the interference with amenity which fuel service stations in predominantly residential areas are likely to give rise, by virtue of such matters as fumes, odours, noise, congestion of traffic, unusually long hours of operation and so on, an application for a fuel service station in such an area shall only be granted if the applicant is able to establish that such a facility is necessary in order to meet the needs of the residents of the area.
- Where a fuel station adjoins the boundary of a residential area, a developer shall provide and maintain a physical barrier in form of a solid wall 3 m in height along the boundary
- The area of land to be developed should be sufficient to allow maneuvering of vehicles within its cartilage.
- The minimum distance from a fuel station to a road junction, round about or intersection along any road where a right turn is required shall not be less than 200 meters
- A fuel station shall not be constructed along expressways, except close to on and off ramps of highways and expressways.
- The distance between a fuel station and an existing fuel station on the opposite side of the same road along any roadway shall not be less than 200 meters.
  The location of a fuel station along the National and/or urban Road shall not be less than 3 kilometers from an existing fuel station on the same side of the road.
- The location of a fuel station along a community access road shall observe a minimum interval of 2 kilometers from an existing fuel station on either side of the road.
- A fuel station shall not be constructed at a road section that has vertical and horizontal curves or bends.
- The location of a fuel station shall be off busy access roads so that delivery and fueling of vehicles do not unduly block traffic at forecourt and allow minimum maneuvering including ability to exit.

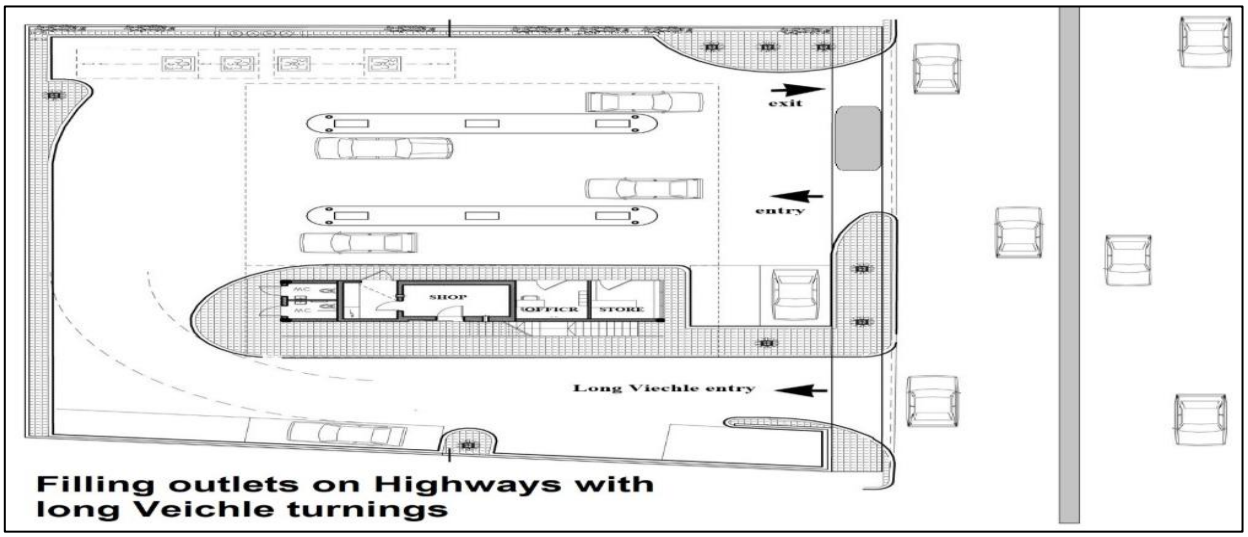
- The area of land to be developed for a fuel station shall be sufficient to allow maneuvering of vehicles and the location of auxiliary facilities in accordance with US EAS 976:2020, Petroleum Industry Storage and Distribution of Petroleum Products
- The land size shall be minimum 900 sqm for filling stations and 1,600 sqm for service stations and shape of the plot for the petrol filling station would need to be such that it suitably accommodates fuel pumps, offices, stores, compressor room, air pump and kiosks without causing any hindrance to the movement of vehicles of expected maximum dimensions, within filling stations and in the access area. Thus the plot size should range between 900 and 1,600Sqm with a minimum frontage of 9 meters on the primary street.
- The distance from the edge of the road to the nearest pump should not be less than 15 meters and buildings are to be located a minimum of 12 m from road property boundaries to provide adequate area for maneuvering of vehicles in the service area.
- Raised curbs of at least 400 mm high of which 100mm is buried shall be erected along street property lines except along driveway openings to prevent and discourage driving motor vehicles on sidewalks and to define entrance or exit points of a fuel station
- Wherever possible, stations should be erected on level rather than sloping site to prevent rolling or discarded materials such as cans, drums, etc.
- Developer shall obtain a letter of no objection from Uganda National Roads Authority where the proposed fuel station is along a road managed by the Authority.

Table 28: Minimum plot requirements, Zoning and Location guidelines for Fuel Filling Stations

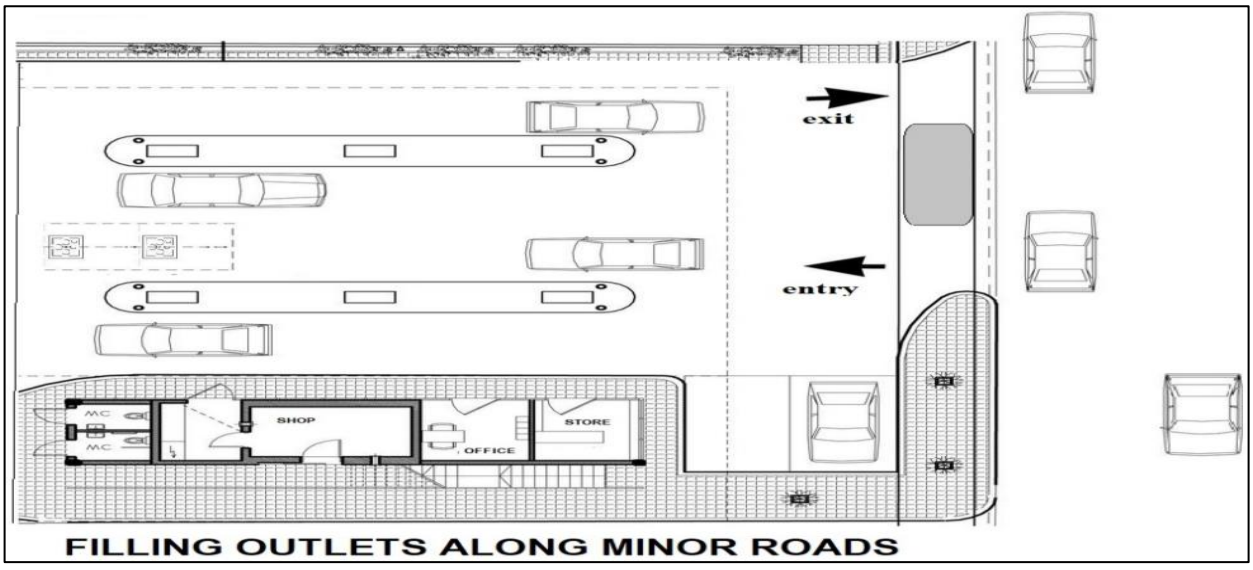
Parameters and facility requirements	**Standards as they apply to the facility**	
Location	Dimension (ft)	Dimension (m)
Along Trunk Roads (Highways)	150 X 142	45 X 40
Along Major Roads (other than Trunk Roads)	100 X 100	30 X 30
Other Roads (Minor Roads)	100 X 100	30 X 30
Building coverage	Shall not exceed 60% with the minimum green of 10% of the plot area.	
Other items	**Standard guidelines**	
Site dimensions of stations with container vehicles patronage	Minimum frontage: 40 m minimum width of access: 8.5 m	
Siting on expressways and highways	at least 2 km from any intersection preferably form part of a service area Not to be constructed along expressways, except close to on and off ramps of highways and expressways	
Siting on Trunk Roads, Primary Distributor Roads and Rural Roads	Minimum sight distance of 100 m Minimum interval of 3 kilometers	
Siting on other roads lower in the hierarchy	Minimum sight distance of 50 m Minimum interval of 200 meters if located on different sides of the road Minimum interval of 3 kilometres if located on the same side of the road	
Waiting spaces	1 vehicle space adjacent to each metered filling point Minimum of 4 waiting spaces between the entrance and the filling points Additional 4 spaces for each service bay if general lubrication and servicing facilities are available 1 additional space between each air–pumping point	
Other requirements and facilities at Fuel Filling Stations (FFS).	• All FFS to provide separate WCs for males and females and ensure their indiscriminate access by all travelers and motorists, and also keep them in good working and hygienic condition. FFSs on highways shall provide not less than two toilets for either sex • FFSs on highways shall provide at least three bins for separated waste accessible by all	

	travelers and motorists. • FFSs on highways should preferably be situated at or include a service centre for emergency shopping, refreshments, restaurant, souvenir shops, etc. • All FFSs on highways shall provide parking space for not less than two buses & 5 other vehicles at any one given time available to motorists for short periods of up to 20 minutes.
Safety considerations for Liquefied Petroleum Gas	**Safety guidelines**
Siting of the Plant	• The plant should not be located close to or within the proximity of any high-tension pylons or cables. The minimum distance shall be 15 meters. • There shall not be any aerial obstructions at the site. These obstructions include telecommunication mast etc. and the minimum distance for such obstructions shall be 10 meters • The plant shall not be located near sources of ignition e.g. welding, cutting, grinding, use of impact tools, electrical arcs, hot surfaces, open flames areas. A minimum distance from the fence wall shall be 10 meters. • The plant shall not be located near hazardous areas. Flammable liquids etc. shall be stored at least 10m from the fence wall. • A fuel station shall not be located less than 100 metre from an industry or factory • The plant shall have separate entrance and exit ways. • The facility shall be free from weeds, open drains, depressions etc. weed killers which constitute fire hazard shall not be used to remove weeds at installation point.
Storage of LPG Tanks	Bulk storage tanks and cylinders shall be designed and located in accordance with the petroleum and Liquid gas guidelines. Safe distance from building, boundary or fixed source of ignition shall be 15m from the installation of storage tanks at filling plants for both car cylinders and domestic cylinders. Distance between storage tanks shall conform to the following: Storage tanks up to 20 tones – 5m Storage tanks 20 to 40 tones – 7.5m Storage tanks 40 to 60 tones – 10m Storage tanks over 60 tones – 15m For more details, please refer to the guidelines for the establishment and operation of petroleum product retail outlets in Uganda and guidelines for the establishment and operation of liquefied petroleum gas filling plants in Uganda.
Infrastructural Requirements (Tanks)	• Except under special circumstances, all tanks at the outlet shall be buried not less than 1.5 meters away from any building or boundary. The top of such underground tanks shall not be less than 0.6 meters or more than the diameter of the tank below ground level. • The minimum length of the vent pipes shall be four (4) meters above ground level, a minimum of four (4) meters away from any dwelling place as well as a minimum of ten (10) meters away from a loading/discharge point or naked fire. • The life span of an underground storage tank should not exceed thirty (30) years
Environmental and fire safety considerations	**Standards and guidelines**
	• Should preferably be located in relatively open areas. • Ensure avoidance of noise and air disturbances. • Cater for facilities for car washing, fuel filling and maintenance activities, as well as car servicing and lubrication bays. • Should provide adequate fuel & oil intercepting facilities. • Provision of proper drainage facilities. • Ensure proper storage and disposal of chemical wastes. • Compliance with fire safety requirements. • Provision of fire hydrant within 100 m.
Environmental protection measures	**Standards and guidelines**

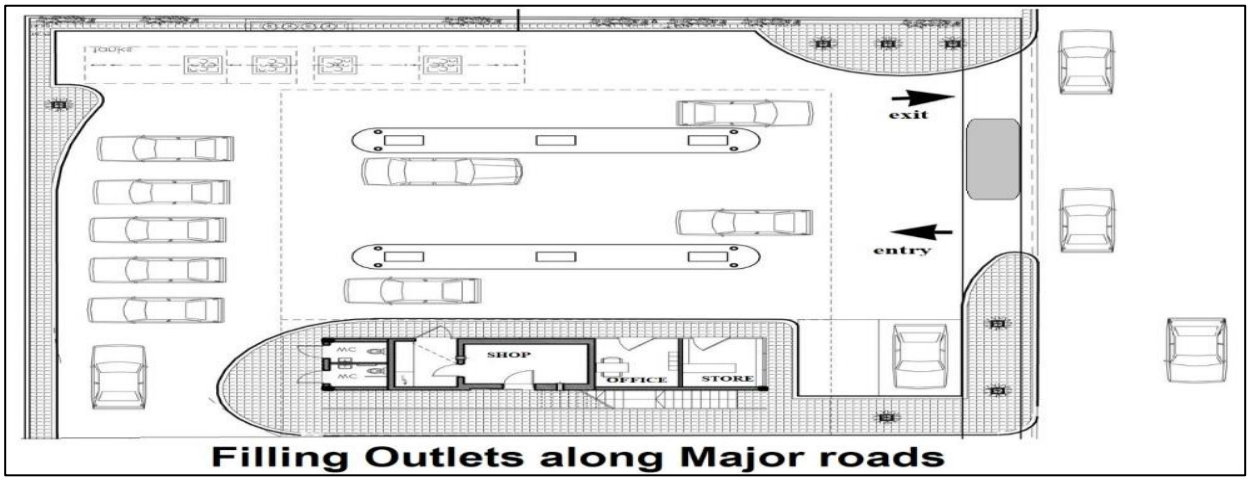
	• All other technical specifications and minimum standards for design, security measures and installations should be set by relevant government authority to meet basic safety, health, operational and environmental protection. • Environmental impact on streams, lakes, ponds, aquifer, etc., will be taken into consideration. • An Environmental Social Impact Assessment must be required from the applicant before establishing a petrol station project and before licensing and construction of any petrol station. • Periodic environmental audits shall be performed regularly on already existing tanks by the relevant authority. • All service areas should be paved to avoid dust nuisance.
Separation distances of Liquefied Petroleum Gas (LPG) filling station/facilities	**Standards and guidelines**
	• For high-rise residential/education/hospital: - 200 meters • For commercial/recreational/industrial: - 200 meters • In low density residential/incidental dwelling: - 200 meters



Filling outlets on Highways with long Veichle turnings



FILLING OUTLETS ALONG MINOR ROADS



Filling Outlets along Major roads

2.6. Civic Zone

A civic centre is a network of spaces or buildings that provide essential services to a local government. It can include everything from government offices, public meeting spaces to free classes and memorials honoring important member of the community. Civic centres are tailored to support the often very specific needs of the community; therefore, their design varies dramatically across the country in size, scope and design. In most cases civic centres are mixed use. Some commercial and retail servicing uses will be permitted in the zone to support the running of the zoned land uses. Restaurants and other day to day service needs will be permitted in the zone where appropriate as summarized in the table below. A high standard of amenity is sought for the civic zone.

2.6.1. Standards and Guidelines for Civic zone

- The size should be sufficient to accommodate the standard range of facilities without overcrowding and some allowance for expansion.
- Must have direct vehicular and cycle access on to a public road. Provision should be made for pedestrian paths and cycle lanes.
- Adequate on-site parking space must be provided for both visitors and staff in accordance with the parking standards provided.
- Landscaping shall be done to enhance amenity of the site and provide shade, privacy and screening.
- Boundary fences must not exceed 1.2 meters high and the metal grill not exceeding 2 meters high. A fence or wall should be setback 0.5 meters inside the plot so that a hedge or other landscaping can be planted to screen the development.
- Buildings must take into account the needs of the physically impaired particularly those with a mobility handicap. The ramp should be used for access in addition to other facilities such as lifts where possible.
- Access to other utilities like water, sanitation and power should be provided.
- Location requirements will be dictated by the function/purpose it serves for that administrative unit but preferably the CBD (Central Business District).
- The building should cover 50% of the plot.

Locational factors

- Centrality
- Neighbourhood
- Availability of support utilities
- Security.

Below are restricted uses in the zone.

Table 29: Prohibited uses in the Civic/Government Business Zone

Prohibited uses
➢ Retail businesses ➢ Cemetery & crematorium ➢ Animal husbandry, and ➢ Those not specified in permitted uses

2.7. Industrial Zone

Industrial activity can be classified into light, general, heavy, service, extractive and special uses depending on scale, noise, effluents, odors, appearance and nature of materials. Separate areas may be zoned for these different types of industry. Small scale enterprises such as crafts, maize mills, tailoring workshops, carpentry, bicycle and shoe repairs, tinsmiths, are generally regarded as service industries that can be located in commercial areas. Industrial development will only be permitted in areas zoned for such purposes.

2.7.1. Locational Requirements for Industrial parks

The locational requirements common to all industrial and business land use types are:

- Flat land or large flat terraces;
- Good access to major traffic routes, preferably direct access to major trunk roads wherever possible to avoid causing nuisance to other noise sensitive uses;
- Convenient access to business centres in existing urban areas;
- Good accessibility to rail, inland container depots or airport;
- Adequate provision of piped water, sewage disposal and waste storage/treatment facilities, electricity supply and telephone services;
- Sited to avoid adverse environmental effects (e.g., noise, odour, smoke, dust etc.) on residential and other sensitive land uses, or with design requirements for the provision of appropriate installations to mitigate such effects;
- Avoid closely siting polluting industries lower than the surrounding residential areas, as well as avoid siting low-rise industrial developments close to high-rise residential developments;
- Sited to avoid despoliation of the rural landscape, country parks, water catchment areas and environmentally sensitive areas, and the site concerned should be properly designed and landscaped so as to minimize adverse impacts.
- All sites shall be landscaped and land scaping designs shall be approved by the Local Government Physical Planning Committee as provided for by the Industrial and Business Park Zoning and Physical Development guidelines.

2.7.1.1. General Environmental Guidelines for Industry Location

2.7.1.1.1. Air Quality Considerations

Every planning effort should be made to ensure that:

- Potentially air-polluting industries are not located in areas where the dispersion of air pollutants is inhibited or where the present air pollution is already serious so as to minimize the health hazard to the surrounding residential areas.
- The location of the industrial zones/plants is influenced by the general wind direction; wherever practicable, industrial zones shall be sited so as urban areas and new towns to take advantage of the prevailing winds;
- High-rise buildings and low-rise air pollution emitters are not located close to each other;
- New traffic generators, especially those of goods vehicles, are not located in areas which currently have severe air pollution;
- Provide adequate buffer distances or screening between specified processes, industries giving rise to dusty, odorous and gaseous emissions, and any sensitive land uses;
- The land use pattern will minimize the demand for road traffic and facilitate the development of railway network so that the vehicle emissions can be kept to the minimum

Noise

- Location of noise-emitting industries close to noise sensitive uses is prohibited.
- Position industries such that there is no line-of-sight to major noisy activities from adjacent noise sensitive uses.
- If the required separation and screening between industries and sensitive uses are not feasible, provide noise mitigation measures such as purpose-built noise barriers and innovative site layouts to minimize noise impacts.

Water

- Locate industries in areas adequately served by public foul sewerage treatment.
- In areas where no foul sewerage is available, siting of industrial developments that will result in effluent discharging into inland waters is prohibited.
- For effluent-producing industries, ensure adequate provision of suitable land and access for installation of effluent pre-treatment facilities.
- Wherever possible, centralize industries of the same category to economize the provision of wastewater collection and treatment facilities.

Waste

For industries with special requirements for waste disposal;

- Ensure that adequate and suitably located space and access are provided for the collection, storage and transportation of waste.
- Locate offensive trades in purpose-built industrial buildings within designated industrial areas and
- Provide adequate buffer to minimize potential odor nuisance.

2.7.2. Light Industrial zone

The Light Industrial Zone is intended to provide for low-intensity industrial uses in zones adjacent to other uses that are prone to industrial pollution. Land in a Light Industrial Park is

intended for light industrial activities, particularly those using clean and low technologies to restrict air and noise pollution. The sorts of industries that may be found in a light industrial zone might include those producing high value but low weight and volume goods, such as specialized electronic firms, IT-based industries, jewelry, medical products, etc.

Table 30: Permissible and Prohibited Uses in Light Industrial Zone

Permitted Principal Uses in Light Industrial Parks	Principal Uses allowed by Special Permit
➢ Processing of non-hazardous materials ➢ Offices serving main processing activity ➢ Open storage <10% Plot surface grade 1, < 30% grade 2, < 40% for grade 3 ➢ Processing, packaging, or assembling of components or goods ➢ Light truck and freight terminals and warehouses ➢ Timber yards ➢ Automobile sales and service facility (showrooms) ➢ Offices of government agencies overseeing the production of specified goods, ancillary services including canteens and open space, car parking. ➢ Low polluting Industries, including service industries where appropriate ➢ Clinics ➢ Ancillary shop or office to service industry provided it does not exceed 500 m² or 70% of built floor area, whichever is smaller ➢ Childcare center ➢ Car park ➢ Limited transportation ➢ Small scale commercial outlets ➢ Canteens, ➢ Mini Parks and small recreation areas where form less than 20% of the developed area.	➢ Contractor's yards/equipment storage with adequate visual screening. ➢ Sawmill. ➢ Veterinary hospital, or commercial stable on a plot of at least 3 acres, provided that no animals shall be kept in any buildings or enclosures within 45m² of any property line; and the use shall not create any odors, noise, or other impacts that would constitute a common- law nuisance concerning any other property. ➢ Expansion of a nonconforming use.

2.7.3. Service Industry Park/Zone

Land in a Service Industry Zone is intended to accommodate small scale, light industrial activities involving repair and maintenance, servicing, and processing. Business in the zone may include small scale suppliers, dry-cleaning, photogenic film processing, small workshops, tradesman depots, tailoring, and services to the motor trade. Will entail the performance in the course of trade or business or any activity included in the list hereunder;

Table 31: Permissible and Prohibited Uses in Service Industry Zone

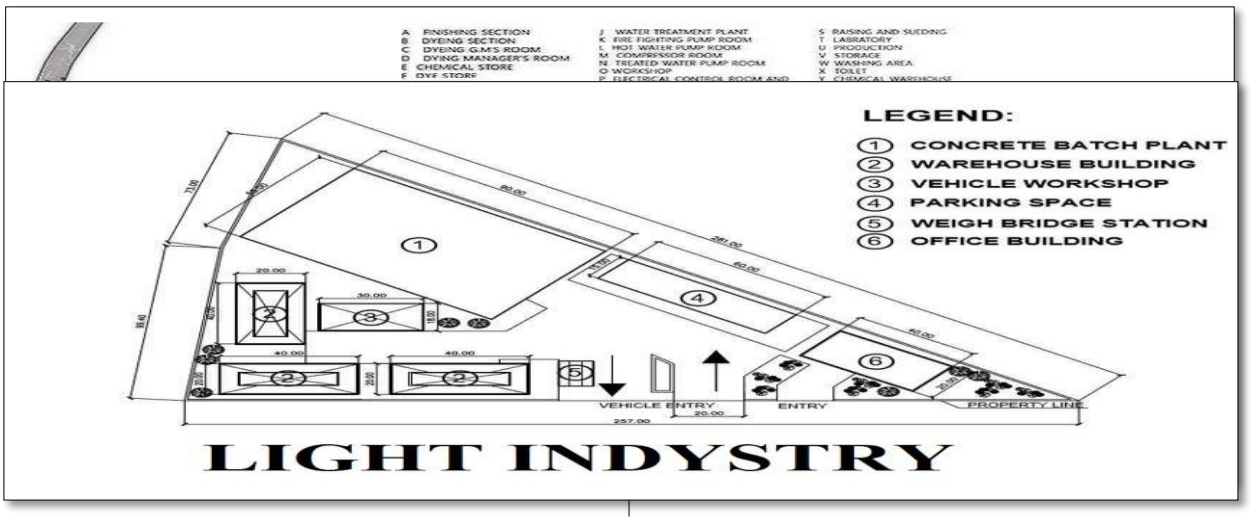
Permitted uses		Prohibited Uses
➢ Emergency Services depot ➢ Service industry ➢ Service station ➢ Motor trading ➢ Clinics ➢ Ancillary shop or office to service industry provided it does not exceed 500 m² or 70% of built floor area, whichever is smaller ➢ Childcare centre ➢ Car park ➢ Limited transportation ➢ Markets ➢ Retail, commercial and ancillary activities will be permitted in the zone, provided they do not exceed 70% of the built floor space	➢ Woodworking ➢ Block Making ➢ Photographic Film Processing ➢ Photographic Plate-making, Etching and like Photographic Processes ➢ Photographic Sign Making ➢ Picture Framing ➢ Plan Printing ➢ Repairing or Servicing ➢ Confectionery ➢ Dental Good ➢ Footwear	➢ All industry not classified as service industries. ➢ Major transportation uses ➢ Institutional premises ➢ Animal husbandry ➢ Major commercial ➢ Sports &

➢ Book Binding ➢ Document Duplicating or Copying ➢ Dressmaking ➢ Dry Cleaning or Dyeing ➢ Engraving by hand ➢ Laundering ➢ Making any of the following: - ➢ Bread, Cakes, Pastries ➢ Canvas Goods, Tents, Camping Soft Goods ➢ Clothing, Clothing Accessories ➢ Optical Goods (being spectacles or the like) ➢ Furniture and soft furnishings ➢ Toys	➢ Jewelry ➢ Keys ➢ Millinery ➢ Car repair works	recreation

2.7.3.1. Standards and guidelines for Light and Service Industrial Parks

Table 32: Area and Planning Standards for Light and Service Industrial Park

Guidelines, standard and location parameters	Standards as they apply to Industrial Park	Guidelines and recommendations
Location within planning area	▪ Near commercial and residential neighborhoods provided activities do not have impacts on the immediate land use as well as distant places. ▪ Can be operated/mixed in commercial and residential areas	- Mixed commercial and industrial land use involving non-polluting and non-disturbing light and service industry - Small workshops and services will be permitted only on plots designated for such purposes in commercial and residential areas
Size of zone	Open	Will depend on the demand for industrial development in the planning area
Industrial plot size	>1.0 Acre (4,000m²) to 2.47 Acres (10,000m²)	
Recommended industrial densities	60 workers per 0.41 Ha	
Building Height (skyline)	Open	
Plot coverage	60%	This is to allow for landscaping, car parking and servicing yards, subject to all other standards being met.
Impervious coverage	30%	
Floor to Area Ratio (FAR)	0.70	
Building line (m)	5	
Setback (m)	3	
Front setback (m)	10	This is to allow sufficient space for landscaping, parking.
Side setback (m)	3-5	To allow sufficient space for maintenance of buildings, access to septic tanks or other utilities, and to avoid possible nuisance to adjoining plots
Rear setback (m)	5	



2.7.4. Heavy industrial

The heavy industrial zone is intended to house and provide for heavy processing activities of industrial goods, with a possibility of direct railway siding and sharing a marshaling yard facility for train maneuvers.

Table 33: Permissible and Prohibited Uses in heavy Industry Zone

Permitted Principal Uses	Prohibited Uses
➢ Manufacturing and processing ➢ Storage up to 40% of plot surface ➢ Offices serving main processing activity ➢ Industry being general or service industry ➢ Vehicle repair ➢ Transport yard ➢ Warehousing if not in excess ➢ Motor Trading ➢ Utility Service Station ➢ Medical facilities for emergency services ➢ Canteens ➢ Limited Commercial Retail ➢ Uses allowed by Special Permit ➢ Business and Commercial up to less than 10% of built space ➢ Stacking/ Storage beyond 40% of plot surface	➢ Major commercial center ➢ Residential ➢ Hotel ➢ Educational facilities ➢ Child Care Centers ➢ Institutional premises ➢ Intensive Animal husbandry

2.7.5. General Industrial Zone

The land included in a General Industrial zone is intended to accommodate a wide range of industrial and related development including manufacturing, food processing, assembly of machinery, and heavy equipment, vehicles, and appliances.

It entails the performance of the following;

i. An operation by way of the carrying out in the course of a trade or business of any process for or ancillary to an activity being:
ii. The making of any article or part of any article; the assembly of products
iii. The altering, preparing and servicing, ornamenting, finishing, cleaning, washing, freezing, packing or canning, adapting for sale, or breaking up for demolition, of any articles;
iv. Processing of goods, including agricultural products;
v. Without prejudice to (i) and (ii), the getting, dressing or preparation for sale of minerals or the extraction or preparation for the sale of oil, or
vi. An operation by way of the carrying out in the course of a trade or business of any process of scientific or technological research, investigation, or testing.

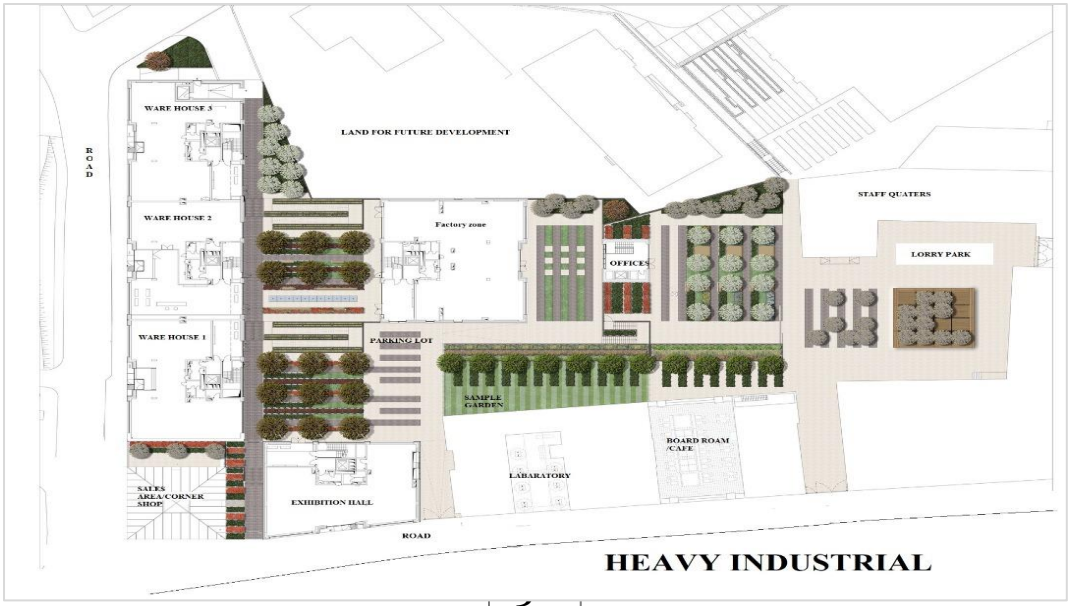
Table 34: Permitted and Prohibited Uses in General Industrial Zone

Permitted Uses	Prohibited Uses
➢ Industry being general or service industry ➢ Vehicle repair ➢ Transport yard ➢ Warehousing if not over 50% of gross floor area ➢ Motor Trading ➢ Utility Service Station ➢ Medical facilities for emergency services ➢ Canteens ➢ Food Stalls ➢ Limited Commercial Retail not exceeding 50% of the floor space area ➢ Parking	➢ Residential development ➢ Major commercial center ➢ Hotel ➢ Educational facilities ➢ Child Care Centers ➢ Institutional premises ➢ Intensive Animal husbandry

2.7.5.1. Standards and guidelines for Heavy and General Industrial Parks

Table 35: Space and Planning Standards for Heavy and General Industrial zone

Guidelines, standard and location parameters	Standards as they apply to type of Industrial Park	Guidelines and recommendations
Location within planning area	General industrial zones will be located in strategic locations close to highways, major roads, railway and other transport infrastructure to ensure that services are provided to a high standard and reliability.	▪ Flat land or large flat terraces ▪ Good access to major traffic routes (major trunk roads) ▪ At least 500m from highway and railway ▪ Convenient access to business centres in existing urban areas; ▪ Good accessibility to inland container depots or airport; ▪ Avoid closely siting polluting industries lower than the surrounding residential areas ▪ Avoid siting low-rise industrial developments close to high-rise residential developments; ▪ Centralize industries of the same category to economize the provision infrastructure and utilities
Size of zone	Open	Will depend on the demand for industrial development in the planning area.
Plot size	Not less than 10,000m²	
Recommended industrial densities	Net Land requirement for heavy industries 4.05 ha per 1,000 Employees General industrial density 40 workers per 0.41 ha	
Building Height – skyline (max m)	Open	
Plot coverage	25%	To allow for landscaping, car parking and servicing yards, subject to all other standards being met.
Impervious coverage	50%	
Plot ratio	50%	
Floor to Area Ratio (FAR)	0.3	
Building line (m)	10	
Setback (m)	5	
Front setback (m)	10	
Side setback (m)	10	
Rear setback (m)	10	



2.7.6. Extractive Industry

The land included in an extractive industry zone is intended to be available for the extraction or mining of rock, gravel, sand, clay, mineral ores, and precious stones. The location of these zones will be carefully selected to avoid activities that may generate an adverse impact on the urban and future urban environment.

Residential development will be restricted to security and staff accommodation located away from operational areas. Strict conditions will be placed on the security of sites and the winning of materials will be properly contracted under license and permits from responsible government agencies. Once the resource of the site has been exploited the land shall be rehabilitated and re-zoned for appropriate use.

Table 36: Permitted and Prohibited Development in Extractive Industrial Zone

Permitted Uses	Prohibited Uses
➢ Extractive Industry ➢ Ancillary uses to an extractive industrial use ➢ Public Open Space ➢ Staff housing except beyond/outside 1km from blasting zone ➢ Afforestation ➢ Waste disposal site (subject to environmental assessment)	➢ Commercial buildings serving the community ➢ School buildings serving the community ➢ Residential development within 1km of a quarry site where explosives are used will be prohibited. ➢ All uses not specified as permitted in the zone

2.7.6.1. Standards and guidelines for extractive industry

Guidelines and standards on Quarrying

The following safety distances should be maintained in quarry operations:

- Quarry sites should be designated and mapped.
- Siting of quarries should be in harmony with other land uses and provide for defined buffer zone between quarries and other land uses.
- For quarrying operations without blasting:
  - Locate 500m to any aerodromes/landing ground
  - Locate 200m to any shopping centre, school and hospital
  - Locate 100m to any house irrespective of consent from the owner
  - Locate 50m to any river edge, road reserve or rail
- Undertake an ESIA before quarrying starts.
- The areas should also be physically planned and appropriate land use assigned and Environmental and Social Management Plan (ESMP) for the whole area prepared.
- Licensing/permission on quarrying activities within the forested land will be required and should be restricted to forestland devoid of trees with the aim of reclamation for re-vegetation.

Guidelines on Mining

The following are the guidelines for exploration of minerals:

- Maximum area of exploration should not exceed the recommended size by law.
- Maximum duration of exploration should not exceed the period specified by law.
- In case of trenching and pitting, rehabilitation should be done as recommended in ESIA
- Time must be indicated as to when rehabilitation starts after exploration ends
- Undertake an ESIA before mining starts with clear ESIA and adequate compensation mechanisms for the local communities.

- The mode of mining should be based on type of mineral, safety, existing land uses, ecological sensitivity etc.
- Wastes should be disposed in designated disposal sites.
- Sanitary facilities should be provided in mining sites.
- Appropriate technology must be used to increase efficiency, control dust, noise and vibration to acceptable levels.
- Toxic by-products should be properly managed so as to avoid adverse environmental impacts
- Disused mines should be rehabilitated according to EIA/EA/EMP where applicable.

Guidelines on artisanal (small-scale) mining

The following are the guidelines for artisanal mining:

- Intensive small-scale mining should be done in designated areas.
- The Government should facilitate EIA in the designated areas and provide disaster vulnerability profiles for mining sites.
- Persons engaged in small scale mining should be encouraged to operate as organized groups and vetted to ascertain capacity to mine i.e., skills, equipment and finances among others.
- Disused mines should be rehabilitated according to EIA where applicable.

2.7.7. Noxious, Offensive, Hazardous Industrial Zone

Land included in the Noxious, Offensive, Hazardous Industrial Zone is intended for development by industries that emit elements of a noxious, hazardous or offensive nature. Such industries would generally be incompatible within any other urban zone and include activities associated with inflammable fuels or explosives, smiting, galvanizing, manufacture of cement, slaughtering of livestock, manufacture of poisons, chemicals, and refining. A detailed list of industries in this category is given in Appendix 4.

All activities in this zone would be subject to strict monitoring by the relevant agencies. Every proposed development would be subject to a detailed environmental impact statement which would be considered before planning approval is given. Strict conditions will be placed on the discharge and disposal of wastes. Industries storing explosive and flammable material will have special sitting and construction measures applied.

Table 37: Permitted and Prohibited Developments in Noxious, Offensive, Hazardous Industrial Zone

Permitted Uses	Prohibited Uses
➢ Industry is defined as noxious, offensive or hazardous ➢ Warehousing ➢ General industries ➢ Ancillary uses to the industry ➢ Public open space ➢ Emergency services ➢ Car Park ➢ Lorry Parking area related to the industries	➢ All uses not specified as permitted in the zone

2.7.7.1. Standards and guidelines for Noxious or Offensive Industries

Table 38: Standards and guidelines for Noxious or Offensive Industries

Public Infrastructure	**Plot Access**	– Every industrial plot must have adequate direct vehicular access and frontage on to an industrial service road; – Zone distributor road – 20 meters (with a carriage way, sidewalks, parking for the loading and offloading trucks, landscaped and greened section between the road and abutting

		properties/plots,) – It is also desirable to provide a separate exclusive lane for bicycles and pedestrians along the roads
	Parking/ Service Areas	Sufficient parking spaces shall be provided to accommodate motor and other vehicles of all occupants, employees, and persons normally visiting any building or premises at any one time. All present and future vehicular parking, including trucks, trailers, employee and visitor parking shall be provided in designated parking areas and shall comply with all the provisions applicable in the industrial park zoning regulations. Parking space should generally be located to the rear or side of the premises but, if some has to be in front of the building, it should be screened off the road by a landscaped strip. – In addition to car parking, it is necessary to provide on-site space for parking and maneuvering of service and delivery vehicles. – Service areas should be located at the side or rear of the premises. They should be hard – surfaced and clearly laid out. Vehicles must be able to enter and leave the site in forward gear. – Generally, a maximum of two vehicular access points will be permitted for each site. – The design of the access, corner radii and culverts must be to the satisfaction of the Uganda National Roads Authority (UNRA). – Any entrance gate must be set back sufficiently inside the site to allow the largest vehicle visiting the premises to park completely off the road while waiting for the gate to be opened.
	Loading and Off–Loading Areas	Loading and off–loading space shall be provided as follows on any premises used for retail or wholesale trade, manufacturing, hotels, hospitals, laundry, dry cleaning establishments or other buildings where large amounts of goods are received or shipped: a) Loading space shall be not less than 3 meters wide, 7.5 meters long and 4.2 meters high. b) Every building or block of buildings containing more than 1,500m² shall have at least one loading space. c) Every building or block of buildings containing more than 6,000m² floor area shall have one loading space for each 6,000m² or fraction thereof. d) No such loading space shall be located closer than 15 meters to any other lot in any residential zone, unless wholly within a completely enclosed building or unless enclosed on all sides by a wall or opaque fence not less than 1.8 meters high. e) Such loading space, maneuvering space and all vehicles using the loading space shall be contained within the plot.
	Waste Disposal Area	Site must be adequately provided with waste disposal and collection facilities. All development in Industrial zones shall have a site which can contain a refuse container for the storage of rubbish awaiting collection and disposal.
	Surface Water/storm water Drainage	– All development shall make proper provisions to control storm water run-off based on the best management practices and all control measures and facilities shall be maintained in effective condition. – Provide for storm water drainage channels linked to the main channel along the primary road within the zone. – Need for adequate designs for covered and open drainage channels that will channel the storm water to the main channel.
	Sewage Management	– Every premise must have water-borne toilet facilities drained to a septic tank and soak pit within the plot, or to a sewer; to the approval of the local authority. Septic tanks must be positioned so that they are accessible for emptying by tanker.
	Waste Disposal	– All facilities for the storage of refuse, garbage and recycling materials shall be located closer to the building served than to any adjoining property, to make the facilities as inconspicuous as possible and where they shall be easily accessible for service vehicles. – Any refuse must be stored in proper containers for collection to the approval of the local authority. Hazardous wastes will require special treatment.
	Safety infrastructure	Firefighting; facilities should be provided at convenient location Medical facilities; on site for minor injuries
	Boundary Fencing	Height of wall**;** Industrial plots will normally be enclosed by means of boundary walls, fences or hedges for both security and screening purposes. These will usually be restricted to 2.0 m in height and shall not obstruct a street sight line. Any necessary walls along the front road boundary should be of decorative brickwork to form an attractive frontage or be screened by

		a hedge or other landscaping materials to the approval of the local authority. Landscaping; The front of any industrial plot must be landscaped for amenity reasons. Along the major road frontage, landscaping should not be less than 2m wide. Landscaping shall apply whenever any proposed building/structure or development activity requires the submission of a Site Plan application or a Special Permit application. To enhance the appearance of a town or city, all new development in an industrial zone will be required to provide adequate tree planting. All portions of the property that are not required for buildings, structures, parking, driveways, or sidewalks shall be suitably landscaped with monuments, ground cover, trees and evergreen shrubs. Planted areas adjacent to the building shall be at a minimum of 1.8m from the building. Loading bays shall also be screened with any combination of walls, berms, and or landscaping.	
	Infrastructure for Vulnerable groups	Special requirements for PWDs**:** provisions for PWDs in public places, roads, parking, toilets, etc. Gender requirements; facilities for children, crèche and day care centre, physically impaired)	
Public Utilities	**Water**	Regular supply of piped water There should be a separate piped water supply to each plot, or other suitable supply, to the approval of the appropriate water authority.	
	Power Supply	– Adequate electricity supply	
Ancillary Services	**Service**	**Permitted**	**Not permitted**
	Residential Use	– The only exception permitted will be caretakers' accommodation in large complexes and should preferably be designed as part of the office building	– No residential or sleeping accommodation will be permitted on industrial plots. – All workers should be accommodated in the low income and high-density residential zone neighbouring the industrial zone.
	Office (Gross Floor Area)	– Offices will only be permitted on industrial plots where they are ancillary to the main industrial use. Where permitted, offices should occupy less than 30% of the Gross Floor Area.	
	Guard House	– A guard-house or guard's shelter may be permitted at the entrance to the plot and any such structure must be of permanent materials to match the boundary wall or main building. – Must be provided with necessary facilities such as sanitation, storage.	
	Open Storage	– Where materials or any products have to be stored in the open, such areas must be located to the rear of buildings and be well screened so as not to be visible from the road.	
	Retailing Outlets	– Will be permitted only if they are ancillary to the main industrial uses.	– Retail outlets will not be permitted on industrial plots

2.7.8. Mixed use in Industrial Zone

Mixed-use development in a broad sense is any urban, village development, or even a single building, that blends a combination of residential, commercial, cultural, institutional, or industrial uses, where those functions are physically and functionally integrated, and that provides pedestrian connections. Mixed use in industrial development will take the form of industrial – residential, industrial – commercial, industrial – civic among others. The restrictions

on the mix of either uses will be based on the prohibitions as given in the various industrial use types.

The design of mixed land use should aim at providing a safe, healthy, useable, serviceable, pleasant and easily maintained environment for all users. While the nature of each venture will differ, design of buildings and open space should consider the following:

- Protection from the spread of fire, dangerous operations, insanitary and dangerous waste and refuse, and vehicles.
- Control of heat, noise, smells, vibration and other nuisances.
- Accessibility – access for all users including the elderly and the physically impaired, for fire-fighting and rescue, collection of waste or refuse, and for servicing and maintenance of equipment, processing, sanitary, or other installations.

2.7.8.1. General Requirements in Industrial zone

Design/Materials

There are no general restrictions on the design of industrial buildings but local authorities should be consulted on the required materials as per the available Building Codes and Regulations in consultation with the relevant laws.

Industrial buildings must be constructed of permanent materials. Good quality and well-pointed facing bricks are preferable to plaster or render. Metal frames and non-reflective sheet metal cladding can also be used to good effect but again maintenance should be carefully considered. Roofing materials must also be permanent and preferably non-reflective.

Buffer areas/Health protection zones standards

These standards and guidelines provide that there shall be health protection zones of between 30m up to 1,500m around industrial zones, to be determined by the responsible government agency and depending on the particular use, applicable to the following sub-categories; (1) Heavy industry and power plants, (2) Agro-industry, and (3) Light industry and technology.

Table 39: standards for recommended buffer distances for mixed use in industrial zones

Polluting Uses	Sensitive Uses that need buffering	Buffer Distance
Multi-storey industrial buildings	residential areas, schools	100m
Multi-storey industrial buildings	commercial	30m
Industrial areas	hospitals	500m
Industrial areas	Residential	200m
Industrial chimneys	sensitive uses	within 500m
Industrial chimneys	high rise buildings	200m
Industrial chimneys	active open spaces	10–50m
Slaughterhouses	sensitive uses and commercial areas	200–300m
Village incinerator	sensitive uses	100m
Odour sources	sensitive uses	200m
Offensive trades	sensitive uses	200m
Dusty uses	sensitive uses	100m
Trunk roads	active open spaces	20m
Trunk roads	residential uses	20–30m
Heat and power stations and boiler installations	Residential, commercial, institutional, civic	100m

Polluting Uses	Sensitive Uses that need buffering	Buffer Distance
Sanitary land fill	Residential, commercial, institutional, civic	N/A
Compost plant	Residential, commercial, institutional, civic	N/A
Sewage treatment installations	Residential, commercial, institutional, civic	N/A
Sewage pumping stations	Residential, commercial, institutional, civic	N/A

2.8. Open Spaces

2.8.1. Zoning requirements for Public Open Spaces

Open Spaces (POS) zone includes streets, open spaces, and public facilities and is open to the public. Recreational uses are sports areas and facilities, parks, public squares, boulevards, and pedestrian zones. The land included in the Public open Space Zone is primarily intended for informal or casual recreation purposes.

Open Spaces are categorized in these standards to include the following;

- The City/Town Square/boma
- Parks (Central Park, Neighborhood Park, Community Park, Recreation Park, Amusement Park, Central Plaza, Smaller plazas, public art and fountains)
- Performance space
- Gardens (Large gardens, small gardens, Botanical Gardens, Zoological Gardens)
- Picnicking sites
- Camping sites
- Sports facilities (stadium, playfield, playground, play lots, sports complex)
- Natural forests
- Woodlots
- Commercial forests
- Public purpose sites (Land earmarked for public amenities and public purpose other than infrastructure)
- Open areas used for buffers between sensitive zones and other land use activities.

Table 40: Table of Permitted Uses and Prohibited Uses in POS

Restricted Uses/Activities	Prohibited Uses
➢ Building and structures ancillary to use permitted in open spaces and parks such as; Stand for vehicles on hire, taxis and scooters, bus and railway passenger terminals ➢ Facilities such as police post, fire post, ➢ Commercial use of transit nature like cinema, circus and other shows ➢ Public assembly halls, restaurants, entertainment facilities ➢ Caravan parks, open-air cinemas, kiosks.	➢ Any building/ structure or use which is not required for open-air recreation, dwelling unit except for watch and ward personnel and uses not specifically permitted therein. ➢ Any development that obstructs natural drainage ➢ Construction on flood overspill areas

2.8.2. Standards and guidelines for Open Spaces

Table 41: Location Standards and Space Requirements for Open Spaces

Type of facility/Public Open Space	Standard parameters	Location and area Requirements	Planning guidelines and recommendations
The Town/City Square	Location within planning area	– Central civic location or focal point of all gazette urban settlement within the CBD. – The surroundings of the square include	– Will usually contain one or more dominant public buildings, which may also include a government building, offices and public service buildings.

		the city's central street networks. – Is often the location of the town hall, hence constructed as the political centre of the town/city – With good access to public transport and a terminal		– Special attention is paid to the way public structures are grouped and landscaped around. – Provide landscapes or well-kept green suitable for open concerts, political rallies and other events that require firm ground. – Location and design must ensure the spaces that connect people to streets and buildings where they can gather and pause from the city's traffic and busy streets. – Should be well connected to other spaces hence need to have qualities of permeability, legibility, opportunities and robustness to support different purposes. – At their centre provide a monument, statue or other feature. – Provide walkways, trees and shrubs, places to sit, and some shops.
	Maximum catchment radius	Entire town/city/District		
	Catchment population to be served			
	Land required in sq m	Gross area/1,000 persons (Ha)		
Recreation/amusement park	Location within planning area	District/ Urban		
	Maximum catchment radius			
	Catchment population to be served	10,000-100,000		
	Land required in sq m	Gross area/persons (Ha)	1.0 – 2.0 Ha	
		Plot size	5– 10 Ha	
Central Park	Location within planning area	City/Municipal		
	Minimum catchment radius	10kms		
	Catchment population	100,000 – 1,000,000		
	Land required in sq m	Land area	2 – 5Ha	
Community Parks (community level)	Location within planning area	Location subject to existing natural spaces such as rivers, forest,		
	Maximum catchment radius	1.5 to 3 kms		
	Catchment population	10,000 – 20,000		

	to be served			
	Land required in sq m	Land area	1.5 – 2.5 Ha	
Neighbourhood Open spaces	Location within planning area		Neighbourhood/housing cluster	
	Maximum catchment radius		2-6 kms	
	Catchment population to be served		100-500	
	Land required	Land area	2 to 3 Ha	
Neighbourhood Park	Location within planning area		Neighbourhood	
	Maximum catchment radius		5 kms	
	Catchment population to be served		3,000-5,000/unit	
	Land required in sq m	Gross area/persons (M^2)	0.6-0.8Ha	
		Plot size	0.6 – 1.5 Ha	
Children's Park	Location within planning area		Neighbourhood nodal point, secondary road	
	Maximum catchment radius		1 km	
	Catchment population to be served		2,000 – 5,000	
	Land required in sq m	Gross area/1,000 persons (Ha)	200-500 m^2 (0.05Ha)	
		Neighbourhood level (Ha)	N/A	
		Community level (Ha)	N/A	
		District Level (Ha)	N/A	
Children play area/Tot lot	Location within planning area		Neighbourhood nodal point, secondary road	
	Maximum catchment radius		0.5 kms	
	Catchment population		1000	
	Land required	Gross area/1,000 persons (Ha)	0.1 – 0.2 Ha	
		Neighbourhood level (Ha)	0.02 – 0.5 Ha	
		Community level (Ha)	0.02– .05 Ha	
		District Level (Ha)	N/A	
Play field (Senior football field)	Location within planning area			
	Maximum catchment radius			
	Catchment population to be served		1,000	
	Land required	Land area (Ha)	0.5 – 1.5 Ha	
		Neighbourhood level (Ha)	0.2 Ha	
		Community level (Ha)	0.6 – 1.0 Ha	
		District Level (Ha)	1 – 1.5 Ha	
Sports field	Location within planning area			
	Maximum			

	catchment radius			
	Catchment population to be served			
	Land required	Gross area/1,000 persons (Ha)	0.6 – 1.2 Ha	
		Neighbourhood level (Ha)	0.4- 0.6 Ha	
		Community level (Ha)	0.8 – 1.21 Ha	
		District Level (Ha)	1 – 1.5Ha	
Soccer field with cricket and athletic track	Pitch size (m)		95 x 180	
	Proposed plot area		0.17- 0.74Ha	
Junior Football field	Pitch size (m)		45 x 90	
Medium size practice soccer/hockey field for dual purpose	Plot area		0.8 – 1.2 Ha	
	Pitch size (m)		90 x 100	
Netball Court	Proposed plot area		0.9 Ha	
	Pitch size (m)		18 x 33	
Basketball court	Proposed plot area		0.2 Ha	
	Pitch size (m)		18 x 28	
Volleyball court	Proposed plot area		0.2 – 0.5 Ha	
	Pitch size (m)		9 x 18	
Tennis Court	Proposed plot area		0.2 – 0.4 Ha	
	Pitch size (m)		22 x 24	
Swimming pool	Proposed plot area		0.2 – 0.3 Ha	
	Pool size (m)		20 x 25	
Children playground	Proposed plot area		0.1 Ha	
	Pitch size (m)		Vary	
Stadiums	District Sports Centre		8.0 Ha	
	Regional Sports centre		10.0 Ha	
	Junior football pitch		45 x 90 m²	
National Sports Complex	Catchment area		The whole country	
	Size of land		10 – 15 ha	
	General location			With good vehicular linkage including air link
	Minimum facilities		To cater for both active and spectator wide range of sporting activities up to national level that should include football field, tennis, volley, netball, hand ball basketball, athletics field, hockey field, cycle track, gymnasium, spectator stands for a minimum of 75,000 people, swimming pool, press rooms, Conference rooms, offices, stores. Restaurants, parking space for 1,000 vehicles, changing rooms, Showers, toilets, telephone, water, electricity, emergency medical services, etc.	
Large gardens	Location within planning area		Citywide, especially in high density areas	
	Maximum catchment radius		2.5 km	
	Catchment population to be served		5,000	
	Land required in sq m	Gross area/1,000 persons (Ha)	1,000 – 5,000	
		Neighbourhood level (Ha)	0.4- 0.8 Ha	
		Community level (Ha)	0.8 – 1.2 Ha	
		District Level (Ha)	2.0 Ha	
Small gardens	Location within planning area		Neighbourhood nodal point, secondary road	

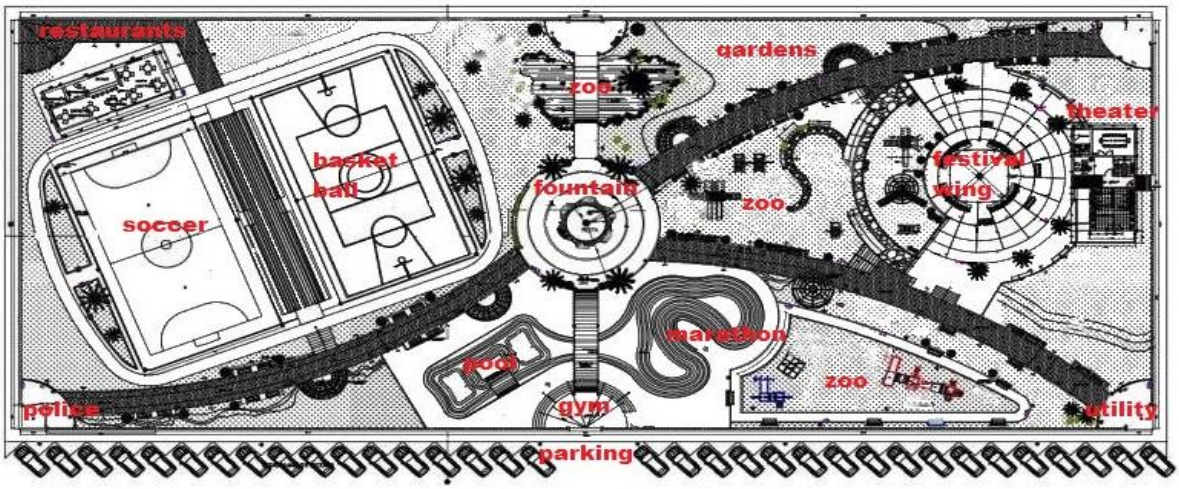
	Maximum catchment radius		10 minutes walking	
	Catchment population to be served		2,000	
	Land required in sq m		1,000-5,000m²	
Central plaza	Location within planning area		Central areas, neighbourhood nodal points	
	Maximum catchment radius		2.5kms	
	Catchment population to be served		2,500	
	Land required in sq m		1,000 – 4,000m²	
Picnicking site	Location within planning area		1km	
	Minimum catchment radius		1km	
	Catchment population to be served		200	
	Land required	Gross area/1,000 persons	250 – 500 M²	
		Neighbourhood level (Ha)	0.04 – 0.08Ha	
		Community level (Ha)	N/A	
		District Level (Ha)	N/A	
Camping site	Location within planning area		Preferably unbuilt areas	
	Maximum catchment radius		5kms	
	Catchment population to be served		50,000	
	Land required in sq m	Gross area/1,000 persons (Ha)	1.0 – 1.5 Ha	
		Neighbourhood level (Ha)	5- 10 Ha	
		Community level (Ha)	10– 15 Ha	
		District Level (Ha)	100 Ha	
Botanical Gardens	Location within planning area		N/A	
	Maximum catchment radius			
	Catchment population to be served			
	Land required in sq m			
Zoological Gardens	Location within planning area			
	Maximum catchment radius			
	Catchment population to be served			
	Land required)	Gross area/100,000 persons (Ha)	0.5 – 1.0 Ha	
		Neighbourhood (Ha)	N/A	
		Community level (Ha)		
		District level (Ha)	10 Ha	
Golf Course type	9 holes	Population per unit	5,000 – 25,000	
		Parking lots (cars)	100	
		Length in meters	750	
		Plot size (Ha)	25.0 – 35.0 Ha	
	18 holes	Population per unit	25,000 – 50,000	

		Parking lots	200	
		Lent him meters	2,170	
		Plot size (Ha)	55.0 – 60.0 Ha	

A City or Municipal level is required to have a Golf Course; however, it is important to assess the availability of land, users/demand for the facility and the capacity to maintain the facility. In planning for open spaces, the planning authorities should encourage the integration of institutional and private open space and encourage their use by members of the public.

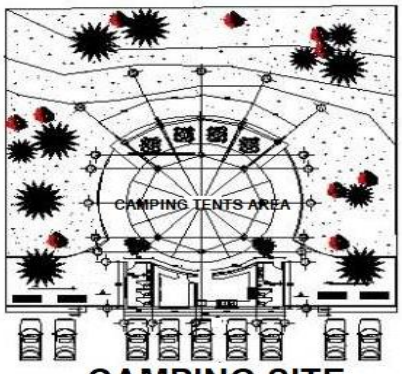
Neighborhood Park

GARDENS



Recreational/Town/City Square/Central/Community Parks


Children park/ Picnic



CAMPING SITE

2.8.3. Site Selection and Development Guidelines for public open spaces

- Size will depend upon the nature of the park and the types of facilities provided.
- Site should front a public street and be within or adjacent to a business district or neighbourhood commercial area.
- On-street parking should be provided.

2.8.4. Location and Accessibility of Open Spaces

Public open spaces should conform to the same requirements of location and accessibility in reference to distance and catchment area to public amenities. Grouping of public amenities with public open spaces on the same land is recommended where possible. It should consider the compatibility of the different amenities. Requirements include the following;

- Accessibility from road and pedestrian network.
- The minimum land requirements shall include the area needed for parking as specified in the parking standards.
- Should be connected to the pedestrian network and to cycle lanes, if existing or planned.
- Should be accessible via public transport and walking at 10-15 minutes walking distance from a transport stop/hub.
- Mid-block pedestrian passages should be provided to promote porosity in the urban grid and enhance the street-level experience for pedestrians.
- All land for POS shall be equipped with water, sanitation, electricity, telephone.

2.8.5. Guidelines for Urban Parks and recreation areas:

- For new residential development, provide land for open space and recreation purposes and/or circulation space by ensuring that land is surrendered during subdivision to provide the open space.
- Provide adequate public parking and related support facilities (such as rest rooms, showers and security arrangements among others).
- Incorporate natural features and use landscape materials that are indigenous to the area, where feasible, into the design of recreation areas.
- Provide pedestrian and bicycle pathways from surrounding streets to parks, to facilitate convenient access into the parks.
- Identify carrying capacity limitations of recreational resources and implement policies to regulate and mitigate impacts to these resources.
- Land use planning should provide for extensive and attractive recreational areas across the urban areas. The recreational areas should form cohesive entities so that there is a network of green zones combining them.
- Should offer a large spectrum of activities and features including such of a neighbourhood park, function as an urban landmark and connect to pedestrianized zones where possible.
- Sports fields and sports pitches shall be evenly distributed throughout urban residential areas.
- Sports facilities should ideally be distributed near educational and social facilities and should be interlinked with parks and other public spaces.

2.8.5.1. Guidelines for implementation of small neighbourhood parks, green spaces, access, easements, pathways and connections.

Small neighbourhood parks shall provide access to basic public space functions, such as play and contact with green in an urban neighborhood. A neighborhood park shall:

- Be accessible to children and elderly in case of the need to cross any primary distributor road.
- Have a children's playground with play equipment.
- Make small-scale sports possible, e.g., jogging, basketball or football.
- Have places to support passive recreation including seats.
- Be designed to ensure safety and security during day and night hours.
- Be capable of being used by all the residents in the development.
- Have naturally shaded areas.

2.8.6. Guidelines for Private Open Spaces in residential development

Private Open Spaces in residential development shall be visible and clearly accessible from the street. The guidelines provide the following;

1. New development and redevelopment sites should offer a mix of ground level and roof top open space.
2. Residential development should consider including publicly accessible open space, particularly ground level, as part of the provided open space.
3. Recreational open and public open spaces are encouraged to be provided by individual properties for the use of building occupants. Design features should include (but not be limited to):

- Common indoor and outdoor spaces for resident use included as part of development.
- Roof gardens, balconies, terraces, decks, and recreation rooms.
- Options for group and individual enjoyment.

4. Rooftop amenity space areas on buildings in close proximity to adjoining properties should be designed in a compatible manner to prevent adverse effects of noise and light.
5. As part of the new multi-family, office, or hotel buildings, explore providing a community meeting space.

2.8.7. General Guidelines for Public Open Spaces

1. The design of POS should meet and/or enhance their intended function; for example, plazas should be designed with adequate amounts of hardscape whereas large greens or parks should minimize hardscape areas that will detract from their intended appearance as a green oasis.
2. The Plan's open space should incorporate significant green and pervious elements, offer shade relief and contribute to the area's tree canopy goals where possible.
3. In the case of a public open space that extends beyond the sidewalk but directly in front of the lobby, or along some portion of the building frontage, the public space should be clearly designated and designed as public space while still allowing the lobby or public entrances to be visible and immediately accessible from the public right of way.
4. Open spaces should not be fenced, or demarcated in any ways which prohibit public use with the exception of playgrounds and pools.
5. Public open spaces and parks should include adequate amenities such as restrooms, storage facilities, and parking, where feasible and also be inclusive of the physically impaired.
6. Plantings should be consistent with the area's Landscape Guidelines and policy recommendations.
7. Selection of materials, furnishings, and systems shall meet the National Landscaping guidelines.
8. Paving of pathways should consist of pervious materials to minimize stormwater runoff.
9. Pathways and connections should utilize appropriate lighting for enhanced pedestrian safety and comfort.
10. Outdoor seating and other passive and active uses should be permitted in areas with public access easements to promote vibrancy.

2.8.8. Lighting in public open spaces

Defined open spaces should have high visibility from sidewalks, streets, and buildings unless constrained by natural conditions. All public open spaces should be provided with street lighting. Proper typology, colour and intensity of light should be considered in design of street lighting. Energy-efficient lighting technologies shall be evaluated and applied. Pathways and connections should utilize appropriate lighting for enhanced pedestrian safety and comfort.

2.8.9. Soft Landscaping of public open spaces

Soft landscaping refers to the improvement of open space by making use of vegetative elements (grass, shrubs and trees). Plantings should be consistent with the National Landscape Guidelines.

Climatic and local weather conditions, types of vegetation, public safety, environmental impacts and aesthetics shall be considered in soft landscaping.

2.8.9.1.Hard Landscaping for public open spaces

Hard-landscaped areas are those treated with construction materials. They include pedestrian areas, squares, footpaths. The following elements should be considered in hard landscaping:

a) Paved areas (pedestrian footpaths, cycling areas, etc.); where possible, permeable materials should be preferred over impermeable paving to minimize storm water runoff.
b) Opportunities for the incorporation of historic and cultural interpretation into public open space, particularly in conjunction with improvements to adjacent public or private space.
c) Garden screen walls and/or retaining walls should be constructed of brick, stone, architectural precast or other highly finished appropriate material. Pavement in open space should be brick, stone, concrete pavers, or concrete.

2.8.10. Street Furniture for public open spaces

Typical street furniture elements that should be considered in POS are: Benches and other seating facilities; Signage; Public lighting; Drinking fountains; Litter bins; Vehicle barriers; Traffic signals; Pedestrian guardrails; Bicycle racks; Pedestrian direction signs; Fences and gates; Tree guards; Tree grates; Planter boxers; Pergolas; and Sculpture and artworks.

2.9. Guidelines for Protected Water Front Zone

Land in the Protected Water Front Zone may be described as land within the immediate vicinity of a water body, which is subject to special protected status. The land includes any site abutting the Mean High-Water Mark of the water body or its bays, beaches, lagoon sides, banks of rivers, lake shores and other water bodies. The normal side or rear yard requirements will be in addition to the coastal protection yard. The extent of the Protected Water Front Zone shall be determined by the Planning Authority in collaboration with the appropriate state controlling agency/agencies.

Access drives, parking, loading, maneuvering, storage of any kind, or accessory buildings or built structures will not be permitted in a waterfront zone. All the waterfront zones which may be affected by erosion, or a future rise in water level will form part of a Protected Water Front Zone to ensure that no development occurs. The width of the waterfront zone will vary according to the protection measures required. Land in the Protected Water Front Zone is to be used for activities specified in the National Environment (Wetlands, River Banks and Lake Shores, and other water bodies Management) Regulations, No. 3/2000.
The Planning Authority shall liaise with the Environmental protection Agency to determine the applications for development that need environmental impact studies.

Table 42: Table of Restricted Uses in Protected Water Front Zone

Permitted Uses	Restricted Uses
➢ Tourist and recreational facilities: Hotels/Resorts, Swimming Facilities, Bars, Golf courses, Amusement Centers, and other related activities. ➢ Industrial activities related to water body: Local Crafts Industries, Fish Processing – All effluent deposited into	➢ Sand winning ➢ Animal husbandry ➢ Garages/mechanical workshops ➢ Large scale commercial activities/markets ➢ Raw solid and liquid waste disposal,

water bodies in connection with these activities must be at least secondary treated. ➢ Boat, Harbor, and Fishing Facilities: ➢ Boat/Fishing Harbors, Lagoon Outlet Structures, Traditional Boat/Ship Building, ➢ Re-vegetation/ Re-forestation ➢ Traditional small scale and cottage ➢ Local craft making	cemeteries/crematorium ➢ Any heavy or large-scale industry, shipbuilding, ➢ Coal and oil-fired power stations ➢ Commercial or Military Docks and dry harbors. ➢ Open dumping and discharge of solid or liquid waste

2.10. Conservation Zone

Land in a conservation zone is intended to be retained in its natural or modified state for conservation purposes. A conservation zone may include areas of outstanding natural beauty, areas of religious, cultural, or archaeological importance, forest reserves, national parks, game reserves and estuarine habitats, land in water supply catchment area endangered hills, slopes, escarpment, fault line, etc.

It is not Intended to exclude development from a conservation zone however activities that are incompatible with the intent of the zone will be prohibited, especially urban development and industry. Access to conservation zone will be restricted to selective areas where the intensity of use can be more effectively managed. Developers are required to provide public places of convenience in recreational and tourist sites.

Table 43: Table of Permitted and Prohibited Uses/Developments in Conservation Zone

Permitted Uses	Prohibited Uses
➢ Tourism and recreation ➢ Ancillary facilities for local craft industries ➢ POS ➢ Educational and Scientific research centers ➢ Limited local transportation ➢ Afforestation	➢ Residential development ➢ Industrial development ➢ Non permissible transportation ➢ Intensive cultivation ➢ Animal husbandry ➢ Open dumping and discharge of solid or liquid waste

2.11. Special Area Zones

Special Use zones are categorized under the following;

- Historic, Traditional and Cultural Zones
- Protective Services Zone
- Special Development Zones
- Refugee / Displaced persons Settlements.

2.11.1. Historic, Traditional and Cultural Zones

The country has a variety of historic, traditional and cultural resources which constitute a big part of the tourism base for the nation. Such historical and cultural resources include; museum sites, war/liberation memorial sites, historical churches, traditional cultural sites & practices, architectural heritage and antiquities etc. Therefore, these standards and land use should contribute to the preservation of the country's cultural and built heritage and its diversity.

2.11.2. Guidelines for Historic, Traditional and Cultural Zones

- Identify and protect existing visual landmarks and support the creation of new culturally appropriate landmarks.

- Retain, whenever possible, significant vistas associated with archaeological features.
- Develop mechanisms to allow access and benefit sharing to the local community.
- Respect significant historic resources by applying appropriate management practices that include strong community participation. Such practices may range from total preservation to integration with contemporary uses.
- Determine appropriate preservation methods.
- Delineate and map site boundaries and setbacks for gazettement.
- Determine appropriate restrictions on the uses and development of adjacent lands.
- Undertake inventory and documentation of the cultural and built heritage sites in the country.

2.12. Protective Services Zone

These are security zones and they should be treated as such. Protective services are considered under: Military service; police and prison service and fire Service.

2.12.1. Protective Service Zone Planning Standards

These standards relate to define the scale, location and site requirements, service facilities and open spaces for the following services; Police, Fire, Prisons and the Military.

2.12.1.1. Planning Guidelines and Area Standards for Police Services

The locations of police stations depend on their functional requirements say district centers, residential neighbourhood, large commercial and business centers, industrial areas and large institutions. Space requirements should take into account office space, accommodation, parking and open spaces for recreation and future expansion.

Recommended minimum space requirements for police services are given in table 36. The provision of space for police posts is determined by a number of factors among which include; the demand, population size, crime rate, availability of land, economic activities
and distance from the nearest police station.

Table 44: Proposed Space Requirements for Police Facilities

	Hierarchy	Location	Population Threshold	Required land Size	Ground coverage (%)	Max height
1	Police Booth	at major road (intersections)		10-12 m²	NA	NA
2	Police post with accommodation facilities	Parish / Ward; In the centre of the catchment area, along or in proximity to main roads, major road	40,000 – 50,000 (Area not served by Police Station)	0.16 Ha (inclusive accommodation) Police barracks, accommodation is dependent on the available land ranging from 0.2 Ha – 1.7 Ha as an addition to the institutional facilities	35	
3	Sub County Police station with accommodation facilities	Sub-county; In the centre of the catchment area, along or in proximity to main roads, primary road		0.16 Ha Area inclusive Accommodation (minimum)	30	
4	District/City Headquarters	District/City; In the centre of the catchment area, along or in proximity to		0.75 – 1.0 Ha		

		main roads, primary road				
5	District/City Headquarters with accommodation facilities	District/City; In the centre of the catchment area, along or in proximity to main roads, primary road		1.75 – 2.85 Ha	30	
6	District Headquarters/ Barracks/Police Station	District/City; In the centre of the catchment area, along or in proximity to main roads, primary road		2.25 – 3.75 Ha		
7	Regional Police Headquarters with accommodation facilities	It is assumed that the office will be held within the District Police headquarters.	N/A	N/A	N/A	N/A
8	National Police Headquarters	Away from the CBD		4 Ha		4 floors
9	Police Training School	City level (to be located in fringe areas)		5 – 10 Ha	30	
10	Police station/post required facilities	**Building Infrastructure** – office structure, quarter guard, staff accommodation structures, medical infrastructure, recreation halls, officers' messes, education facilities, places of worship. **Driveway** – Separate visitor and police emergency **Car Park** – separate and provide general for visitors, for staff, and at the rear for emergency. Yard for accident vehicle parking **Open spaces** – parade grounds, open ground and recreation grounds, helicopter landing site				

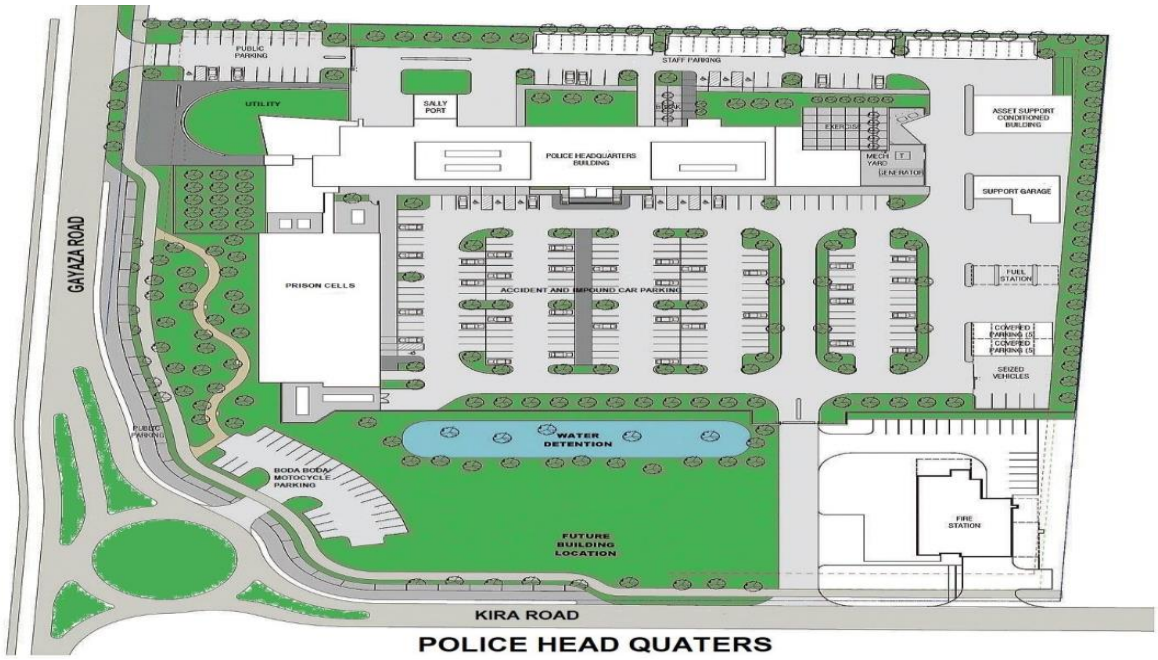


Figure 4: A typical layout for a Police Headquarter

2.12.2. Planning Standards, Space Requirements and Facilities for Fire Fighting Services

Table 45: Standards and guidelines for fire stations:

	Service Hierarchy		Urban Centre Municipal and Town Council (Ha)	City (Ha)
1	Local fire station	Catchment population/area	2,500 – 30,000	2,500 – 30,000
		Numbers	1	1
		Size and location within settlement area	In the centre of the catchment area, along or in proximity to main roads, primary road. Site size shall be a minimum area of 0.5 ha with a minimum frontage of 35 m – Should be easily accessed from the main road/s. – Additional minimum area of 0.4 ha is required for staff accommodation and drilling area. – A small fire station would require a minimum of 30 staff members to cover a population of 50,000 – 100,000 depending on the degree of fire risk. – Allow for parking and maneuvering of at least three (3) 400 gallon capacity fire tenders/ trucks	
		Basic Requirement	Shall include; – Hydrants which shall be placed at 1km intervals along major town roads. – Hydrants should be located at a minimum of 15m from nearest building. – In areas where regular supply of water is a problem, water storage tanks of 132,000 liters capacity each should be provided at high density housing areas and within industrial zones with high fire risks. – Open spaces; parking, parade grounds, Open ground, electricity, telephone and water. – Houses for staff and their Families. – Workshop area	
2	**District Fire Station**	Catchment area	Catchment's area shall be a district of 15km to 30km radius	
		Location and size	– Require an area of 0.3 – 0.5 Ha with a minimum frontage of 47m to infrastructure, afford ample space on site for parking and maneuvering of vehicles. – Should be easily accessed from the main road/s. – Additional minimum area of 0.4 ha is required for staff accommodation and drilling area. – Location shall be in the centre of catchment area and within striking distance to all parts of the district.	
		Basic Requirement	Basic site facilities shall include; – Building Infrastructure; Station office Buildings, Barracks Buildings, hydrant zone of 2m², truck parking building for at least three trucks, parking and maneuvering of at least three (3) 1760 liters capacity fire tenders/ trucks – Open spaces; parking, parade grounds, Open ground, electricity, telephone and water. – Houses for staff and their Families – Parade Grounds – Workshop area	

Guidelines for locating fire stations and other firefighting facilities

- Fire stations should be located so that the fire tenders are able to reach any disaster site within 3-5 minutes
- Fire stations should be located on corner plots as far as possible and on main roads with minimum two entries.
- In the new layouts, concept of underground pipelines for fire hydrants on the periphery exclusively for firefighting services should be considered.

- Necessary provisions for laying underground/ over ground firefighting measures, water lines, hydrants etc., may be kept wherever provision of fire station is not possible.

2.12.3. Planning Standards for Prisons Service facilities

Prisons are big land consumers and therefore not suited for location in urban areas. They should be located on the urban fringes particularly in areas where urban expansion would not be unnecessarily curtailed. A minimum of 16 Ha should be reserved for Prisons/Rehabilitation Centres while a minimum of 2 Ha is sufficient for juvenile homes.

2.12.3.1. Guidelines for Setting up a Prison

- **Location:** The site of a prison should either be located in urban or rural Districts and should accommodate the staff in charge of security. No development in or near wetlands, flood plains, fragile landscapes, or historic/archaeological sites.
- **Environmental Impact Assessment Study:** Before establishing and building up any prison, there will be an ESIA conducted at the site selected.
- Site establishing a prison must allow for a facility expansion to meet future demand.
- Include sufficient parking space for staff and visitors. The prison will need enough parking to accommodate two full staff shifts because of overlap during shift changes, as well as enough spaces for overlap during visiting hours.
- Any planned prison should have design that places most recreation yards where the prisoners should take an advantage of relaxing.
- The prison should include the area required for the double fence zone and the perimeter patrol road including access to the site from public roads.
- Include areas for incoming deliveries and for waste disposal and recycling.
- The amount of "buffer" zone around the prison facility is discretionary. Provide a visual barrier of trees and greenery or some other buffer between the perimeter fence and the property line.
- A low-rise building prisons may lead to mismanagement of land, many multi-storey prisons operate quite successfully and recommended like any other forms of well densified settlements.

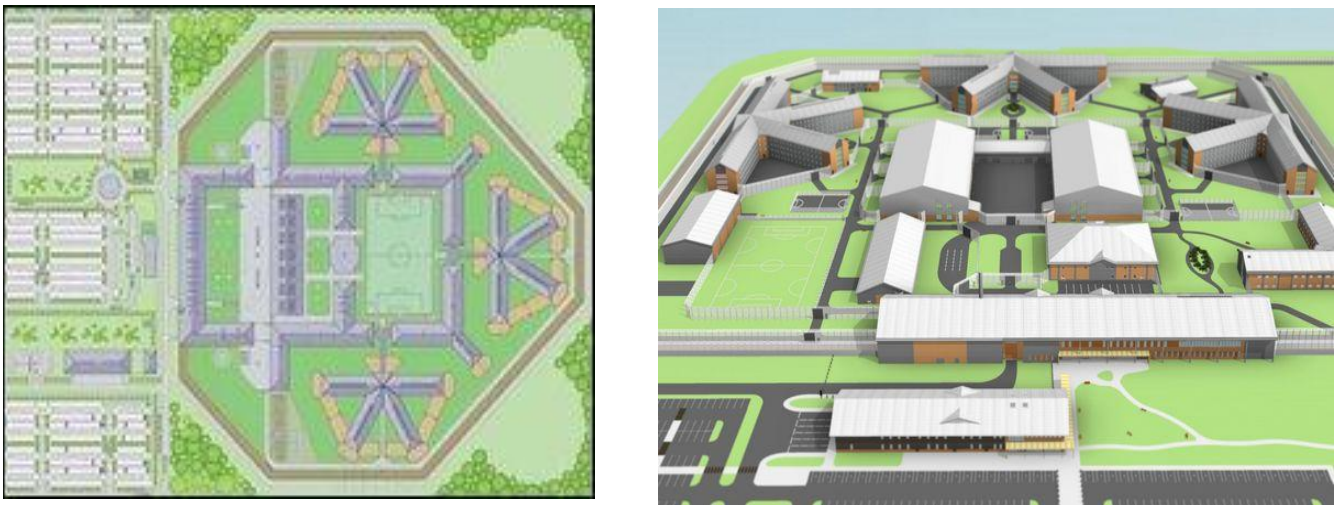


Figure 5: Example of Design of a prison

- Land property for setting up a prison should be owned by the government. Or can be acquired through expropriation procedures to gain enough space of land available for development

2.12.4. Guidelines for Establishment of Military Installations.

Sufficient areas should be allocated to military barracks, camps, garrisons, military training institutions and other installations. Important land use planning considerations include:

- The relationship of the installation's land uses to those of the surrounding region.
- The necessary allocation, proper arrangement, and efficient correlation of land uses and structures to serve the mission and strength of the installation.
- Suitability of existing streets, structures, utilities, transportation facilities, and recreation facilities.
- Future expansion requirements.
- Ecological/environmental and natural resources sustainable management.

The guidelines for the establishment of military installations include:

- They should be marked and/or demarcated as military land and appropriate signage/warning notices erected.
- Ensure that they are not located in environmentally sensitive areas e.g. wetlands, parks, protected forests, conservation areas and human settlements among others.
- The Ministry of Defense should provide appropriate infrastructure services to support and minimize potential negative impacts to the region.
- Establishing a safeguarding area as buffer zone between the military camps and civilian settlement.
- Consider relocating permanent military camps and training areas in appropriate areas.
- Environmental Impact Assessment should be conducted before establishment of any military camps and other installations.

2.12.5. Refugees / Displaced Persons Settlement

Land designated for refugee and displaced persons settlements is considered protected zones and should therefore be properly planned for hence the consideration in these standards. It includes both refugee and internally displaced persons settlements and camps.

2.12.5.1. Guidelines and Standards for Refugees / Displaced Persons settlements.

a) Average camp area per person

The size of a camp and area per capita is critical in the planning of camps as crowded conditions lead to increased morbidity and stress. The provision of adequate space, both outside and inside shelters is therefore an essential requirement. The 'average camp area per person (Sqm) indicator, measures the average living space to which a person has access in a camp as per the Settlement and Shelter Guidelines by OPM. This space should accommodate all services while promoting dignified living:

A minimum surface area ranging between **35 – 45 m²** per person including household gardening space should be allocated. **30m²** per person will be necessary for roads, foot paths, educational facilities, sanitation, security, firebreaks, administration, water storage, distribution points,

markets, storage of relief items and, of course, plots for shelter. It excludes however, any land for significant agricultural activities or livestock. The remaining **15 m²** per person is allocated to household gardens attached to the family plot which should be included in the site plan from the outset.

Table 46: Minimum standard for settlements and camps

Description	Minimum Standard
Covered living area	3.5 – 5.5 m². Per person may be required and appropriate) Minimum ceiling height; – the standards specified in Building Codes will apply.
Camp settlement size	45 m². Per person (including kitchen and vegetable garden)
Fire Safety	30 m firebreak every 300 m. Minimum 2 m between structures – use 2 times the height of the structure as an appropriate distance.
Gradient for camp site	1 to 5 %, ideally 2 to 4%
Drainage	Appropriate drainage needs to be put in place, especially relevant in locations that experience a rainy season with flash floods.

b) Camp Site Planning Standards

The recommended site planning standards for services and infrastructure to be referred to when preparing the camp layout.

Table 47: Camp Site Planning Standards for Services and Infrastructure

Description	Standard	Further consideration and recommendations
Communal latrine	1 per 20 persons – emergency phase	Separate latrine areas for men and women For long-term accommodation use one household latrine per family
Latrine distance	Not more than 30m from shelter and not closer than 6m	Latrines must be close enough to encourage their use but far enough to prevent problems with smells and pests.
Shower	1 per 50 persons	Separate, well drained, shower areas for men and women.
Water supply	20 liters per person per day	
Water tap stand	1 per 80 persons	1 per community
Water distance	Max. 200m from household	No dwelling should be further than a few minutes' walk from a water distribution point.
Rubbish container of 100 liters	1 per 50 persons	1 per 10 families
Refuse pit – 2mx5mx2m	1 per 500 persons	1 per 100 families
Health centre	1 per 20,000 persons	1 per settlement Include water and sanitation facilities
Referral hospital	1 per 200,000 persons	1 per 10 settlements
School	1 per 5,000 persons	1 per sector 3 classrooms, 50 m².
Distribution centre	1 per 5,000 persons	1 per sector
Market place	1 per 20,000 persons	1 per settlement
Feeding centre	1 per 20,000 persons	1 per settlement
Storage area	15 to 20m². Per 100 persons	Refugee storage
Lighting	As appropriate in building codes	Consider priority locations such as latrine, wash areas, public service areas.
Registration area	As appropriate	May include arrivals area, medical clearance, distribution and parking.

Description	Standard	Further consideration and recommendations
Administration/office	As appropriate	
Security post	As appropriate	
Security fencing	Depending on the circumstances	

c) Site selection criteria and standards

Sites for planned camps should be selected in consultation with a range of sectors, including the parent Ministry, UNHCR, OPM, technical specialists such as hydrologists, surveyors, planners, engineers, and environmental engineers. The factors to be considered when selecting sites for refugee settlement include:

Table 48: Refugee Settlement Site Selection Criteria and Guidelines

Criteria	Guidelines
Topography, drainage, soil conditions	– The topography of the land should permit easy drainage and the site should be located above flood level. Rocky, impermeable soil should be avoided. Wherever possible, steep slopes, narrow valleys, and ravines should be avoided. – A site should have a slope of 2%–4% for good drainage, and not more than 10% to avoid erosion and the need for expensive earth-moving for roads and building construction. – Avoid areas likely to become marshy or waterlogged during the rainy season. Consult national meteorological data and host communities before making a decision. – Subsoil should permit good infiltration (permit soil to absorb water and retain solid waste in latrines). Very sandy soils may have good infiltration; but latrine pits may be less stable. – The groundwater table should be at least 3**m** below the surface of the site. – If possible, select a site where the land is suitable for vegetable gardens or small-scale cultivation.
Water resources	– Choose locations that are reasonably close to an adequate source of good water, and ideally near high ground that has good surface water run-off and drainage. Once located, water sources should be protected. – Hydrological surveys will be required to provide information on the presence of water.
Land Rights	– Refugees should enjoy exclusive use of the site in which they live, by agreement with national and local authorities. – The status of land to be occupied for sites will be clarified in writing by the Government. – The Government and host community will agree and clarify the entitlement of refugees to carryout given activities (forage for food, collect firewood, collect timber and other shelter materials such as grass or mud, gather fodder and graze animals).
Accessibility	– Ensure the site has an adequate road infrastructure; access to it should be reliable, including during the rainy season. – Assess the site's proximity to national services, including health facilities, markets and towns.
Security	– The site should be located a sufficient distance from the nearest international borders (50km), conflict zones, and other potentially sensitive areas. – Avoid locations that experience extreme climatic conditions, or present evident health (malaria), environmental or other risks. – Evaluate seasonal variations. Sites that are ideal in the dry season may be inhabitable in the rainy season.
Environment and Vegetation	– Ensure the site has sufficient ground cover (grass, bushes and trees). Vegetation provides shade, protects from wind, and reduces erosion and dust. – Avoid sites within 1 day's walk of an environmentally protected area (such as a wild-life reserve). – Undertake ESIA for establishment of proposed refugee camps and undertake Eas. – Determine the camp carrying capacity for each single camp and duration of time for which refugees are accommodated there. – Ensure that area of the refugee camp is marked by a ring road or a live fence to control unauthorized expansion. – Set aside public lands at each provincial level to temporarily cater for any unlikely event that might result in displaced persons.

d) General guidelines for the protective service zone

The zone should be connected with adequate rail, road, air, and water transport facilities depending on the security service being considered. While the zone should be easily accessible to the civilian population, it should be secure enough to be able to reduce activities of intruders and at the same time protect the state and the general public from wrongdoers.

Table 49: Table of Permitted and Prohibited Uses in Protective Services Zone

Permitted Uses	Prohibited Uses
➢ Military, Police Service, Prison and Fire Service Facilities ➢ Houses for staff and their Families ➢ Restricted areas for ammunition Depots ➢ Shooting Ranges ➢ Retail shops, workshops ➢ Places of worship ➢ Sports grounds clubhouses/messes/canteens ➢ Medical/health facilities ➢ Offices and parking ➢ Parade Grounds ➢ Workshops, Prisons Farms, Conference Halls ➢ Retail and Repair Shops, Canteens/Messes ➢ Education Facilities ➢ Refugee and IDP settlements ➢ Aircraft Landing Sites, Aircraft hangers	➢ Industries other than for research and training ➢ Large markets ➢ Transportation and warehouses ➢ Massive housing development other than for the staff and their families ➢ Large scale/major commercial development

2.12.6. Agricultural land use

Land in Agricultural use will include areas of farming and agri-businesses. Agricultural land should be zoned based on land suitability to promote sustainable production systems and to preserve it for food security. Permitted uses in support of agriculture will be designated open space, dwellings/accommodation, maintenance and storage buildings, and other uses necessary for the support of agriculture. An agricultural estate with an area above **ten hectares (10Ha)** must have a Land Use Master Plan.

There shall be no development on highly fertile agricultural land classified by the responsible Local Government Authority following a thorough soil suitability and capability analysis. Any conversion of the land use of such land shall undergo an approval process under the involvement of the National Physical Planning Board, The Ministry of lands Housing and Urban Development, the Ministry of Agriculture Animal Husbandry and NEMA.

2.12.6.1. Planning Guidelines and Standards for Rural Agricultural Land use

1. Land use to include commercial, industrial and residential subdivision on important fertile agricultural lands is prohibited. Any other use must have a direct connection between those activities and the maintenance of agricultural uses on the same or nearby properties.
2. Major agricultural land use changes cannot be converted without permission of concerned institutions or ministries/agencies.
3. Develop and map soil capability/suitability profiles for the country in order to zone suitable areas for agricultural practices.
4. Structures on individual sites should be clustered to maximize agricultural production on the land and reduce infrastructure costs.
5. Establish a rural settlement boundary to protect agricultural lands. Outside this boundary, land uses will be limited to agricultural pursuits, outdoor recreation and preservation.

6. Subdivision of productive agricultural lands should be based on viable economic units for agricultural production as per different agro ecological zones/regions.
7. Crop production should be done depending on adaptation to designated agro-ecological zones, soil characteristics, recommended agricultural practices and appropriate land husbandry technologies.
8. The minimum land subdivision should be based on ability of a given size of land to support a family unit.
9. Develop incentives and/or disincentives to discourage subdivision of large-scale farms.
10. Cultivation on the slope's ranges from 0% - 12% contour farming is recommended and to use soil conservation measures; for >12% - 55% one is obliged to apply soil conservation measures; slopes up to 55 % with deep soil may be used as a last resort if extensively terraced and above 55% land should be used for perennial/permanent crops/forests (e.g., grass, tea and bananas and trees).
11. Discourage cultivation on areas identified and demarcated as riparian – the distance of cultivated land from rivers should be 10m from the highest water-mark ever recorded. The minimum on both side of the river should be 2m for small rivers and maximum of 10m. Generally, the standard should be the same size of the river on both sides of the river, with a minimum of 2m and up to a maximum of 10m.
12. Distance of cultivated land from lakes should be 100m from highest water mark for all lakes.
13. Discourage agricultural activities in wildlife dispersal areas.
14. Protect water bodies from contaminants emanating from agriculture
15. Cultivation along highways and railway line reserves is prohibited.

2.12.6.2. Planning standards and Guidelines on Urban Agriculture

1. In a residential area, a maximum of 5% of the land may be used for agriculture.
2. The permitted agriculture should be practiced in the backyard of the plot, window panes and rooftops.
3. No agricultural practices should be undertaken in the road and railway line reserves within towns.
4. Free range animal rearing in urban areas is prohibited. Controlled zero grazing is permitted but with permission of the planning authority.

2.12.6.3. Planning Guidelines for peri-urban agriculture

1. Agriculture may be practiced at the backyard of the plot.
2. Peri-urban agriculture should be practiced in single holdings and a restricted number and species of animals per land holding.
3. Establish an adequate waste management system on the plot.
4. Restrictive livestock keeping within closed boundaries of the plot.
5. Agricultural practices in the road reserves and highways is prohibited.
6. Agricultural activities in ecologically fragile/socially sensitive areas e.g., riparian reserves, sewerage lines or ponds, cemeteries, dumping sites and settlements are prohibited.
7. Any agricultural activity must have the approval of the planning authority.

2.12.6.4. Planning Guidelines on plantation farming/ estates

1. Conduct an ESIA before establishment of plantations, annual and perennial crops.
2. Plan for residential quarters for workers with adequate amenities such as schools, clinics, water and sanitation facilities.
3. Provide machinery parking yards and garages.
4. Designate site for the processing plant.
5. Conserve water courses and wetlands through provision of buffer zones.
6. Preservation and access to cultural and public utility sites should be ensured.

7. Proper occupational health and safety measures for workers should be ensured.

2.12.6.5. Planning Guidelines for livestock rearing

1. Delineate livestock lands according to agro-ecological zones.
2. Ensure that the siting, distribution and density of water points is done in consultation with relevant stakeholders after doing an ESIA.
3. Restore degraded lands with appropriate technology e.g., reseeding, soil conservation among others.
4. Ensure the farm size is not smaller than the minimum recommended size of a commercially viable farm for a given ecological zone.
5. Ensure sitting of livestock handling facilities (markets, holding grounds, dips, routes that animals follow on their way to markets etc.) is done in consultation with the local communities and local authorities.
6. Control human settlements near watering points for animals.
7. Encourage the location of processing facilities in livestock rearing areas.
8. Ensure that stocking levels are within the carrying capacity set for each ecological zone (Ha/livestock unit).
9. Establish inventories, map and register community grazing areas.

2.12.6.6. Guidelines and standards for buffer separations between residential and agricultural land uses:

1. A separation distance of 500m from livestock farms should be in place to mitigate odour.
2. A minimum width of 300m where open ground conditions apply; and a minimum width of 40m where a vegetated buffer element can be satisfactorily implemented and maintained from spray areas.
3. A separation distance between the sensitive receptor and agricultural land will be a minimum of 150 m; or a minimum width of 40 m where a vegetated buffer element can be satisfactorily implemented and maintained to control smoke, dust and ash.
4. The separation distance between the sensitive receptor and the source of noise will be a minimum of 60m whether or not a vegetated buffer element is located between the sensitive receptor and adjacent land uses.

2.12.6.7. Planning Guidelines for irrigation farming

1. Use of rain water for irrigation should be encouraged.
2. An ESIA should be done before an establishment of a large-scale irrigation and drainage of swamps.
3. A water resources assessment survey and report should be prepared and a permit/license issued from the Local Authorities.
4. Prohibit water abstraction without a valid license.
5. Marshland irrigation projects should include a component of erosion control measures at the surrounding hills and supplying catchment.
6. Provide sanitary facilities in large irrigation schemes.
7. Irrigation farming must be friendly with adjacent land uses.
8. Provide a buffer zone of at least 50m from the irrigation schemes and the natural water courses/body into which such irrigation scheme discharges its water.

2.12.6.8. Planning Guidelines for fish farming

Fisheries and Aquaculture can be undertaken in nearly all ecological zones of the country but different sites are suitable for different production systems depending on the site specific natural and socioeconomic conditions.

Location:

- Fish pond shall be located in wetland or on slopes. Land with a gentle slope shall be selected, taking advantage of existing land contours or topography.
- Fish farms shall not be located within areas which have been designated or proposed as RAMSAR sites.

Size and Shape

- Square and rectangular shaped ponds are easiest to build but the pond should take on a different shape to fit the size and shape of the land.
- An area of 300 m^2 is recommended for a family pond, which is built without the use of machinery.
- Land suitability study should be conducted before developing aquaculture.
- All project development on fish farming must conduct an ESIA before implementation.
- Aquaculture shall be developed in good sites with adequate and suitable water resources.

Depth

- The water depth shall be 30 cm at the shallow end or more and 1 meter or more at the deep end. The pond can be deeper than this if the pond is used as a water reservoir in the dry season. It is important that the water can be completely drained for harvesting.

2.13. Institutional Land use Zone

This zone accommodates large scale educational, healthcare and worship facilities on adequate parcels of land. Childcare, community centres, counselling services, funeral homes, nursing homes, open spaces, schools, health facilities and worship centres are permissible in this zone. All existing facilities shall be mapped and designated under institutional use. However, for new or proposed such facilities, consideration should be made of the locational guidelines and planning considerations as indicated in the standards for social services in chapter five of these guidelines.

2.14. Environmental Land use Zone

Preservation of ecological resources maintains their core values and function and such areas are unavailable for development unless the proposed development is in tandem with environmental conservation and the relevant environmental regulatory frameworks. Preservation areas comprise: floodplains, wetlands, steep slopes and hilltops, national parks, natural and indigenous forests or woodlands among others. The preservation areas identified above and their standards and guidelines have been discussed in chapter four of this document in detail.

The gazetted areas shall be considered environmentally sensitive if they are: Floodplains, Wetlands, Steep slopes, Ridgelines and Hilltops, Forests, Areas of volcanic hazard and Natural buffer zones.

In floodplains, the following activities are prohibited:

- Any development, except for irrigation works and dams subject to an Environmental and Social Impact Assessment.
- Any excavation, filling, or removal of soil, earth or gravel.
- The obstruction of stream channels.

In wetlands, the following activities are prohibited:

- Dredging and soil dispersal.

- Grading and soil removal.
- Placement of buildings (both public and private) and infrastructure including in their buffer areas.

The development in the upland of wetlands shall be controlled to prevent the effects of sedimentation, which impairs the function of wetlands. Planning shall integrate connections between wetland areas and other habitats unless those areas contain invasive species or other threats. Water sources and their catchment areas including the confining bed of aquifers and water bodies shall be protected from pollution by;

- Minimizing impervious land coverage to less than 20% to reduce storm-water runoff, downstream flooding, water contamination and to maintain groundwater recharge.
- Not permitting storages, businesses that use hazardous chemicals, solid waste disposal and facilities, seepage lagoons, hazardous waste storage, pipelines that transmit oil/gasoline/or hazardous materials, and pit latrines within 100m of an aquifer.

On steep slopes, ridgelines and hilltops, the following activities are prohibited;

- Physical alteration when gradient is above 20 %.
- Any constructed development on slopes with a gradient above 20 %.
- Any development on very steep slopes, ridgelines and hilltops shall be strictly controlled.

Guidelines for areas of volcanic hazard;

- Siting of key facilities and critical infrastructure shall be out of hazardous areas, as determined by a hazard map based on scientific information on volcanic hazards.
- The number of people residing in volcanic hazard areas shall be minimized through low density development.
- Development in a rural area subject to volcanic hazards shall depend on ensuring full coverage of water supply in the event of ash fall.
- Information related to volcanic hazards and risk shall be incorporated into urban and land use planning documents, including hazard maps, as well as social aspects of planning for hazards.

CHAPTER THREE

3. Subdivision and Amalgamation of Land

3.1. Guidelines on Subdivision and amalgamation of land

The location, design and functionality of subdivisions influence the efficiency and effectiveness of settlements and determine the spatial structure of urban and rural areas. During the subdivision process, land should be divided into convenient individual plots or blocks for particular purposes, properly laid out and serviced.

Amalgamation of land involves creation of a new plot by consolidating two or more plots to obtain a large single plot to permit more functional development. It can also be carried out for purposes of acquiring a single title for meeting approved area-planning standards.

3.1.1. General Guidelines for Land Subdivision and Amalgamation

1. All proposals for land subdivision or amalgamation by all land owners shall be submitted to the relevant local authorities for consideration in line with the area physical development plans.
2. No person shall subdivide or amalgamate land unless the subdivision or amalgamation is in accordance with an approved layout scheme and approved physical development or zone plan.
3. In the absence of an approved PDP or layout scheme, the developer shall seek guidance from the office of the Physical Planner who will proceed to prepare a piece meal plan for the area and present it to PPC before consideration of the subdivision or amalgamation proposal.
4. No subdivision or amalgamation of land shall be carried out without obtaining planning permission from the Physical Planning Committee of the relevant local authority.
5. No subdivision or amalgamation of land shall be approved in contravention of the laws relating to land utilization or development.
6. All subdivisions of land shall require preparation and submission of a subdivision plan/layout for approval by the Physical Planning Committee of the local authority.
7. The subdivision or consolidation plan in relation to any land shall be prepared by a qualified physical planner and the plan shall be subject to approval by the PPC.
8. All major subdivision of land proposals and other proposed new developments greater than 40 plots or 5 acres shall require preparation and submission of a Physical Master Plan.

3.1.2. Layout of Subdivisions

Key considerations during subdivisions are road design, topography, cost, convenience, safety and appearance.

The design of road patterns in subdivisions should be simple, clear, easy to follow and the following general types of road system and patterns are generally acceptable: Rectangular or Grid system; Radial System, Curvilinear System and Planned Unit Development (Neighbourhoods).

3.1.3. Hierarchy of Road in Subdivisions

- The subdivisions of land must consider the general hierarchy of roads.

- The right of way or reserves of new roads provided or designed in land subdivisions must conform to the minimum road reserves established in these standards.

1. **Arterial Roads**
   - There must be no direct access on such roads because they are designed for through traffic and long-distance traffic movements.
   - It is advisable to provide a buffer zone preferably of screening plants and trees to avoid any possible access onto the roads.

2. **Sub-Arterial Roads**
   - Observe limited direct access to these roads because they provide through movement of public transport though at lower speeds and volumes than arterial roads.

3. **Collectors**
   - They have to be kept free of frontage access if they are to be safe hence direct vehicular access should be kept at minimal. A range of 5 – 30% of properties with direct frontage is permissible depending of the characteristics of the area being subdivided.
   - The design of junctions between collector and arterial roads should provide a safe ingress and egress of traffic from the subdivision.
   - Collector roads should preferably be at least 1 km apart and should be designed to limit movement of through traffic.

4. **Local Street/Access Roads**
   - They exist to provide access to properties providing movement of local traffic and direct access to residential plots or properties.
   - Over 70% of direct access to properties in the neighbourhood shall be provided by this category of roads.
   - These access roads are designed to permit local pedestrian and local cycle movements within neighbourhoods.
   - Cul-de sacs shall serve a maximum of twelve (12) plots.
   - The interval between access roads shall be determined by the standard of the plot size being subdivided within an area.

Figure 6: Road hierarchy and connectivity.

3.1.4. Plot Layout of a Subdivision

1. Plot arrangements must be sensitive to topography, physical natural resources, environmental conditions, road patterns and the acceptable minimum size of the plots.
2. Plots must be capable of being used for the purpose for which they are designed **(Figure 4).**

3. Plots should be laid out to take advantage of the topography and should minimize changes to the natural topography.
4. Plots on steep slopes or high gradient areas should in general be larger to permit proper utilization of the plot as a result of the topography.
5. Demarcation of plots must take into account the preservation of very critical natural vegetation and forests reserves.
6. Plots must have a frontage on the access roads and provision of double access is prohibited except for the case of a sanitary lane or passage and corner plots.
7. Plot lines or boundaries should preferably be perpendicular to the street or road in order to avoid creation of irregular or awkwardly shaped plots. In unavoidable circumstances, such plots must be relatively large to allow the stipulated setbacks of buildings.
8. Corner plots should in general be larger than other plots in the subdivision layout to allow visibility of traffic at the corners.
9. Spray corners and building lines should be strictly observed at intersections as fences or other structures constructed would impede the visibility at the corners.
10. Roads should cover between 20 – 30% of the total land area being subdivided for effective connectivity.

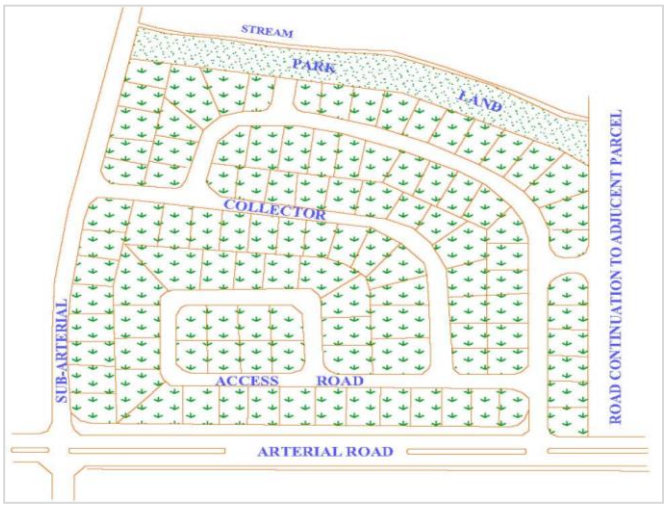


Figure 7: Plot layout of subdivisions

3.1.5. Minimum Plot Size and Dimensions

1. Plot sizes and dimensions shall conform to the provisions of the land use zoning of an area. For areas without any scheme or physical development plan, the minimum sizes of plots for the different land uses provided under these standards shall apply.
2. New plots shall conform to the established plot sizes or density in these standards or as prescribed in other approved area physical development plans or planning standards.
3. Where a range of plot size is given, the size of the plots shall depend on the planned and approved land uses of the area, planned density as per the approved physical plan, planned road hierarchy, physical characteristics of the land and general character of the area.
4. Every plot shall be rectangular in shape and length shall be 2 to 3 and not more than 5 times the width (Figure 31).
5. These provisions shall not apply to any subdivision created solely for the purposes of adjusting the common boundaries in case of land encroachments, land severed by topography and land severed by streets or road reserves.

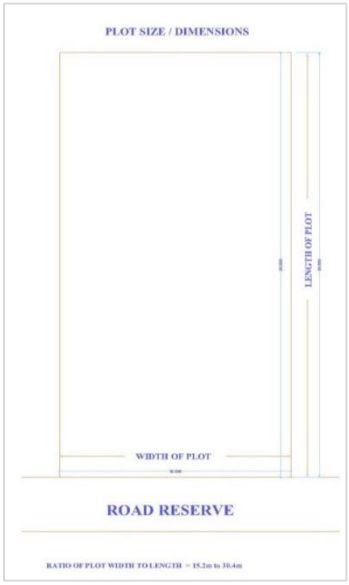


Figure 8: Plot Size and Dimensions

3.1.6. Planning Standards of Land Subdivision and Amalgamation

3.1.6.1. Technical Requirements of a Land Subdivision Plan/Layout

During the subdivision plan preparation process, the following requirements shall apply;

1. Each new plot created must have a direct vehicular access to a road based on the approved road hierarchy standards and such a road or street shall not be a sanitary lane or passage.
2. Drainage reserves or lee-ways should be observed within the subdivisions and such reserves or lee-ways shall not in any case be less than 3 metres in width.
3. Protection zones or reserves along the water bodies, lake shores, waterfronts and lake beaches should be observed in line with National Environment Act, 2020.
4. Sizeable land, in proportion to the total land area being subdivided land should be reserved for open spaces, amenities, recreational facilities, road reserves for public purposes.

3.1.6.2. Format of the Subdivision Plan/Layout

1. The subdivision plan should be drawn at a scale 1:2,500 or in series of 500's depending on the size of the land to be subdivided.
2. The plot boundaries and their dimensions together with the size, location, plot numbers should be clearly indicated.
3. The contiguous boundaries of all adjacent plots and the road system (existing and approved) should be clearly indicated correctly on scale.
4. The true north should be indicated by a pointer and names of all existing roads or streets with their widths should be well indicated.
5. The existing survey lines (plot boundaries) must be clearly defined and show the new subdivisions.
6. The proposed/new survey lines (new subdivisions or plots) with approximate dimensions and the proposed means of access road with their widths should be clearly indicated appropriately.
7. All existing buildings and their relationship to the proposed boundaries of the new plots clearly indicated.
8. The proposed use of each new plot should be stated and every new plot or subdivision created should be separately numbered or lettered.
9. All the existing and planned infrastructure and utilities that affect the new plots or subdivisions on and above should be clearly shown on the plan.
10. The title block should be located in the lower right hand corner indicating details such as type of survey, name and address of applicant, plot and block number, location, name of local authority, date among others.
11. The subdivision plan should be signed and dated by the owner or his duly authorized agent and the private practicing and registered Physical Planner.

3.1.7. Consideration of the Subdivision Plan by Local Authority.

All subdivision proposals shall be submitted to the local authority for planning scrutiny and technical advice. The Physical Planning Committee shall ensure the following;

1. The Proposal is within the framework of the Physical Planning Act, 2020 and the Land Act Cap 247 and any other related laws.

2. The Proposal conforms to all high-level plans and the National Land Use Policy guidelines.
3. Proposal fits within the general framework of the Local Authority's Physical Development Plan, approved local detailed plans and all higher-level plans.
4. Coordinate with neighbouring local authorities on proposals that bear or present a regional influence or impact.
5. Consultation with the Ministry responsible for Physical Planning on proposals with a national interest or with other MDAs such as NEMA, NFA, MoWE etc. to incorporate critical matters of national interest as specified in related policies and laws.

3.1.8. Conditions of approval for Subdivisions

Applicant or property owners seeking to subdivide land must consent to the following conditions before or after the approval of the subdivision plans.

1. The land reserved for roads or partly affected by the new road reserves shall remain a public utility.
2. All land reserved for public purpose or for any other purposes for which the land may have been reserved shall be indicated on the cadaster print.
3. Construction of new roads or streets in the approved subdivision plan must conform to the technical requirements of the relevant local authority.
4. The new surveys must be in conformity with the approved subdivision plan or scheme and no alterations shall be permitted for land reserved for open spaces, social amenities, recreational facilities, road reserves as approved in subdivision plan or scheme.
5. Any land reserved for public infrastructure, utilities and facilities as may be reserved by the applicant should be transferred free of charge to Government or the relevant local authority.
6. Any conditions imposed to the applicant should be registered in the certificate of land title and in the land cadaster information system especially in urban areas.

For land subdivision and amalgamation Procedure on Subdivision Permission Application, refer to the PPA, 2020.

CHAPTER FOUR

4. Environment and Natural Resources

These guidelines are designed to minimize impacts arising from construction in disaster prone areas and un controlled development on steep slopes and other risk prone areas.

4.1. Guidelines for flood-prone areas

- Identify and map flood prone areas in the planning area.
- Discourage human settlement in flood-prone plains.
- Create a buffer zone between the flood plain and human settlement to ensure safety of the local communities.
- Carry out afforestation, tree-planting, water and soil conservation in catchment areas and along water courses.
- Develop a flood early warning system.

4.2. Guidelines for landslide prone areas

- Identify and map landslide prone areas in the planning area.
- Discourage human settlement in landslide prone areas.
- Sitting of infrastructure in land slide prone areas should be determined by slope, soil characteristics and vegetation cover.
- Control the flow of water along water courses using appropriate technology through Construction of flood control structures such as dykes and dams.
- Undertake an ESIA for proposed construction of dykes and dams.
- Engage the local communities in the construction of water-flow control structures.
- Encourage the planting of water-logged tolerant crops (e.g., rice, arrow roots) in flood plains.
- Intensify soil and water conservation measures in already settled landslide prone areas.

4.3. Guidelines on fire safety management

- Designate and develop fire breaks in fire prone habitats/areas such as forests, ranches, refugee camps, squatter land and slums.
- All urban areas should have an adequate number of well-equipped fire stations as specified in these standards.
- Build and strengthen the capacity of responders (fire fighters) and conduct regular drills.
- All commercial and institutional buildings must have operational and clearly labelled emergency exit routes and ensure regular inspections of the buildings.
- Provide adequate access roads and hydrants for firefighting in urban settlements.
- Farms and forests shall be surrounded with a buffer distance as safety belt of cleared land designed to stop the spread of wild fire depending on the risk analysis of the most prone sites.
- Separation distances shall be set from other buildings (fire escape areas) and allow evacuation in case of fire especially in commercial areas;

- Where these separation distances cannot be realized, additional protective measures, typically a fire wall may be used to justify a reduction in the minimum separation distances.

4.4. Guidelines for Strong Wind and earthquake prone areas

The provisions in the building codes and Seismic Code of practice for structural designs take precedence. In addition, the following are the guidelines for strong wind and earthquake prone areas:

- Identify and map wind/earthquake prone areas in the planning area;
- Trees shall be planted as wind breaks.
- Appropriate designs of houses in earth prone areas shall be applied.

4.5. Guidelines on the Protection of Ground and Surface water sources

4.5.1. Guidelines for groundwater management

- Locate industries and other activities that are likely to cause pollution or changes to groundwater away from ground water areas/sources used for water supply.
- Conduct hydro-geological mapping of ground water characteristics countrywide document and report as national ground water aquifer profiles.
- Control industrial development, settlements and other human activities on known ground water recharge zones in order to control possible ground water pollution and allow recharge.
- Establish mechanisms to allow ground water recharge through damming, artificial ground water recharge and enhancing precipitation infiltration by allowing certain percentage of land free of pavements.
- Provide for a buffer zone between the irrigation schemes and ground water sources and natural water bodies.

4.5.2. Guidelines for rivers and lakes protection

Provisions under Sections 8(2) and 29 on protection zones for river banks and lake shores under the NEA; and the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000, specifically the 7th schedule, 6th schedule shall take precedence. In addition, the following guidelines shall apply for rivers and lakes and are intended to:

- Provide buffer zones measured from the highest water mark ever recorded for rivers/ streams depending on the width, water volume, whether permanent or seasonal and the use of that water.
- Provide buffer zone for lakes for purposes of minimizing soil erosion, runoff of pesticides, fertilizers and other non-point sources of contaminants into streams, rivers, lakes, wetlands and marine habitats.
- In addition to stream/ river/lake setbacks, utilize erosion control devices, integrated pest management plans, and rehabilitate disturbed areas.
- Incorporate best management practices to prevent pollution of rivers, streams, wetlands and near shore waters.
- The responsible authority should coordinate the development, adapting, and implementation of management plans that shall rationalize the use of resources and mitigate on the negative impacts on rivers and lakes.
- Profile and report human activities around such lakes, rivers and wetlands, clearly indicating the impact of such activities on the system.

- The concerned institutions/authorities shall issue necessary notices and orders in order to stop degradation of such lakes, rivers, wetlands and other surface water bodies.
- Preserve the aesthetic and biological values of the rivers and streams as part of open space system. Where possible, provide public access to these open spaces and for recreational purposes.
- Preserve and maintain the rivers, natural streams and drainage ways within the developed areas by designating them as part of the open space system.
- If modifications are necessary, mitigate impacts on biological habitats by using stream-side vegetation, rip-rap boulder lining of stream banks, v-shaped bottom channels to maintain a stream flow during low rainfall periods, and other designs to enhance aeration.
- Integrate planned improvements to the drainage system into the open space system by emphasizing the use of retention basins and recreational access in the design approach.
- Develop monitoring plans for discharge of effluents into the aquatic environment to ensure that standards are met.
- Encourage inter-agency coordination and public-private partnership in planning and management efforts of these resources.
- Carry out Environmental and Social Impact Assessment (ESIA) for activities likely to have negative impacts on the river/stream, lake, wetland and ground water. Limit uses in these areas to conservation, compatible recreation such as hiking, fishing, religious and cultural practices and controlled diversion for agricultural purposes.

4.6. Guidelines for wetland resources

Provisions under Section 8(2) of the NEA; and the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000 on wetlands and wetland resources shall take precedence. In addition, the following guidelines shall apply:

- Clearing of wetland vegetation, for purposes other than domestic use should only be done with the approval of the concerned authority.
- The burning practice of wetlands should not be allowed as doing so destroys wetland biodiversity.
- To prevent depletion of fish stocks, there should be no fishing in breeding sites.
- Fish ponds constructed within a wetland should be constructed on the sloping sides of the wetland.
- Promote and regulate the development of an aquaculture centre and nature reserves around the wetlands that would serve as an attraction for both visitors and residents.
- Livestock access should be prohibited in the wetland.
- It must be ensured that all areas upstream and around a wetland are properly managed to prevent wetland degradation. Growth of wetland plants should be allowed at the edges of riverbanks.
- The responsible institutions should control all activities in wetlands (e.g. regulating brick making, sand and clay harvesting) through a licensing in system.
- Sensitize opinion leaders' especially political leadership on the importance of conserving the wetlands.

- Efforts should be made to rehabilitate degraded wetlands through exclusivity to allow natural regeneration, enrichment planting and controlled use.

4.7. Guidelines on protection of hilltops, hillsides, mountains and forests

Land resources include mountains, hills, soil, forests, historic and cultural sites. Their protection, in the various forms of land ownership and whether in protected and unprotected areas should target to conserve these resources and the biodiversity therein. The integrity of these resources is continually being threatened by intense human activities.

The following guidelines will help to conserve and sustainably manage them;

- Cultivation should be discouraged on slopes beyond 55%, instead there should be afforestation and the protection of existing vegetation.
- Promote appropriate species selection for site planting.
- Regulate exploitation of forest products and services e.g., charcoal, logging, and non-wood products.
- Zone and protect water catchments areas in hilltops, hill sides, mountains and forests.
- Embrace integrated ecosystem management planning.
- Protect hills, mountains and forests through identification, mapping, inventory, easement and gazettement.
- Encourage inter-agency coordination and public-private and community partnerships in planning and management efforts of these resources.
- Prevent the burning of grass and any other vegetation in areas of intensive agriculture or on steep slopes.
- Promote agroforestry on farm lands and encourage woodlots in urban areas.
- Rehabilitate degraded areas through re-afforestation and enclosure for natural regeneration.
- Undertake an assessment of the carrying capacities of various goods and services before any extraction to ensure sustainable use of hilltops, hillsides, mountain and forests.
- Encourage indigenous forestry on hilltops, hillsides, and mountains.
- Provide buffer zone of **5m** between forest plantations and other land uses for purposes of minimizing bad effects. The use of this buffer should not include activities that are fire prone.
- Encourage ecotourism on hilltops, hillsides, mountain and forests.
- Establish disaster preparedness in forest fires and landslides, mudflows, rock falls, flush floods, volcanic activities, diseases and pests among others.
- Promote participatory forest management.

4.8. Guidelines on protection of historic and cultural heritage

Historical and cultural heritage include; traditional and cultural sites, museum sites in different areas in the country, war memorial sites, churches, traditional and cultural practices. Therefore, land use should contribute to the preservation of the country's cultural and built heritage and its diversity. These guidelines should supplement requirements contained in relevant laws, and regulations. The guidelines for the protection of historic and cultural heritage are as follows:

- Identify and protect existing visual landmarks and support the creation of new culturally appropriate landmarks.
- Retain, whenever possible, significant vistas associated with archaeological features.
- Develop mechanisms to allow access and benefits sharing to the local community.
- Respect significant historic resources by applying appropriate management practices that include strong community participation. Such practices may range from total preservation to integration with contemporary uses.
- Determine appropriate preservation methods to take care of diversity in sites/locations.
- Delineate and map site boundaries and setbacks for gazettement.
- Determine appropriate restrictions on uses and development of adjacent lands.
- Undertake inventory and documentation of the cultural and built heritage sites in the country.

4.9. Standards of environment and natural resources

Environmental resource/aspect	Proposed standards
Lakes	Lakes specified in the seventh schedule of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations; No. 3/2000 have a **buffer zone – 200 m** Lakes not specified in the seventh schedule of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations; No. 3/2000 have a **buffer zone – 100 m** **Buffer Zone** ***The buffer zone should be measured from the highest water mark ever recorded.*** **Regulated activities** These activities shall be permitted with written authority from the Executive Director of NEMA in accordance with the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000. Such activities may include; fish farming, tourism, research, harvesting of medicinal plants and recreation.
Rivers	Rivers specified listed in the sixth Schedule of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations; No. 3/2000 **have a buffer zone-100m** Rivers not specified listed in the sixth Schedule of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations; No. 3/2000 have a **buffer zone-30m** **Buffer Zone** *The buffer zone should be measured from the highest watermark of the river ever recorded***.** **Regulated activities** These activities shall be permitted with written authority from the Executive Director of NEMA in accordance with the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000. Such activities may include; fish farming, tourism, research, harvesting of medicinal plants.
Swamps/Wetlands	The protection zone of a wetland is to be determined with written authority from the Executive Director of NEMA. A wetland declared under sub-regulation (2) *(a)* of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000 is of international and national importance because of its biological diversity, ecological importance, landscape, natural heritage or tourist purposes in which the following activities may be permitted: research, tourism and restoration or enhancement of the wetland. A wetland declared under sub-regulation (2)*(b)* of the National Environment (Wetlands, River Banks

Environmental resource/aspect	Proposed standards
	and Lake Shores Management) Regulations, No. 3/2000 is an area in which regulated activities such as; brick making, recreational activities such as spot fishing, maintenance of green spaces, cultivation, drainage, sewerage filtration etc. as stated in the second schedule of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000. A wetland declared under sub-regulation (2) *I* of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000 is an area in which a person who has property rights in the land may carry out traditional activities such as; harvesting of papyrus, medicinal plants, trees and reeds; any cultivation where the cultivated area is not more than 25% of the total area of the wetland; collection of water for domestic use as stated in the second schedule of with the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000. Wetlands on the shores of Lake George and associated in-flowing rivers are declared to be of international and national importance as specified in the Third schedule of the National Environment (Wetlands, River Banks and Lake Shores Management) Regulations, No. 3/2000 therefore no activities are permitted to be carried out within.
Forests	The protection zone of a forest is to be determined with written authority from the Executive Director of NFA. The National Forestry and Tree Planting Act, 8/2003 gives the different categories of how the forests are classified, their importance, management and the regulated activities from Section 6 to 14. For more details on community forest management, refer to the Guidelines for the Registration, Declaration and Management of community forests, 2015 by Ministry of Water and Environment.
Sanitary Landfills	Section (71) of the National Environment (waste management) regulations, 2020 classifies the landfill into two. • **Class 1**: landfills for hazardous waste. • **Class 2**: landfills for non-hazardous waste i.e.; biodegradable waste or inert waste as characterized in schedule 3 of the National Environment (waste management) regulations, 2020. The guidelines for location of a landfill include; • Should not be within a floodplain; • Should not be located in an area which is prone to natural disasters, including earthquakes, floods and landslides, unless the waste management facility is designed, constructed, operated and maintained to prevent collapse or washout; • Should be more than **200m** of any land which may be prone to or impacted by slope failure; • A landfill should have a buffer of **500m** from any mapped-out area of geological fractured zone. Among others as stated in Regulation 62 of the National Environment (waste management) regulations, 2020. Permissible activities; Waste sorting, Recycling, Tree planting.
Other Waste Management Practices	Regulation 82 to 88 of the National Environment (waste management) regulations, 2020 clearly elaborates the effective operation of an incinerator by the licensed waste handler and these shall apply.
Air Quality	The air quality standards and guidelines by WHO, 2005 defines the pollutants as primary, secondary, gaseous and particulate. The policy identifies the permissible standards for the mentioned pollutants. The control of air quality should make reference to the WHO 2005 guidelines.
Soil quality	The National Environment (Minimum Standards for Management of Soil Quality) Regulation, 2001; references standards in the first schedule within parts 1, 2, 3 and 4. **Part 1;** states the soil quality parameters and classes for rain-fed agriculture. **Part 2;** states the soil quality parameters and classes for irrigated agriculture. **Part 3;** states the soil quality parameters and classes for wetland rice systems under natural flooding. **Part 4;** states the soil quality parameters and classes for wetland rice under unirrigated systems. For use of the above reference should be made to the National Environment (Minimum Standards for Management of Soil Quality) Regulation, 2001;
Effluent	The National Environment (Standards for Discharge of Effluent into Water or Land) Regulations, 2020 states the effluent standards as follows;

Environmental resource/aspect	Proposed standards
	Schedule 2 states the Standards for General Chemicals and Micro-Biological Discharge. **Schedule 3** states the Standards for Inorganic Substances Effluent Discharge. **Schedule 4** states the Standards for Organic Substances Effluent Discharge. Reference should be made to the above schedules in the regulations.
Hilly And Mountainous Areas	According to the **National Environment (Mountainous and Hilly Areas Management) Regulations, 2000.** Every land owner or occupier shall while utilizing land in a mountainous and hilly area; • observe the carrying capacity of the land; • carry out soil conservation measures; • utilize underground and surface water resources; • carry out measures for the protection of water catchment areas; • use the best available technologies to minimize significant risks to ecological and landscape aspects; and • maintain such vegetation cover as may be determined by an agricultural extension officer or a local environment committee. A district environment committee may with respect to hilly and mountainous areas in its jurisdiction – • regulate land use through zoning; • restrict and control the activities which are inconsistent with good land husbandry practices; and • make guidelines for the management of areas prone to landslides, floods, drought, falling rocks, fires and damage by wind.

CHAPTER FIVE

5. Social Services

The social services considered herein refer to those facilities normally provided by the Government or local authorities for the benefit of the general public. These are categorized into education, health, and religious services. Social services should be located in areas within easy reach of the intended users and away from areas with hazardous effects.

5.1. Guidelines for Establishment of Education Facilities

5.1.1. Planning Guidelines on Site Location of School Facilities

These guidelines present recommendations for determining site location in terms of accessibility, threshold, range, compatibility with neighboring land uses, and plot size.

It is recommended that locations with onsite contamination or are in very close proximity to pollution sources of offsite risks like industrial facilities, especially collections of multiple sources be avoided. A site that is close to where kids live and allows them to walk to school is highly recommended.

Whenever possible, schools should be located within residential neighborhoods to ease access and encourage sustainable mobility through walking, cycling, and public transportation, adjacent to community developments such as community centers, playing fields, libraries, and other similar developments to facilitate the possibility of sharing facilities and reduce the cost of offering these auxiliary facilities within the school premises.

5.1.1.1. General site location criteria

The following aspects and criteria should be undertaken before final selection of a school site:

- Availability of suitable land; Neighborhood with a relationship with residential area;
- School size as compared to authorized occupancy rate;
- Availability of utilities (piped water, electricity, internet, incinerator);
- Topographic characteristics and suitability for a school settlement;
- Local community involvement and interest;
- For earthquake prone areas, geological studies should be done before siting a school;
- Easy access to transport infrastructure;
- Threshold population except for those areas designated as hard to reach;
- No frontage to major roads or railway;
- a site that is not less than 500 meters from noisy and toxic industries;
- a site with easy access to a playing field;
- Water should be provided from subsurface sources, and alternate energy sources are encouraged.

5.1.1.2. Guidelines and standards on Zoning for Education Facilities

Land in the education zone shall be limited to the intended purpose. The zoned facilities include; Early Childhood Learning Centers / Nursery Schools, primary and secondary schools, technical and vocational schools/colleges, and tertiary institutions such as polytechnics and universities.

a) Nursery and Primary schools

- Caters for elementary schools and should be close to residential areas and community services.
- Recommended to be placed in a neighborhood with convenient pedestrian and vehicular access.
- The population of the catchment spans from **3,000-5,000** persons for urban areas, **1500 – 3000** persons for rural areas
- The recommended walking distance from house to school is between **500 – 2km** for urban and **1km – 4km** for rural areas.
- A distance of **1 to 4 km** between two schools is recommended urban areas while in rural areas, this should not be greater than **4**km.
- Playgrounds, classroom blocks, hostels (when necessary), offices, canteens, washrooms, and libraries are the essential auxiliary facilities to be offered.
- Large-scale commercial activities, industries, transportation and warehousing, livestock rearing, slaughterhouses are prohibited within the school vicinity.

b) Secondary Schools, Vocational/Technical Schools

- These will be positioned preferably in residential areas and will serve a minimum of **15,000** people in urban areas and a minimum of **7,000** persons in rural areas.
- The recommended walking distance from house to school should not be more than **5km** in rural areas and urban **2km**.
- The distance between two schools should not be greater than 5km in rural areas and not greater than **3km** in urban areas.
- Students' hostels, teachers' houses, places of worship, laboratories/workshops, playgrounds, offices, stores, canteens, school gardens and libraries are permitted uses in this zone.
- Industries, garages and warehouses, and animal husbandry other than for research and education will be prohibited in close proximity of this facility.

c) Tertiary Institutions- Polytechnics, Universities, and others

- The catchment population of **50,000 persons** in urban areas and **25,000 persons** in rural areas shall be sufficient.
- Students' hostels, residential accommodation for lecturers and other institution employees, lecture halls, laboratories, workshops, playgrounds, places of worship, police stations, clinics/hospitals, sewage treatment plants, research stations and their facilities, commercial buildings for shops, banks, printing, minor repairs, gas/petrol filling stations, fire stations and farming areas among other things will be provided in this zone.
- Industries, transportation, warehousing, large-scale market places, animal husbandry other than for research will be prohibited in close proximity of these facilities.

5.1.2. Design and Construction of School facilities

i. **School and class size**

- The amount of space needed for a site should be standardized per student.
- All classrooms should meet the MoES standard of **45 students per classroom** for both primary and secondary schools.
- The minimum and maximum size of classrooms shall range between **1.6 to 2m² per student.**

- The number of users and their functions are used to determine the administrative and service rooms. The number of toilets and other sanitary facilities is proportionate to the overall capacity of the school (for example, an average of **30 students is calculated per toilet cubicle**).
- Adding the necessary required external spaces to the built area of each building yields the minimum land area requirement for each type of school. This space is determined by the number of floors in the school, as well as the expected proportion of land devoted to landscaping and circulation (PLC).

The amount of space needed for the school will be determined by the site's ability to meet the criteria outlined in the above guidelines:

Table 50: Land Requirements for schools

School Type / Size	Area in acres
School with 1 to 3 Class Blocks	0.2-0.48 Ha (0.5 – 1.2 acres)
School with 4 to 6 Class Blocks	0.5 – 1.0Ha (1.38 – 2.47 acres)
Schools with 7 to 11 Class Blocks	1.1 to 1.4Ha (2.7 – 3.5 acres)
School with 12 to 30 Class Blocks	1.5 to 2.00Ha (3.7 – 4.9 acres)

Table 51: Standards for schools (minimum size)

Facility	Standard	Guidelines
Nursery and preschool	**Plot Size: min 700m²** **PLC: Maximum 0.3**	• Max 25 pupils per classroom. • Minimum 2m² per child for preschool and 3m² per child for nursery. • Can be affiliated with a primary school. • Must have safe access with secured crossing for primary road. • Must have a playfield or area.
Primary School	Plot Size: 2 -4 Acres (0.8 – 1.6 Ha) PLC: 0.3	• Max 45 pupils per classroom. • Minimum 1.6 – 2m² per child. • Includes playfields, administration, kitchen, parking, sanitary facilities.
Secondary School	Plot Size: 3 – 6 Acres (1.2-2.4Ha) PLC: 0.3	• Maximum 45 pupils per classroom. • Minimum 1.6 – 2m² per child. • Includes playfields, administration, kitchen, parking, sanitary facilities.
Vocational training centers	Plot Size: 1.5-5 Acres (0.6-2.0Ha) PLC: Max 0.3	• Includes playfields, administration, parking, hall • Includes a minimum 4 workshops • Plan depends on vocation
Universities	Plot Size: Min 6 – 24.7 Acres (2.4- 10Ha) PLC: Max 0.4	• Essentials includes playfields, administration, parking, hall, lecture theaters.
• **For all additional facilities as per the unique requirements and operations of each institution which are not included in the above land requirement, standards of space requirements per person and other auxiliary facilities shall be applied and added to the above plot size to determine the total land area.** • **In urban areas and other areas with severe land shortage, the lower limits of the standards above shall apply. High rise developments as a form of densification are also encouraged.**		

5.2. Guidelines for Establishment of Health Facilities

5.2.1. General requirements

- Health facilities shall be located in areas with easy access to the public and away from areas with excessive noise, smoke, dust, odour, flooding, and shall not be located near railway, freight yards, children's playgrounds, airports, industrial plants, or disposal plants.

- A healthcare facility established for this purpose must be utilized exclusively for that purpose.
- Health facilities are required to offer and maintain a safe environment for patients, employees, and the general public.
- The building must be constructed in such a way that no risks to the patients', personnel's, or public's life and safety exist.
- Health facilities must have access to potable, and sufficient public water supply system.
- Solid waste shall be collected, treated, and disposed of in accordance with related codes, laws, or ordinances on sanitation.
- Liquid waste shall be discharged into an approved public sewerage system whenever possible; radioactive waste and other hazardous liquid waste shall be collected and treated in accordance with international rules.
- Medical waste including syringes, used bottles, body parts and others shall be incinerated on site.

5.2.2. Guidelines for Site Location of Health Facilities

i. The facility shall be located within a distance of **10 – 30km** for a district and **5 – 20km** for a city.
ii. Accessibility to a good road network, reliable water supplies, and a stable power supply at the site are basic requirements.
iii. Wetlands and waterlogged places should be avoided.
iv. It should be located in an area that is free of all forms of pollution and flooding.
v. It must be served by public utilities such as water, sewage, and storm-water disposal, as well as power and telecommunication.
vi. When locating a health facility, asses the location's suitability in terms of size of land, topography, drainage system, soil conditions, availability of utilities, natural features and other constraints.

Size of the site: The site must be large enough to accommodate all of the projected functional requirements as well as any extension plans for the next ten years. The recommended norm for every **100 beds** ranges from **1.5 to 4 hectares.** It has been determined that **11.40 m²** per bed is a fair amount. It can, however, be adjusted depending on the current scenario at a certain site/location.

Computations: The hospital's total area is: The total number of beds multiplied by 40m² per bed e.g., 100 beds multiplied by 40 = 4200m² (for 100% occupancy)

For effective use of land:

- Smaller hospitals with fewer than 100 beds should be single-story unless other factors necessitate multistory development. A **100-bed** hospital should have a minimum site space of (1.49Ha) **3.7 acres** for such a building only and (2.99Ha) **7.4 acres** for rural areas if not storied.
- Unless other constraints indicate otherwise, larger hospitals with more than **100 beds** should be multi-story buildings.

Table 52: Land Requirement for health facilities

Type of Facility	Land requirement

National referral	**24.7 acres(9.9Ha), including landscaping, an incinerator, and a laundry place**
Regional referral	12.4 acres(5.01Ha), including landscaping, an incinerator, and a laundry place
District hospital	6.2 acres(2.5Ha) (including landscaping, incinerator, and laundry)
Health centre IV	2.5 acres (1.01Ha)
Health centre III:	1.2 acres (0.48Ha)

Table 53: Summary of Planning Standards for Health Facilities

Type	Catchment Population	Land Requirement (Min)	No. of Beds (Min)	Basic site requirements
National Referral Hospital	27 million	24.7acres(**9.9Ha**),	250	Piped water, electricity, parking space, optic fiber telephone, incinerator, laundry area.
Regional Referral Hospital	2 million	12.4 acre (5.01 Ha),	150	"
District Hospital	500,000	6.2 acres (2.5Ha)	60	"
Health centre IV	100,000	2.5 acres (1.01Ha)	10	"
Health centre III:	20,000	1.2 acres (0.48Ha)	5	"

5.3. Guidelines for Places of Worship/ Religious Facilities

Land in the places of Worship Zone is designed to be strictly used for religious activities only. The assembly space includes a structure that will be utilized for public gatherings, worship, or other activities. Locations of assembly such as choir or musician's spaces, altar areas, confessional areas, podiums, or rooms capable of accommodating the congregation's overflow during a worship session are also part of the assembly space.

Not included are ancillary areas such as kitchens, toilets, offices, washrooms, and lodging that are not generally utilized for worship because they are not generally utilized for worship and vary from facility to facility depending on demand.

5.3.1. Site and Location Requirements

Places of worship can be found in a variety of settings, each with its own set of criteria.
This document applies to the following typical locations:

- Areas with a mix of uses
- Exclusively residential zones
- location on the outskirts of town or in the countryside

It is the local authority's responsibility to ensure that the following three groups' interests and concerns are taken into account:

- Future site occupants – a focus on the development site and its use is required.
- Neighbors' consent – a focus on the interaction between the development and nearby areas is required;
- Community – a focus on the locality's identity and streetscape issues is required.

The local government should strike a balance between the following:

- Protection of residential neighborhoods from uses that are objectionable or detrimental to their amenities;
- Allowance for the possible location of civic, cultural, and community facilities within residential areas that serve and are compatible with residential development.

- Smaller worship facilities would be permitted on plots that are not normally larger than local plot sizes, where the local population is largely religious, and where the amount of disruption to surrounding neighbors is acceptable.
- Premises meant to serve a larger catchment area should be large enough and positioned in mixed-use locations where residential activities do not prevail, such as town centers, main roads, and the outskirts of commercial zones.
- Major places of worship that are likely to attract a big number of followers or crowds may be better suited to siting on the outskirts of towns or in the countryside.
- Both pedestrians and motor vehicles should have easy access to them.
- Walking distance to places of worship from homes shall be between 15 and 30 minutes.
- Permitted uses include dwellings for religious leaders, social centers, basic schools, playgrounds, open spaces, bookshops, and canteens.
- A restaurant/bar or a venue of public entertainment shall not be allowed to be adjacent to a place of worship neither can its premises be used as a worship place.
- Places of public worship must be constructed to maintain the neighborhood's character.
- All houses of public worship must have a front entrance that is readily visible from the street;
- Places of worship should not be in temporary structures.

a) Plot Size

There is no standard plot size but land required shall be determined by the nature and scale of construction. Consideration must be paid to their potential future expansion when planning for them. Priority should be given to the ability to grow vertically for effective land utilization. The space allocation of between **0.5 – 1 acre (0.2-0.4Ha)** is recommended as sufficient for such facilities. However ancillary space requirement for such facilities shall be based on the standards for each facility/use.

b) Setbacks/ Buffer Zone and Height

- On the rear and side boundaries, a minimum setback of **5 meters** and **1.5 meters** is required respectively. The front setbacks will be those required as per the road category.
- A larger setback may be required in the case of places of worship to facilitate outdoor activities.
- Large-scale places of public worship should be set back at least **2km** in urban areas, **4km** in rural areas from any other existing or approved large-scale place of worship.

Parking Space

- A minimum of one car parking place should be allocated for every ten worshippers, with the maximum depending on the size of the facility to be offered or a rate of one car space per 8m² of public floor area.
- Off-street parking is required to ensure minimal disruption to local residents and for road safety, and all required parking must be supplied on-site, either at grade or in a basement.

Land Scaping

- A two-meter-wide planted area must be provided alongside and beyond residential zones' boundaries.
- The local authority shall require a landscape plan and report for places of public worship to be approved by the planning authority.

Acoustic Privacy

- Acoustics should be provided in places of public worship, the design and materials used must provide reasonable acoustic privacy to surrounding residential and business users.
- In extreme cases, proposed developments generating noise should investigate and employ both passive and other noise abatement options.
- The following standards for noise shall apply;
    - 1 hour per day – 105 dBA
    - 1.5 hours per day – 102 dBA
    - 2hours per day – 100 dBA
    - 3hours per day – 97 dBA
    - 4 hours and above – 85 dBA

Public Consent

- In largely residential areas, community concerns should be addressed through public consultation conducted by the developer and the permit authority prior to the issuance of the building permission to all adjacent owners and property owners across the road.
- The public shall be given the opportunity to offer comments to the permit authority, and the results of the consultation process should be used to make design changes.

CHAPTER SIX

6. TRANSPORT AND INFRASTRUCTURE

This chapter looks at roads, parking facilities, motorized and non-motorized transport, road furniture, outdoor advertisement, public transport, rail, air and water transport. It provides zoning guidelines and planning standards for the above-mentioned facilities.

6.1. Road Standards and guidelines

Road standards are based on classification of public roads as specified in schedule 2 of the Uganda Road Act (2019). The roads are grouped into two categories: rural and urban.

6.1.1. Road Classification.

Roads are classified as national roads, district roads, urban roads or community access roads (Road Act-2019, section 13). This hierarchy is mainly based on road network management by road authorities. The road hierarchy as outlined in Schedule 2 of Road Act 2019 was based on functional classification of public roads in Uganda.

Table 54: Road Act Classification of Public roads.

Class of road	Type of road	Road authority	Description	Category/type of service
Expressway		Uganda National Roads Authority	Heavy traffic roads, high speed & Limited Access	Primary road
National Road	A	Uganda National Roads Authority	Linking ports, airports, border to each other and capital City	Primary road
National Road	B	Uganda National Roads Authority	Linking District H/quarters to each other & Class A	Secondary road
National Road	C	Uganda National Roads Authority	Linking small towns to District H/quarters to class A, B & each other	Secondary road
National Road	Others	Uganda National Roads Authority	Other national roads maintained by UNRA	Secondary road
District Road	I	District Council	Linking District centers to each other & National roads	Secondary road
District Road	II	District Council	Interconnect District h/Quarters & County admin centers	Secondary road
District Road	III	District Council	Connectors to & Between Class II	Tertiary road
Urban Road-Municipal	U	Municipal Council	Road within Municipality not National Road	Tertiary road
Urban road-Town Council	U	Town Council	Road within Town Council not National or district Road	Tertiary road
Park road	P	As determined by Minister of transport	Road within a national park not being a national road or district road	Tertiary road
Community Access Road	CAR	District Council	Road path or track linking communities and other villages to classified roads. Roads also Provide Access to Administrative, economic & social services	Tertiary road

6.1.2. Road Planning Criteria

- Planning of roads shall be based on an evaluation of present and future needs within the time horizon of the plan.
- It shall also focus on the philosophy and guidelines as stipulated in the Urban and Rural Roads Designers Manuals.

- Road networks should be planned on the basis of sufficient information including, amongst others:
    1. Geological conditions and stability (e.g., risks of landslides, etc.);
    2. The environmental, scenic, aesthetic, and preservation impacts;
    3. Topography, hydrography, slopes, etc.;
    4. The built environment, community, and/or cultural assets of the area, and measures to minimize environmental disturbance;
    5. The patterns of existing and planned settlements and land uses;
    6. Traffic safety considerations;
    7. The integration with other means of transport including NMT.
    8. Reference to be made to roads (Rural and Urban) designers manuals.

6.1.3. Guidelines for Rural roads.

- National roads with a dominant through movement function such as expressways and national highways are similar to rural roads (district and community access roads). Therefore, they are grouped together for appropriate planning and implementation.
- The arterial roads compose a fully connected network.
- Arterial roads only connect to other arterial roads and sub-arterial roads.
- Collectors should only connect to collectors and sub-arterial roads.
- Public transport should concentrate on a network of sub-arterials and collectors.
- Each road should intersect only with roads in the same class or one immediately above or below it in the hierarchy. In that way anyone using the network has a clear impression of the graduated change in conditions between the low-speed access roads and the segregated, higher speed "through routes' at the top of the hierarchy.

Table 55: Four level road hierarchy framework for rural road network planning and management

LEVEL 1: PURPOSE								
ROAD. *Carry through traffic, serving a longer distance purpose.*					**LOCAL ACCESS** ❖ *Collect local traffic.* ❖ *provide local access to property*			
LEVEL 2: FUNCTION								
ARTERIAL ROAD Express way, Highway) *Through traffic movements* *Longer distance traffic movements* *line haul public transport task* *Primary freight and dangerous goods routes* *regional cycle movements (off road)*		**SUB ARTERIAL ROAD (Traffic distributor, controlled distributor)** *Connections between local areas and arterial roads* *Connections for through traffic between arterial roads* *Access to public transport* *Through movement of public transport* *Regional – local cycle movements (off road).* *Pedestrian movements*		**COLLECTOR (Major /minor collector)** *Carry traffic having a trip end within the specific area* *Direct access to properties* *Access to public transport* *Pedestrian movements* *Local cycle movements*		**local access** Direct *access to properties* *Pedestrian movements* *Local cycle movements*		
LEVEL 3: MANAGEMENT								
Expressway	**National Road-A**	**National Road-B**	**National Road-C**	**National Road-Others**	**District Road-I**	**District Road-II**	**District Road-III**	**CARs**
Heavy traffic roads, high speed &	*Linking ports, airports, border*	*Linking District H/quarters to each*	*Linking small towns to District*	*Other national roads maintained*	*Linking District centers to each*	*Interconnect District h/Quarters & sub county*	*Connectors to & between Class II*	*Roads that provide access to Administrative,*

Limited Access	*to border and the capital city*	*other & Class A roads*	*H/quarters to class A,B and to each other*	*by UNRA*	*other & National roads*	*administrative centers*	*roads*	*economic & social services*
LEVEL 4: DESIGN								
The design is based on the Uganda Road Designers Manual 2010 (and subsequent revised and updated editions).								

6.1.3.1. Road design.

6.1.3.1.1. General

Uganda road designers manual 2010 outlines that the function of a particular road has a significant impact on the design criteria to be chosen. The following steps are required in the early stages of design process;

- Classification of the road in accordance with its major function.
- Determination of the level of access control compatible with the function of the road.
- Selection of geometric design standards compatible with function and level of access control.
- Design features that can convey the level of functional classification to the driver include carriageway width, continuity of alignment, spacing of junctions, frequency of access, standards of alignment and grades, traffic controls and road reserve widths.

6.1.3.1.2. Road design classification.

There are six Design Classes of roads (Geometric designer's manual 2010). Design Class Road I, II, & III which are bitumen surfaced. Design Class A, B, & C which are gravel surfaced. Design class I is further divided into two subcategories i.e., Classification I(a) is four lane and Ib two lane. The division into Road Design Class is governed by the design speed and design traffic. Functional classification of roads based on road hierarchy is one of the aspects that a road design class should follow or depend on.

The proposed road reserve widths have been guided by road design classification of public roads as per geometric designers manual 2010.

Geometric design parameters of the different road design classes (design speed, sight distances, horizontal curves, gradients, vertical curves and short falls) refer to chapter 4 of the geometric designers manual 2010.

For speed management refer to section 10 of the geometric designers manual 2010

To ensure traffic safety, the following measures can be employed:

- Speed limit and speed control measures;
- Separate vulnerable road users from the motor traffic by providing footways and cycleways; and,
- Separate the local traffic from the through traffic by providing service roads.
- Through roads with heavy traffic can also be provided with a median to improve traffic safety. U-turns should then preferably be achieved by use of roundabouts, which maybe false, i.e., no connecting roads.

Table 56: Planning Standards for Rural roads

CRITERION		Road.					Local Acess			
		Arterial Road		Sub Arterial Road			Collector			Local Access
		Expressway	Highway	Traffic Distributors		Controlled Distributor	Major Collector		Minor Collector	Local Access
		Expressway	**National Road-A**	**National Road-B**	**National Road-C**	**National Road-Others[1]**	**District Road-I**	**District Road-II**	**District Road-III**	**Community Access Roads**
Right of way (m)		60	50	40	30	30-60	30	25	25	20
Minimum lane width(m)		3.5	3.5	3.5	3.5	3.5	3.5	3.2	3.2	3.0
Number of lanes		≥ 4	≥ 4	≥ 4	≥ 2	≥ 2	≥ 2	2	2	2
Width of median (m)		1.2-5.0	1.2-5.0	1.2-5.0	Nil	1.2-5.0	Nil	Nil	Nil	Nil
Shoulder width(m)		2	2	2	2	2	2	1.5	1.5	1.2
Design Class Paved Ia	12,000-20,000 pcu/day	√	√	√		√				
Design Class Paved Ib	6000-10000 pcu/day	√	√	√		√				
Design Class Paved II	4000-8000 pcu/day		√	√	√	√	√			
Design Class Paved III	2000-6000 pcu/day		√	√	√	√	√			
Design Class A gravel	4000-8000 pcu/day				√	√	√	√		
Design Class B Gravel	2000-6000 pcu/day				√	√	√	√	√	
Design Class C Gravel										√

[1] Classifcation "other roads" refers to roads adopted and maintained by Uganda National Roads Authority. The range of standards therefore explains the variations based on the design and functional requirements.

6.1.3.2. Guidelines for Shoulders

a) Shoulders are required to support the paved surface of the road and to provide areas for safe emergency stopping of vehicles. Shoulders should never be used as permanent parking places for vehicles.
b) The construction of shoulders should be done as carefully as the construction of the main paved area of the road except those shoulders on access roads which may not normally be paved. It is recommended that shoulders on main roads be paved with at least one course of asphalt surface dressing.
c) Unpaved shoulders should be properly grassed and maintained. Shoulders not maintained may allow storm water to enter the base and affect the stability of the road.
d) The recommended widths of shoulder are given in the **table 47 above**. It is assumed that all shoulders are properly compacted and grassed.

6.1.3.3. Guidelines for Junctions and Corners.

a) Ease of movement, not equating to higher speed but rather smoother, slower and safer speed;
b) Have the shortest vehicular path;
c) Have good visibility on entering a junction. To achieve this, traffic islands, control devices, traffic signs and road markings must be all considered; and
d) Should be large enough to enable the users to identify conflicting traffic movement.
e) The minimum distance between consecutive junctions shall preferably be equal to **(10 x VD)** meters; where VD is the major road design speed in km/h.

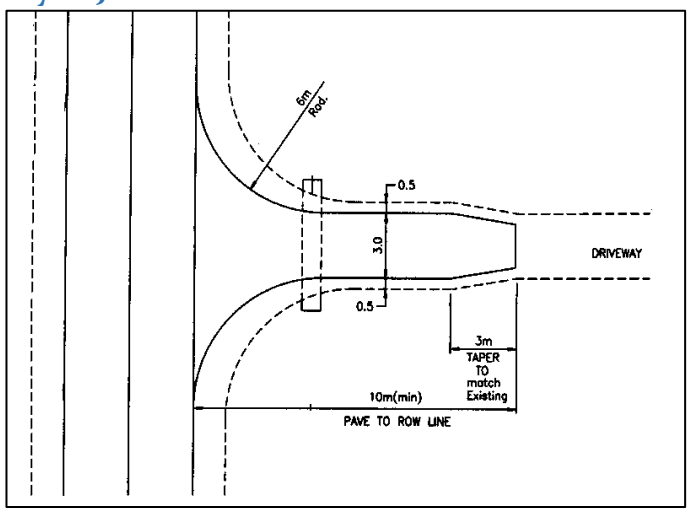
6.1.3.4. Guidelines and standards for access.

- An access refers to the intersection of an unclassified road with a classified road and shall generally be provided within the road reserve boundary of the classified road.
- Accident risk increases with the frequency of access roads, so they should, as far as possible, be discouraged on higher classes of roads.
- In certain locations, the constant daily vehicular movement or heavy peak hour flows at an access may justify its design to junction standards. This may occur, for example, at an entrance to an industrial development or factory site.
- The layout and design of these roads should be determined after examination of the topography and the need to access the main roads at convenient intervals.
- Avoid ad hoc creation of accesses in hilly areas and make adequate arrangements to manage storm water running down the access road.
- Properly plan the intersections of access roads with the main road to minimize accidents.
- All residential, commercial and industrial accesses in rural centres to be properly constructed to a minimum carriageway **width of 8 meters** with a well compact fill and concrete or bitumen surface.
- An access shall have entry and exit radii of between **8 to 15 meters** depending upon the turning characteristics of the expected traffic with no left or right turning lanes, left turn merging lane or traffic islands.

- Minimum visibility to and from the accesses to be **100 meters** in both directions along the main road (safe stopping distance for a vehicle traveling at 40 mph). Where the topography prohibits minimum sight distance, the posted speed limits should be reduced and warning signals placed on the main road.

6.1.3.5. Guidelines and standards for Visibility at Junctions

- The visibility offered to drivers should be sufficient to identify any necessary course of action and then safely to follow that action.
- It is recommended that visibility splays involve the requirement for an approaching side road vehicle to be seen before it reaches the stop or give way line.
- Pedestrians also need to see and be seen and crossing movements are often concentrated at or near intersections.



Visibility splays i.e., the angles of visibility at road junctions are shown below in relation to road type.

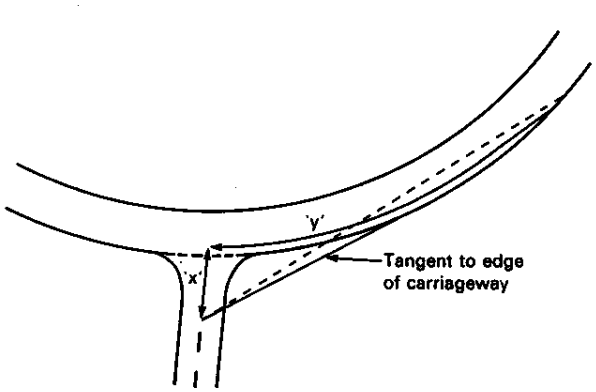


Figure 9: Visibility splay on curve

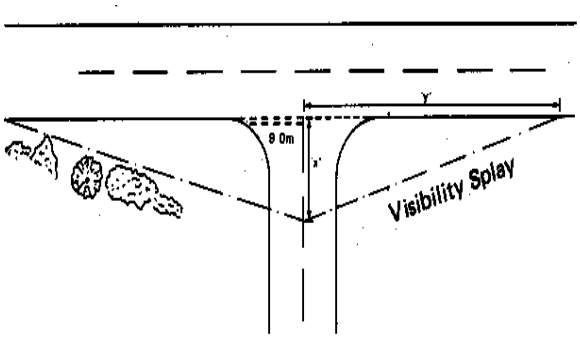
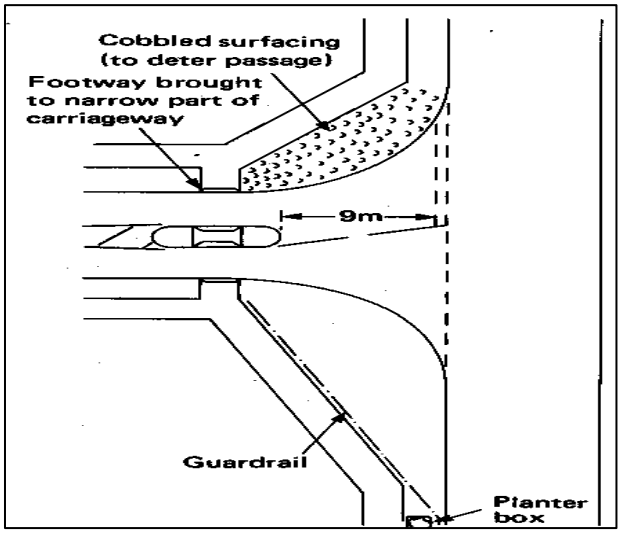


Figure 10: Visibility splay on straight sections

a. Permanent and temporary signs must be placed so that they can be read and acted upon safely.
b. At an intersection between a minor road and a dual carriageway, where there is sufficient space in the central reserve for minor road vehicles to perform their maneuvers in two stages, the sight distance need only be provided in one direction at a time.
c. Intersections of more than two roads should be avoided.

d. Y-junctions can also be misleading unless one route is given obvious precedence over that adjoining it.
e. T-junctions should be avoided on the inside curves of through roads.
f. Roads forming an intersection should meet one another at an angle of **90°** plus or minus a tolerance of **10°**. This alignment should be maintained for a distance of **30 meters** measured from the center point of the intersection.
g. Visibility envelope should be landscaped or paved to avoid obstruction
h. Obstructions in the visibility envelope must be avoided. These activities are prohibited; street furniture, telephone kiosks, road signs, vegetation (when fully grown) and parking.



i. Maintenance is important and visibility should be achieved within the boundaries of the highway to allow this.
j. Visibility requirements are needed at roundabouts; to the next exit (or previous exit) **or 50m** whichever is the least, from a point **15m** back before the stop line.
k. From the circulating carriageway, the same distance should be provided from a **point 2m** from the central island. No activities are allowed within the island.

6.1.3.6. Interchanges.

The principal difference between interchanges (graded separated intersection) and other forms of intersection is that, in interchanges, crossing movements are separated in space whereas, in the latter case, they are separated in time. Reference should be made to the Geometric Designers Manual 2010 for details.

6.1.3.6.1. Interchange warrants.

The following are cited by the geometric designers manual 2010 under section 9.

Traffic volume	With increasing traffic volumes, a point will be reached where all the options of temporal separation of conflicting movements at an at-grade intersection have been exhausted. One of the possible solutions to the problem is to provide an interchange.
Freeways	Access is permitted only at designated points and only to vehicles travelling at or near freeway speeds. As such, access by means of intersections is precluded and the only permitted access is by way of interchanges. Crossing roads are normally those that are high in the functional road hierarchy, e.g. arterials, although, if these are very widely spaced, it may be necessary to provide an interchange serving a lower order road, for example a collector.
Safety	Some at-grade intersections exhibit high crash rates that cannot be lowered by improvements to the geometry of the intersections or through the application of control devices. Such situations are often found at heavily travelled urban intersections. Crash rates also tend to be high at the intersections on heavily travelled rural arterials where there is a proliferation of ribbon development.

Topography	The topography may force a vertical separation between crossing roads at the logical intersection location.

6.1.3.6.2. Location and spacing of interchanges.

The location of interchanges is based primarily on service to adjacent land. On rural freeways bypassing small communities, the provision of a single interchange may be adequate while larger communities require more. The precise location of interchanges would depend on the particular needs of the community but, as a general guide, would be on roads recognized as being major components of the local system.

The generous spacing applied to rural interchanges would not be able to serve intensively developed urban areas adequately. As an illustration of context sensitive design, trip lengths are shorter and speeds lower on urban freeways than on rural freeways. As drivers are accustomed to taking a variety of alternative actions in rapid succession, a spacing of closer than 8 kilometers can be considered.

6.1.3.6.3. Types of interchanges.

Type	Explanation
Service Interchange	In the case of freeways as intersecting roads, reference is made to systems interchanges. Systems interchanges exclusively serve vehicles that are already on the freeway system.
Access Interchange	Access to the freeway system from the surrounding area is via interchanges on roads other than freeways, for which reason these interchanges are known as access interchanges.

System interchanges.

Figure 11: Four legged interchanges

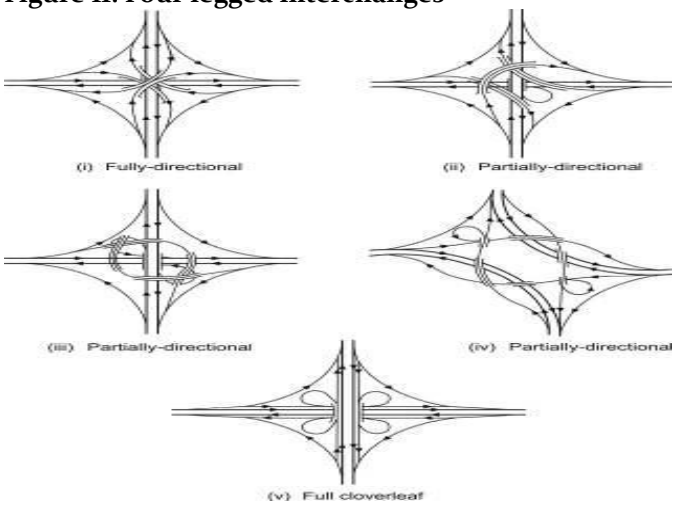
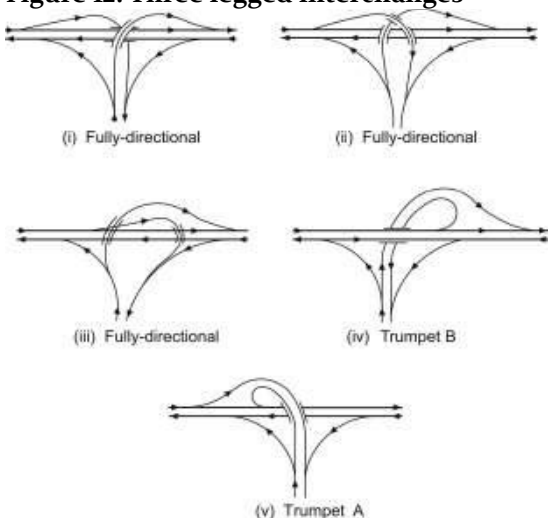


Figure 12: Three legged interchanges



6.1.3.6.3.1. Access and Service interchanges.

In the case of the systems interchange, all traffic enters the interchange area at freeway speeds. At access and service interchanges, vehicles entering from the crossing road may be doing so from a stopped condition, so that it is necessary to provide acceleration lanes to ensure that they enter the freeway at or near freeway speeds. Similarly, exiting vehicles should

be provided with deceleration lanes to accommodate the possibility of a stop at the crossing road.

Figure 13:Diamond interchanges

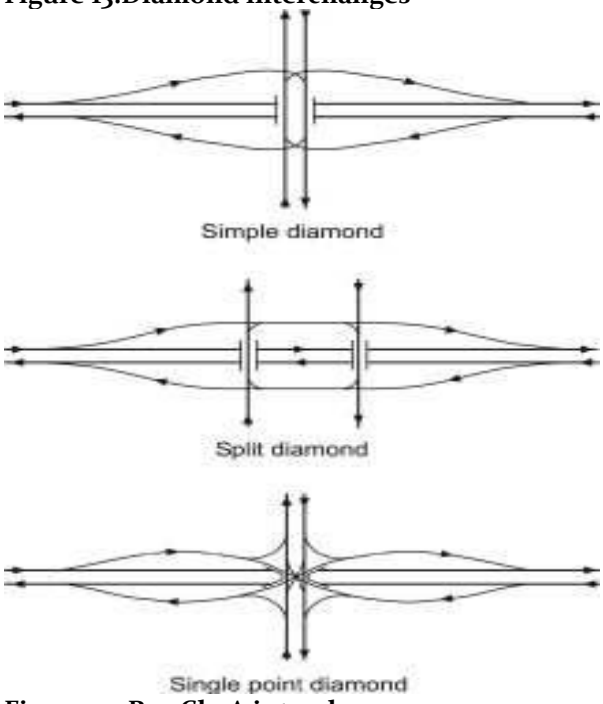


Figure 14: Par-Clo B interchanges

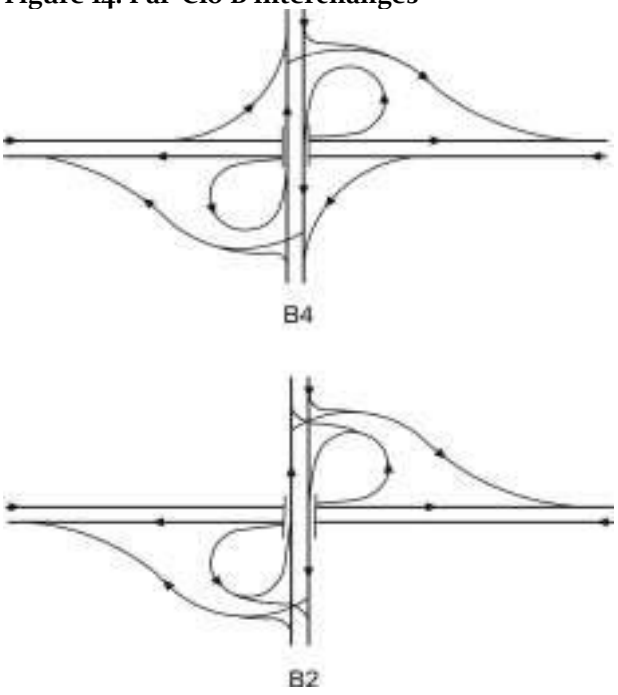


Figure 15: Par-Clo A interchanges

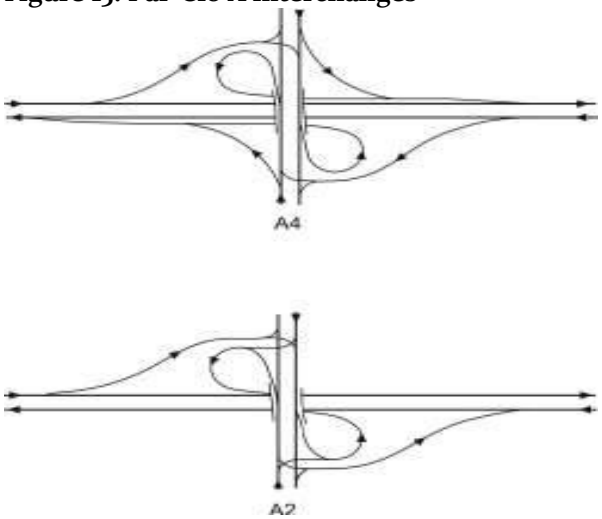
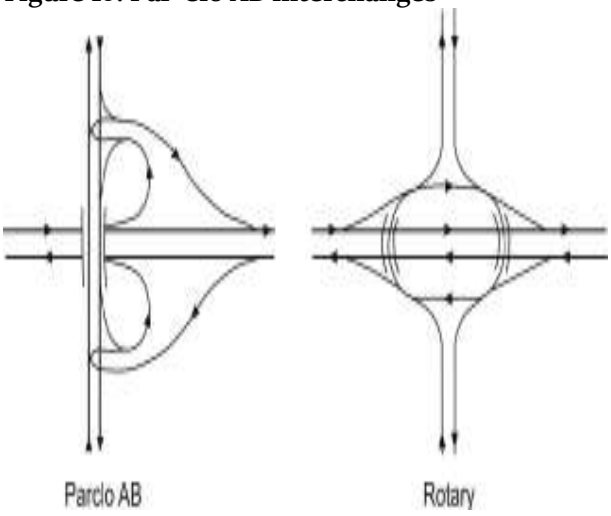


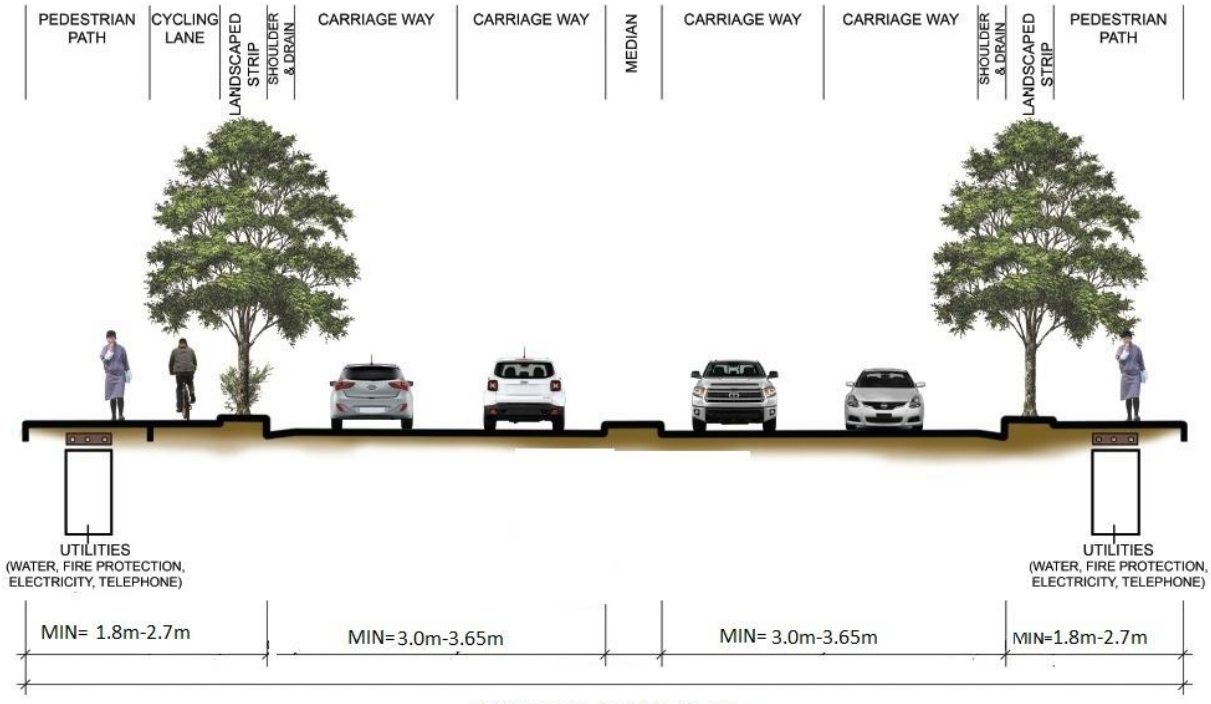
Figure 16: Par-Clo AB interchanges



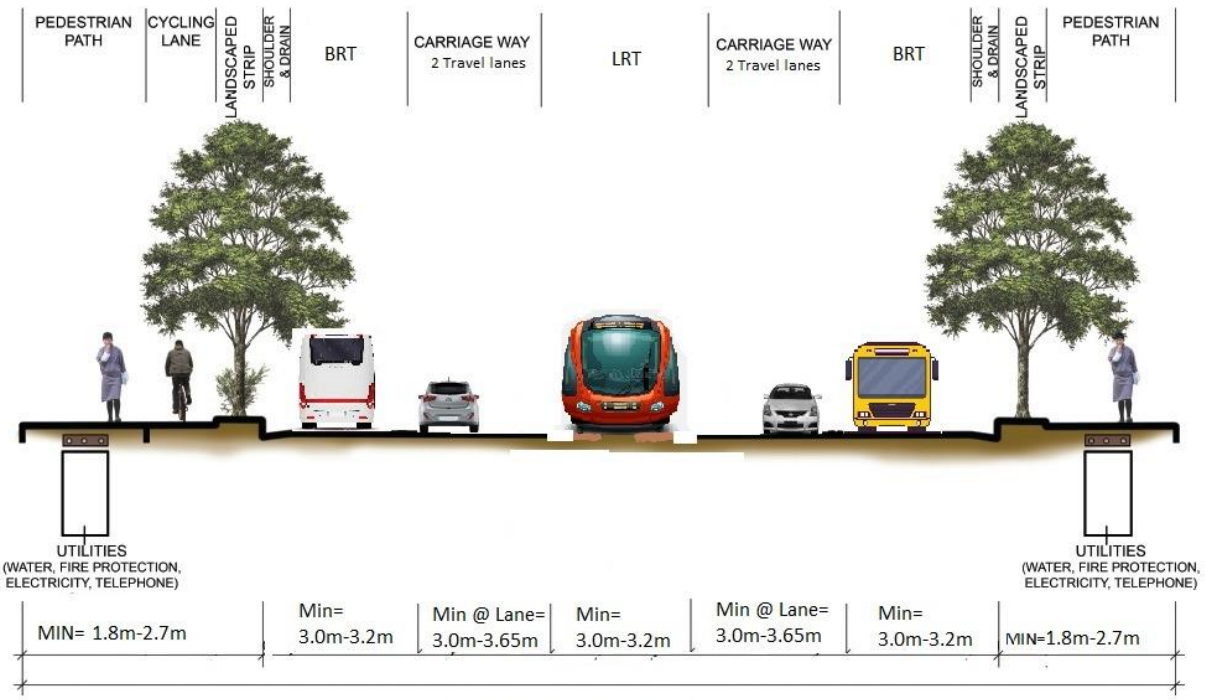
For details on interchanges refer to section 9 of the road geometry designer's manual of 2010

Table 57: Planning guidelines for Rural roads

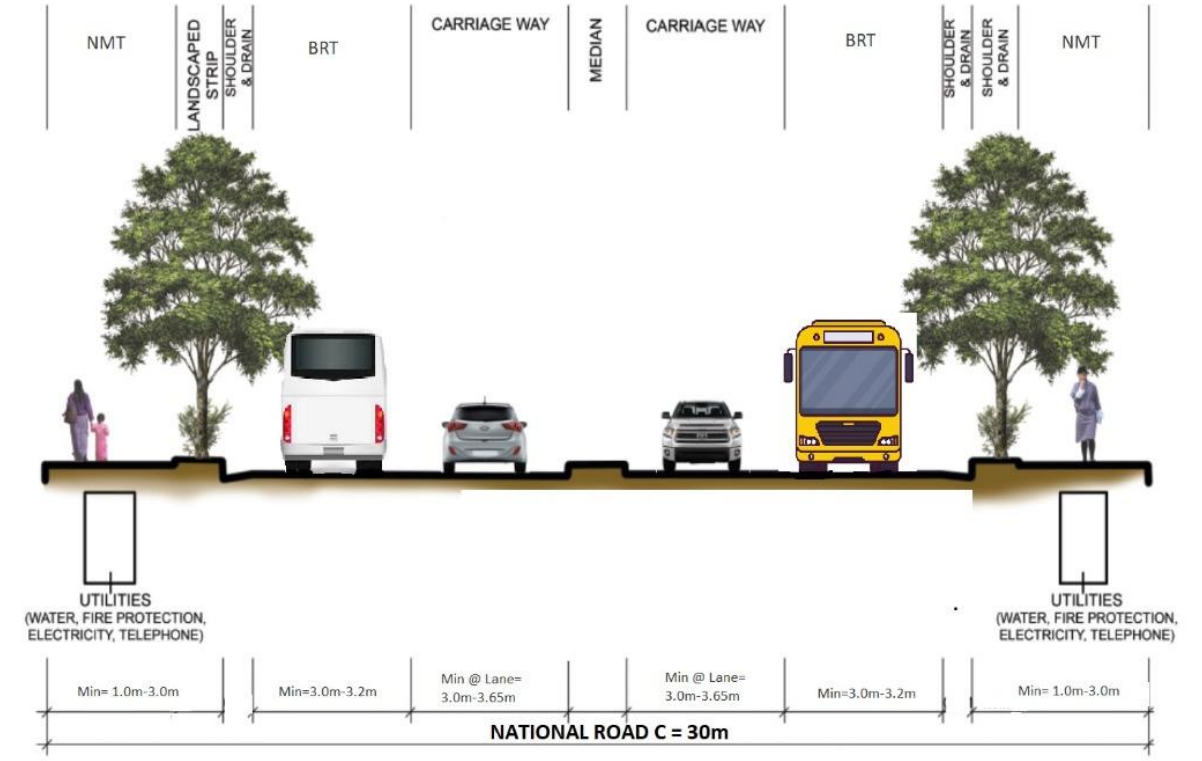
CRITERION	Road.					Local Access			
	Arterial Road		Sub Arterial Road			Collector road			Local road
	Expressway	Highway	Traffic Distributor		Controlled Distributor	Major Collector		Minor Collector	Local Access
	Expressway	**National Road-A**	**National Road-B**	**National Road-C**	**National Road-Others**	**District Road-I**	**District Road-II**	**District Road-III**	**Community Access Rroadss**
Right of Way	60	50	40	30	30-60	30	25	25	20
Access control	Full	Full or partial	Partial or unrestricted	Partial or unrestricted	Full or partial	unrestricted	unrestricted	unrestricted	unrestricted
Public transport facilities	Emercency route/LRT	Bus route	Bus route	Bus route	Bus route/LRT	Nil	Nil	Nil	Nil
Cycle facilities	Nil	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders
Pedestrian Movement facilities	Nil	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders	Shoulders
Road side station	Permitted	Permitted	Permitted	Permitted	Permitted	Nil	Nil	Nil	Nil
Bus Stopping provisions	N/A	Separated from main road	Lay-bys	Lay-bys	Lay-bys if applicable	Lay-bys	Lay-bys	Lay-bys	Lay-bys
Pedestrian Crossings	Grade separated	Grade separated/ Signalized	Signalized/level crossings	Signalized/level crossings	Grade separated/ Signalized/level crossings	Level crossings	Level crossings	Level crossings	Level crossings
Land use impact enhancement	Barriers prohibited built areas	Prohibited in built areas	Regulated land use	Regulated land use	Regulated land use	Land Scaping	Land Scaping	Land Scaping	Land Scaping



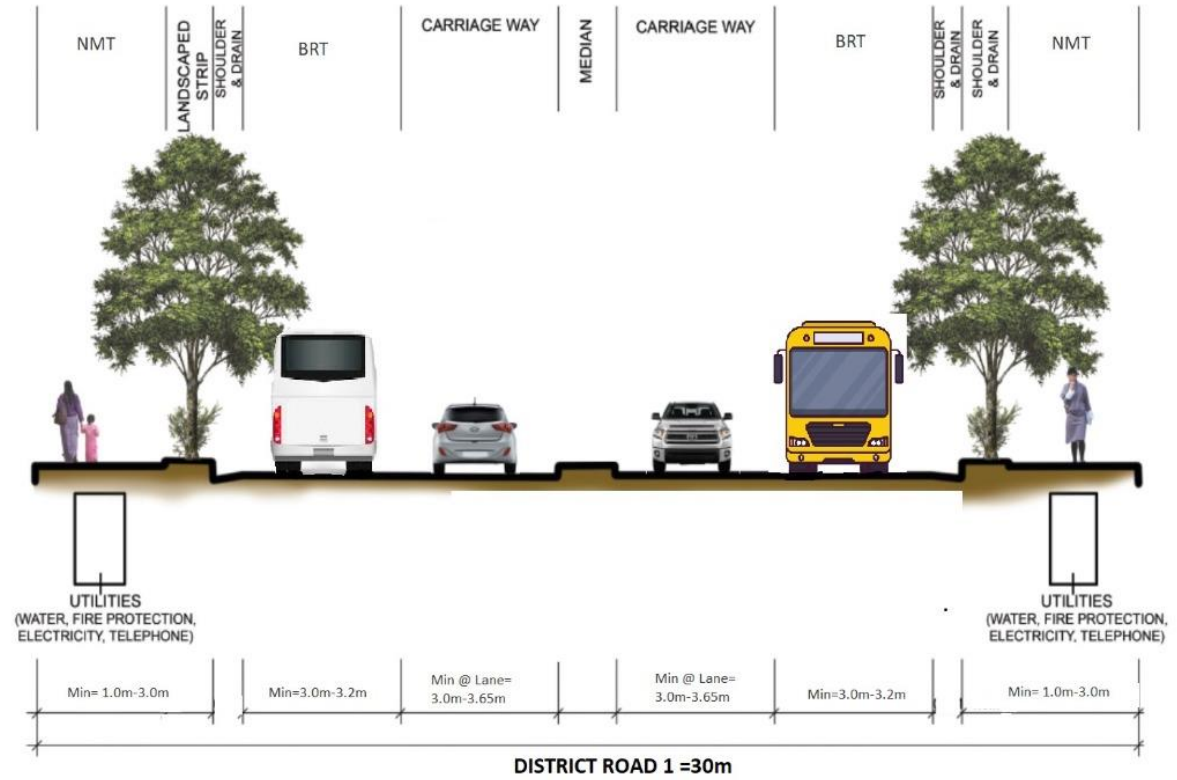
NATIONAL ROAD A=50m



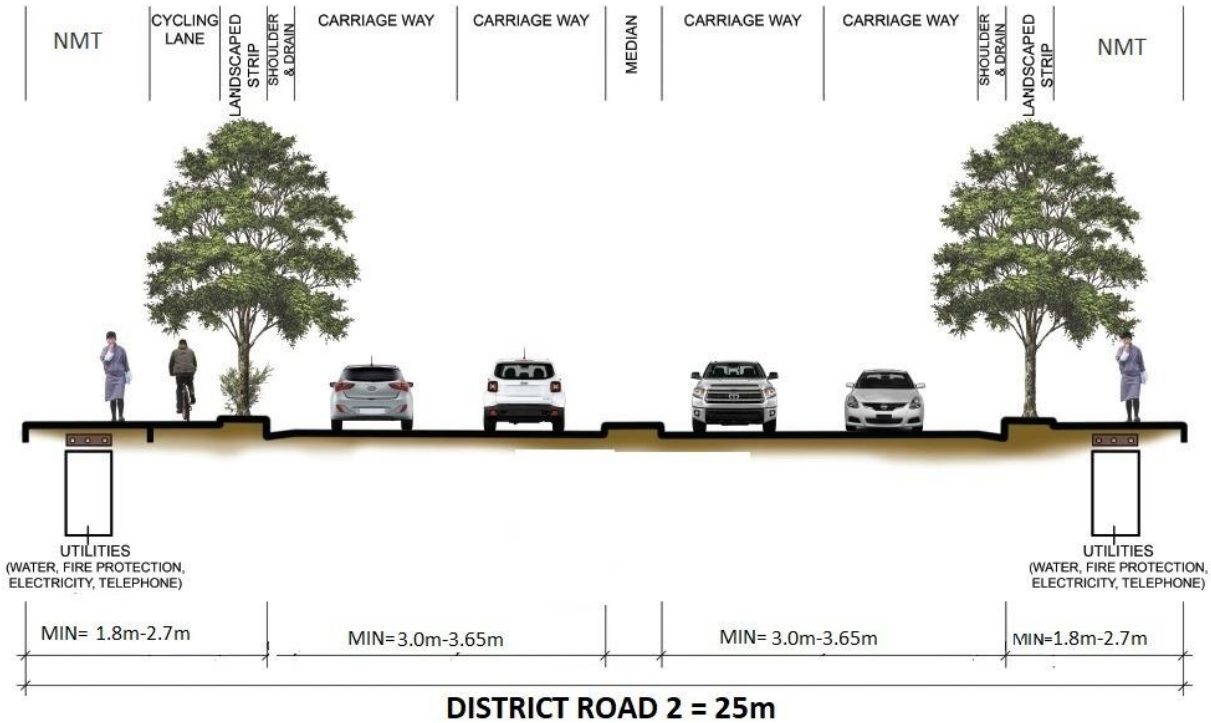
NATIONAL ROAD B=40m



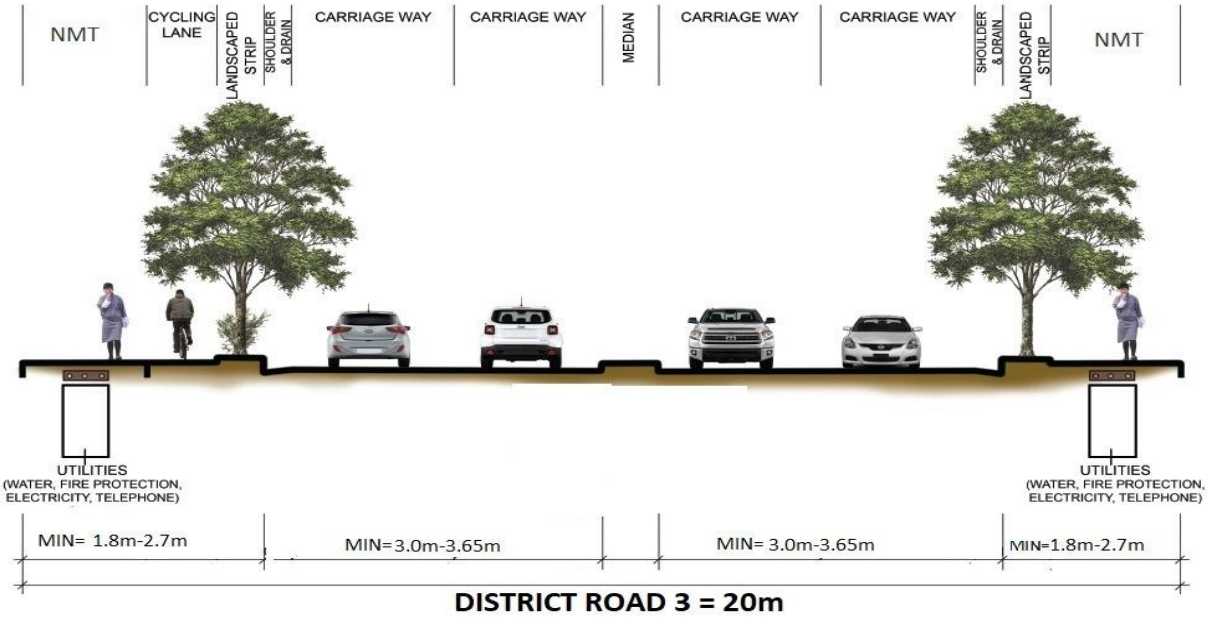
NATIONAL ROAD C = 30m



DISTRICT ROAD 1 =30m



DISTRICT ROAD 2 = 25m



6.1.4. Urban Roads.

An urban road is a road within the boundaries of a gazetted urban area (Road Act 2019). In Uganda, the words road and street are both used in urban areas. Roads mainly carry through traffic and streets provide access and therefore, perform multiple functions.

6.1.4.1. Urban roads classification system.

The roads in an urban network can be broadly classified into two categories:
"Mobility roads" are higher order roads, generally operating at higher speeds, carrying higher traffic volumes over longer distances.
"Access roads" are lower order roads, generally characterized by operating at lower speeds with shorter travel distances in order to provide connections to the higher-order roads or individual properties. These are further categorized into seven classes[2].

Table 58: Urban roads standards as per the Urban roads designer's manual (URDM) 2022

URDM Class (2022)	UDRM Class (2010)	Function	Description	Road reserve width (maximum): Metre
1	A	Mobility	Trunk Route (With dedicated BRT trunk or Public Transport lanes)	60
2	B		Major Arterial (With dedicated BRT trunk or Public Transport lanes)	40
3	C		Minor Arterial (With shared BRT feeder or Public Transport lanes)	28
4	D	Access	Collector Street (Commercial, Residential & Industrial)	20
5	E		Access Street (Commercial, Residential & Industrial)	15
6	-		NMT Access Way	8
7	-		Informal settlement access lanes	6

[2] Urban Roads Designer's Manual (URDM) 2022, developed 7 classes of urban roads based on Uganda Districts Roads Manual 1 (UDRM), volume A.

Table 59: Design Standard Classes and Typical Features of Urban roads

DESCRIPTION				REQUIREMENTS				FEATURES										
Class		Description	Surface type	Intersection Spacing (minimum)		Direct access to Property	On-street parking	Max Speed	Intersection Control	No. of lanes per direction		Lane Width (m)		Road Reserve (m)		Public Transport		NMT Facilities
				Ideal	Range					Traffic	BRT/PT	Ideal	Range	Ideal	Range	Allowed	PT Stops	
1	A (1 - 3)	Trunk Route with BRT trunk service	Paved only	2.4km	1.6 – 3.6km	No May be allowed if conditions are met	No	80km/h	Stop Traffic Signal Grade Separated	2 or 3	1 lane or 1 stop & 1 passing lane	3.5m	3.3 – 3.5m	60m	42.8m - 60m	Yes	Median or Kerb stations	Crossings at intersections Walkways segregated from road Bike lane segregated from road
	B (1 - 3)	Trunk Route with PT route	Paved only	2.4km	1.6 – 3.6km	No May be allowed if conditions are met	No	80km/h	Stop Traffic Signal Grade Separated	2 or 3	1 lane or 1 stop & 1 passing lane on one side only	3.5m	3.3 – 3.5m	60m	39.6m - 60m	Yes	Kerb stops	Crossings at intersections. Walkways segregated from road Bike lane segregated from road
2	A (1 - 3)	Major Arterial with BRT trunk service	Paved only	800m	680 – 920m	No May be allowed if conditions are met	No	60km/h	Stop Traffic Signal Grade Separated	2	1 lane or 1 stop & 1 passing lane on 1 or both sides	3.5m	3.3 – 3.5m	40m	34.5m - 40m	Yes	Median stations	Crossings at intersections. Walkways segregated from road Bike lane: segregated from road
	B (1 - 2)	Major Arterial with PT route	Paved only	500m*	400-600m	No May be allowed if conditions are met	No	60km/h	Stop Traffic Signals	2	1 lane or 1 stop & 1 passing lane on 1 side only	3.5m	3.3 – 3.5m	40m	33.3m - 40m	Yes	Kerb stops	Crossings at intersections. Walkways segregated from road Bike lane: segregated from road
3	A (1 - 3)	Minor Arterial with BRT Feeder service	Paved only	600m	480 – 720m	No May be allowed if conditions are met	No	50km/h	Stop Traffic Signals Roundabouts	1	1 shared BRT & traffic	3.5m	3.3 – 3.5m	28m	20.1m – 28m	Yes	Kerb stops	Crossings at intersections. Walkways segregated from road Bike lane segregated from road
	B (1-3)	Minor Arterial with PT route	Paved only	500m	400-600m	No May be allowed if conditions are met	No	50km/h	Stop Traffic Signals Roundabouts	1	1 shared PT & traffic	3.5m	3.3 – 3.5m	28m	20.4m – 28m	Yes	Kerb stops	Crossings at intersections. Walkways segregated from road Bike lane segregated from road

DESCRIPTION				REQUIREMENTS				FEATURES										
Class		Description	Surface type	Intersection Spacing (minimum)		Direct access to Property	On-street parking	Max Speed	Intersection Control	No. of lanes per direction		Lane Width (m)		Road Reserve (m)		Public Transport		NMT Facilities
				Ideal	Range					Traffic	BRT/PT	Ideal	Range	Ideal	Range	Allowed	PT Stops	
4	A (1 - 2)	Collector Street (Commercial & mixed-use)	Paved	>150m	100m – 150m	Yes	Yes	50km/h	Stop Traffic Signal Urban Compact Roundabout	1	N/a	3.7	3.5m – 3.7m	20m	15.8m - 20m	Minibus taxi only	Kerb stops	Walkways segregated from road Cycle on road
			Gravel	*>150m*	100m – 150m	*Yes*	*Yes*	*50km/h*	Stop	*1*	*N/a*	3.5	3.3m – 3.5m	20m	*14m - 20m*	*Minibus taxi only*	*Kerb stops*	Walkways segregated from road Cycle on road
	B (1 - 2)	Collector Street (Residential)	Paved	>150m	100m – 150m	Yes	Yes	50km/h	Stop Traffic Signal Urban Compact Roundabout	1	N/a	3.7	3.5m – 3.7m	20m	15.3m - 20m	Minibus taxi only	N/a	Walkways segregated from road Cycle on road
			Gravel	*>150m*	100m – 150m	*Yes*	*Yes*	*50km/h*	Stop	*1*	*N/a*	3.5	3.3m – 3.5m	20m	*15.3m - 20m*	*Minibus taxi only*	*N/a*	Walkways segregated from road Cycle on road
	C (1 - 2)	Collector Street (Industrial)	Paved only	>150m	100m – 150m	Yes	Yes	50km/h	Stop Traffic Signal Roundabout	1	N/a	3.7	3.5m – 3.7m	20m	15.6m - 20m	Yes	Kerb stops	Walkways segregated from road Cycle on road
5	A (1-2)	Access Street (Commercial, mixed-use & residential)	Paved	50m	30m – 50m	Yes	Yes	40km/h	Stop Mini Roundabout	1	N/a	3.3m	3.0 m – 3.3m	15m	N/a	Minibus taxi only	Kerb stops	Walkways segregated from road Cycle on road
			Gravel	50m	30m – 50m	*Yes*	*Yes*	*40km/h*	Stop	1	N/a	3.5m	3.0m - 3.5m	15m	N/a	Minibus taxi only	Kerb stops	Walkways segregated from road Cycle on road
	B (1-2)	Access Street (Industrial)	Paved only	50m	30m – 50m	Yes	Yes	40km/h	Stop Mini Roundabout	1	N/a	3.5m	3.3-3.5m	15m	N/a	Minibus taxi only	Kerb stops	Walkways segregated from road Cycle on road
6		Access way: Informal Settlement	*Paved* *Gravel*	*N/a*	*N/a*	*Yes*	*No*	30km/h	Stop	1	N/a	4.4m	4.0m – 4.4m	8.0m	7.0m – 8.0m	No	*NA*	Walkways segregated from road Cycle on road
7		Access Way: NMT only	*Paved* *Gravel*	*N/a*	*N/a*	*Yes*	*No*	N//A	N//A	1	N/a	3.0m	2.5m– 3.0m	6.0m	5.0m – 6.0m	No	*NA*	Shared walkway & Cycle lane

Adopted from the Urban Roads Designer's Manual (URDM) 2022,

6.1.5. Guidelines for Naming Roads in Local Governments

This section outlines the general requirements for road names to ensure that the public can easily locate places and essential services such as medical facilities and transport services.

6.1.5.1. Application process.

Below are the application process steps to follow when applying for a new road name for

- a new public road that is vested in the government, or
- a new or existing private road where there are six or more lots to be served, or
- where it is proposed to alter the name of an existing road

***Note:* in relation to a new public or private road required to be named as a result of new subdivision permission, road name approval should be obtained from the LG prior to the lodgment of a survey plan.**

6.1.5.2. Application process steps.

i. Pre-application name check.

a) Applicants must apply to the Local government for a pre-application name check before any further work is undertaken.

b) Applicants need to provide three proposed name options for each road to be named (i.e., one preferred name and two alternatives)

c) Local Government staff will respond in writing (via e-mail) to confirm if the proposed names are acceptable or advise if more options are required along with instructions on the next steps. All proposed names must be confirmed as acceptable for use before proceeding any further with the application. Applicants should retain a copy of this confirmation for use later in the process.

ii. Application checklist and supporting evidence.

Once the applicants have completed the above steps, they must complete the following checklist and gather the required details and supporting evidence in order to complete their application.

Table 60: Road naming checklist

Road naming checklist
a) **Completed application form.** This is developed by the LG and includes applicant details; name, address, email address and preferred contact details and any agent contact details.
b) **Resource content details;** attach any relevant approved resource consent documents and plans.
c) **Site plan or Scheme plan** that clearly shows the layout of roads to be named highlighted in color and labelled as "road 1", "road 2" etc (do not add any of the proposed names on the plan)
d) **An assessment (can be in a form of a letter)** confirming that the proposed names meet the principles, technical requirements and application process requirements there in and covering matters within items e) to m) below
e) **Three proposed name options** per road to be named -one preferred name and two alternatives for LG to choose from.
f) **A chosen road type** that actually reflects the type of road being named (e.g., street or avenue). A table of road types and descriptions can be found in Table 61 page 103.
g) **A description of the meaning of the proposed names** (e.g., relevant historical back ground to the names, description of the origins, translation for local names).
h) **A description of how the proposed names link to the area** (e.g., local history theme, flora and fauna found locally, early settlers, war heroes, historical person of note and why the name is relevant to the area.
i) **Community consultation summary and evidence.** Provide copies of any consultation, emails or letters sent to the community and feedback received, labelled with details of person or group that provided that feedback.

Road naming checklist	
j)	**A copy of pre application Name Check** confirmation from LG staff confirming that the proposed names are not duplicated and are acceptable for use. The LG must have a road names database.
k)	**Permissions from family members, religious and cultural institutions** for any commemorative names as relevant.
l)	**For the renaming or alteration of the name of the existing road**, evidence is required to show that 100% of all owners of all properties that take current addresses from that road have been consulted and that most of them agree to the change as well as a justification as to why the proposed change is required.

iii. Submitting a completed application.

a) Completed road naming applications including road naming application form, application checklist, supporting documents and evidence should be submitted to the Accounting Officer of the Local Government and forwarded to the Physical planning directorate/department/section for assessment.
b) Assessed applications shall be sent to the relevant lower local government Accounting Officer for forwarding to the village/cell council for community consent.
c) Village/Cell Council sends the request to ward/parish council for endorsement.
d) Request is further sent to the higher Local Government council for endorsement or deferral or rejection.
e) The Accounting Officer of the higher Local Government analyses the comments and forwards the request to Physical Planning Committee for recommendation.
f) PPC will then produce a report summarizing the application details, proposed road names and supporting evidence and minutes to the relevant Local Government sectoral committee and council for consideration and approval.
g) The planning authority informs the applicant, other LG departments and related agencies of the approved name.

iv. Approval process.

a) Local Council meetings and decision making

- Relevant sectoral committee on behalf of LG council will review the report presented at their meeting and make a recommendation for approval to LG Council.
- To remove any doubt, LG Council shall have the final decision on naming roads and altering of road names within council's area of jurisdiction.
- LG council has the discretion to reject any names proposed, to seek alternative names or defer a decision pending further information and to make its own enquiries.

b) Approval Notification.

- Once the road name is approved by LG Council, LGA shall notify the applicant of the decision.
- LGA shall enter the new road names in their addressing databases.
- The applicant is responsible for arranging and installing appropriate road/street signage under the guidance and supervision of LG technical team.
- Street numbers are assigned by the LGA.

c) Fees for purposes of new road name approval.

The fees charged for purposes of new road name approval shall be as prescribed by the LG Council.

6.1.6. Guidelines for road naming

Table 61: Guidelines for road naming

No.	Key Principle	Explanation
1	Ensure public safety	Road names must not create risk to public safety or operational safety for emergency response, or cause confusion for transport, communication and mail services.
2	Recognize public interest	When naming or renaming a road, its long-term effect on the wider community needs to be considered.
3	Link a name to a place	Road names should be relevant to the local area, with preference given to unofficial names used by the local community. Names that link the name to the place could relate to local area culture and occupation of the land, local flora and fauna, Freedom war contributions among others.
4	Ensure names are not duplicated	New street or building names should not duplicate any similar name already in use within the area or neighboring areas. A variation in the suffix, e.g., 'street', 'road', 'avenue', etc., cannot not be accepted as sufficient reason to duplicate a name. Duplicates are considered to be two (or more) names within close proximity, or names that are identical or have similar spelling or pronunciation.
5	Names must not be discriminatory	Road names must not discriminate and or cause offence on the basis of race, ethnicity, religion, disability, sexuality or gender.
6	Recognition and use of local languages	The use of indigenous languages in the naming of roads is encouraged, subject to agreement from the relevant traditional owner group(s).
7	Dual names	Dual naming is not typically appropriate for use in the naming of roads.
8	Using commemorative names	Naming often commemorates a person, event or place. When considering a commemorative name, the following must be considered; • When deciding on the assignment of a commemorative name, consider the person's achievements, relevant history and association to the area, and the significance of the family/person to the area/land. For example, a family that has been associated with an area for at least 50 years. • The names of people who are still alive should be avoided because community attitudes and opinions can change over time. In exceptional circumstances, if a person wishes to name a road after a living person, an application from the exemption from this principle must be lodged to LGA. • A commemorative name applied to a road should only use the surname of a person, not first or given names. • The initials of a given name are not to be used in any instance.
9	Using commercial and business names	Applicants should not name roads after commercial business, trade names, estate names and nonprofit organizations. Exceptions can apply if the business or organization has had an association with the area over a substantial period of time and is held in high regard by the community.

10	Language	• Road names, except when they are proper nouns, must be written in standard English or a recognized format of the language local to the area. • The name should be easy to pronounce, spell and write, and not exceed three words and/or 25 characters. • 'The' is not a suitable prefix in naming of any road. For example, The Avenue is not acceptable. In new estates, road types should be chosen with the ultimate estate configuration in mind. • The apostrophe must be deleted from existing road names written with a final 's and the possessives should not be included in the first instance. Apostrophes forming part of a person's name or surname are permitted (e.g Okot p' Btek). • Abbreviations are not allowed with exception of 'St' (saint). • A name cannot be a numeric value. For example, 1st Street, or 101 Road. Where numbers occur in a road name they should be written in full (e.g Fifth Street). • Roads must use an approved road type
11	Directional names	Cardinal directions (north, south, east and west) are not to be used.
12	Assigning extent to a road	The extent to which the name applies must be made clear. For example, the start and end or where it intersects with other roads.
13	For national interests,	Government to establish a National Road Naming Committee to name national roads.

6.1.7. Technical requirements for naming of new roads/streets.

1) Any road (including private roads, private ways and access ways) that serves six or more plots requires a road name.
2) Subsidiary names, such as a row of buildings within an already named road being called 'Terrace/Parade', should only be used in roads of short length.
3) Road name shall not include a hyphen or full stop. Where the name of the road name is being derived includes a hyphen, it shall be replaced with a space.
4) For purposes of consistency names starting with Mc or Mac should not have a space included in MC or Mac and the rest of the name (e.g., Mcdusman Kabega).
5) Different road types do not distinguish different road names of the same or similar sounding names for purposes of a new road naming application (e.g., Muteesa road, Muteesa street or Muteesa Crescent all are considered to be same road name).
6) A Road name should not include a preposition (preposition are used to show location, direction, cause; "in, *of, by, to, with, near, above, at*".
7) Origin to destination names should not be used (e.g., Hoima-Masindi Road).
8) All new pedestrian walkways should end with one of the following suffixes: path; walk.
9) All new street names should end with one of the following suffixes (in alphabetical order) table 62:

Not acceptable suffixes: Common, Court, Cross, End, Gate, Meadow, Park, Path, Side or Walk.

Table 62: Road types acceptable for registration.

Road types	Abbreviation	Description	Open ended	Cul-de-Sac	Pedestrian only
Alley	Aly	Usually, a narrow road in the city or town.	√	√	
Approach	App	roadway leading to an area of community interest, i.e., public open space, commercial area, beach etc.	√		
Arcade	Arc	Covered walkway with shops along sides.			√
Avenue	Av	Broad road, usually with trees planted on each side (tree lined avenue).	√		

Road types	Abbreviation	Description	Open ended	Cul-de-Sac	Pedestrian only
Boulevard	Bvd	Wide road, well paved usually ornamented with trees and grass plots.	√		
Break	Brk	A vehicular access on a formed or unformed surface, which was originally prepared as a firebreak.	√		
Bypass	Bypa	An alternative roadway constructed to enable through traffic to avoid congested areas or other obstructions to movement.	√		
Circuit	Cct	Roadway enclosing an area.	√		
Chase	Ch	Road leading down to a valley.	√	√	
Crest	Crst	Road running along the top or summit of a hill.	√	√	
Close	Cl	Short enclosed road.		√	
Court	Crt	Short enclosed road usually surrounded by buildings.		√	
Crescent	Cres	Crescent shaped road especially where both ends join a thoroughfare.	√		
Drive	Dr	Wide main road without crossing streets.	√		
Entrance	Ent	A roadway connecting other roads.	√		
Esplanade	Esp	Level road often bordering water along a seaside, lake or a river.	√		
Fire trail	Ftrl	Vehicular access on a formed or unformed surface, which was originally prepared as firebreak.	√		
Freeway	Fwy	An express, multi-lane highway, with limited or controlled access.	√		
Glade	Gld	Road usually in a valley of trees.		√	
Green	Grn	Road often leading to a grassed public recreation area.		√	
Grove	Grv	Road that features trees standing together.		√	
Highway	Hwy	Main road or thoroughfare; a main route.	√		
Lane	Lane	Narrow road between walls, buildings or narrow country road.	√	√	√
Loop	Loop	Road that diverges from or re-joins a main thoroughfare.	√		
Mall	Mall	Wide walkway with shops along sides.			√
Mews	Mews	Road in a group of houses.		√	
Parade	Pde	Road that has pedestrian facilities along the side.	√		
Parkway	Pwy	A roadway through parklands or an open grassland area.	√		
Passage	Psge	Narrow street for pedestrians.			√
Place	Pl	Short, sometimes narrow, enclosed road.		√	
Promenade	Prom	Wide flat walkway usually along water's edge.			√
Quay	Qy	Road alongside or projecting into water.	√	√	
Ramp	Ramp	An access road to and from highways and freeways.	√		
Retreat	Rtt	Road forming a place of seclusion.	√	√	
Ridge	Rdge	A roadway along the top of a hill.	√		
Rise	Rise	Road going to a higher place or position.	√	√	
Road	Rd	Open road primarily for vehicles.	√		

Road types	Abbreviation	Description	Open ended	Cul-de-Sac	Pedestrian only
Square	Sq	Road which forms a square shape or an area of road bounded by four sides.	√	√	
Steps	Stps	Walkway consisting mainly of steps			√
Street	St	Public road in an urban area especially were paved and with footpaths and buildings along one or both sides.	√		
Subway	Sbwy	An underground passage or tunnel that pedestrians can use for crossing under a road, railway, river, etc.			√
Terrace	Tce	Road on hilly area that is mainly flat.	√	√	
Track	Trk	Walkway in natural setting.			√
Vista	Vsta	Road with a view or outlook.	√	√	
Walk	Walk	Thoroughfare for pedestrians.			√
Way	Way	Short enclosed road.		√	√
Wharf	Whrf	A road on a wharf or pier.	√	√	√

6.1.8. Technical requirements for Numbering of Roads/Streets

1. A new street should be numbered with even numbers on one side and odd numbers on the other, with the exception that for a cul-de-sac consecutive numbering in a clockwise direction is preferred.
2. Private garages and similar buildings used for housing cars, etc., should not be numbered.
3. There should be no sanctions given to the avoidance of any numbers e.g., 13, 4 etc. and a proper sequence should be maintained.

6.1.9. Technical requirements for Renaming or Renumbering of Roads/Streets

1) Renaming / renumbering existing roads/streets is normally only considered in exceptional circumstances when changes occur which give rise (or are likely to give rise) to problems for the occupiers, Emergency Services, and postal Mail etc. The Changes include among others re-design of the road, change of traffic flow and duplication issues.
2) For the renaming or alteration of the name of the existing road, evidence is required to show that 100% of all owners of all properties that take current addresses from that road have been consulted and that most of them agree to the change as well as a justification as to why the proposed change is required.

6.2. Naming of buildings

6.2.1. Application process for naming of buildings.

a) Pre-application name check.

1) Applicants must apply to the Local Government for a pre-application name check before any further work is undertaken.
2) Applicants need to provide three proposed name options for the building to be named (i.e. one preferred name and two alternatives).
3) LG staff will respond in writing (via e-mail) to confirm if the proposed names are acceptable or advise if more options are required along with instructions on the next steps. Applicants should retain a copy of this confirmation for use later in the process.

b) Application checklist and supporting evidence.

Once the applicants have completed the above steps, they must complete the relevant checklist as prepared by LGA and gather the required details and supporting evidence in order to complete their application.

c) Submitting a completed application.

1) Completed building naming applications including building naming application form, application checklist, supporting documents and evidence should be submitted to the accounting officer of the Local Government and forwarded to the Physical planning directorate/department/section for assessment.
2) Assessed applications shall be sent to the Physical Planning Committee (PPC) for consideration.

d) Approval process.

To remove any doubt, PPC shall have the final decision on naming buildings and altering of building names within council's area of jurisdiction.

e) Approval notification.

1. Once the building name is approved by LG council, LGA shall notify the applicant of the decision.
2. LGA shall enter the new building names in their property databases.
3. The applicant is responsible for arranging and installing appropriate building name signage under the guidance and supervision of LG technical team.

f) Fees for purposes of new building name approval.

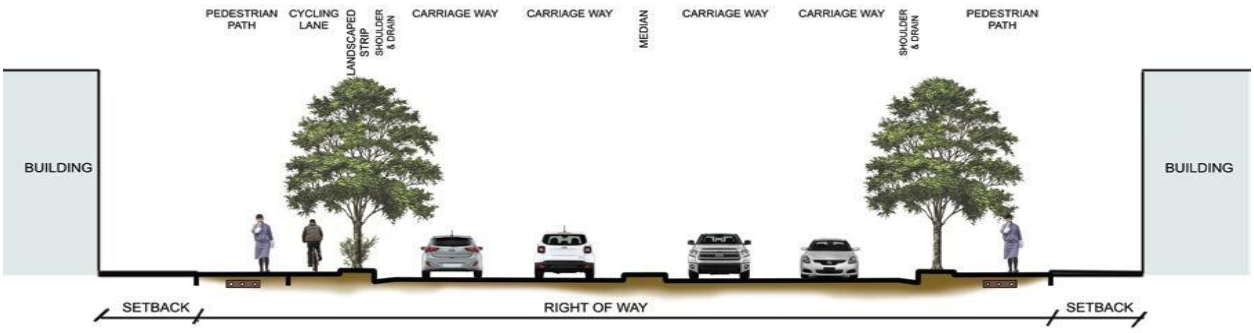
The fees charged for purposes of new building name approval shall be as prescribed by the LG authority.

6.3. Adjacent Lands and Frontage Zones

6.3.1. Planning standards and guidelines for adjacent lands and frontage zone

6.3.1.1. Frontage zone

This is the space between the property boundary and the footpath. It is used for soft landscaping such as lawns or low planting and can accommodate underground utilities. In spatially constrained existing street corridors, the frontage zone can be omitted.



6.3.1.2. Setbacks from Roads

Building setbacks form the front yards of residential properties. The distance that buildings are set back and the design of front yards strongly influence the spatial character of the road/street and determine the interface between public and private space. Setbacks of buildings from roads/streets shall be established by the Regulatory Plans. It shall be measured from the limit of the ROW of roads. Setbacks shall be planned based on consideration of frontage zone, the type of road/street and the adjacent land uses.

Table 63: Standards for recommended setbacks for urban roads.

Hierarchy	Type of Street	Min/Max Setback from ROW (m)	Frontage Zone (m)	The adjacent lands
Arterial	Main street arterial	0–3	2.0	The adjacent lands often contain active land uses, including places to eat and drink and ground-floor retail. The adjacent lands host the types of active land use that draws people to the street, and also serves as the point of origin for many pedestrians using the footpath.
	Mixed use arterial	0–3	2.0	
	Single use arterial	0–6	0.0	The adjacent lands contain predominantly detached, single household dwellings. The residences serve as the point of origin for pedestrians and cyclists (who may be travelling to a public transport stop) as well as people travelling by private car. Small-scale local retail, schools and community facilities such as playgrounds serve as local destinations within easy distance on foot or on a bicycle.
Collectors	Main street Collector	0–3	2.0	The adjacent lands often contain active land uses, including places to eat and drink and ground-floor retail. The adjacent lands host the types of active land use that draws people to the street, and also serves as the point of origin for many pedestrians using the footpath.
	Mixed use Collector	0–3	2.0	
	Single use Collector	0–6	0.0	The adjacent lands contain predominantly detached, single household dwellings. The residences serve as the point of origin for pedestrians and cyclists (who may be travelling to a public transport stop) as well as people travelling by private car. Small-scale local retail, schools and community facilities such as playgrounds serve as local destinations within easy distance on foot or on a bicycle.
Local streets	Local Street	0–6	0.0	
	Center Local Street	0–6	0.0	

6.4. Non-Motorized Transport Infrastructure.

NMT includes all forms of movement that do not rely on an internal-combustion engine for movement.

6.4.1. Planning Standards and guidelines for Non-Motorized Transport infrastructure.

The standards herein are based on the provisions of the Non-Motorized Transport (NMT) Manual 2020.

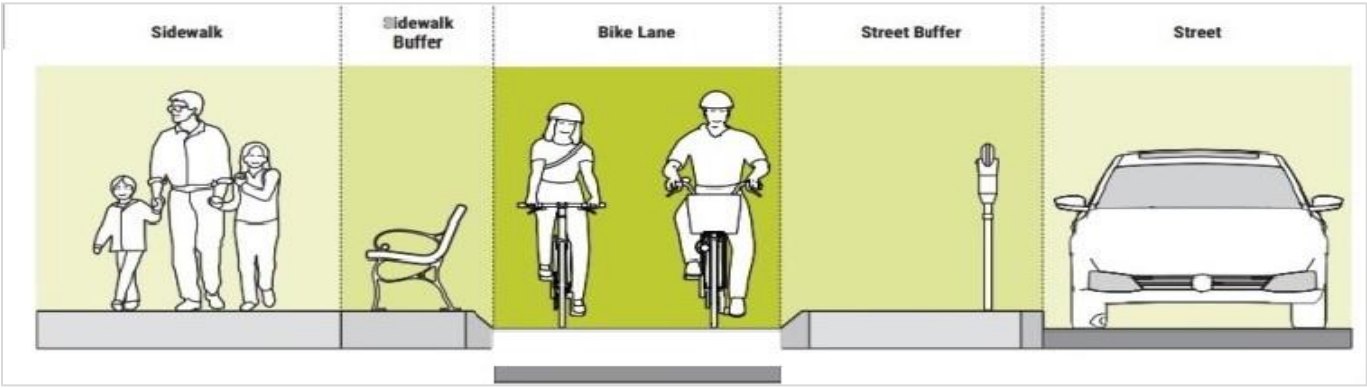


Figure 17: Cross section of NMT in an urban area.

6.4.1.1. Master planning and Network design.

Non-Motorized Transport (NMT) Manual 2020 under section 2.2 provides guidelines on how to develop pedestrian masterplan and bicycle masterplan respectively.

a. Principles for network design.

- The NMT network should be designed to be continuous, logical, and consistent at all locations;
- Networks should be designed in line with the shortest paths from different locations;
- Network design should consider the overall safety measures for the end-user;
- The NMT facility should be able to attract the end-user into choosing NMT rather than other modes;
- The network should be able to easily connect with other public transport modes.

b. Environment and social aspects.

An Environmental and Social Impact Assessment (ESIA) for an NMT project should be conducted as per the National Environmental Act (NEMA, 2019), the Environmental Impact Assessment Regulations and NMT manual 2020.

For NMT classification in terms of degrees of separation refer to Table 3-1 of NMT manual 2020.

6.4.1.2. Design parameters for pedestrian and bicycle facilities.

Table 64: Minimum space requirements for pedestrian and bicycle facilities

Facility	Parameter	Accepted Minimum Width (m)	Recommended minimum (m)	Maximum
Pedestrian foot way-total separation	Min width	1.0	2.0	3.0 *
Pedestrian foot way-kerb/barrier	Min width	1.0	2.0	3.0 *
Cycle way-total separation (two way)	Min width	1.5 [1](with adjacent cycleway space)	3.0	3.0 *
Cycle way-kerb separation (two way)	Min width	1.5 [1](Check sight distances)	3.0	4.0 *
Cycle way-marked separation (one way)	Min width	1.5	2.0	2.5 *
Pedestrian footway	Max gradient	1:15	1:20	1:25*
	Min Corner Splay	2.0	3.0	5.0

Cycleway	Min Radius	3.0	5.0	5.0
Crossfall/ camber	Max gradient	Paved 1:50 Gravel 1:25	Paved 1:50 Gravel 1:25	Paved 1:50 Gravel 1:25
Both Pedestrian and cycle facilities	Total separation: Distance from shoulder break point	120Km/hr-5 80Km/hr-2 60Km/hr-1	120Km/hr-7 80Km/hr-3 60Km/hr-1	120Km/hr-9 80Km/hr-4 60Km/hr-2
Vertical Clearance (Pedestrians)	Vertical Clearance	2.5	2.5	3.0
Vertical Clearance (Cyclists)	Vertical Clearance	2.5	2.5	3.0
*Subject to capacity requirements				
[1]Assume some space on adjacent walkway to be used for passing.				

Adopted from NMT Manual, 2020

6.4.1.3. NMT only-Foot Bridges and under passes.

A good road network design will either eliminate the need for footbridges and underpasses, or design and site them effectively so that they become part of the desired mobility and access routes of pedestrians and cyclists.

Table 65: Pedestrian crossing facilities guidelines

Facility	Width(m)	Height(m)
Pedestrian Bridges	2.0	5.2
Pedestrian subways Length: 14m or less Length: 14m or less Length: 14m or less	 2.1 2.4 3.0	 2.5 2.5 3.0
Shared pedestrian or cycle subways Pedestrian footway Cycleway Total	 2.0 3.0 5.0	 2.5 2.5

Adopted from NMT Manual, 2020

6.4.1.4. Intersection treatments and pedestrian crossing facilities.

Standards and guidelines for pedestrian crossing facilities and NMT signage and road markings refer to Section 6.0 and Section 7.0 of NMT manual 2020 respectively.

6.5. Street Furniture.

Street furniture are the fixtures on streets, such as seating and benches, streetlight posts, street signs, waste-bins and other fittings. Street furniture can also include bicycle parking racks, shade trees and planters, and other items to create public spaces on the streets.

6.5.1. Zoning.

A useful way to design and plan for effective widths of street furniture is through a zoning system, with furniture/buffer zones, frontage zones, and pedestrian/cycling zones.

6.5.2. Standards and Guidelines for Street furniture elements and dimensions.

Table 66: Standards and guidelines for different elements of road furniture

Furniture	Dimensions		Location & frequency
	Foot Print	Height	
Bench	2.4m by 0.75m	0.4m to 1.0m	At least 0.5 m from the edge of a footway Every 50 m in commonly used pedestrian areas

			At bus stops and shelters
Bollard	0.3m diameter	0.6 to 1.2m	As required but not more than 1.4 m apart 0.3 m from the kerb
Bus Stop Shelter	2.6m by 1.4m	2.5m	As required by bus services
Bicycle Locker	2.0m by 1.9m	2.1m	As transport interchanges and stops
Bicycle Rack	0.75m by 50mm	0.75m	As transport interchanges and stops
Drinking fountain	0.3m diameter	0.6m	As required
Rubbish Bin	0.8m	1.3m	As where liter may be generated e.g. At bus stops and restaurants.
Parking meter/pay point	0.3m by 1.5m	1.5m	As required by street parking
Planter	Varies	Varies	As required
Lighting pole	0.6m by 0.6m	Varies	As required to provide suitable illuminance.
Public Transport sign	65mm diameter pole	2.1m	As required by public transport providers
Parking sign	65mm diameter pole	1.5m	As required by street parking
Street name sign	65mm diameter pole	2.1m	As required
Street tree		5.0m tall	Varies, but foliage should be above the pedestrian eyeline
Utility Vault	Varies	Flush	As required by utility companies

Adopted from NMT Manual, 2020

6.5.3. Land Scaping.

For standards and guidelines for landscaping NMT infrastructure refer to the Uganda Non-Motorized Transport Manual (NMT) 2020 under section 4.2 and National Urban Landscape Strategy for Uganda 2020 – 2040 (MoLH&UD)

6.5.4. General standards and guidelines for vendors and traders within the furniture zone.

When located in the furniture zone of a sidewalk, vendors and stalls should be placed at least:

- 0.5m from Kerb edges
- 2.0m from street furniture such as benches and fire hydrants.
- 1.5 m from trees and planters.
- 2.5m from transit stops, boarding zones, and loading zones.
- 3.0m from pedestrian crossings.
- 6.0m from building entrances.

6.5.4.1. Factors to consider in the spatial design for street vendors

- Any urban redesign needs to be informed by the nature of existing trading activities – what is sold where and how it is displayed, as well as pedestrian flows.
- Maintain the clearance distances from street Kerb for street vendors.
- Vendors/traders should not obstruct a public road, footway or public place. Enough space must be provided adjacent to traders for pedestrians to walk.
- Vendors should not be located in an area that obscures a shop, window and traffic signs.
- Vendors should not obscure a fire hydrant, or the entrance or exit to a building.

- Pedestrian counts are important in calculating how many street traders can be accommodated in any one area.
- The viability of the majority of street trading businesses is about 'passing feet'. Any redesign that changes pedestrian flows needs to bear this in mind. Certain trades are not so dependent on foot traffic. Trades, where customers specifically seek out products or services, can be accommodated in less busy areas.

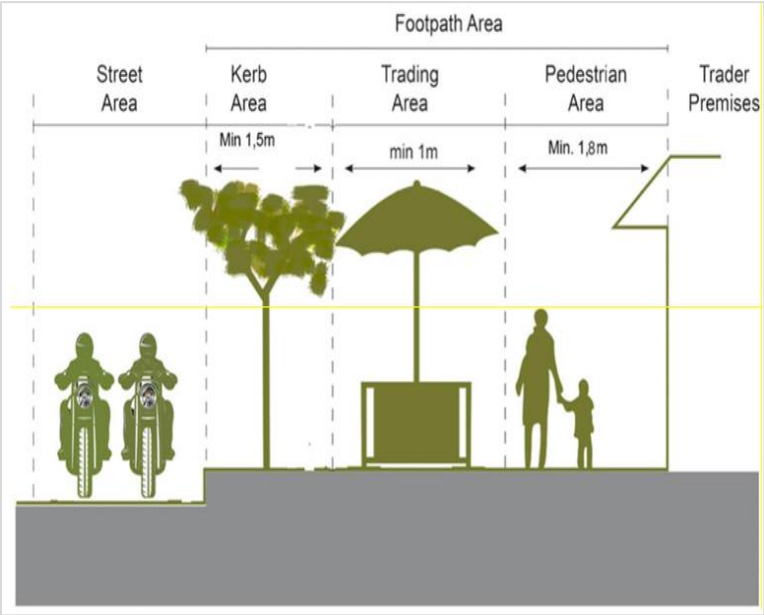


Figure 18: Cross section of street furniture with vendors

6.6. Street and Exterior Lighting.

6.6.1. Planning Standards and guidelines for street and exterior lighting.

a) Street lighting.

- Lighting should provide a uniformly lit road surface against which vehicles, pedestrians or other objects are seen in silhouette (shadow).
- The design of the lighting system should relate to the road surface reflection characteristics in order to provide the optimum quality and quantity of illumination.
- Light colored surfaces give better silhouette vision than dark ones.

Table 67: Standards for luminance requirements for public lighting.

Type of road	Minimum Luminance[3] (Lux)	Mounting height of luminaires
Expressways	30	9 to 10 meters
Main and Mixed-use arterial streets, Arterial Roads	15	9 to 10 meters
Main and mixed-use collector streets, Collector roads	10	7.5 to 9 meters
Local access road	8	7.5 to 9 meters
Foot path, pedestrian space	20-50	Lower street lamps
Car parks	10-30	9 to 10 meters

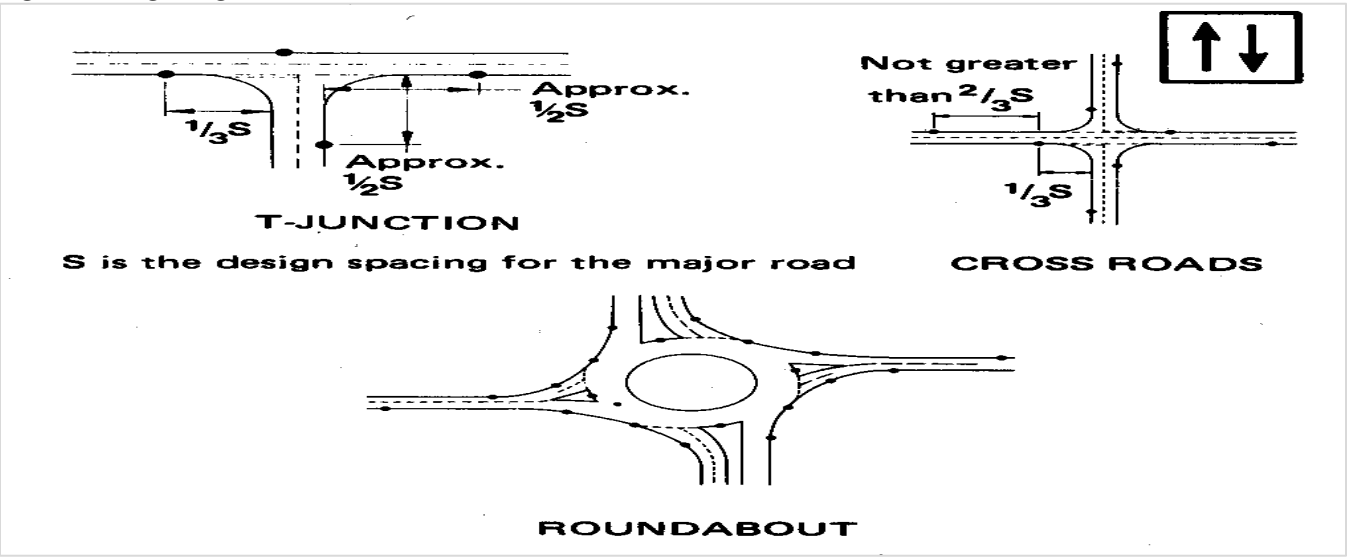
6.6.2. Lighting installations at Intersections.

- Lighting is most appropriate in urban streets, and key locations include intersections and places where pedestrians cross.
- The level of illumination needs to be consistent and maintenance is most important. Signs and road markings should be visible at night.
- Where the road layout is at all unusual or where there are large numbers of cycles or pedestrians, lighting is particularly important.

[3]Luminance is the intensity of emitted light from surface per unit area in a particular direction (Lux = 1 lumen m^2).

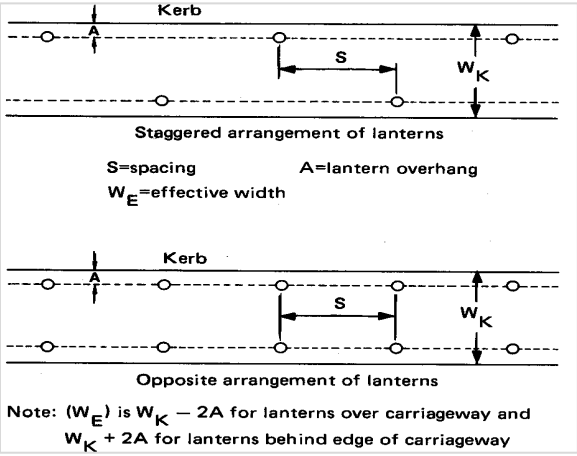
- There is a need to improve street lighting especially where there are high pedestrian flows.

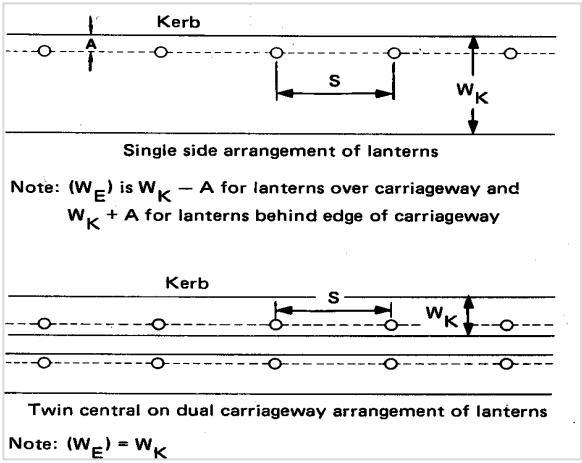
Figure 19: Lighting Installation at Intersections



6.6.3. Standards and guidelines for Street Lighting layouts

- On dual carriageways, lighting may be located either in the median or on the other side of each carriageway.
- On median installations, dual mast arms should be used, for **which 12–15-meter** mounting heights are favored. For single luminance spacing is **100m** interval while for multiple luminance spacing is **300m** minimum.
- Lighting columns (poles) should be placed behind vertical Kerbs whenever practical. The appropriate **distance is 0.5m** behind the Kerb for roads with a design speed of 50 km/h or less, and **1.2m** or greater for roads with a design speed of 80 km/h or greater.
- Where poles are located within the clear zone, regardless of distances from the edge of the carriageway, they should be designed to include a frangible impact attenuation feature. However, these types of poles should not be used on roads in densely populated areas, particularly with footways to avoid accidents.
- In pedestrian spaces, lower street lamps or outdoor floor or wall-recessed luminaries may be considered. On footpaths and cycle tracks, the lamp post should be placed at **least 0.45 meters** from the outer edge of the adjoining pedestrian walkway.
- Lamp posts should not be sited in positions where they will be a danger to a vehicle leaving the road. If this is not possible, then they should be protected by crash barriers, or designed to collapse on impact. Consideration should be given to the use of sodium lighting, particularly at key points, as it is much more efficient than mercury or tungsten lighting.





6.6.3.1. Exterior lighting

i) General guidelines for exterior lighting

All exterior lighting, such as that used in and around buildings, recreation areas, parking lots, and signs, shall be designed to meet the following guidelines:

a) Protect against the spillover of light to adjacent properties;
b) Protect against glare onto public rights-of-way thereby impairing the vision of motorists and adjoining properties;
c) Shield adjacent properties by thick evergreen vegetated buffers, berms, walls, or fences, and/or the use of directional lighting, lighting shields, special fixtures, timing devices, appropriate light intensities, luminaries, and mountings at appropriate heights.
d) A point-by-point lighting plan is required for site plan approval that indicates the foot-candles at grade grid points that cover the site. The Physical Planning Committee can waive this requirement for small independent projects on less than 1/2 acre if the fixture types are specified on the plan.
e) Any changes to the lighting plan must be approved by the Physical planning Committee through a site and/or subdivision plan revision.

ii) Standards for exterior lighting

All outdoor lighting shall conform to the standards and provisions found in the standards listed below:

a. Maximum Lighting Height

Outdoor lighting, except Outdoor Sports Fields and Performance Areas shall be designed, located and mounted at heights no greater than:

1) **5.6 meters** above grade for non-cut-off lights;
2) **10 meters** above grade for cut-off lights, unless a raised foundation is required to protect the poles, in which case the maximum height shall not exceed **11 meters** above grade.

b. Distance from Property Line

All outdoor lighting fixtures shall be located a **minimum of 3 meters** from a property or **1.5 meters** from a right-of-way line and should not be located within a required perimeter buffer or streetscape unless it is located at the interior edge.

c. Lighting for Canopies

1) Lighting for canopies shall be restricted to lighting fixtures (including lenses) that do not project below the bottom of the canopy. Lighting for canopies for service stations and other similar uses shall not exceed an average of **120 lux** as measured at ground level at the inside of the outside edge of the canopy.
2) Canopies used for building accents over doors, windows, etc. shall not be internally lit (i.e., from underneath or behind the canopy).

d. Floodlights and Spotlights

1) Lighting fixtures shall be selected, located, aimed, and shielded so that direct illumination is focused exclusively on a portion of the building façade or other intended site feature and away from adjoining properties or the right-of-way.
2) On-site lighting may be used to accent architectural elements but shall not be used to illuminate entire portions of building(s). Such lighting shall be installed in a fixture that is shielded such that no portion of the light bulb extends below the bottom edge of the shield, and that the main beam from the light source is not visible from adjacent properties of the adjacent right-of-way.
3) Floodlights or other type of lighting attached to light poles that illuminate the site and/or building(s) are prohibited.
4) Anybody intending to use floodlights should seek permission from the Planning Authority and pay a specified fee determined by the Planning Authority.

e. Wall Pack Lights

Wall packs on buildings may be used at entrances to a building to light unsafe areas. They are not intended to draw attention to the building or provide general building or site lighting. "Wall Packs" on the exterior of the building shall be fully shielded (true cut-off type–bulb or light source not visible from off-site) to direct the light vertically downward and be of low wattage (preferably 100 watts or lower).

6.6.3.2. Illumination of Outdoor Sports Fields and Performance Areas.

Lighting of outdoor sports fields and performance areas shall be installed in accordance with the following requirements:

1) The mounting height of outdoor sports field and outdoor performance area lighting fixtures shall **not exceed 24 meters** from finished grade, including any foundations, etc.
2) All outdoor sports field and outdoor performance area lighting fixtures shall be equipped with the manufacturer's maximum glare control package (louvers, shields, visors or similar devices). The fixtures must be aimed so that their beams are directed and fall within the primary playing field or performance area.
3) Events shall be scheduled so that the normal hours of operation for the sports field lighting system for any game or event shall not exceed 8:00AM to 12:00AM. An exception to this

time limit may be granted for completion of unusually long games, a performance which has been weather-delayed, or when a tournament or performance is scheduled in advance with a final game or performance to occur beyond 12:00AM. The facility's property owner and management/production authority for the tournament or performance are jointly responsible for providing notice of potential time extension for tournament play to the LGA and adjacent property owners/occupants. Written notice may be distributed to adjacent property owners/occupants 48 hours in advance or door hang tags at least 24 hours in advance of the event. Written notice shall be provided to the LGA within 48 hours in advance of the event.

4) Lighting of playing fields or performance areas shall only be turned on when activity is scheduled and occurring. When scheduled activities are completed prior to 12:00PM, the field or performance area lights shall be turned off (when egress lighting is separate) or reduced in light level by at least fifty percent (50%) within one hour after conclusion of play or other activity. When there are no scheduled activities at a sports field or performance area, the lighting shall not be turned on.
5) Security and egress illumination lighting systems may remain turned on for any amount of time deemed necessary to remove people safely.
6) Light pole/stands shall not be located in planting bed(s) with trees and other vegetation

6.7. Outdoor Advertisement

The guidelines and standards herein apply to billboards and signposts placed on public roads, buildings and open spaces on both urban and rural roads.

6.7.1. Planning Standards and guidelines for Advertisement.

The provisions in these guidelines are based on the UNRA Regulations (General) 2017.

- A person who intends to advertise as an advertising firm along a public road or road reserve shall apply to the road authority/local government to be registered.
- An advertising agency shall be fully registered by URSB and meet all the guidelines and requirements for the relevant roads' authority/Local government.
- Approval of applications for outdoor advertisement in local governments is a privy of the Physical Planning Committee.
- For the application process by advertising firms or individuals, refer to the UNRA Regulations (General) 2017.

6.7.2. Classification for purposes of placing advertisements.

An advertisement placed on a public space or road reserve shall follow the classifications as specified by the road authority/local authority.

Table 68: sizes of bill boards, signposts and signboards

Category	Size (range)	Regulating Authority
Super	36 square meters to 72 square meters.	Road Authority
Large	18 square meters to less than 36 square meters.	Road Authority
Small	6 square meters to less than 18 square meters.	Road Authority
Very small	1 square meter to less than 6 square meters.	LGA

Adopted from UNRA

6.7.3. Content on billboards or other signage.

An advertiser shall ensure that the message on a billboard or other signage complies with the applicable laws of Uganda and standards issued by the Uganda National Bureau of Standards and shouldn't be offensive.

6.7.4. Guidelines and Standards for placement of billboards on public spaces or road reserve.

a) They shall be designed and erected or constructed so as not to be detrimental to or have negative aesthetic impact on the road structures and the road environment;
b) They shall not be erected on faces of fills or cuts or within **2.0 meters from** toe of till or edge of cut or edge of the drain;
c) They shall not be located in curves, islands junctions, roundabouts;
d) They shall be located away from each other at a distance of **at least 2.0 km** for the super signs/billboards;
e) All billboards excluding super sizes along a public road with a speed limit of up to 50 kph, shall be **at least 200 meters apart** from each other, on the same side of the road.
f) All billboards excluding super sizes along a public road with a speed limit of up to 100 kph, shall be **at least 500 meters apart** from each other, on the same side of the road.
g) The Authority shall determine the number of billboards that may be erected at road intersections on a public road.
h) Placement of billboards shall be supervised by a physical planner and professional civil engineer.

6.7.5. Guidelines for Design and construction of billboards.

A person authorized to erect a billboard or signage on a public space or road reserve shall ensure that the billboard or signage;

a) bears the name, branding and address of the owner;
b) is designed in conformity with the engineering standards and specifications of structures and materials issued by the authority;
c) is rigidly and securely attached, supported or anchored in a safe manner so that unwanted movement in any direction is prevented;
d) is constructed to allow adequate clearance from ground level to permit free movement of pedestrians;
e) is designed, in case of structural elements and foundations, and constructed under the supervision of a professional civil engineer;
f) is maintained in a good state of repair and safe condition.
g) Lettering should generally be **not less than 50 mm high** to ensure ease of reading from a reasonable distance, but should not be **more than 300 mm high** to prevent the sign being visually intrusive or a distraction.
h) Composite signs advertising several premises/products are much preferred as this helps to avoid sign clutter. Such composite signs should **not exceed 4 meters in height** and the lettering should comply with these guidelines.
i) Fixed signs or lettering on buildings should generally be on the front elevation, at or just above ground floor height and below eaves level. They should be of the same general size, level and design as neighboring signs.

j) Illuminated signs will not normally be permitted unless it can be clearly shown that road users will not be distracted and that the sign will be well maintained. Where illumination is required, it may be preferable to direct light on to a non – illuminated sign for ease of maintenance.
k) Signs which project from a building or structure will not normally be permitted for amenity and safety reasons.

6.7.6. Guidelines for materials and color for billboards or other signage.

1. Advertisement signs should be made of durable and easily cleaned materials. Plastic, wood, metal and concrete are acceptable. All materials used for advertising should be approved by the authority, taking into account the visual, environmental, technical and legal implications.
2. All signposts and bill boards design and erection should be supervised by a professional civil engineer.
3. Colors should be chosen to ensure ease of reading by day-light and artificial light. White lettering on a dark background or vice-versa is recommended.
4. Use of LED billboards / screens is prohibited in the city centres and highways.

6.7.7. Guidelines on safety of billboards or other signage.

- A billboard or other signage near signalized intersections shall not have red, amber or green as its main colors or any other color which the authority may deem unfit or which may constitute a road safety hazard.

An advertiser shall ensure that;

a) the illumination of the billboard or other signage does not constitute a road safety hazard;
b) the disruption of traffic flow is minimized during erection or maintenance of billboards and other infrastructure on a public road;
c) the billboard or other signage does not obstruct the view of motorists or pedestrians; and
d) a billboard of **size 9 square meters** and above is insured against injury or death to persons or damage to property.

6.7.8. Monitoring and inspection.

The authority or a person authorized by the authority, may, at any time inspect any billboard or signage to ensure compliance with the conditions of the permit and these guidelines.

6.7.8.1. Prohibited billboard or signage.

a) Any billboard or signage which interferes with vehicular or pedestrian traffic or jeopardizes public safety; or
b) Any billboard or signage that obscures or is likely to obscure any other billboard or signage already erected on a public road with the approval of the authority.
c) Any billboard or signage in poor physical state, or offensive causing a public nuisance.

6.8. Off-Street Utilities

This section covers underground utilities which include; water mains, sewer mains, optical fiber, electricity, storm water drains among others.

6.8.1. Planning guidelines and Standards for off-street utilities.

6.8.1.1. Guidelines for permission to cut across a road for utilities installations.

a) A person who wishes to cut across any public road or road reserve shall apply to the Road Authority for a permit.
b) The Authority shall, before approving an application for a permit for cutting purposes of a public road or road reserve, inspect the proposed site.
c) The Road authority shall review the application and communicate its decision to the applicant **within 30 days** from the date of submission of the application.
d) Where the application is approved, the authority shall issue a permit to the applicant upon payment of the prescribed fee.
e) The applicant reinstates the road and its environment to the original state after their operations fully inspected to the satisfaction of the approving authority.
f) The road authority or a person authorized by the road authority, may, at any time inspect any road cutting to ensure compliance with the conditions of the permit and these guidelines.

6.8.1.2. Standards for Underground utilities

Within settlements, most underground utilities can be buried within the Right of Way (ROW) of the road network. In this case, transverse service ducts shall be provided **every 100 -150 meters**. The recommended ROWs to be considered when utilities must be laid out elsewhere.

Table 69: Recommended ROWs for utilities

Type of utility	Min Right of way (m)
Main Trunk (Storm drainage, sewerage)	1.5 – 3
Water System, Fire protection system	1.0 – 3
Electricity, (Medium or low Voltage), Telephone	1.0
Optical Fiber cables	1.0

6.8.2. Guidelines and standards Cable and underground electricity Distribution.

a) All cables should be buried to the right depth with a minimum of **600mm** below the ground surface;
b) All cables shall be armored and be buried direct in ground, trenches or ducts;
c) Cables must be protected with DANGER slabs and inspection manholes, indicating whether it is LV or MV, of the correct size and type. They must be laid touching one another throughout the length of the cable.
d) Where the excavated material from a trench is rocky, backfilling shall be done using imported material preferably red soil, murram, and quarry dust or river sand.
e) All cable routes crossing roads, railways, etc. must be provided with ducts of the right size depending on the diameter of the cable, with a minimum of **150mm** duct standard. The ducts will be adequately protected with concrete.
f) Cable routes should be clearly marked and appropriate warning signs indicating the voltage level put in place to protects those who excavate the area in future.
g) Minimum horizontal separation/clearance between utility cables and any other service shall be **0.3m.**
h) In vertical crossings utility power cables shall cross below all services and shall have a minimum clearance of **0.5m** from the surface.
i) Low voltage cables can be placed parallel to higher voltage cables, as long as the vertical and horizontal distance between them is not less than **350mm and 150mm** respectively.

When it is not possible to obtain this separation, they should be separated by a solid mass of brick or else one of them will be installed in duct.

j) Where both low voltage and telecommunication cables are directly buried, a minimum horizontal clearance shall be observed in accordance with Uganda Communications Commission (UCC) and UEDCL.

k) Between the power cables and the fuel deposits, there will be a minimum distance of **1.2meters.** The electrical cable should be fully protected.

6.9. Parking Facilities

This section covers on-street and off-street parking facilities, and traffic impact assessment.

6.9.1. Planning Standards and guidelines for parking.

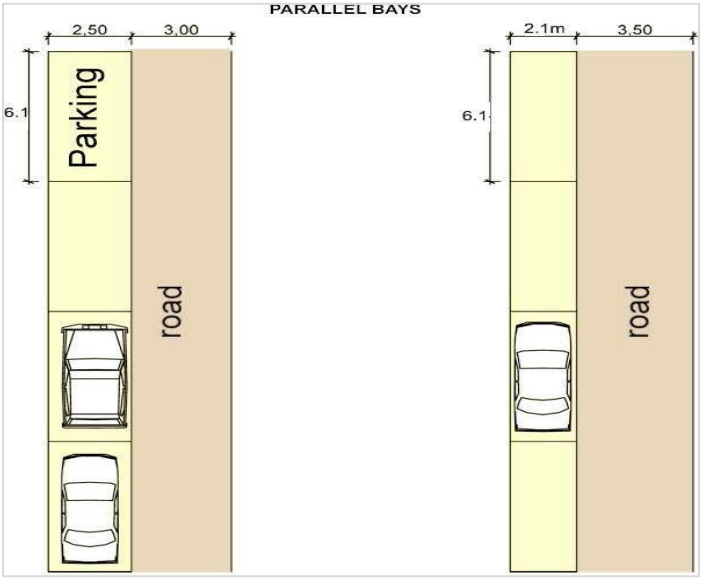
The traffic and road safety (parking of motor vehicles) regulations 2001:

a. The LGA shall, in consultation with the Minister responsible for transport, identify roads and streets on which the Council shall designate parking places.
b. LGA shall, by notice in the Gazette, publish the names of the roads and streets identified under (a) above.
c. An agent shall, on information provided by the LGA and on conditions agreed upon between the LGA and the agent, make road markings indicating parking places on the streets and roads identified under (a) above.
d. Road markings made by the agent under I shall include the demarcation of free parking places, chargeable parking places and special parking places.

6.9.2. Guidelines and standards for on-street parking.

- The quantity of on-street parking that is needed in a given area depends on a number of factors, but is most closely related to proximity to centres, the availability of public transport and the density, type, and intensity of land use.
- On street parking should only be provided once pedestrian, trees, cycle paths and vending spaces have been catered for.
- On-street parking on public streets should not be allocated to individual dwellings. This allows for a more efficient turnover of spaces and, as such, fewer spaces are needed overall.
- On arterial and access streets, on-street parking spaces should be provided in a series of bays that are parallel to the vehicular carriageway. Provided on streets with operating speeds less than 50km/h.
- Perpendicular parking should generally be restricted to one side of the street to encourage a greater sense of enclosure and ensure that parking does not dominate the streetscape.
- Traffic lanes wider than 3.3 m can have 2.1 m wide parking bays. Otherwise, standard bays should be 2.4m by 6.1m.
- To reinforce narrower carriageways (particularly when spaces are empty) each parking/ loading bay should be furnished so that it is clearly distinguishable from the main carriageway.
- Perpendicular or angled spaces may be provided in lower speed environments such as local streets. They may be applied more generally in centres to cater for increased demands around shopping areas.

- Loading facilities should preferably, be provided off street. However, this is not always possible or desirable within older centres and/or where it would lead to an excessive number of access points to driveways.
- To reduce the visual impact of parking, the number of parking spaces per bay should generally be limited to three parallel spaces (including loading areas) and six perpendicular spaces.
- Kerb buildouts, or similar treatment, should be provided to separate each bank of parking/loading. These will enable space for the planting of street trees and other street facilities (such as lighting or bike racks).
- The number of motorcycle parking spaces provided should be developed from demand surrogates, such as total motorcycle registrations.
- The following are recommended when motorcycle size data is not available: a (1.5-m) × (2.5-m) stall and 60° parking angle (90° in low-traffic environments).
- The development of uniform motorcycle parking signs should be considered, to inform motorcyclists of legal parking locations.



- In areas, such as the central business district where there is a high demand for limited parking, it may limit parking to a set maximum period of time, so that others may use parking spaces. "Time limit" parking should be available at a cost that reflects the convenience of on-street parking as comparable to off-street parking charges and encourage greater use of long stay off-street parking.

Table 70: Conditions for designated on-street parking areas

Area of concern	Condition (prohibited activities)
On street boda boda parking:	Boda boda parking in designated on-street vehicle parking spaces and all undesignated places is prohibited.
Sidewalks:	Only vending carts may be permitted in designated on-street parking areas, but application for a permit is required to place vending carts on sidewalks.
Driveways:	In front of or within **three (3) meters** of, or if radius is present, **3 meters** from the tie-down or flare return of the radius to a public or private driveway or alleyway.
Intersections:	Within an intersection or within **Ten (10) meters** of any traffic control device, such as a flashing beacon, stop sign or traffic signal;
Fire Systems:	Within **4.5 meters** of a fire hydrant or fire safety sprinkler, standpipe or other fire protection system control valve, whether such valve is mounted on a building or on the ground.
Railroads:	On or within **15 meters** of the nearest rail or a railway crossing.
Crosswalks:	On a crosswalk or within a minimum of **six (6) meters** of a crosswalk not located at an intersection or within **6 meters, 9 meters** if signalized of a crosswalk at an intersection.
Direction of Parking:	In the opposite direction of the movement of traffic.

Area of concern	Condition (prohibited activities)
Excavation and other obstructions:	Alongside or opposite any street excavation or obstruction when stopping, standing, or parking would obstruct traffic.
Parking next to other vehicles:	On the roadway side of any vehicle stopped or parked at the edge or curb of a street (double parking) or in any other manner so that such stopped or parked vehicle cannot conveniently move out of its place.
Alleys:	In an alley (where vehicle blocks travel lanes – this excludes parking alongside the roadway that is not in the roadway) unless in a parking space properly designated by the LGA.
Handicapped Parking:	On highways and elsewhere throughout the city in any parking space designated and established for use by physically impaired persons unless the vehicle properly displays special designating plates or permits issued by any LGA.
Bridges or Elevated Structures:	On the approaches to or upon any bridge or any controlled access highway within the city limits or in areas between roadways of a divided highway, including crossovers.
Blocking Passage of Vehicles	In a matter that blocks traffic or interferes with or blocks the passage of other vehicles.
Prohibited Parking Areas:	At any place where any portion of the vehicle extends into an area where official signs or other markings prohibit stopping, standing or parking, or where the curb is painted yellow.
Not Parking Within Allowed Areas:	Any place where any portion of the vehicle is parked in a manner so that the vehicle is not completely within a designated parking space.
Disregard for Prohibited Parking:	In any place that is signed or painted as to restrict parking such as stopping and/or standing and/or parking.
Capacity:	Where parking is causing a problem for the free flow of vehicles along a roadway the city may remove parking.

- Where on-street parking can be permitted, it will usually take the form of parking parallel to the kerb. The space needed for parking a car parallel to the kerb is **6.1m by 2.4m**.
- Angled parking is often desired in downtown or other such high demand parking areas. This is because angled parking increases the number of spaces along a property frontage by **2.5 times** compared with parallel parking.
- In order to encourage the best use of the space, it is advisable that on-street parking spaces should be marked by the LGA as per their layout schemes on the carriage-way in colour specified by the Planning authority.
- All parking spaces, aisles between parking space shall meet the minimum dimensional requirements set forth in this guideline.

Table 71: Minimum standards for parking styles

Back-In Reverse-Angled Parking	Parking must be a minimum of 2.7 meters wide by 4.0 meters long.
Drive-In Angled Parking	45° parking spaces must be a minimum of 2.7 meters wide by 5.2 meters long. 60° parking spaces must be a minimum of 2.7 meters wide by 5.5 meters long. 90° parking spaces within a parking lot must be a minimum of 2.47 meters wide by 5.5 meters long
Driveways for all uses	Driveways for all uses, except single-family residential, shall maintain a minimum of 6 meters in width along the length of the driveway.

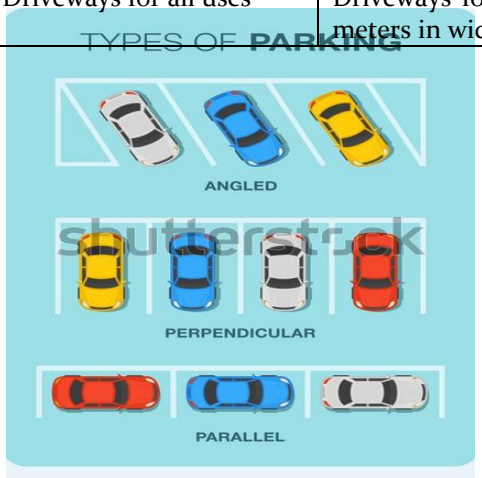


Figure 20: Types of parking categories

6.9.2.1. Special purpose places/zones.

In order to avoid parked vehicles interfering with other important operations along the curbside area in addition to problems for traffic movement, special purpose zones are created. These include loading zones, bus zones, passenger zones, agency only parking, residential, taxi and time limit restriction zones;

Table 72: Guidelines and standards for special parking places/zones

Zone	Guidelines
Loading Zones	Loading zones are areas businesses, public or private agencies need for loading and unloading of goods. Typically, parking is prohibited in these areas except for loading and unloading. Lengths for such areas are typically between **6 to 18 meters** but smaller spaces may be provided based on engineering judgment in order to balance this need versus high parking space demands.
Bus Zones	These bus zones or stops or stands may include bus shelters or benches. The typical parking prohibition in these zones is **15 to 44 meters** in length depending on the bus size, location of stop and number of busses stopping at a time. Other vehicles are not allowed to park or load/unload in the bus zone. However, because national guidelines typically allow passenger vehicles to pick-up and drop off passengers in the bus zone, the city may allow temporary stopping of vehicles dropping off or picking up passengers in areas of high parking demand, where bus use is infrequent. The urban authority may restrict these zones/spaces to operational hours of the transit system.
Passenger Zones	Passenger zones allow for the pick-up and drop-off of passengers by private vehicles at places like movie theaters, hotels and schools, main markets.
Agency Only Parking Zones	The urban authority may establish specific parking for public agencies such as police, judiciary, and public officials only. The urban authority may restrict the use of these zones to typical operational hours.
Residential Parking Zones	The urban authority may allow or establish residential parking permit zones in some residential areas to permit only local residents to park on certain streets. These are typically areas where there is frequent nonresident parking and not many other options for residents to park near their homes.
Taxi Zones.	The urban authority may allow or establish taxi zones in urban areas with high volumes of taxi pick-up, drop-off and traffic. These zones may be restricted during typical operational hours of passenger pickup and drop-off
Time Limit Zones	The urban authority may allow or establish time limited restriction parking to encourage higher turnover such as **15-min parking or 1-hour parking**. Signs are placed to convey the parking limitation. Restricting parking duration can be effective at high turnover such as banks, post offices, or loading areas. Agencies often use part time restrictions for parking in certain areas during rush hour or critical times for improved traffic flow where parking is discouraged.

6.9.2.2. Guidelines and standards for Boda-boda parking zones/places.

a) The LGA shall, in consultation with the minister for transport, identify roads and streets on which it shall designate boda-boda parking places.
b) LGA shall, by notice in the gazette, publish the names of the roads and streets where designated parking places exist.
c) The LGA shall make road markings indicating parking places on the streets and roads.
d) Use of motor cycles (boda-boda) for purposes of transporting passengers in urban areas shall be regulated through provision of designated motor cycle parking places/zones.
e) Location of boda-boda stages shall be closer to traffic generating sites and shall **be 30 meters** away from junctions.

f) Minimum space requirements for boda-boda parking space shall be **15m²** and minimum range shall be **100 meters.**

6.9.3. General Guidelines for Off-Street Parking.

1) All uses of land and structures within any urban LGA shall be required to provide off-street parking spaces in the required numbers specified at the time of the erection of any principal building or structure or at any time any principal building or structure is enlarged or increased by increasing the existing floor area.
2) Whilst these guidelines have grouped parking standards into Planning Use Classes, there will inevitably be some developments that will not fall into any of the categories. In such cases parking provision will be considered on the development's own merit. However, the onus will fall to the developer to demonstrate that the level of parking provided is appropriate and will not lead to problems of on-street parking on the adjacent highway network. This will usually be demonstrated through a Transport Assessment (TA) or Transport Statement (TS).

6.9.3.1. Guidelines and standards for Off-street Parking

a) Environmental considerations

1) The importance of good design and materials is emphasized. They should be designed with adequate lighting and other features, so that people feel comfortable using them, especially after dark.
2) Parking should not be considered in isolation from other design considerations. It is part of the palette that makes for a high-quality environment and sense of place.
3) In flood prone areas or those susceptible to flooding, underground parking is prohibited while undercroft parking may be considered in residential developments to elevate the living area. Sustainable drainage systems and pollutant filters should be designed into parking areas to help address flooding and water quality issues.
4) With good parking design the necessity for parking enforcement at trip origins should be minimized, however parking enforcement may be required to manage parking at destinations.

b) Storage Space for Off-street Parking

Type	Conditions
The storage space of one (1) automobile.	• The size of a parking space shall be in accordance with generally accepted geometric design principles for the type of space and lot. • All off-street parking and loading areas shall be paved. • Parking Lot paving shall consist of asphalt, concrete, brick pavers, pervious paving materials, or other paving materials approved by the engineering directorate/department/section. • In no case shall gravel be a material approved to fulfill the paving requirement. • The PPC may modify this requirement on developments less than an acre.
The storage space of one (1) bicycle.	• The size of a bicycle parking space shall be in accordance with generally accepted geometric design principles for the type space and lot. • Acceptable rack elements, rack location and access, rack area and site conditions such as protection from the elements and visibility shall conform to the minimum required standards.

c) Extensions, alterations and change of use

Prior to any extension or change of use, the developer must demonstrate that adequate parking will be provided.

d) Shared Use Provision

1. Often, especially in urban areas, parking provision can be shared with other uses.
2. Shared use of parking areas is highly desirable, provided this works without conflict and that car parking provision is within the standard that requires the greatest number of car spaces applicable.

e) Computation of off-street parking requirements

1. For trip destinations, parking requirement shall be calculated on Gross Floor Area (GFA), or the number of visits for business and commercial use and leisure respectively. For trip origins, the size of the dwelling is taken into account (by way of the number of bedroom) and spaces are allocated on a per dwelling basis.
2. Where GFA is used to determine parking standards and the calculation results in a fraction of a space, the number should be rounded up to the nearest whole number.
3. For the avoidance of doubt, where developments are smaller than the relevant threshold in the use class table, the rounding up principal will still apply.
4. Where a development incorporates two or more land uses to which different parking standards are applicable, the standards appropriate for each use should be applied in proportion to the extent of the respective use. Any future change of use that requires planning permission may require a change in parking requirements in accordance with the standard.
5. With all end destination use classes (i.e., non-dwelling) being maximum standards, the physically impaired parking provision should be included within the appropriate vehicle parking standards.

6.9.3.2. Guidelines for Off-street Parking for Commercial Vehicles

Since commercial vehicles have unique servicing requirements, the onus is with the developer to analyze their development's own requirements in terms of the numbers and types of commercial vehicles visiting their premises and demonstrate to the Planning Authority that any development proposal includes sufficient commercial vehicle provision to meet normal requirements such as provision for loading, unloading and turning. Such commercial provision should be clearly signed and marked to avoid being utilized as an overflow parking area for cars.

6.9.3.3. Guidelines for Off-street Private Bus Parking

Developments likely to generate coach traffic should provide appropriate off-street parking facilities for the stopping, setting down and picking up of passengers as well as appropriate turning facilities (avoiding the requirement for coaches to reverse in or out of a site where possible, taking into consideration pedestrian safety). The onus will be on the developer to demonstrate to the Local Authority the development has the appropriate level of provision.

6.9.3.4. Guidelines for Off-street Provision for Cycle Parking

a) Cycle Parking Standards should be applied by Local Authorities to all applications for new or extended development. They are expressed as minimum standards to reflect the sustainable nature of this mode of travel. It is essential that cycle parking is designed into a development at an early stage, prior to the granting of planning permission to ensure it relates well to the development.
b) In exceptional circumstances, where it is not possible to provide cycle parking spaces on-site, developers will be expected to make a financial contribution towards public provision of such facilities.
c) At large development sites, the exact number of cycle parking spaces will depend on the individual characteristics of the site and its surrounding area.
d) Cycle Parking Standards can be found under the individual Use Classes.

6.9.3.5. Guidelines and standards for Physically Impaired parking requirements

- Any parking lot, area or facility (facilities) serving a commercial or industrial use, public facility or multi-family development shall provide a specified number of reserved parking spaces designated for physically impaired (accessible) use, as set forth in Table 72 of this subsection.
- Each parking space shall be not less than **2.4 meters** wide, with **1.5 meters** access aisle and shall have a **depth of 6 meters**.
- Where accessible parking spaces can be paired together, the minimum combined width of the two (2) spaces and shared access aisle shall be not less than **6.4 meters.**
- Where a van accessible space is paired with another accessible space, the minimum combined width of the two spaces shall be not less than **7.3 meters.**
- In a parking lot, area or facility required to provide only one (1) accessible space, such space shall be van accessible. Each such parking space and access aisle shall be at a grade not exceeding **2%** in all directions.

Table 73: Standards for parking space for physically impaired drivers

Parking Space Requirements for the physical impaired*	
Total number of spaces in a parking facility	**Required Number of Designated Parking Spaces for the physically impaired (Accessible)**
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1000	2 %
1001+	20% plus one (1) for each 100 over 1,000
***10% of the total number of parking spaces at outpatient medical units and treatment facilities, shall be accessible. 20% of the total number of parking spaces at units or facilities that specialize in treatments or services for persons with mobility impairments shall be accessible**	

1) Accessible parking spaces shall be adjacent to and distributed to serve all ramps, elevators, walkways and entrances to the maximum extent possible.
2) Accessible parking spaces serving a particular building shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance.
3) In parking facilities (buildings or lots) that do not serve a particular building or use, accessible parking spaces shall be located on the shortest accessible route of travel to an accessible pedestrian entrance of the structure.
4) In buildings containing multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located on the shortest accessible route of travel to all accessible pedestrian entrances.
5) In parking facilities, one (1) in every eight (8) accessible spaces, but not less than one (1) space, shall be served by an access **2.4 meters** wide minimum and shall be designated as "van accessible."
6) Passenger loading zones shall provide an access aisle at least **1.5 meters** wide and **6 meters** in length adjacent and parallel to the vehicle pull-up space.
7) The minimum vertical clearance at accessible passenger loading zones shall be **2.9 meters** at passenger loading zones and along at least one vehicle access route to such areas from site entrance(s) and exit(s). Accessible parking spaces shall provide a minimum vertical clearance of **2.5 meters** and along at least one vehicle access route to such areas from site entrance(s) and exit(s).
8) Each parking space reserved for the physically impaired shall be designated by blue metal reflective signs at least **300mm** in width and **450mm** in length and be erected at such height or in such manner so as to be clearly visible from the parked vehicle.
9) Such signs shall be printed in white letters not less than **25mm** in height on three (3) separate lines and centered, the following words: "Permit Parking Only," and "Tow-Away Zone". Such signs shall also display the international symbol for accessibility.
10) Spaces designated for van accessibility shall have an additional sign "Van Accessibility" mounted below the symbol of accessibility.

6.9.3.6. Off-street Parking Design considerations

Table 74: Standards for Parking Bay sizes

Type of vehicle	Minimum Parking Bay sizes (m)
Cars	2.4 x 4.8
Minibus/Light vans	2.4 x 5.5
Rigid vehicles	3.5 x 14.0
Articulated vehicles	3.5 x 18.5
Coaches / Bus	3.5 x 14.0

a) Parking areas that have end bays adjacent to solid structures (e.g., fence or wall) should increase the width of these bays by **1m** to allow for improved maneuverability and entry/exit of people to/from the vehicle.
b) Where a developer intends to employ a one-way system, a clearly marked route for drivers should be set out using suitable signs and surface arrows.
c) Landscaping is important and should be incorporated into parking areas.

Table 75: Guidelines for residential parking

Type	Conditions

In-curtilage	• Where housing densities are lower, space for car parking can be provided "on plot", within the curtilage of the dwelling, such as in the form of a garage, car port, cart lodge, parking bay or private drive. • Ideally dwellings/premises should be accessed from the front, although side and rear access can be appropriate in some circumstances (e.g. compact terraces). • Quality urban design dictates that care should be taken that this does not result in streets dominated by parking spaces in front of dwellings, or by building facades with large expanses of garage doors.
Garage provision and size	• Garages need to be large enough to accommodate a modern, family sized car and some storage. • Minimum Garage size for cars is **7.ometers x 3.ometers** (internal dimension)
Underground, underdeck and undercroft parking	For developments of higher dwelling density, it is unlikely that sufficient space for car parking can be provided by in-curtilage and garage provision (without a detrimental effect on the quality of the development), shared provision is thus encouraged.

6.9.4. Intermodal Terminals

A terminal can be categorized into one of the following five categories: 1) Intercity terminals, 2) Commuter Transit Centers, 3) Interchanges, 4) Park and Ride Terminals and 5) On street facilities.

6.9.4.1. Bus Terminal

a) Terminal characteristics

Table 76: Bus Terminal characteristics

Characteristics	Description	Land requirement
Terminal typology	Intercity Bus terminal – city to city connection	
	Commuter Transit Centers – travel to and from between two and neighbouring centres	
Terminal size	Large (more than 300 buses)	The size shall vary according to terminal function and the level of an urban area.
	Medium (60-300 buses)	
	Small (less or equal to 60 buses)	
Terminal operations	Fixed route bay allocation	
	Dynamic bay allocation	

b) Guidelines for Functional features of a bus terminal

Table 77: functional features of bus terminal

Feature	Requirements	Condition
Bus bay allocation	Common bays	This allows only for fixed route bay allocation for buses, and are planned mostly for local bus terminals with short layover time.
	Segregated bays	This will be segregated by activity, i.e., as loading bays, idle bays, and unloading bays.
Bus boarding bay arrangement	Saw tooth bays	This arrangement works well with one-way driveway (along the bays), and allows easy pulling in and pulling out of buses, without the need to reverse.
	Angular bays (60^o, 45^o, 30^o)	These work well with one-way driveway and allow easy pulling in, but require reversing while pulling out.
	Perpendicular bays	This arrangement requires minimum combined area per bus (bay + driveway), but maximum driveway width, and higher effort (and time) for pulling in (and out).
	Linear/parallel bays	A long linear platform serves multiple buses. Linear bays usually include an overtaking lane which acts as a driveway.
	Drive through bays	These allow for parallel bays, each with a single drive-in lane. These bays may be arranged at 30, 45, 60 or 90 degrees to the curb.

Average lay over time	30mins	This is the most important determinant of capacity requirement for a terminal's bus specific infrastructure (boarding, offloading and idle parking bays). The higher the layover time, the higher the accumulation of buses inside the terminal, and higher the capacity requirement to accommodate them.
	60 mins	
	15mins	
Private vehicle parking at Bus terminal	Structured parking	Parking on multiple floors (multilevel parking), usually above ground
	At grade parking	Parking arranged only at ground level.
	Shared parking	Parking not exclusive to bus terminal private vehicles, such as public parking in a district catering to visitors to the area, including those accessing the bus terminal.
	On street parking	Parking arranged along the street, not planned on a land parcel set off the street, usually outside the terminal complex.
Feeder service integration	Intermodal	Includes infrastructure integration with transit systems such as metro or public bus system.
	Feeder lanes	these provide feeder services without parking provisions. They are used for pick and drop only, not waiting (by feeder modes such as auto rickshaw, taxi and cycle rickshaw).
	Feeder bays	These provide feeder services with parking provisions. They serve both as boarding bays for passengers as well as short term parking for feeder modes such as auto rickshaw (tuk tuk), taxi and cycle rickshaw.
Bus Maintenance activities	On site	Maintenance/breakdown facilities are provided inside the terminal boundary. Provisions include reserved parking bays for breakdown vehicles, space for a mini workshop, room for tools etc.
	Off site	Maintenance/breakdown facilities are not provided inside the terminal boundary but sourced off site, usually to local, privately operated repair workshops in the terminal's vicinity.
Passenger amenities	Toilets	This relates to the facilities provided in the terminal, for passengers' convenience.
	Dormitory	
	Ticketing	
	Eateries	
	Tourist information	
Terminal staff amenities	Toilets	This relates to the facilities dedicated for staff.
	Resting room	
	Canteen	
	Dormitory	
Bus staff amenities	Toilets	This relates to the facilities dedicated for bus drivers and conductors (Collectively known as bus staff or crew).
	Resting room	
	Canteen	
	Dormitory	

A combination of the functional and operational requirements presented above, outlines the brief for planning and developing a bus terminal. Based on these requirements, the minimum land requirement shall be determined using a form for recording and collating the design brief/study. The size therefore shall vary according to its function and the level of an urban area. It is a requirement that bus stands be provided between two major urban areas.

c) Terminal Locations.

Table 78: Locational Requirements for bus terminals

Intercity bus terminal	Commuter Transit Centers (Local Bus terminal)

• Intercity Bus Terminals shall be located outside the traffic burdened city centers in places mainly farther from residential areas, with sufficient land for proper planning and development of the platforms of buses and passengers' buildings. • It is vital to create the necessary connections of the terminal with the CBD and the nearby region by the available transport modes.	• The location of the Commuter Transit Centers should be around the central area of a city with easy access from the main road network (especially the urban arterials) and in areas with low traffic volumes. • Typical terminals will be placed in or around the area of a suburban railroad station or a city bus station or a small port serving urban sea transport, composed of Park & Ride facilities, bike parking facilities, bus or tram stops or terminals and direct connections to metro lines or even link to port terminals of urban or suburban routes.

6.9.5. Recommended parking standards for different users

6.9.5.1. Shops

This includes: shops, retail warehouses, hairdressers, undertaker (funeral parlour), travel and ticket agencies, post offices, pet shops, sandwich bars, showrooms, domestic hire shops, dry cleaners and funeral directors.

Table 79: Parking requirements for shops

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Commercial	***Minimum***	***Minimum***	***Minimum***	***Minimum***
Excluding food stores	1 space per 20m²	1 space per 400m² for staff and 1 space per 400m² for customer	1 space, + 1 per 20 car spaces (for 1st 100 car spaces), then 1 space per 30 cars. Spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, over 200 vehicle bays = 4 bays plus 4% of total capacity
Food stores	1 space per 14 m²			

1) Parking standards for large standalone developments, such as large department stores and shopping centers will be considered on a case-by-case basis and should be agreed with the relevant LGA.
2) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.
3) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.

6.9.5.2. Financial and professional services

This includes: banks, building societies, estate and employment agencies, professional and financial services and betting offices.

Table 800: Parking requirements for financial and professional services.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Commercial	*Minimum*	*Minimum*	*Minimum*	*Minimum*
	1 space per 20 m²	1 space per 100 m² for staff plus 1 space per 200 m² for customers	1 space, +1 per 20 car spaces (for 1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	**200 vehicle bays or less** =2 bays or 5% of total capacity, whichever is greater, **over 200 vehicle bays** = 6 bays plus 2% of total capacity

1) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.

2) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.

6.9.5.3. Restaurants and cafes

This is meant for the sale of food and drink for consumption on the premises-restaurant, snack bars and cafes.

Table 81: Parking requirements for restaurants and cafes.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
	Minimum	*Minimum*	*Minimum*	*Minimum*
Commercial	1 space per 5 m²	1 space per 100m² for staff plus 1 space per 100m² for customers	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, over 200 vehicle bays= 4 bays plus 4% of total capacity
	Lorry space per 2 m²	1 space per 100m² for staff plus 1 space per 200m² for customers		

1) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.
2) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.

6.9.5.4. Drinking establishments

This caters for public houses, wine bars, or other drinking establishments (but not Nightclubs).

Table 82: Parking requirements for drinking establishments.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Commercial	*Minimum*	*Minimum*	*Minimum*	*Minimum*
	1 space per 5m²	1 space per 100m² for staff plus 1 space per 100 m² for customers	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, over 200 vehicle bays= 4 bays plus 4% of total capacity

1) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.
2) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.

6.9.5.5. Hot Food takeaways

This caters for the sale of hot food for consumption off the premises

Table 83: Parking requirements for hot food takeaways.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Commercial	*Minimum*	*Minimum*	*Minimum*	*Minimum*
	1 space per 20 m²	1 space per 100m² for staff plus 1 space per 100 m² for customers	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, over 200 vehicle bays= 4 bays plus 4% of total capacity

1) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.

2) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.

6.9.5.6. Business

This includes offices, research and development, light industry appropriate in a residential area.

Table 84: Parking requirements for businesses.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Mixed use	*Minimum*	*Minimum*	*Minimum*	*Minimum*
	1 space per 30 m²	1 space per 100 m² for staff plus 1 space per 200m² for visitors	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, over 200 vehicle bays= 6 bays plus 2% of total capacity

1) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.
2) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.
3) Consideration should also be given to the requirement for any overnight parking and facilities.

6.9.5.7. Purely industrial

Table 85: Parking requirements for purely industrial use.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Industrial	*Minimum*	*Minimum*	*Minimum*	*Minimum*
	1 space per 50 m²	1 space per 250m² for staff plus 1 space per 500m² for visitors	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, over 200 vehicle bays= 6 bays plus 2% of total capacity

1) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.
2) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.
3) Consideration should also be given to the requirement for any overnight parking and facilities.
4) If a site office is included in the development, then provide additional parking to cater for office parking.

6.9.5.8. Storage and distribution

Including open air storage

Table 86: Parking requirements for storage and distribution areas.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Industrial	Minimum	Minimum	Minimum	Minimum
Without retail element	1 space per 150 m²	1 space per 500 sqm for staff plus 1 space per 1000 sqm for visitors	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, Over 200 vehicle bays= 6 bays plus
With retail element	1 space per 150m² +1 space per 20m² retail area for customer			

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
	parking		spaces)	2% of total capacity

1) In all cases adequate provision should be made for the parking and turning of service vehicles, serving the site, off the highway.
2) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.
3) Consideration should also be given to the requirement for any overnight parking and facilities.

6.9.5.9. Hotels

This includes hotels, boarding or guest house where no significant element of care is provided.

Table 87: Parking requirements for hotels.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Commercial	*Minimum*	*Minimum*	*Minimum*	*Minimum*
	1 space per bedroom	1 space per 5 staff plus 1 space per 10 bedrooms	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity

1) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.
2) The modern-day hotel is seldom used solely as a hotel and often offers multifunctional amenities such as conference facilities, restaurants and gyms. These multifunctional uses must be considered per individual class use and adequate parking allocated to encompass all uses when considering the potential for cross-visitation.

6.9.5.10. Institutions

Includes residential care homes, hospitals, nursing homes, boarding schools, residential college and training centers.

Table 88: Parking requirements for institutions.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
institutional	*Minimum*	*Minimum*	*Minimum*	*Minimum*
Residential care home	1 space per Fulltime equivalent staff + 1 visitor space per 3 beds	1 space per 5 staff	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity
Hospital	To be considered on a case-by-case basis	1 space per 4 staff Visitors - to be considered on a case-by-case basis		
Treatment centers (Private sector with overnight facilities)	To be considered on a case-by-case basis	1 space per 4 staff Visitors - to be considered on a case-by-case basis		

Primary and secondary boarding schools	1 space per Fulltime equivalent staff	1 space per 5 staff + 1 space per 3 Students		1 bay or 5% of total capacity, whichever is greater
Tertiary institutions	1 space per Fulltime equivalent staff + 1 space per 5 students.	1 space per 5 staff + 1 space per 3 Students		

1) For hospitals, their unique and particular needs arising from their 24-hour service (which impacts on accessibility for patients and visitors and on staff working patterns) should be taken into account and parking provision provided accordingly.
2) The impact of parking on the surrounding area should be considered and if necessary, provide appropriate traffic management measures (e.g., resident parking scheme) to prevent illicit parking on neighboring streets by people travelling to the hospital site.

6.9.5.11. Special Areas

This includes: prison, young offenders' institution, detention centre, secure training centre, custody centre, short-term holding centre, secure hospital, secure local authority accommodation or use as military barracks.

Table 89: Parking requirements for special areas.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Special Areas	*Minimum*	*Minimum*	*Minimum*	*Minimum*
	1 space per Full time equivalent staff, Visitor- Individual merit.	1 space per a) Full time equivalent staff, Visitor- Individual merit.	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, Over 200 vehicle bays= 6 bays plus 2% of total capacity

1) Standards should be used as a guide but there must be flexibility and applications should be looked at on a case-by-case basis.
2) Visitor parking requirements will vary between institutions and should be dealt with on an individual application basis.

6.9.5.12. Dwelling houses

Table 90: Parking requirements for special areas.

Use	Vehicle	Bicycle	Motorcycle	Disabled
Residential	*Minimum*	*Minimum*	*Minimum*	*Minimum*
1 bedroom	1 space per dwelling	1 secure covered space per dwelling None if garage or secure area is provided within curtilage of dwelling	N/A	N/A if parking is in curtilage of dwelling, Otherwise as Visitor/ unallocated
2+bedroom	2 spaces per dwelling			
Visitor/ unallocated	0.25 spaces per dwelling		1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total

				capacity

1) Standards exclude garages under **7m x 3m** (internal dimensions) as a parking space but can include under croft parking and car ports providing, they have no other use.
2) Motorcycle spaces should be secure and covered with charging facilities.
3) Visitor/unallocated vehicle parking to be provided for all dwelling types.
4) Visitor/unallocated vehicle parking can, subject to appropriate design, be located on or near the road frontage.
5) Unallocated cycle parking for residents to be secure and covered, located in easily accessible locations throughout the development.
6) Reductions of the vehicle standard may be considered if there is development within an urban area (including town center locations) that has good links to sustainable transport.
7) Car Clubs (shared car use) should be promoted in low provision/car free residential developments and car club spaces provided.

6.9.5.13. Purely Institutional

This includes clinics, health centers, crèches, day nurseries, day centers, schools, art galleries, museums, libraries, halls, places of worship, church halls, law courts. Non-residential education and training centers.

Table 91: Parking requirements for special areas.

Use	**Vehicle**	**Bicycle**	**Motorcycle**	**Physically Impaired**
institutional	*Minimum*	*Minimum*	*Minimum*	*Minimum*
Medical centers	1 space per Full time equivalent staff + 3 per consulting room	1 space per b) staff + 1 per consulting room	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	Dependent on actual development, on individual merit, although expected to be significantly higher than business or recreational development requirements
Child care	1 space per Fulltime equivalent staff + drop off/pick up facilities.	1 space per 4 staff + 1 space per 10 child places		1 bay or 5% of total capacity, whichever is greater
Day care center	1 space per Fulltime equivalent staff + drop off/pick up facilities.	1 space per 4 staff		1 bay or 5% of total capacity, whichever is greater
Primary and secondary school	1 space per 15 pupils	1 space per 5 staff + 1 space per 3 pupils	1 space, + 1 per 20 car spaces (for 1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	1 bay or 5% of total capacity, whichever is greater
Tertiary institutions	1 space per 15 students for staff + 1 space per15 students for student parking	1 space per 5 staff + 1 space per 3 students		1 bay or 5% of total capacity, whichever is greater
Art Galleries, Museums, Public/ exhibition hall	1 space per 25sqm	1 space per 4 staff plus visitor parking (individual merits)		**200 vehicle bays or less** = 3 bays or 6% of total capacity, whichever is greater, **Over 200 vehicle bays** = 4 bays plus 4% of total capacity
Places of worship	1 space per 10sqm	1 space per 4 staff plus visitor parking (individual merits)		

1) Where a crèche is located at a school, the parking standards for a crèche is added to the school's requirement.
2) A lower vehicle provision may be appropriate for educational establishments in an urban location where there is good access to alternative forms of transport to allow sustainable travel.
3) Special schools can be varied in their requirements and should be looked at on their own merits.
4) Special schools parking/drop off arrangements must be taken into consideration as generally extra staff are required and most pupils/students arrive by taxi or car.
5) Bus parking and facilities must be considered for all uses

6.9.5.14. Assembly and leisure

This includes: cinemas, music and concert halls, bingo and dance halls (but not nightclubs), swimming baths, skating rinks, gymnasiums or sports arenas (except motor sports, or where firearms are used).

Table 92: Parking requirements for special areas.

Use	Vehicle	Bicycle	Motorcycle	Physically Impaired
Recreational	*Minimum*	*Minimum*	*Minimum*	*Minimum*
Cinema	1 space per c) seats.	10 spaces plus 1 space per 10 vehicle space	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	**200 vehicle bays or less** = 3 bays or 6% of total capacity, whichever is greater, **over 200 vehicle bays** = 4 bays plus 4% of total capacity
Outdoor sports pitches	20 spaces per pitch plus 1 space per 10 spectators seats	10 spaces plus 1 space per 10 vehicle space		
Swimming Pools, Gyms, Sports Halls	1 space per 10 sqm of public area	10 spaces plus 1 space per 10 vehicle space		
Golf clubs	3 spaces per hole			

1) Bus parking and facilities must be considered for all uses.
2) Multifunctional uses must be considered per individual class use and adequate parking allocated to encompass all uses, when assessing the parking requirements of a development, taking into account cross visitation.
3) A lower provision of vehicle parking may be appropriate in urban areas (including town center locations) where there is good access to alternative forms of transport and existing car parking facilities.

6.9.5.15. Others (miscellaneous uses)

This includes: theatres, houses of multiple paying occupation, hostels providing no significant element of care, scrap yards. Petrol filling stations and shops selling and/or displaying motor vehicles. Retail warehouse clubs, nightclubs, launderettes, taxi businesses, amusements centers and casinos.

Table 93: Parking requirements for special areas.

Use	Vehicle	Bicycle	Motorcycle	Disabled
Ancillary	*Minimum*	*Minimum*	*Minimum*	*Minimum*
Conference facilities	1 space per d) seats	1 space per 4 staff plus visitor parking on individual merits	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, Over 200 vehicle bays= 6 bays plus 2% of total capacity
Hostel	1 space per full time staff equivalent.	Individual merits	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity
Marina	1 space per 2 mooring berths	Individual merits	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity
Motor vehicle service centers	1 space per full time equivalent staff + 1 space per 35sqm	1 space per 4 staff	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, Over 200 vehicle bays= 6 bays plus 2% of total capacity
Motor vehicle show rooms	1 space per 45sqm show area	1 space per 4 staff plus customer parking	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, Over 200 vehicle bays= 6 bays plus 2% of total capacity
Night club	1 space per 50sqm	1 space per 4 staff	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity
Petrol filling stations	1 space per 20sqm retail space	1 space per 4 staff + customer parking	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity
Stadia	1 space per 15 spectators	10 spaces plus 10% of vehicle parking provision	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity
Theatres	1 space per 5 seats	1 space per 20 seats	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 3 bays or 6% of total capacity, whichever is greater, Over 200 vehicle bays= 4 bays plus 4% of total capacity
Vehicle rental/hire	1 space per full time equivalent staff member permanently deployed at base site + 1 an allowance of	1 space per 4staff plus customer parking on individual merits	1 space + 1per 20 car spaces for (1st 100 car spaces), then 1 space per 30 car spaces (over 100 car spaces)	200 vehicle bays or less = 2 bays or 5% of total capacity, whichever is greater, Over 200 vehicle bays= 6 bays plus 2% of total capacity

Use	Vehicle	Bicycle	Motorcycle	Disabled
	visitor parking			

6.9.6. Certification of minimum parking requirements.

For any parking lot, garage, vehicle storage area operated on a commercial basis, reconfiguration of an existing parking lot or any other off-street parking area required (but excluding off-street parking for detached, duplex, triplex and quadraplex dwellings on a single lot), a layout plan shall be submitted to Physical Planning office to review for compliance with these guidelines. Any such parking plan shall show;

- the number of motor vehicle parking spaces,
- the percentage of spaces to be designated for use only by compact cars,
- the number of existing spaces for bicycle parking and the location of bike parking facilities,
- the arrangement of parking aisles, the location of driveway entrances, provisions for vehicular and pedestrian circulation,
- the location of sidewalks and kerb on or abutting the property,
- the location of utilities, barriers, shelters, and signs,
- the location of landscaped areas and the types of vegetation to be located in them, typical cross sections of pavement, storm water drainage facilities, and any other relevant information requested by physical Planning and Engineering directorates/department/sections for review and comment, as appropriate.

6.10. Guidelines for Traffic Impact Assessment (TIA)

Traffic Impact Assessment (TIA) is a valuable tool for assessing potential impacts of traffic generated by a proposed development to the surrounding transportation system. TIA generally includes a description of the scope and intensity of the proposed development, a summary of the projected impacts and any required improvements to ensure that the roadway facilities can safely accommodate the proposed development.

Prior to the approval of a subdivision, pre-development planning or development, LGA may require the completion of a TIA depending on the type of development.

In general, there are two levels of assessment that may be required in support of a development:

a) A comprehensive traffic analysis known as a **Transport Assessment** (TA).
b) A less detailed analysis known as a **Transport Statement** (TS).

- Typically, a subdivision, pre-development plan or development that potentially generates high traffic volume shall require a comprehensive TIA. This includes but not limited to area PDPs, neighborhood PDPs, change of zoning resulting in increase of traffic, increase in density from previous TIA, special land use scenarios, block of flats, shopping complexes, industrial and other complex developments, etc.
- In such situations where dispensations are required to reduce the number of car parking spaces required especially within the CBD, developers shall conduct Traffic Impact Assessment Studies in order to determine the number of parking spaces to be provided.

Planning applications for the following developments **MUST** be accompanied by a Transport Impact Assessment.

Traffic Impact Assessment	Transport Assessment[4]
• All proposed developments within the Central Business District. • Developments with accesses on the arterials (All national roads) • Schools • Parking facilities • Supermarkets and shopping malls, • Hospitals • Stadia • Cinemas and conference facilities • Commercial land uses (buildings, spaces etc.) of Gross Floor Area which equal to or greater than 1,000m	• Fuel stations • Garages • Washing bays
A Transport Assessment should be undertaken whenever a development is expected to generate 50 or more new trips (arrivals plus departures, by all travel modes) during the peak hours. Even if the development does not generate the threshold level of trips, a Transport Assessment may still be necessary under the following conditions: - High traffic volumes on surrounding roads that may affect movement to and from the proposed development. - A development that includes a drive-through operation.	A Transport Statement may also be necessary where the development does not qualify for a TA but where LGA has concerns regarding: • Proposed access locations (e.g., direct access on to a congested or high-speed road, • proximity of the proposed access points to other existing drives or intersections etc.). • Inadequate sight distance at access points.
• A TIA (including any interim TIA) must be signed off by a qualified professional engineer bearing a professional engineer's stamp. **An unsigned TIA is not acceptable and will not be reviewed.** • The TIA shall be required for developments in both urban and rural areas. • Guidance on the expected contents and structure of a Transport Statement shall be provided by LGA.	
If a developer is not sure if their proposal requires a Transport Assessment/ Transport Statement or none of the two, shall contact the engineering department, at LGA for further guidance/ clarification.	

6.11. Public Transport Infrastructure

The following are the facilities that make up a successful public transport network.

a) Streets that carry public transport services.
b) Overall journey time
c) Street design especially the busways, bus stops and intersections.

6.11.1. Planning Standards and guidelines for Public Transport infrastructure.

a) Bus based transit system.

A functional bus system is an essential element of both intercity and Intracity public transport system. Bus lane, bus ways, bus stops, bus terminals and depots are the critical infrastructure components of a bus-based transit system. Buses are classified as articulated buses, double-decker bus, ordinary bus, medium-size bus and small size bus.

Table 94: Bus category and capacities

Bus category	No. of seating passengers	No. of standing passengers	Traffic capacity (maximum number of passengers per bus)
Articulated bus,	38+38	62+62	200
Double-decker bus	80	80	160
Ordinary bus	36	64	100
Medium-size bus	26	44	70
Small size-bus	19	31	50

[4] A Transport Statement (TS) is a simplified transport/traffic impact assessment which is used in cases where transport issues arising out of development proposals may not require a full Transport Assessment.

b) Road based-public transport services.

Table 95: Infrastructure requirements for road based public transport services

Class	Description	Public transport types	Infrastructure required
1	Trunk Route	• Dedicated BRT trunk • Dedicated bus lanes • Taxis in mixed traffic	• Median side BRT lanes and median stations • Kerb-side bus lanes and stops with or without shelters
2	Major Arterial	• Dedicated BRT trunk • Dedicated bus lanes • Taxis in mixed traffic • Boda-boda on limited licensed routes only	• Median side BRT lanes and median stations • Kerb-side bus lanes and stops with or without shelters
3	Minor Arterial	• Shared BRT feeder • Shared bus lanes • Taxis in mixed traffic • Boda-boda on limited licensed routes only	• Kerb side BRT lanes and median stops with shelters • Kerb-side bus lanes and stops with or without shelters
4	Collector Street	• Shared bus lanes • Taxis in mixed traffic • Boda-boda on limited licensed routes only	• Kerb-side bus lanes and stops with or without shelters
5	Access Street	• Taxis on limited licensed routes only • Boda-boda on limited licensed routes only	• N/a
6	Informal settlement Access Way	• Not allowed	• N/a
7	NMT Access Way	• Not allowed	• N/a

6.11.2. Transit lanes planning.

One of the common bus priority measures is provision of reserved bus lanes on major urban roads to facilitate faster movement of buses and below is the recommended minimum width of the different types of bus lanes.

Table 96: Guidelines and Standards for Transit Lanes

Type of bus route	Minimum width (m)	Guidelines
Bus or transit lane	3.2	• Roadway lane dedicated to bus transit vehicles and these are separated by a painted line. • Bus lanes should be provided along frequent routes where buses are delayed by regular traffic congestion.
Urban busway	3.2	• This section of road way is reserved for buses only characterized by: **30 km/h** average operating speeds with frequent stops; • Separation between modes should be done using raised buffers or separators, with breaks for vehicle crossings (as few as possible); • Buffer or separator between bus lane and cycle or pedestrian through routes.
Rapid transit busway	3.2	• Busways may be configured as either two-lane (two-way) or one-lane (bi-directional), and may be guided (separated from adjacent traffic), or non-guided (not separated from adjacent traffic). • Provide physical barrier such as a barrier curb or other physical feature to separate BRT from non-BRT traffic. • Locate guided busways in the roadway median or offset to one side of the roadway.
Public	6.4	• Provided on main urban streets with high pedestrian volumes where property

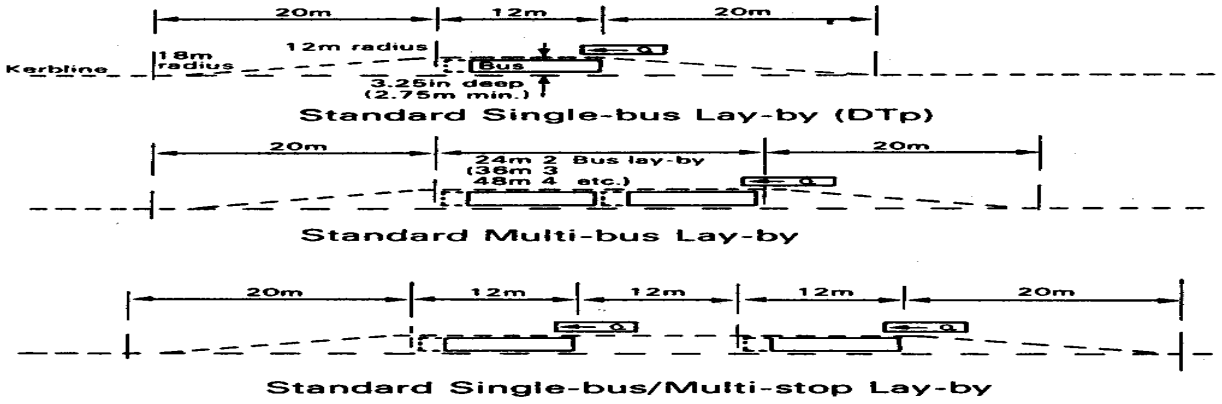
Type of bus route	Minimum width (m)	Guidelines
transport mall		access is limited and vehicle through traffic can be diverted. • A public transport mall can be an option to integrate buses effectively into the public realm

6.11.3. Transit stops.

On street facilities are various public transport stops that serve different routes of bus or tram networks or transfers between different modes. They can further strengthen the intermodal role of a transport system when they are equipped (provided that there is adequate space and all safety issues have been considered thoroughly) with bicycle parking facilities and infrastructure dedicated for interoperability between modes (multiple high piers, ramps, etc). Private vehicles are prohibited in this type of intermodal facilities, considering that they are located in central city areas and that approaching and stopping of private vehicles next to them can cause not only traffic congestion problems and obstruction for the public transport vehicles but also raise safety issues.

6.11.4. Bus lay-bys.

Lay-bys refer to recessed kerb layout



6.11.5. Bus bays.

Bus bays refers to carriageway marking Infront of kerblines.

6.11.6. Stop Spacing

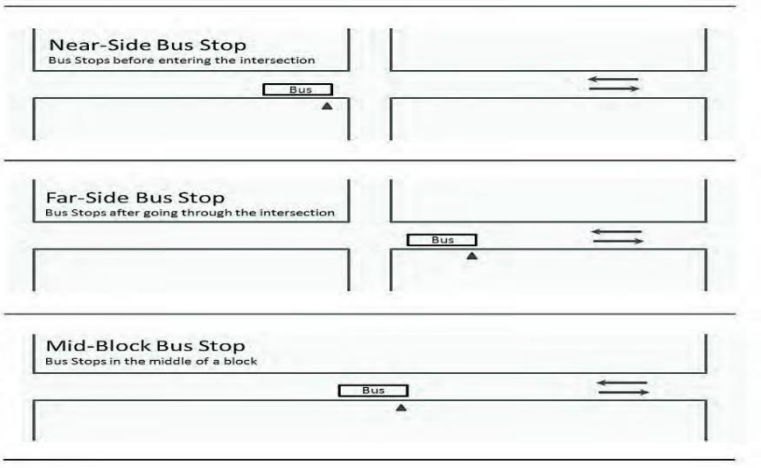
Stop spacing refers to the distance between stops along a bus route. Stop spacing takes into consideration the trade-offs between vehicle travel times and walking distances to bus stops. Characteristics of the service, route, location and passenger type need to be weighed up to find the appropriate bus stop spacing.

Table 97: Stop spacing standards

Levels	Route type	Spacing Range (m)
Urban Area	Local Route	200-400
	Express or bus rapid transit	800-1600
Sub-urban area	Local Route	400-800
	Express or bus rapid transit	1600 or as needed
Rural Area	Local Route	As needed
	Express or bus rapid transit	As needed

6.11.7. Guidelines for Bus Stop Location

There are three location options for bus stops: near-side, far-side and mid-block. Far-side stops are, in general, preferred stop location because they are shown to be the safest for passengers exiting the bus and minimize conflicts with other vehicles. However, a mid-block or near-side stop may be more appropriate in some situations.



a) No resident shall walk more than **400 meters** from their home to the bus stop; In the case of residences designed specifically for the elderly and mobility impaired, there should be not more than **100 meters** between the development and the bus stop; and, where there are gradients, the suggested walking distances should be reduced by **10 meters** for every **1meter** rise or fall.
b) Bus stops should be located as close as possible to locations of passengers' destinations such as schools, shops, libraries, old people's homes, hospitals, railway stations etc.
c) It is generally not advisable to position bus stops opposite each other on a two-lane carriageway.

6.12. Passenger Amenities

6.12.1. Planning guidelines and standards

a) The erection or alteration of bus shelters by other parties such as advertising companies, unless specifically acting as agents or contractors to the above bodies, will require submission of a formal application for planning permission.
b) Display of commercial advertising not related to the public transport undertaking, requires formal application for 'advertising consent'.
c) Shelters should be designed and sited to provide maximum weather protection, bearing in mind the prevailing winds and the need for protection against splashes from passing vehicles.
d) Shelters can also be designed to provide weather protection for pedal cycles. Waiting passengers must have a clear view of approaching buses, and be themselves clearly visible to bus drivers and passers-by.
e) Shelters should provide minimum obstruction to the pavement, and a recommended **width of 1.8m** should be allowed for passing pedestrians. There should be at **least 0.5m** clearance between any part of the shelter and the kerb edge. The shelter should have no projecting sections or sharp corners that would create a hazard to pedestrians.
f) Shelters should be constructed from vandal resistant materials that are easy to clean and need minimum maintenance. Materials and designs used should be of standard size, shape and type to allow easier maintenance.
g) A bus shelter should not be sited where it might cause obstruction to passengers who are boarding or alighting or obstruct sight lines for other drivers.

h) Combining bus shelters with commercial advertisements or public telephones (so long as these do not have priority over bus service information) will reduce costs, minimize footway obstruction, and facilitate lighting the shelter at night, thereby reducing passenger fear of assault. Any shelter without lights should be sited in open or well-lit areas. In addition, all new enclosed shelter designs should have entrance and exit choices which avoid entrapment.

i) Passenger information displays should be mounted on the shelter and the bus stop flag fixed to the shelter above roof level to do away with the need for a bus pole and thereby help reduce street clutter.

j) Shelters can vary greatly in dimensions according to likely demand and usage. In general, it is recommended that minimum dimensions of **1.5m x 4.0m** for cantilever styles and **2.0m x 4.0m** for enclosed designs are used. Larger dimensions should be provided where above average usage is anticipated, such as key stops in residential developments and at town/city centers or route or modal interchanges.

6.12.2. Bus Shelter

- A standard-size bus shelter requires a **1.8m x 3m pad**.
- The shelter should be placed at least **0.6m** from the kerb when facing away from the street and at least **1.2m** when facing towards the street.
- The adjacent sidewalk must still have a **1.8m** clear-passage.
- Orientation of the shelter should take into weather conditions.
- Sidewalks separated from the roadway with a planter strip offer a unique opportunity to provide a bus shelter out of the path of passing pedestrians.

6.12.3. Bicycle Parking

Bike racks or storage lockers should be considered at bus stops in urban fringe areas and park- and-ride facilities.

6.12.4. General guidelines for other ground based public transport services

These include heavy, light rail and electric trams.

- Light and heavy rail should be operated along corridors with dedicated rail reserves in which the railway lines are located.
- Heavy rail can be utilized for passenger and freight transport.
- Level crossing of railway lines with roads of any class should be avoided, and where such crossings exist, they should be converted to grade separated crossings.
- Electric trams can be operated in dedicated rail reserves, or in some circumstances within the road reserve on high class roads only.

6.13. Rail Infrastructure

6.13.1. Planning Standards and guidelines for rail infrastructure.

6.13.1.1. Standard for Right of way for railway lines.

Table 98: Standards for Right of Way

Type of rail	Minimum ROW
Meter gauge	60 meters width (Measured as 30 meters either side of the Centre line).
Standard gauge	60 meters width (Measured as 30 meters either side of the Centre line)

6.13.1.1.1. Other guidelines for railway planning.

a) Planting trees along the railway corridor to mitigate visual distractions, intercepting noise pollution and reduce carbon emissions into the atmosphere.
b) Sensitize communities neighboring the railway on safe activities close to the reserve.
c) Clearance for power line crossings of Railway tracks

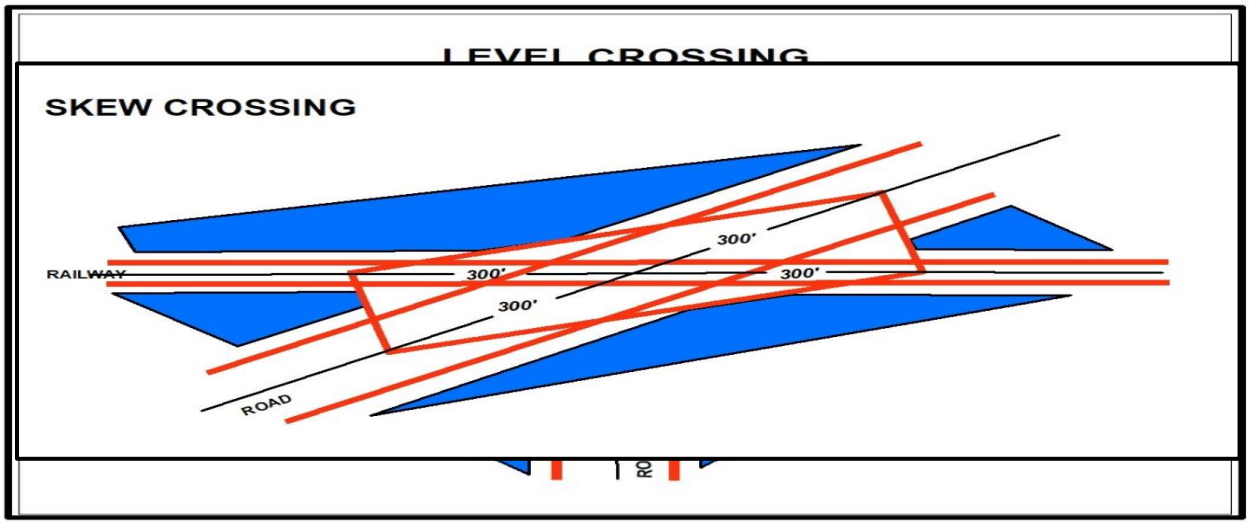
Table 99: Standards for ground clearances

Overhead crossing line.	Minimum clearance from rail level. (m)	Minimum clearance between the highest traction conductor and lowest transmission line crossing conductor. (m)
Up to and including 11Kv	Underground cables	
Above 11Kv and up to 33Kv	15	2.44
Above 33Kv and up to 66Kv	15	2.44
Above 66Kv and up to 132Kv	16	3.05
Above 132Kv and up to 220Kv	17	4.58
Above 220Kv and up to 400Kv	18	5.49
Above 400Kv and up to 500Kv	19	7.49
Above 500Kv and up to 600Kv	22	7.49

d) Advise the neighboring communities on location and design of structures to minimize visual distractions.

e) **Visibility (Road to Railway).**
- The minimum desirable areas of clear visibility, which shall apply to all level crossings, are shown in the chart below. The diagrams are only typical as the shape of the area will vary with the alignments of the railway and road.
- The essential dimension is the minimum of **300 feet** in each of the four directions along the diagonals.
- Where speed on the railway is likely to be high or the road carries fast traffic, consideration shall be given to increasing the sighting distance over **300 feet**, particularly from the road to the railway.

- These areas shall be defined by markers of unserviceable rails, steel sleepers, or other permanent means, painted or lime washed white.

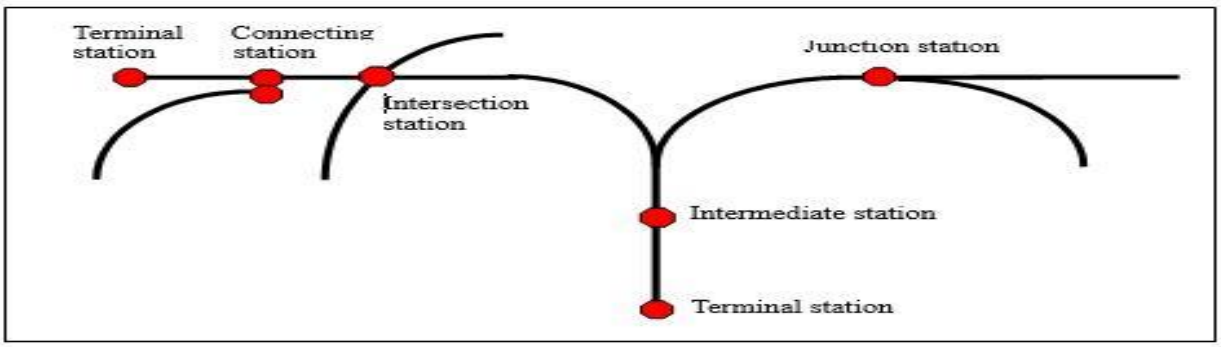


6.13.2. Rail stations.

Stations are classified into terminal stations, intermediate stations, junction stations, and connecting stations.

Table 100: planning standards for rail stations.

Type of railway station	Category	Area (acres)
Terminal(depot) stations	Pass through	50
	Heading type	50
Intermediate stations	Intermediate stations	30
Junction station	Junction station	30
Connecting stations	Intersection	30
	Connecting	30



6.14. Aerodromes

Aerodrome is a location from which aircraft operations take place regardless of whether they involve air cargo, passengers or neither, and regardless of whether it is for public or private use.

6.14.1. Functional classification of aerodromes in Uganda.

The National Airports Development Plan considers a classification system of functional airport roles which clearly demonstrates the types of facilities and services that should be provided at each airport category;

Table 101: Standards and guidelines for Airports

Airport	Function	Minimum Land (Ha)
International Airport	Airports of entry and exit for international traffic, which perform all services and support facilities related to customs, immigration, health service, quarantine of animals, plants and similar procedures, in which air transport is provided on a regular basis.	400
Regional Airport	These airports support some level of scheduled commercial airline service in addition to a full range of general aviation service. It could also include international charter flights, particularly if it is placed in a tourism destination.	200
Local Airport	These airports support most twin and single engine aircraft. They also support local air transport needs and special use aviation activities.	100
Airfield	A place where aircrafts can take off and land but unlike airports must not have terminals or paved runways.	60

6.14.2. Land use compatibility guidelines for Aerodromes

1) Most commercial and industrial uses, especially those associated with the airport, are good neighbors to airports. Land uses where the airport creates the demand, such as motels, restaurants, warehouses, shipping agencies, aircraft related industries, and industries that benefit from the access to an airport, are compatible land uses.
2) Incompatible airport land uses include residential development, schools, community centers and libraries, hospitals, and buildings used for religious services and tall structures, smoke, abattoir and electrical signal generators, landfills and other bird/wildlife attractions, cell towers and antennae transmitting signals that interfere with radio transmissions and/or navigational aids, lights that may be disorienting to a pilot, and tall structures including towers and construction cranes that may impact an airport's airspace.

6.14.2.1. Guidelines for fencing of aerodromes and installations.

(1) An operator of an aerodrome shall provide a fence or a suitable barrier on the aerodrome;
  (a) to prevent the entrance into the movement area, of any animals likely to be a hazard to aircraft; and
  (b) to deter the inadvertent or premeditated access of an unauthorized person onto a non-public area of the aerodrome.

(2) An operator shall provide suitable means of protection for an aerodrome to deter the inadvertent or premeditated access of unauthorized persons into ground installations and facilities, essential for the safe operation of aircraft.

(3) The fence or barrier required shall be located so as to separate the movement area and other facilities or zones on the aerodrome which are vital to the safe operation of aircraft, from areas open to public use.

6.15. Port and Maritime Facilities

Permission shall be required of all port development schemes both public and private as per provisions of the Inland Water Transport Act of Uganda. Clearance shall be sought from NEMA, Ministry of Internal Affairs and security agencies in Uganda.

6.15.1. Classification of In Land ports in Uganda.

There are four natural or manmade ports which are inland ports (dry ports), Ferry Ports, fish landing sites and small craft harbors (marinas).

Table 102: Standards and guidelines for inland ports

Types	Function	Land requirement (acres)
Inland ports (dry ports)	Is a port on inland water way such as river or lake where dry bulk cargo without packaging is handled (loading and unloading).	200
Ferry ports	A place alongside navigable water body that provides facilities for loading and unloading ferries. Availability of suitable number of places for safe anchorage for ferries during long periods of inactivity.	50
Fish landing sites (Fishing ports)	Provides suitable number of places for safe anchorage for fishing vessels during long periods of inactivity	20
Marinas	Specially designed harbor with moorings for pleasure yachts and small boats. Marinas provide harboring, supply and repair services for pleasure boats.	5

6.15.2. Guidelines for Fishing ports or Fish landing sites.

- An all-inclusive fishing port should include: fish processing facilities, refrigerators, ice plants, docking bay, offices and some other utilities inclusive of roads, parking areas for private and commercial vehicles, sufficient space for loading and unloading and also areas for future expansion.
- Wastes must be properly examined and managed to avoid contamination.
- Environmental and Social Impact Assessment and a proposed layout scheme shall be required before planning consent can be given.
- The Local Government Council shall approve the layout scheme on recommendation of the Physical Planning Committee.

6.15.3. Guidelines for Marina

- Environmental and Social Impact Assessment and a proposed layout scheme shall be required before planning consent can be granted.
- The Local Government Council shall approve the layout scheme on recommendation of the Physical Planning Committee.

6.16. Oil and Gas Utilities

6.16.1. Planning Standards and guidelines for petroleum activities.

For the purpose of these guidelines, focus shall be on three key elements; environment, safety and land requirement. These guidelines shall primarily be concerned with the source, transmission, processing and storage.

6.16.2. Upstream.

Guidelines to be followed in the exploration, development and production of petroleum products are provided in the Petroleum Regulations, 2016.

6.16.3. Midstream.

Guidelines to be followed in the refining, conversion, transmission and midstream storage of petroleum products are provided in the Petroleum Regulations, 2016.

6.17. Standards for Feeder and export Pipelines.

Table 103: Standards for Pipeline Right of Way

Pipeline	Right of Way (m)	Guidelines
Feeder Pipeline	60	• A person shall not undertake any activity in an area adjacent to a pipeline system without the written consent of the Petroleum Authority of Uganda, in consultation with the licensee. • A person other than the licensee shall not undertake a ground disturbance within 6m from the pipeline system where there is no pipeline right of way without the approval of the Petroleum Authority of Uganda. • Before commencing a ground disturbance in the controlled area of the pipeline system where uncontrolled access over the pipeline may arise and cause damage to the pipeline, a temporary fence shall be erected.
Export pipeline	60	
Oil wells (source)	N/A	• Land requirements shall vary based on capacity and technical requirements. • For safety issues and environmental conservation, refer to the Petroleum (exploration, development and production) – Health, Safety and Environment Regulations 2016.
Processing facilities	N/A	• Land requirements shall vary based on capacity and technical requirements. • For safety issues and environmental conservation, refer to the Petroleum (exploration, development and production) – Health, Safety and Environment Regulations 2016
Storage	N/A	• Land requirements shall vary based on capacity and technical requirement • For safety issues and environmental conservation, refer to the Petroleum (exploration, development and production) – Health, Safety and Environment Regulations 2016

6.18. Petroleum waste management facility siting requirements

- The minimum space requirement for waste management facility **shall be 5 acres.**
- A petroleum waste management facility shall not be established in;
  a) Flood plain.
  b) Within **500meters** of a mapped out geological fractured zone.
  c) In a place which is prone to natural disasters, like earth quakes, floods and landslides unless the facility is designed, constructed, operated and maintained to prevent collapse or wash out.
  d) Within **200 meters** of any land which may be prone to or impacted by slope failure.
  e) On a hilly or mountainous area with a gradient of more than **60°**.
  f) In a water source area including the surface and subsurface water catchment area, through which pollutants are likely to move toward and reach water sources.
  g) Within **200meters** from the boundaries of the protected area, bird sanctuary, wild management area or land acquired and administered under Wildlife Act, the National Forest and Tree Planting Act 2003 and other law on conservation.

h) Within a wetland or **500 meters** of a river bank or lakeshore or area immediately adjacent to fragile ecosystems.
i) Within areas of agriculture except with the approval of National Environment Authority or
j) Within a **distance of 500 meters** from human settlement or commercial areas.

CHAPTER SEVEN

7. Utility Services

This section covers electricity, water, communication, and sewerage facilities.

7.1. Electricity Supply

Guidelines are given for generation, transmission and distribution of electricity. Regulation of planning and design of overhead distribution line extensions and new constructions follows the Electricity Distribution Line Construction Guidelines (2017).

7.1.1. Electricity Generation

Table 104: Standards for electricity generation sites.

Type of plant.	Land requirement (Acres)	Guidelines
Geothermal plant	1-8 acres per Mega watt	• Developments shall require ESIA before commencement of construction
Nuclear plant	5-10 acres per Mega watt	
Coal plant	19 acres per Mega watt	
National gas plant	20-40 acres	
Hydro power plant	0.265 acres per Mega watt	
Solar power plant	6-8 acres per Mega watt	

7.1.2. Electricity Transmission Network.

Transmission network is high-voltage system for transfer of electric power. It consists of transmission lines, substations and switching substation.

7.1.2.1. Standards for Right of Way (ROW) and Way Leaves.

The standard definition of UETCL of a 220kV transmission line includes a **5m meter** wide corridor for right of way and safety zone on each side of the right of way of **17.5m**. The RoW suffices for the tower foot print and a permanent maintenance track while the way leaves suffice for the safety zone with restricted use.

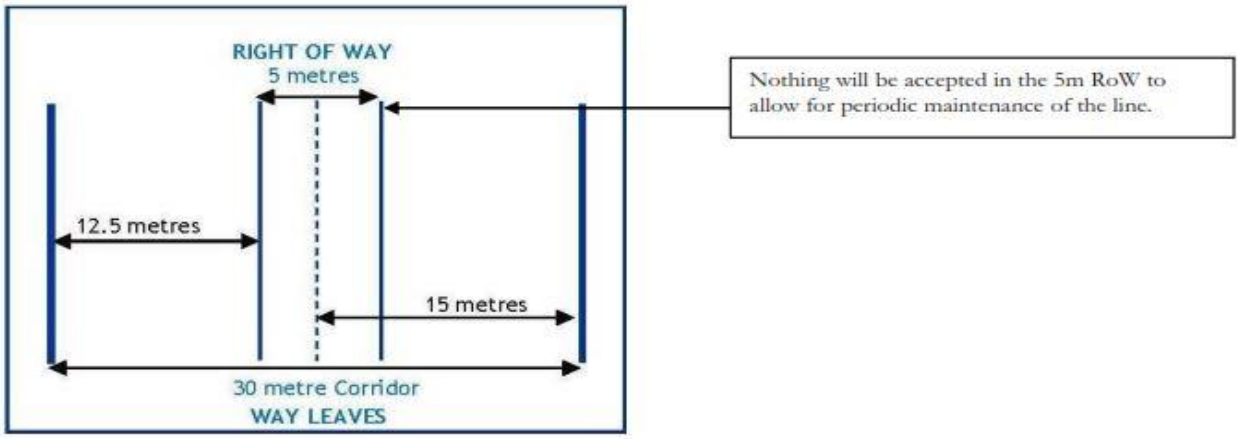


Table 105: Planning standards for public utility way leaves

Types of electric supply lines in KV	Minimum Right of way (m)	Minimum Safety zone (m)	Minimum Way leave (m)
66kV	5	15	20
132kV	5	25	30
220kV	5	35	40
400kV	10	50	60

7.1.2.2. Permissible land uses within the safety zone.

e) Crop growing not exceeding 2m high.
f) Pastures and animal grazing.
g) Crossing angle of Standard Gauge Rail (SGR) at 60-90°

7.1.2.3. Min vertical distance below the transmission line

Table 106: Standards for conductor clearances

Types of electric supply lines in KV	Minimum vertical clearance below
66kV	8.0
132kV	8.5
220kV	9.5
400kV	10.0

7.1.3. Transmission substation.

7.1.3.1. Guidelines and standards for locating a sub station

a) Substations should be located **at least 200 m away** from telephone exchange, broadcasting or radio communication installation; **6 meters** from any adjacent building or development for safety measures in case of fire to be used for fighting equipment.
b) Main receiving substation requires **a minimum of 5%** of the exterior spaces that are reserved for landscape and require buffer zones of **approximately 50 meters** between the substation and other land uses.
c) In order to make use of the buffer zone, permission and guidance should be sought from the planning authority and UETCL.

Table 107: Standards for electricity transmission substations

Classification of Substations	Plot sizes (m^2)
132KV/33KV	132x100
220KV/132KV	150x150
400KV/132KV	300 x300
Traction substations	Nil

7.1.4. Electricity Distribution Network.

Table 108: Standards for electricity distribution way leaves

Types of electric supply lines in KV	Minimum Right of way (m)	Distance from the center
11kV	5	2.5
33kV	10	5.0
66kV	20	10.0

7.1.4.1. Conductor external clearances.

Table 109: standards for minimum conductor clearances.

Area	Minimum conductor clearance above ground
Rural (outside townships)	11kV-5.5m 33kV-5.8m
In Townships	11kV and 33kV-5.8m
Above ground, road and rail crossings	LV-6.5m 11kV-6.8m 33kV-7.5m
Minimum conductor clearance to buildings, poles and structures not forming part of the power lines is 3.0m	

7.1.5. Distribution substation.

7.1.5.1. Guidelines and standards for locating a sub station

a) Substations should be located at **least 200 m away** from telephone exchange, broadcasting or radio communication installation; **6 meters** from any adjacent building or development for safety measures in case of fire.
b) Main receiving substation requires a **minimum of 5% of** the exterior spaces that are reserved for landscaping and require buffer zones of **approximately 50 meters** between the substation and other land uses.
c) Within the interior equipment building, open spaces and toilets shall be allowed.
d) Landscaping shall be done to enhance amenity of the site and provide shade, privacy, and screening.
e) Fencing of the site shall be done to provide security and safety.

Table 110: Standards for electricity substations.

Types of electric supply substations	Minimum Plot size (m^2)
33kV/11kV	30 x 40
123kV/33kV	40 x 80

7.2. Water Supply System

Water supply system consists of infrastructure that collects, treats, stores and distributes water between water sources and consumers. Municipal water systems typically consist of one or more sources of supply, appropriate treatment facilities, and a distribution system.

7.2.1. Water sources Protection

Two protection zones are recommended as per the Uganda Water Supply Designers Manual 2013.

Table 111: Standards and guidelines for water sources protection

Protection zones	Area	Restrictions
Inner protection zone	50-meter radius	This area should be fenced off and it should have a lockable gate. ❖ No pit latrines, septic tanks, etc., to be allowed within; ❖ No storage of fuels, oils etc., to be allowed within; ❖ Access of humans and animals to be strictly controlled if at all permitted; ❖ All surface water runoff to be directed away; ❖ Dense vegetation to be encouraged and maintained; and ❖ Local communities to be educated about the importance of this zone
Outer protection	200-meter	❖ No pit latrines, septic tanks, etc., to be allowed within;

Protection zones	Area	Restrictions
zone	radius	❖ No storage of fuels, oils etc., to be allowed within; ❖ Access of humans and animals to be strictly controlled if at all permitted; ❖ All surface water runoff to be directed away; ❖ Dense vegetation to be encouraged and maintained; and ❖ Local communities to be educated about the importance of this zone

7.2.2. Water demand

For water consumption rates for the different water users refer to Section 2 of Water Supply Designers Manual 2013.

7.2.3. Guidelines and standards for water Pipelines

- During preliminary design, the considerations of pipeline routing (alignment), subsurface conflicts, and rights-of-way are considered.
- The pipeline should be located at **least 4.5m away** from the street centerline.
- In urban areas, pipelines should follow roads and streets as much as is possible.
- Presence of other underground infrastructure such as telephone cables, electricity cables, fiber optic system and sewers should always be anticipated and catered for in the earlier stages of selecting the pipe route.
- Lateral separation of **3meters** between portable water pipeline and sanitary sewer line should be considered.
- Adequate rights-of-way both for construction and for future access are necessary for a successful installation.
- Where possible, the provision for right of way for water pipelines should be located within the infrastructure corridors
- On occasion, it is necessary to obtain rights-of-way for transmission-type pipelines across private lands. If this is the case, it is very important to properly evaluate the width of temporary easement that will be required during construction and the width of permanent easement that will be required for future access.
- If a pipeline is to be installed across private property, it is also very important for the entity that will own and maintain the pipeline to gain agreements that no permanent structures will be constructed within the permanent easements and to implement a program of monitoring construction on the private property to ensure that access to the pipeline is maintained.

Table 112: Standards for Right of Way for pipelines

Pipe diameter range	Right of way (m)
Small DN 50-110mm	3.0
Medium DN 125-250mm	3.0
Large DN 300-500mm	6.0

7.3. Fire hydrants

- Fire hydrants should be located at the entrance to the site and if necessary, at 500metre interval in commercial areas, 1,000-meter interval in residential areas and 300-meter interval in industrial areas.
- Their location should be along an access route with no obstruction.

Table 113: Guidelines and standards for fire hydrants

Pipes	Pipe should not be less than **160mm** in high commercial areas.
Range	In town centers and industrial centers, **the range is 65m-100m**

7.4. Water treatment plants

For guidelines on water treatment plants, refer to Section 6 of the Water Supply Designers Manual 2013.

Table 114: Standards for water treatment plants.

Category of plant	**Min land requirement**
Small treatment plant (less than 500m³ per day).	1 acre
Large treatment plant (greater or equal to 500m³ per day).	3-6 acres

7.5. Water reservoir (Land Requirement).

Table 115: Land requirement for water reservoirs

Facility	**Min land requirement (m)**	**Guideline**
Storage reservoir	25 x 25 with a 5m buffer	Fencing shall be required including the buffer

7.6. Guidelines for Public water points

- Public water points (stand posts) should be sited on high ground to facilitate the drainage of spilt water, and also, to make the points serve as air-outlets at peaks in distribution pipelines.
- Site should normally be **at least 3meters** from the adjoining roads and should be properly drained.
- The points should be fenced off to restrict entrance of animals.
- Public water points (stand posts) should be designed and constructed according to the standard drawings approved by the Directorate of Water Development.
- Every water point should be provided with a stopcock and a meter.

Table 116: Standards for public water points

Area	**Walking distance**	**No of users**
Rural areas	Not exceed 1.5 Kilometers	150
Urban areas	Not exceed 250 meters	200

7.7. Public Sanitary Sites

There are four recommended public sanitary facilities in Uganda; Public Toilets, Sewer pipeline, Waste Water treatment plants and Fecal sludge treatment plants.

7.7.1. Guidelines and Standards for Public wash facilities/Toilets

a) The nearest building to the facility should not be **less than 60meters** away.
b) Availability of regular water supply for clearing and maintenance purpose.

c) Adequate light for good visibility for both day and night.
d) Adequate ventilation
e) Facility should be located at a distance of not less than **200meters** from the nearest body of water, wherever possible.
f) Location of public toilets in all cases should be at least **3meters** away from adjoining roads and should be adequately screened (preferably with perforated wells) without completely concealing it from potential users. Public toilets should be properly labelled for easy identification.
g) A standard of one stance per 50 persons for a neighborhood of **5,000 persons** (min) is recommended.
h) The site size should be a minimum of $50m^2$.
i) In busy commercial and recreational areas with large number of visitors, public toilets should be located within **500m** distance of each other wherever possible.

7.7.2. Sewer pipeline

7.7.2.1. Location factors for a sewer line

- Distance from settlements
- Topography
- Population size
- Accessibility and road / access size
- Way-Leaves Corridor for each

7.7.2.2. Guidelines and standards for sewer pipelines

Presence of other underground infrastructure such as telephone cables, electricity cables, fiber optic system and sewers should always be anticipated and catered for in the earlier stages of selecting the pipe route. Lateral separation of **3meters** between portable water pipeline and sanitary sewer line should be observed.

Table 117: Design criteria for sewer network design

Criteria	Value	Unit	Comment
Sewer network pipelines			
Minimum diameter	DN 200	mm	A minimum diameter of DN 200 mm shall be applied for all public sewer network pipelines owing to operational reasons: prevention of blockages, facilitation of cleaning and maintenance.
Maximum depth	6	m	
Minimum coverage of sewer pipe	1.2	m	
Minimum slope	1/DN	%	
Maximum slope	8	%	
Minimum flow velocity	0.5	m/s	Minimum flow velocity to prevent sedimentation in the sewer.
Maximum flow velocity	5.0	m/s	Maximum flow velocity to prevent corrosion of pipes and manholes and avoid absorption of air caused by turbulence.
Connection to a public sewer			Connection only in manholes. No direct connection to buried sewer
Right of way (minimum)	3.0	m	

7.8. Waste water treatment plant.

Location of waste water treatment plant should be at relatively high points to protect them from rain and floods.

7.8.1. Site selection of waste water treatment plant

Table 118: standards for site selection of waste treatment plants

Elements	Minimum distance	Maximum distance
Road	500	3000
settlement	150	1500
Main river	500	3000
Faults	500	3000
Ground water	500	3500

7.8.2. Space requirements for waste water treatment plants.

Table 119: standards for small treatment plants

Type	Service areas	Land requirement
Low-cost waste water treatment plant (with more than 2 stabilization ponds up to a maximum of 4 ponds – 4,182m² – 13,337m²)	Small sewerage areas (Housing estates, Universities & tertiary institutions, Prisons, stadiums)	1-3acres

Table 120: standards for large treatment plants

Type	Service areas	Land requirement
Conventional waste water treatment plant (sewage and fecal sludge treatment plant)	Big catchment areas	12 acres
Waste water treatment plant	Big catchment areas	7.5 acres
Fecal sludge treatment plant	Big catchment areas	4.5 acres

7.9. Solid Waste Management.

National Environment (waste management) regulations 2020 under Part II Clause 7 , Part IV and Part VIII provide for waste management hierarchy that emphasizes the 3Rs (Reduce, Recycle and Reuse), management of domestic and municipal waste and regulations for landfills respectively.

7.9.1. Requirements for solid waste management.

Guidelines are given for design, construction, installation, operation and maintenance of solid waste storage, collection and disposal systems.

7.9.1.1. Storage and disposal requirements.

- In design of all buildings and other facilities which are constructed or modified, there shall be storage facilities to accommodate volume of solid waste anticipated.
- Reusable waste containers which are emptied manually shall not exceed 34Kgs when filled or have a capacity of more than 208 liters or 0.208 cubic meters in volume and shall be capable of being serviced without the collector coming into physical contact with the solid waste.
- Provide an all-weather access road negotiable by loaded collection vehicles from the public road to the workable surfaces of the land fill.

7.9.2. Guidelines and standards for siting solid waste facilities.

Solid waste facilities referred to herein include landfills, transfer stations and compost facilities, categorized into collection, storage and process.

A person shall not establish, construct or operate any waste management facility:

a) in a floodplain;
b) within **500 meters** of a mapped out geological fractured zone;
c) in a place which is prone to natural disasters, including earthquakes, floods and landslides, unless the waste management facility is designed, constructed, operated and maintained to prevent collapse or washout;
d) within **200 meters** of any land which may be prone to or impacted by slope failure;
e) on a hilly or mountainous area with a gradient of more than 60^{o};
f) in a water source area, including the surface and subsurface water catchment area, through which pollutants are likely to move toward and reach water sources;
g) within **500 meters** of a cultural or natural heritage or archeological site; or
h) within **6 kilometers** from an aerodrome

7.9.3. Guidelines and standards for Location of solid waste facility.

a) the waste treatment or disposal facility is **not within 200 meters** from the boundaries of a protected area, bird sanctuary, wildlife management area or land acquired and administered under the Uganda Wildlife Act and any other law on conservation;
b) the waste treatment or disposal facility is not located within a wetland or within 500 meters from a riverbank, lakeshore or area immediately adjacent to fragile ecosystems;
c) the boundary of the waste treatment or disposal facility is at a distance of at least **500 meters** away from human settlements or commercial areas; and
d) the boundary of the waste treatment or disposal facility is not within areas suitable for agriculture except with the approval of the NEMA.

7.9.4. Safety requirements.

Waste handler shall ensure that waste treatment or disposal facility;

a) Is enclosed and secured from access by unauthorized persons or wildlife;
b) Has an updated site layout plan; and
c) Has a buffer zone around it as prescribed under the NEMA Act, these regulations and any other applicable law.

7.9.5. Standards for solid waste treatment facility.

Space requirement for solid Waste disposal sites based on population threshold and site size below;

Table 121: Standards for solid waste treatment facility

Catchment population	Land Requirement
5,000- 30,000	2ha
31,000- 100,000	5ha
101,000- 300,000	10ha
301,000- 1,000,000	15ha
>1,000,000	20ha

7.10. Telecommunication

7.10.1. Guidelines for Telecommunication Masts

a) Where practicable, the planning authority shall require that the operator/applicant demonstrate that all reasonable steps have been taken;
   - ✓ To investigate mast sharing before seeking to erect new ones.
   - ✓ To pursue the possibility of cooperating with another operator to erect new mast for joint usage.

b) Planning authorities shall be required to maintain a register of all applications for telecommunication masts/tower site. This shall be made available to operators to allow them to consider the possibilities of mast sharing when planning the development of telecommunication networks.

c) The planning authority shall ensure that apparatus no longer required for telecommunication purposes are removed as soon as reasonably practicable from the land or building on which it is located and the land restored to its previous condition.

a) The foremost part of each mast/tower shall be a **minimum distance of 5 meters** from the physical barrier around the mast.

b) Operators to consider the use of materials, colors & design that would minimize obtrusiveness. In urban areas, preference shall be for towers to be located on existing buildings.

c) Any change to an existing base station which increases its height and/or base, shall be subject to the normal planning process as if it were a new development.

d) Readily identifiable signage, informing the public as to who are the operators of the site & their emergency numbers shall be posted at a conspicuous position at the site.

e) All towers over 30 meters shall be painted & treated as stipulated by Civil Aviation Authority (CAA).

f) All applications proposed to be located within a 3 km radius of airports, similar facilities & flight paths shall be referred to CAA for consultation before determination.

g) Fences or barriers to preclude unauthorized access to areas where exposure limits may be exceeded.

h) base stations near kindergartens, schools and playgrounds may need special consideration.

i) Application for installation of a mast shall require consent of the locals within the area.

Table 122: Standards for communication masts

Zoning	Permissible height (minimum)	Average plot size and protection area
Residential	Less than 35 meters	Not less than 20m x 20 m
Commercial	Less than 120 meters	Not less than 12.5m x 12.5 m
Industrial	Less than 120 meters	Not less than 12.5m x 12.5m for shorter mast and 16.5m x 16.5m for taller mast
Civic & Cultural	Less than 120 meters	20mx20m
Mixed Use	Less than 80 meters	20mx20m
Education	Not allowed on school compound	At least 150m from the nearest Classroom or dormitory Structure.
Health facilities	Not allowed in clinic and polyclinic facilities.	At least 150m from the nearest ward and sensitive equipment facilities
Aviation facilities	Not allowed	

7.11. Planning Standards and guidelines for Cemeteries & Abattoirs.

7.11.1. Standards for cemeteries.

Table 123: General standards for cemeteries

Criteria	Condition and standard
Site Requirement	Low water table
Location	Accessible to catchment area
Site Size	Site size will relate to population grouping
Population up to 5,000 persons	0.5ha to <0.8ha
Population 5,000 to 15,000	0.8ha to 1ha
Population Up to 100,000 persons	2ha

7.11.2. Crematoria.

Table 124: Standards for crematoria

Criteria	Guidelines and standard
Catchment area	**District**
Location criteria	• Near open water. • Not less than 20m from nearest dwelling house. • Not less than 15m from public road. • Accessible from catchment area. • On site car parking for at least 25 vehicles.
Site size	0.5ha (including space for parking and storage facility)

7.11.3. Funeral parlor.

Table 125: Standards for funeral parlours

Criteria	Guideline and Standard
Population to be served	**N/A**
Location criteria	Not to be located in residential area, except as part of local shopping Centre, near to a mortuary, hospital and churches.
Site size	• Minimum plot size 464.5m^2, • Must include space for parking for at least two cars (including at least one hearse) for first 50m^2 of built floor area and, with additional parking of one car space per each additional 50m^2 of floor area.

7.12. Standards and Guidelines for Boundary Walls and Fences

The boundary wall or fence is defined as "any wall, fence or enclosing structure erected on or next to a property boundary and any other structures affixed to or on top of it." A Boundary wall may also mean a non-load bearing structure erected to demarcate the site or plot boundary and to act as a physical barrier.

7.12.1. Guidelines for Boundary Walls and Fences

1) Plot fencing shall involve provision of boundary wall, screen walls, fences or other means of enclosure as specified in the Building Standards, 2019.
2) No erection of a boundary wall or fence shall take place without obtaining development permission or building permit.
3) Boundary walls fronting onto public streets or roads especially in urban areas should highly be visible and transparent so as not affect the character and visual amenity of the area.

4) No wall or fence should be erected to a height greater than maximum height specified in these standards.
5) Height of boundary wall or fences for correctional institutions, high security sites or buildings and wildlife or conservation facilities may be greater than the standard height so as to prevent easy escape, delivery of contraband and to protect the facilities from attack.
6) Enclosure of wildlife and conservation facilities should preferably be of wire mesh or barbed wire fence so as to provide visibility of the wildlife.
7) Use of natural fences involving plant materials is highly encouraged in residential areas, rural and agricultural areas.
8) Boundary walls and fences should be constructed in a manner that promotes neatness, tidiness and aesthetics.

7.12.2. Planning Standards for Boundary Walls.

1) Boundary walls, screen walls or fences are permitted along road frontages and common boundaries of any plot.
2) The height of any wall shall not exceed 1.8 meters high unless otherwise specified in these standards.
3) The height of boundary wall or fence for correctional institutions should be 5.2 meters in order to keep intruders out and those inside safe.
4) Fence mesh of wildlife and conservation facilities should be at a minimum of 2.5 meters above ground at its lowest point and located 4.0 meters from edge of right of way (ROW).
5) Walls and fences abutting on a street, road or in front of the main building should be at least 50% transparent.
6) Walls and fences along the street or road should be constructed at least 2.0 meters inside the property boundary so as to observe a frontage setback.
7) Razor wire and wire mesh fences where permitted should not exceed 2.0 meters above ground level.
8) Electric fencing where permitted shall comply with the Building Regulations, 2019.
9) No boundary wall should be used as or form part of the building or structure.
10) Barbed wire fence should not be permitted in the urban areas and its use in rural areas should be restricted.
11) Construction of walls and fences shall comply with the building standards and specifications as specified in the National Building (Building Standards) Code, 2019.

Table 126: Proposed Boundary Wall Requirements

No.	Land Use/Development	Height (Meters)		Total Height (Meters)	Street/Road Setback (Meters)
		Solid Wall	Open Grill		
1.	Residential Areas	1.2	0.3	1.5	2.0
2.	Civic Areas & Town Centres	0.6	0.9	1.5	2.0
3.	Industrial Areas	1.8	N/A	1.8	3.0
4.	Wild life and Conservation Facilities	N/A	2.5	2.5	4.0
5.	Utility, Electricity and Telecommunication Installations	N/A	1.5	1.5	2.0
6.	Agricultural Establishments/Farms	N/A	1.5	1.5	3.0
7.	Correctional Institutions and High Security Areas/Buildings.	5.2	0.3	5.5	5.0
8.	Civil Aviation facilities	2.5	0.5	3.0	3.0

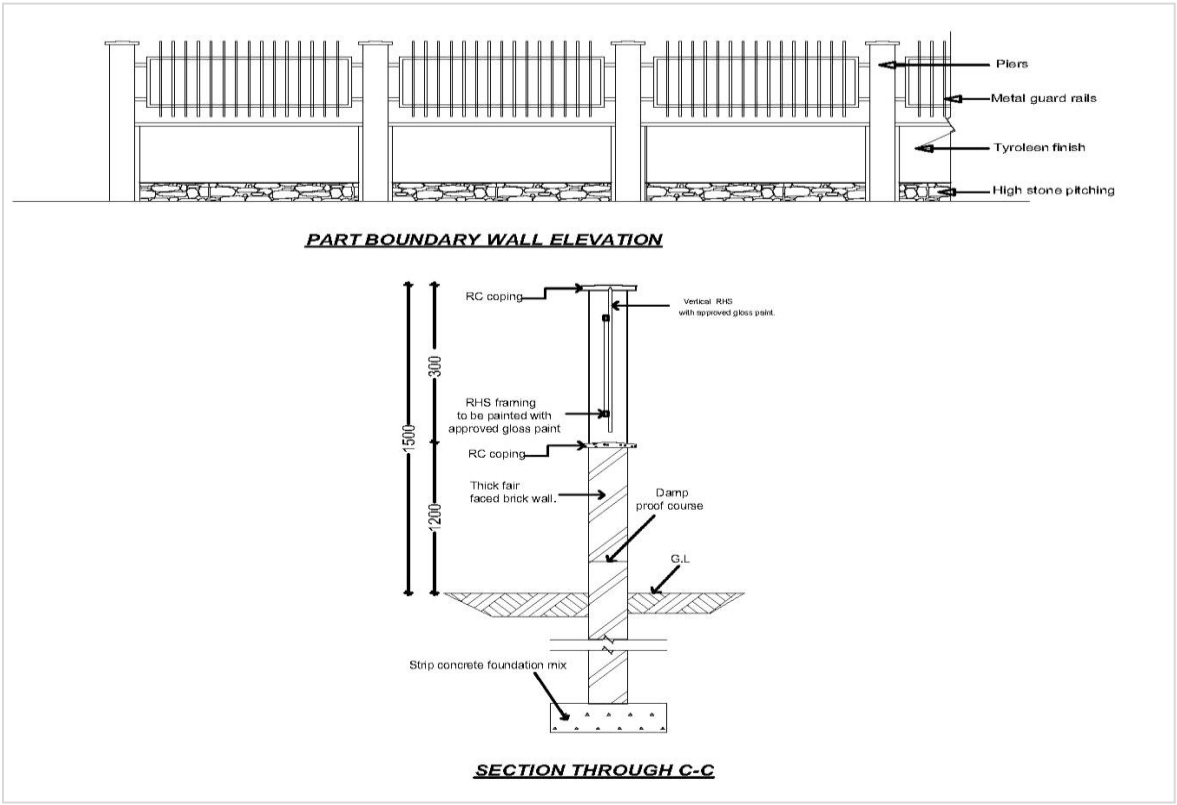


Figure 21: Typical illustration of Boundary Wall in Residential Areas.

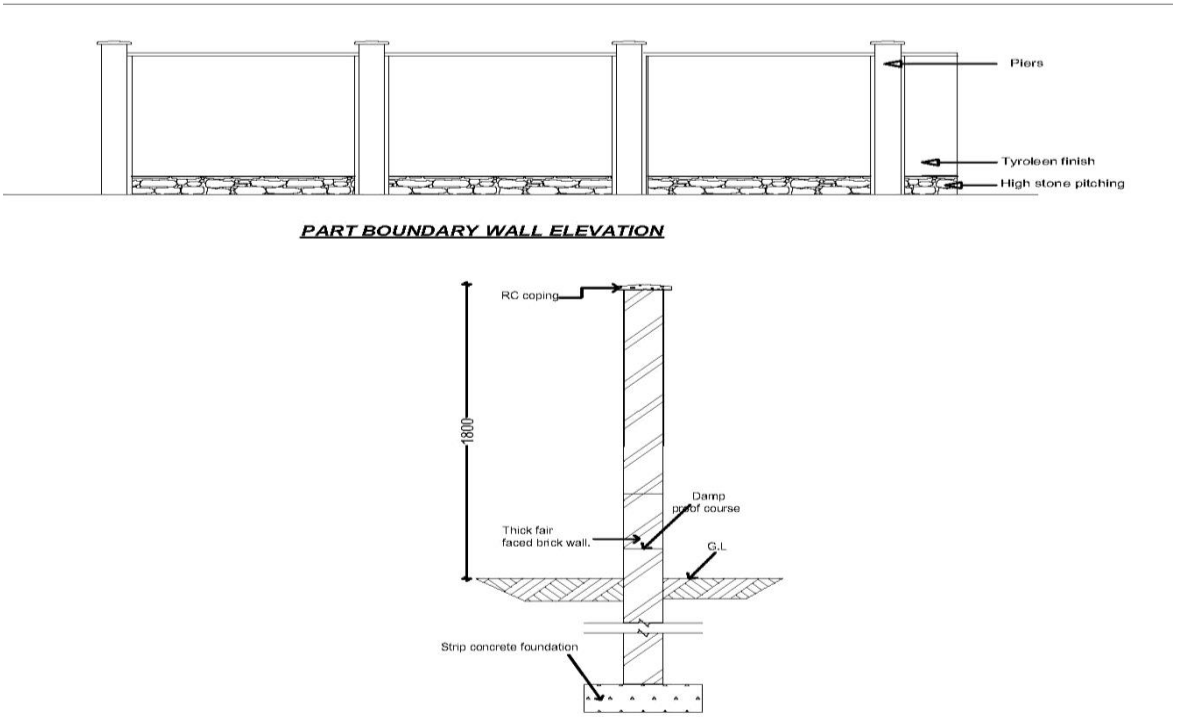


Figure 22: Typical illustration of Boundary Wall in Industrial Areas.

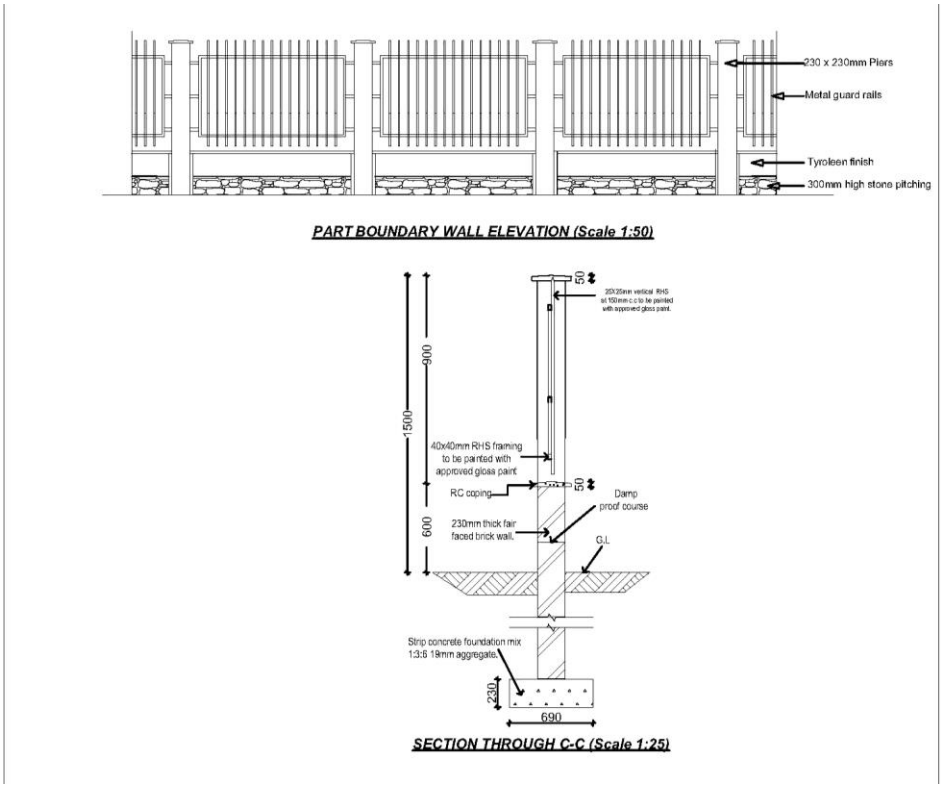


Figure 23: Typical illustration of Boundary Wall in Civic Area/Town Centre.

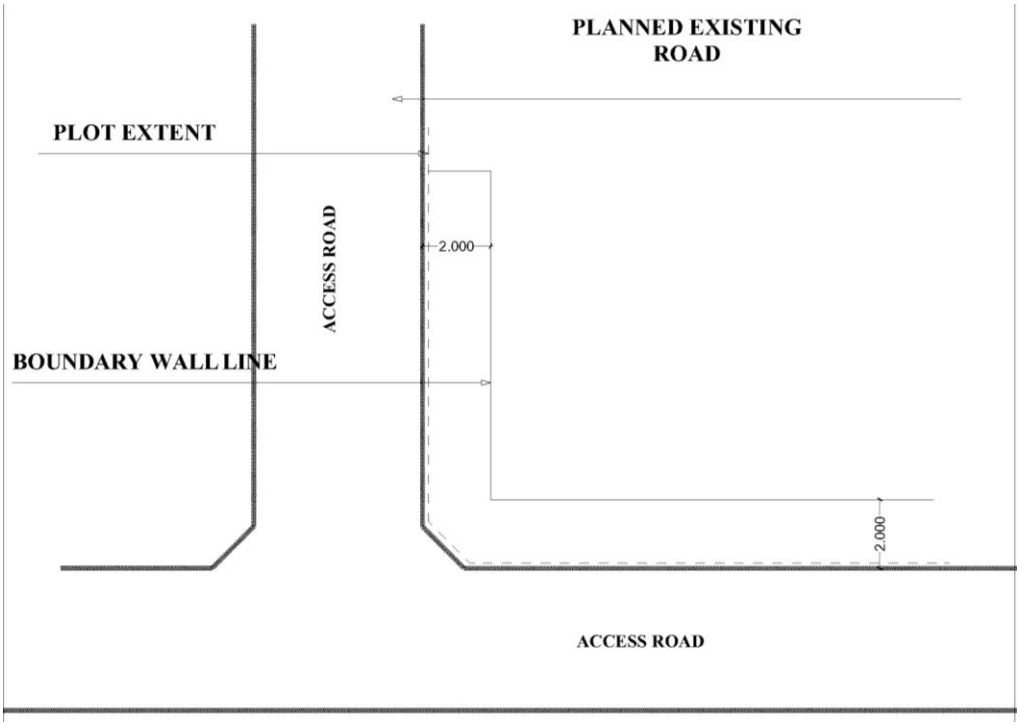


Figure 24: Boundary Wall Setbacks along a Planned Street or Road.

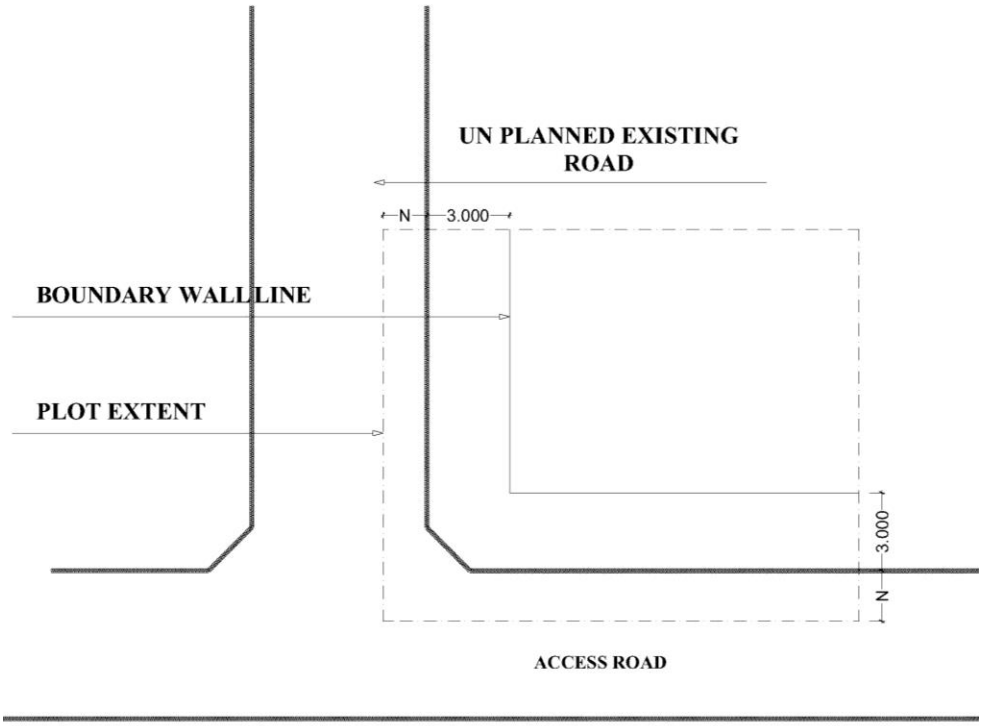


Figure 25: Boundary Wall Setbacks along an Un-Planned Street or Road.
Note: Size of road reserve (N) will depend on class and function of the road.

Figure 26: Typical Examples of Wire Mesh Fences in Residential Area
Source: Homestratosphere.com and walcoom.com respectively.

CHAPTER EIGHT

8. Standards for plan scales, notation and graphics

Physical development plans consist of two elements: the drawing and the report. The presentation of these plans involves illustrations of bearing, scale, coloring and symbols for easy interpretation.

- All plans must have a bearing indicated in two ways: by grid lines and the north point in a strategic place which is easily visible.
- All plans must have a scale as per the hierarchy or level of planning.

Table 127: Types and hierarchy of plans

No.	Plan Type	Scale
1.	National Physical Development Plan	1:250,000 – 1:12,000,000
2.	Regional Physical Development Plan	1:50,000 – 1:500,000
3.	Special Physical Development Plan / Subject Plan	1:5,000 – 1:250,000
4.	District Physical Development Plan	1:50,000 – 1:100,000
5.	Urban Physical Development Plans	1:5,000 – 1:50,000
6.	Local Physical Development Plans (sub county)	1:5,000 – 1:20,000
7.	Detailed Physical Development Plans	1:1,000 – 1:5,000
8.	Action Plans	1:500 – 1:3,000

8.1. Colours:

The evolution of planning has necessitated the subclassification of the colour schemes and this becomes very difficult to identify all uses with a particular colour scheme. However, for purposes of guiding the colour shades during plan preparation, these standards only give colour schemes to the broader land use zones commonly used and for the new ones will be at the discretion of the planning team. Under the same colour scheme of each land use, difference in densities and other sub classifications under a given use will be indicated by varying hues or hatching and shades of the primary colour for that use.

Table 128: Types and hierarchy of plans

Land cover	Colour	Land use	Colour
Built-up / Settlements	Dark Brown	Residential	Brown
Agriculture	Light green	Commercial	Blue
Range Land	Lime green	Industrial	Purple
Forests	Dark green	Institutional	Yellow
Open water	Light Blue	Civic	Red
Wetlands	Mid green	Infrastructure and utilities	Grey
Barren Land	Light brown	Open water	Light Blue
Tundra	Grey	Environmental (forests, open spaces, wetlands,)	Green
		Agriculture	Light green

8.2. Lettering:

It is difficult to give specific type of lettering for the different types of plans however it is recommended that the planner uses professional judgement to bring about proportionality to the size, spacing and legibility depending on the different plans being prepared. It is recommended

that any given plan should have a title block at the top and a sub title at the bottom of the drawing.

APPENDICES

Appendix 1: Definitions of Terms:

Term	Definition
Planning Standards	Provisions of the plan in relation to the carrying out of development being provision by or under which requirements are specified or standards are fixed in respect of any aspect of that development, including, but not limited to, the generality of the foregoing requirements or standards in respect of the different aspects of the development such as the area, shape, frontage, the dimensions of any land, distance, range, threshold, setbacks, plot coverage, location, siting, height, density, landscaping among others.
Planning Guidelines	Written statement that contains guidance to be referred to before any development and establishment of a project. Planning guidelines are often used for purpose of uniformity, comfort, and safe development.
Land use zoning	This is classification of activities carried out on parcels of land to determine particular use and suitability.
Development Zoning	This is a method of physical planning in which planning authorities divide land into areas called zones, each of which has asset of regulation for new development that defers from other zones aimed at guiding growth and development.
Plot	A piece or parcel of land occupied or capable of being occupied by one principal building and any structures or uses accessory thereto, including such yards as are required by these regulations.
Plot Size	the dimensions or extent, of a piece of land in terms of how large or small it is. The boundaries are separately defined in meters and bounds on a survey plan but does not include a piece or parcel of land the boundaries of which are so defined merely for the purpose of indicating the area of land which is the subject of an easement or a proposed easement or which has been opened as road;
Plot Access	entry or approach to the plot
Floor To Area Ratio	Ratio of a building's total floor area to the size of the piece of land upon which it is built.
Coverage Percentage	**It** determines the percentage of land that can be covered by buildings.
Plot/Building Coverage	The percentage of land covered by building. The land area covered by all buildings and structures on a plot, expressed as a percentage of the plot area or area of the plot that is covered by a development.
Plot Ratio	with respect to a development, means the ratio of the gross floor area of the buildings on the site of the development divided by the area of that site.
Site Coverage	Means the proportion, expressed as a percentage, of the size of the development which the area covered by building or other structures on the site bears to the area of the site. It is where the area covered by a building or other structure is measured to coincide with the area contained within the projection onto a horizontal plane of the outer limits of the building or other structure to the extent that it is above the level of the adjoining ground.
Gross Floor Area	With respect to a building, planning unit or development for some purposes, means the sum of the floor areas (inclusive of all walls, columns and balconies whether roofed or not) of all storeys in the building, in all buildings contained in the planning unit or all buildings to which that development relates, as the case may be but excluding car parking accommodation, space for loading and unloading commercial vehicles, bank vaults, strong rooms and safe deposits.
Buffer	A transitional area between two distinct land uses or types used to lessen the impact of one on the other.
Building Height	The vertical distance from the average finished ground level of the exterior walls of the building or structure to the highest point of dome, flat or mansard roofs or to the mean level between the ridge and the eaves for gable, hip, gambrel, salt box, shed or A-frame roofs, masts.
Setbacks	Minimum distance a development or building can be from something else (plot boundary, road, another building). It can be front, side or rear.
Building Line	A line drawn across a plot such that no building or permanent structure, except a boundary

Term	Definition
	wall or fence of approved design enclosing the plot, may be within the area contained between that line and the regular line of the street on which the plot has frontage;
Building Restriction Line	A line which identifies suitable building area locations on airports.
Community	An assemblage of human beings living in a defined geographical area and identified by common history, common culture or common residence in an area.
Conservation	Looking after and managing a resource so that the resource maintains its ability to fulfil its functions and provide goods and services for present and future generation.
Permissible Use	Developments that may be permissible on land with a specific land use classification.
Central Business District	Part of an urban area which contains the principal commercial streets and main public buildings. It is characterized by a number of land use changes that include industrial, residential, commercial, civic among others.
Easement Rights	Means the rights to use another person's land for a stated purpose. It can involve a general or specific portion of the property, and is generally used to allow infrastructure pass across, over or under a private property. A Right-of-Way allowing access across a piece of land is an Easement Right.
Industry	It is an economic activity concerned with the processing of raw materials and manufacture of goods in factories.
General Industry	Means an industry in which products or materials of all kinds and properties are processed, assembled or fabricated using machinery and/or power in which the nature of production process is not obnoxious or hazardous to public safety. It includes workshops, service establishments and service industries.
Noxious Or Offensive Industry	Means an industry where an offensive, poisonous or potentially harmful trade, use of activity which, because of fumes, emissions, dust, smell, vibration, noise, waste products, nature of material used, processes employed or other causes is deemed to be a potential source of danger, nuisance or offense to the general public or persons in the area.
Hazardous Industry;	A: an operation for the disposal of radioactive material; B: the performance in the course of a trade or business of any process for or ancillary to the manufacture of any product included in the Table hereunder.
Extractive Industry	An industry engaged in hazardous processes which ay cause adverse effects on the health of the people and the environment unless special care is taken in relation to its raw materials, by products, waste materials and effluent thereof.
Place Of Assembly	Means a place used or intended for use as a public hall, theatre, cinema, music hall, concert hall, dance hall, open air theatre or drive in theatre; a place used or intended for use for the conduct of trade fairs or exhibitions
Public Building	Means a building that is occupied by public authority and frequently visited by members of the public.
Existing Use	Means a use of premises where – that use was in existence in a planning area immediately before the appointed day of a new physical plan.
Frontage	With respect to plot or a site, means a boundary, or that part of a boundary, of the plot or site which coincides with, or with part of, an alignment.
Landscaping	Means the process of making an area more attractive by altering the existing design through adding ornamental features, paving and plantings.
The Plan	Means the physical planning scheme for the area
Structure	Includes a wall and fence and anything that is affixed to or projecting from a building or other structure.
Subdivision	Refers to dividing land into parts, whether the dividing is- a) by sale, conveyance, transfer, or partition; b) by an agreement, dealing or instrument into vivo (other than a lease for any term not exceeding five years without right of renewal) rendering different parts thereof immediately available for separate disposition or separate occupation.
Accessibility	Ease of access/egress to any location by walking, cycling, public transport and private vehicles, or for commercial vehicles.

Term	Definition
Advertisement	Means any visible representation of a word, logo, name, letter, figure, object, mark, symbol, abbreviation, light or any combination thereof with the object of transferring information which is visible from any street or public place, but does not include a road traffic sign.
Aerodrome	Means any definite and limited ground or water area (including any building, installation and equipment) used or intended to be used, either wholly or in part, for the arrival or departure or surface movement of aircraft.
Airway	Means a designated path or air route identified by an area of specified width on the surface of the earth.
Area of distribution	Means the area within which the holder of a distribution license is, for the time being, authorized to distribute electrical energy.
Arterial Roads	Roads intended to carry large volumes of through traffic between areas (through traffic) with fewer access opportunities to adjacent developments.
Backbone	A facility (e.g., pathway, cable or conductors) between telecommunications rooms, or floor distribution terminals, the entrance facilities, and the equipment rooms within or between buildings.
Bareboat	Means a boat or vessel hired without crew stores or bankers.
Billboard	Means a structure or object erected or placed to display an advertisement.
Boda-boda	A bicycle or motorcycle used as a taxi to carry passengers or goods.
Broadband	A transmission capacity with sufficient bandwidth to permit combined provision of access to voice, data and video.
Building sewer	In relation to land means any pipe conduit, underground gutter or channel provided on that land to convey sewage or trade waste, but does not include a sewer connection.
Bus terminal	A bus terminal is the point at the start/end of a bus route, where the vehicles stop, reverse and wait, before departing on the return journey.
Cargo vessel	Means a vessel, which is not a passenger vessel;
Carriageway	Means a portion of a public road including the various traffic lanes and auxiliary lanes, but excludes shoulders.
Collectors	Roads that provide neighborhood travel between local and arterial roads and direct access to adjacent lands.
Community access road	Means a road, path or track linking communities and villages to other classified roads and provides access to administrative, social and economic services.
Compost	Material produced by aerobic biological decomposition of organic material.
Connectivity	Connectivity entails how easily and directly users can move through street networks.
Cul-de-sac	Reasonably short street with a bulbous end or is a dead-end street particularly one with a circle for turning around at the end.
Cycle way	Means a thoroughfare for bicycles and on which the use of moving and stationary vehicles is prohibited.
Distribution network	The part of electricity supply network operating at distribution voltages below transmission level typically 33kV, 11kV, 415V and 240V.
Distribution Substation	A substation that steps up or steps down distribution voltage
Domestic sewage	Includes feacal matter, urine, household slops and other liquid house refuse.
Effluent	Treated or untreated liquid waste flowing from a sewage treatment plant.
e-Government	Is the use of information and communication technologies to deliver public services in a convenient, efficient customer-oriented, and cost-effective way.
Expressway	Means a heavily trafficked, high speed and limited access road, which has a dual carriageway with grade separated junctions, and considered the highest grade of road.
Ferry landing	Ferry landing" means a specialized docking facility that receives a ferryboat.
Foot path	The area within the road reserve that is generally reserved for pedestrian use OR Pedestrian way not associated with a road.
Footway	Means a way or path for pedestrians, including a raised walk along the edge of a bridge and on which the use of moving or stationary vehicles is prohibited; OR Pedestrian way at the side of a road

Term	Definition
Green Infrastructure	An interconnected network of natural green and engineered green elements applicable at multiple scales. Natural green elements include the conservation and integration of traditional green elements including trees, wetlands, riparian area and parks. Engineered green elements include systems and technologies designed to mimic ecological functions, or to reduce impacts on ecological systems. Examples include green alleys, green buildings and green roadways.
Ground water	Means all water occurring or obtained from below the surface of the ground other than water contained in works, not being a borehole, for the distribution, reticulation, transportation, storage or treatment of water or waste and includes water occurring in or obtained from any borehole or aquifer.
High voltage	Means voltage exceeding 1,000v AC;
Incineration	Means thermal treatment of waste with or without recovery of the combustion heat generated, including through oxidization of carbon or material containing carbon into carbon dioxide and water, as well as other thermal treatment processes including pyrolysis, gasification or plasma processes when the substances resulting from this treatment are subsequently oxidized.
Kerb	Line of concrete, bricks or stones forming a raised edge (often around 150mm) between a footway and a carriageway.
Landfill	Means an engineered site for disposal of waste onto or into land, lined with impervious plastic sheeting to prevent leakage or leaching of dangerous substances into soil or water;
Low voltage	Means voltage not exceeding 1,000v AC; (415V and 240V)
Maritime Administration	Means the department responsible for maritime safety and security in the Ministry responsible for transport.
Medium voltage	Means 33kV and 11kV.
Multimode optical fiber:	An optical fiber that carries many paths of light.
Municipal waste	Means waste, excluding industrial waste, collected within a local government.
Neighborhood	Defined as a group of building or houses that are together in an area or that are grouped together in area OR is a geographically localized community within a larger city, town, suburb or rural area.
Open waters	Means areas of inland waterways within which the conditions are such that it is appropriate to apply the highest standards of safety to vessels operating on inland waterways.
Pathway:	A facility for the placement of telecommunications cable.
Pedestrian	Means a person travelling on foot, whether walking or running and includes a pedestrian with a disability using mobility devices such as crutches, calipers, wheelchairs or sensory devices such as white canes, low vision devices or hearing aids.
Petroleum pipeline	Means a pipeline used to transport petroleum but excludes a pipeline located on the premises of a manufacturer of petroleum products; a retailer of petroleum products; or a storage facility.
Petroleum waste	Includes any substance or object arising from petroleum activities or mid-stream operations or similar waste imported into the country which is dumped, abandoned, discarded or disposed off or intended, required by law to be disposed off including substances listed in schedule of petroleum waste management regulations of 2019 but excludes general waste not contaminated by petroleum commodities or products.
Platform	Raised level surface on a road, operating like a speed hump but providing a flat surface that can be used to identify a pedestrian crossing or shared road space. Also known as speed hump.
Pollution	Means any direct or indirect alteration of the physical, thermal, chemical, biological or radioactive properties of any part of the environment by discharging, emitting or depositing wastes or emitting noise so as to affect any beneficial use adversely, to cause a condition which is hazardous or potentially hazardous to public health, safety or welfare or to animals, birds, wildlife, fish or aquatic life, land and water sources or to plants or to cause a contravention of any condition, limitation or restriction which is subject to a license under

Term	Definition
	the Environment Act.
Port	Means a place or area on a lake or river designated as such by notice and includes an inland port.
Public Transport	A shared passenger transport service which is available for use by the general public, as distinct from modes such as taxicab, carpooling or hired buses.
Railway line	A railroad that has a start and an end, together with its adjacent strip of land, and includes line sections, buildings, structures and equipment designed to manage rail traffic, together with their corresponding land.
Ramp	A slope or inclined plane for joining two different levels, as between a road carriageway and raised footway (replacing the kerb at strategic locations such as pedestrian crossings).
Road furniture	Means all fixtures on the road and within the road reserve that are intended to provide information or safety to a road user which includes traffic lights, sign posts, traffic signs, guardrails, marker posts, fences, benches, reflectors and center-line pads, bollards, phone boxes, bus stops, taxi stands, public lavatories, fountains, watering troughs, memorials, sculptures and waste receptacles.
Road side station	Means a government facility along expressways, highways and ferry landing sites and includes toilets, bathrooms, parking yards, restaurants, mini groceries, supermarkets, garages and resting centers.
Rumble strips	A series of raised strips across a carriageway (or parallel to the carriageway in case of lane markers) that alert drivers for potential dangers by causing tactile vibration and audible rumbling, transmitted through the vehicle wheels into the vehicle body.
Segregation	Streets within which interactions between modes of transport are discouraged or prevented through the use of a series of barriers and other design measures.
Service road	Means a road that runs parallel to a highway and that provides access to the property bordering it.
Sewage	Used water of a community or industry containing dissolved and suspended matter also called waste water.
Sewerage	The sewerage system comprises the pipes, pumps and plant needed to collect, transport and treat sewage.
Shared Street	A street where pedestrians, cyclists and vehicles share the main carriageway and where pedestrians have priority of movement over other users.
Shoulder	Side of road used for structural support and drainage, but may also be reserved for use by non-motorized transport and or/ vehicle emergencies and break down.
Side walk	Footway for pedestrians at the side of the road (pavement in some English documents).
Speed bump	(Also known as road hump or sleeping policeman) is a speed reducing feature of road design to traffic flow. They are 70-100mm high and 300mm across.
Stormwater	All surface run off from rainfall predominantly in urban catchments.
Street	In this guide, any public road within an urban area. This is to remind users of the guide of the need to consider all street uses and activities, physical features and surrounding context, even when designing expressways and highways in the urban area.
Street type	Street type defines a street, taking into consideration the land use context, the relationship of the buildings to the street and the number of travel lanes, users, volume, type and speed of traffic.
Telecommunications line	Means any wire, cable, equipment, tower, mast, antenna, tunnel, hole, pit trench, pole or other structure or thing used or intended to be used in connection with a telecommunications system.
Track	Means a path or road for bicycles but not for motor vehicles.
Transit oriented Development	A walkable, cyclable, mixed-use form of development typically focused within 600 m of a rail or busway station. Its intent is to create mobility options for a higher density of transit riders and the local community.
Urban road	Means a road within the boundaries of an urban council and which does not form part of a national road.

Term	Definition
Utility	includes infrastructure for communications, electric supply, gas supply, oil pipelines, sewers or water supply;
Waste	Includes any matter prescribed to be waste and any matter whether liquid, solid, gaseous or radioactive which is discharged, emitted or released to the environment in such a volume, composition or manner as to cause an alteration of the environment.
Watercourse	Means any river, stream, drain, gully, canal, or any channel, constructed or natural, in which water flows whether constantly or intermittently.
Vending	Refers to the selling, offering or displaying for sale or soliciting others to purchase for present or future delivery any goods, wares, merchandise, subscriptions, services or any food packages or any combination thereof from, in, upon, along or through the highway, streets, sidewalks, door to door on residential property, in the open air or from a temporary shelter or vending device upon private property.
Place of worship	Any building or area used for religious worship by a congregation or religious group, whether or not the building or place is also utilized for other social or training activities, is referred to as a worship place. These include but are not limited to churches, mosques, and temples.
Non-Motorized Transport (NMT)	Non-Motorized Transport refers to active and human powered transportation including walking, bicycling and other variants such as small-wheeled transport (cycle rickshaws, skates, skateboards, push scooters, hand carts and wheelchair travel).
Wholesale market	A market for the sale of goods to a retailer. A wholesaler receives large quantities of goods from the manufacturer and distributes them to stores where they are sold to retailers
Retail market	Market that includes all those other activities that involve the sale of goods and services directly to the consumer and usually purchased for personal or family use
Paving	Construction in an outdoor floor or superficial surface covering. Materials include; asphalt, concrete, stones, wood etc.

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Appendix 3: Most prevalent Housing Typologies in Uganda Detached (single-family home)
A stand-alone residential structure that does not share outside walls with another house or building.

i. **Semi-detached**
The single-family structure that shares one common wall with the next house. These are predominant in most cities, municipalities, and Town Councils in the country.

ii. **Tenements (mizigos)**
Type of building shared by multiple dwellings, typically with flats or apartments or a room for rent.

iii. **Townhouses/ terraced house**
A tall narrow traditional terraced house, generally having three or more floors.

iv. **Apartments**
Is a self-contained housing unit that occupies only part of a building, generally on a single story.

v. **Mix of houses**
Include diverse types of housing including apartments, single-family homes, and townhouses.

vi. **Duplex**
A residential building is divided into two apartments. (American) also known as semi-detached.

Types of houses	Rural	Urban
Large single houses	A mix of houses, townhouses, and exclusive apartments, country homes	A mix of exclusive houses, townhouses and apartments
Single houses, some apartments	A mix of houses, town houses, apartments	Balance of houses, townhouses, and apartments
Single and semi-detached houses	Balance of houses and apartments	A mix of houses and apartments
Mix of houses and Mizigo	A mix of houses and Mizigo	A mix of houses and basic apartments
Mizigo, degraded houses	A mix of Mizigo and low-cost housing	A mix of Mizigo and low-cost housing.

Appendix 4: Categories of Hazardous Industry zone

Hazardous industry zone will entail an operation for the disposal of radioactive material, and the performance in the course of a trade or business of any process for or ancillary to the manufacture of any product included hereunder. Hazardous Industries include; -

- Acids
- Ammunition
- Asbestos Productions
- Bleachers
- Calcium carbide
- Celluloid or Celluloid Products
- Chemicals where there is a risk of explosion or the escape of toxic Gas
- Disinfectants
- Explosives (including fireworks)
- Fertilizers
- Flammable or combustible liquids by refining and including any production composed of flammable or combustible liquid and resins, waxes, or pigments
- Petroleum production and refining
- Organic compound of mercury or cadmium
- Oxygen
- Photographic film other than non-flammable film
- Poisons
- Raw plastic
- Vaccines bearing live virus.

Appendix 5: List of Noxious or Offensive Industry

Noxious or Offensive Industrial zone will accommodate the following;

- Industrial operations and activities dealing in a toxic or noxious matter of any solid, liquid, or gaseous matter, including but not limited to gases, vapors, dust, fumes and mists, containing properties which by chemical means are;
    1. inherently harmful and likely to destroy life or impair health or;
    2. capable of causing injury to the well-being of persons or damage to property.
3. The conduct of a night-soil depot or stockyard'
4. The performance in the course of a trade or business of any process for or ancillary to an activity included hereunder, but does not include any use which is part of extractive industry.
5. Manufacture of the following;
    a. Cement of lime
    b. Soap (where there is an extraction of fat)
    c. Tar
    d. Zinc oxide by the continuation of a smelting process
    e. Preparation of food for animals and not human consumption by cooking, refining,
    f. Purifying, extracting, smoking, salting, dehydrating, conserving or like means
    g. Processing natural rubber
    h. Processing or treatment of animal, fish, or bird carcasses or parts of them by boiling, heating, washing, crushing, burial, tanning, or scouring other than in the production of animal by-products including glue.
    i. Slaughtering of livestock at an abattoir, slaughter-house
    j. Smelting, alloying or refining of metal, ores, or semi-processed ores (including the reclamation of metal from the scrap)
    k. Storage of bones hides, skins, or tallow
    l. Striping, dismantling, or breaking up for demolition any commodity at a junk yard, scrap materials (including meal) dealer's yard, motor vehicle wrecker's boat wrecker's yard, or plant wrecker's yard
    m. Tannery or hide processing.

Appendix 6: List of Noxious and Offensive Industrial activities;

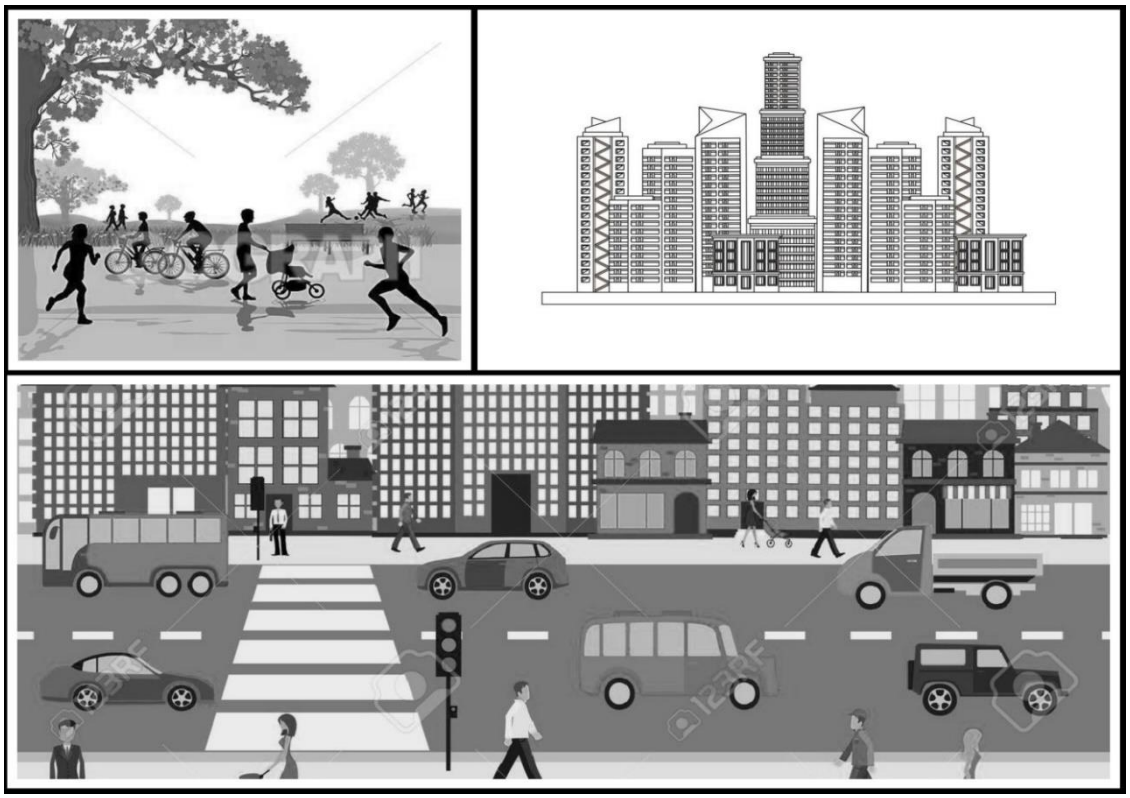
- Cleaning descaling or treatment of metal or masonry or other articles by abrasive blasting other than by a waste process or other than in a enclosed booth or building.
- Cleaning, descaling, or treatment of metal in an acid bath conduct of a poultry dressing housing where other than for poultry raised on the same site.
- Conduct of a pre-mix bitumen plant
- Crashing or screening tone, gravel or sand
- Handling gravel, sand, or crushed stone by a mechanical installation except where all such or material are fully enclosed.
- Heat treatment in a kiln of minerals (including clay), timber, or the products of power metallurgical processes.
- Hot dip galvanizing incineration where the incinerator or incinerators used is or are capable of consuming more than one tone of material per hour and were not in the use of a crematorium.

THE REPUBLIC OF UGANDA

MINISTRY OF LANDS, HOUSING AND URBAN DEVELOPMENT

NATIONAL PHYSICAL PLANNING STANDARDS AND GUIDELINES

2022



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