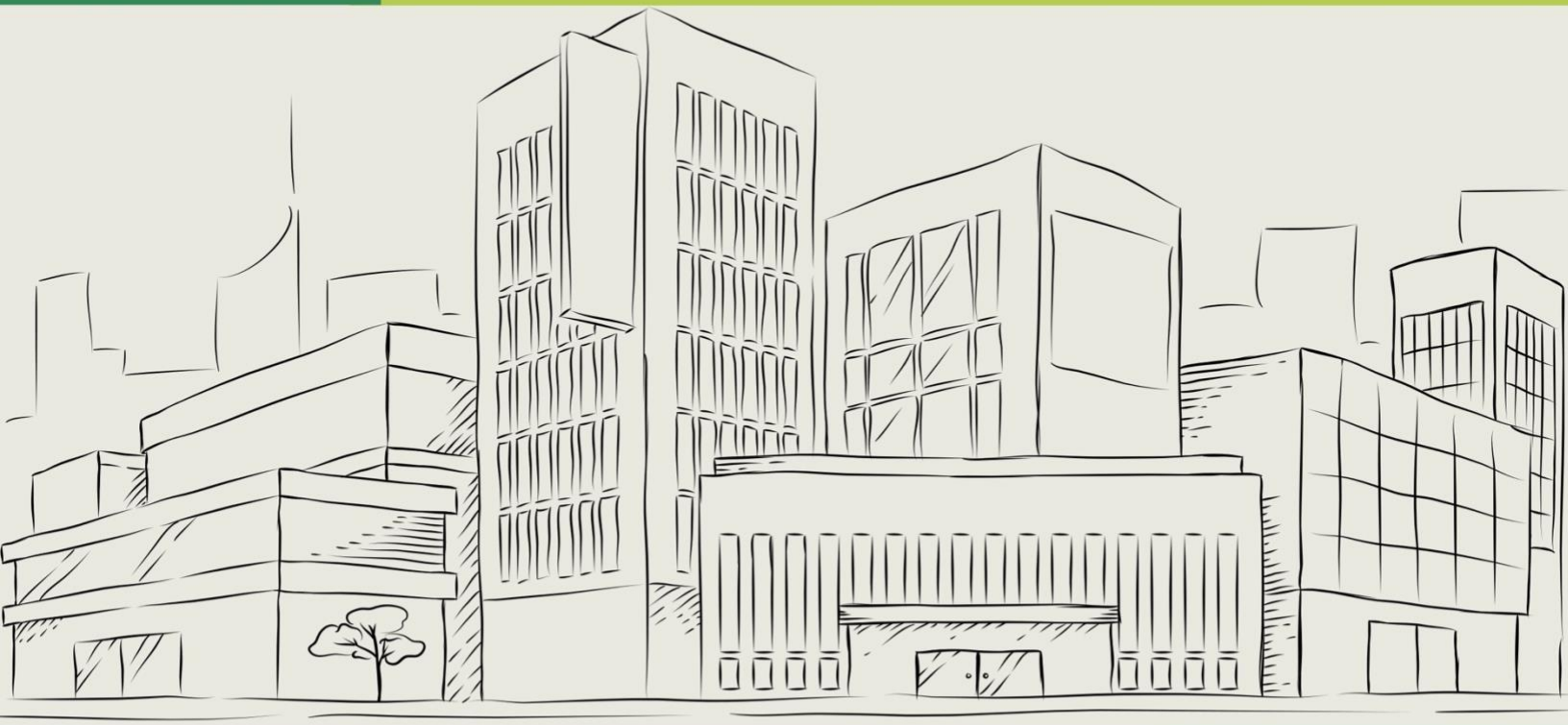
REPUBLIC OF KENYA

MINISTRY OF LANDS, PUBLIC WORKS, HOUSING, AND URBAN DEVELOPMENT

State Department for Lands and Physical Planning

PHYSICAL AND LAND USE PLANNING HANDBOOK



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November 2025

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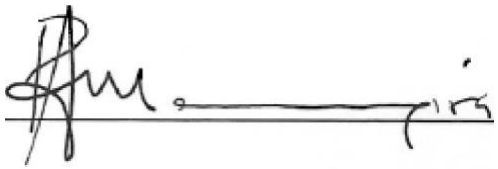
Physical and Land Use Planning Handbook

First published in 2025

CERTIFICATION AND APPROVAL

This is to certify that this Physical and Land Use Planning Handbook has been prepared as per the requirements of the Physical and Land Use Planning Act No.13 of 2019, Section 90, Part (viii) Sub-section 2(b).

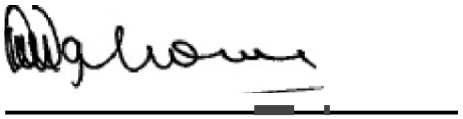
CERTIFIED BY



National Director of Physical Planning

Date 06.08.2025

APPROVED BY



Cabinet Secretary for Lands, Public Works, Housing and Urban Development

Date 29th August 2025

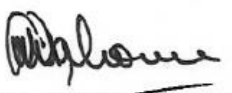
FOREWORD

Kenya has undergone rapid socio-economic development and land use transformation since independence. The country has experienced positive land use transformation through growth, urbanization, and agrarian reforms. Challenges have also occurred in land use, such as uncontrolled land subdivision, urban sprawl, uncoordinated development, and environmental damage, among others. The country has sought to provide a guiding framework for development through enabling legislation, including the Constitution of Kenya 2010, the Physical and Land Use Planning Act, 2019, the National Land Use Policy, 2017, and the National Spatial Plan, 2015. The Physical and Land Use Planning Handbook, which aims to provide practical guidance in all aspects of land use and infrastructure planning, is expected to align with new legislation and the changing needs of society. Therefore, there is a need to review the current Physical Planning Handbook to reflect new planning approaches, governance systems, national goals, and emerging economic sectors.

The Constitution under Article 66 (1) provides for the regulation of the use of land, or any interest in or right over land, in the interests of defence, public safety, public order, public morality, public health, or land use planning. To carry out this function, it grants the state the authority under the Fourth Schedule to establish general principles of land use planning. In fulfillment of this mandate, the national government performs functions such as formulating spatial planning policies, strategies, guidelines, and standards. This Physical and Land Use Planning Handbook is therefore a significant achievement by the State Department for Lands and Physical Planning in carrying out its assigned mandate.

The guidelines and standards in this Handbook apply to the entire country, both at the National and County levels, in the provision of physical and land-use planning services. They will form a basis for enhancing the capacity of counties in the preparation and implementation of physical and land-use development plans and act as a tool for standardizing processes and procedures. The handbook will be reviewed every ten years to reflect the dynamism and emerging trends in physical and land use planning.

I expect that the guidelines and standards in this Handbook will be adhered to. Compliance will lead to the realization of aesthetically, dignified, secure, and sustainable urban and rural settlements that will ensure the socio-economic development and prosperity of the people of Kenya.



Hon. Alice Wahome, EGH
Cabinet Secretary,
Ministry of Lands, Public Works, Housing & Urban Development

PREFACE

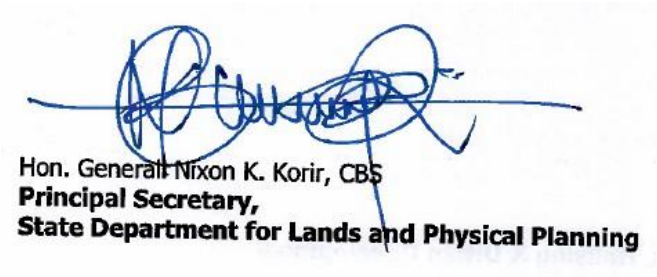
Land is a fundamental resource upon which social, economic, and environmental development depends. Land allocation and utilization directly shape the optimization and sustainability of this resource. Physical and land use planning provides a framework for balancing competing land use demands, guiding optimal, economical, aesthetic, and orderly development, as well as facilitating equitable access to land resources.

The handbook was developed by the Directorate of Physical Planning as a practical guide to the application of the Constitution of Kenya, 2010, and existing policies and legislation on physical and land use planning. In addition, it addresses the gaps in new planning paradigms such as corridor development, techno and resort cities development, and sectional development, as well as the incorporation of Disaster Risk Management (DRM) considerations in physical and land use planning.

Sustainable development depends on the effective coordination of development initiatives in all sectors. The handbook will therefore provide a basis for the coordination and harmonization of sectoral spatial developments by providing guidelines and standards to both the National and County Governments. It will also be critical in addressing disaster risks that are likely to be encountered.

I am confident that this handbook will serve as a valuable reference for institutions and practitioners in the built environment, National and County Governments, academia, professional bodies, Ministries, Departments, and Agencies (MDAs), and the general public.

By sharing a common understanding of standards and guidelines in physical and land use planning provided in the handbook, we will collectively contribute to planned, resilient, and sustainable development that fosters economic growth and the well-being of Kenyans. I therefore appeal to all stakeholders to take up their space in the implementation process.



Hon. General Nixon K. Korir, CBS
Principal Secretary,
State Department for Lands and Physical Planning

ACKNOWLEDGEMENTS

The preparation of the Physical and Land Use Planning Handbook was a collaborative effort involving various institutions and individuals, among them Ministries, Departments and Agencies, County Governments, Academia, Non-Governmental Organizations, Professional Bodies, Practitioners, and Development Partners.

Foremost, we extend our appreciation to the State Department for Lands and Physical Planning for providing policy guidance and effective oversight. We also acknowledge the support of other Ministries, in particular, the National Treasury and Economic Planning, for their funding support, the Ministry of Defence, and the Ministry of Education, for their comprehensive comments.

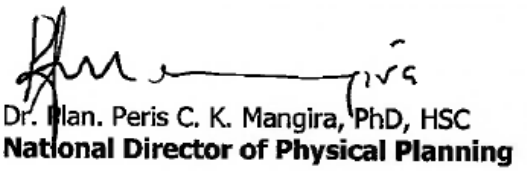
We are grateful to the Council of Governors (CoG) and County Governments for their active participation, whose invaluable and practical insights enriched the handbook. We also recognize the National Land Commission for its valued participation and knowledge sharing in the formulation process.

We acknowledge specific institutions that played a critical role in the development of the Handbook. Among them, the World Bank, the National Disaster Operation Center (NDOC), the Department of Metropolitan Development, the State Department for Public Works, Kenya Power and Lighting Company, Kenya Urban Roads Authority, Kenya Maritime Authority, Kenya Civil Aviation Authority, Kenya Airports Authority, Communication Authority of Kenya, National Construction Authority, Kenya Railways, Conservator of Forests and the National Environment Management Authority for their expertise and active participation in the preparation of the handbook.

Special mention goes to experts in academia and professional bodies. In particular, the University of Nairobi, the Technical University of Kenya, the Kenya Institute of Planners, the Architectural Association of Kenya (Town Planners Chapter), and the Town and Country Planners Association of Kenya for their technical expertise and professional input to the handbook.

Lastly, I sincerely thank all the staff in the Directorate of Physical Planning for their professionalism, resilience, and dedication in preparing the handbook within the set timelines. Special appreciation goes to Enosh Momanyi, Augustine Masinde, Dr. Elizabeth Nguah, Gertrude Rapong'o, Grace Katheu, Charles Onditi, Melody Lijoodi, Faith Onyango, Collins Korir, Irene Mugo, Mercy Nturibi, Ephraim Njogu, Stephen Katana, and Zudiah Shamir for advancing the initiation and formulation process.

To you and all stakeholders, "Asante Sana". Let us use this Handbook to develop Kenya.



Dr. Plan. Peris C. K. Mangira, PhD, HSC
National Director of Physical Planning

EXECUTIVE SUMMARY

Kenya is undergoing rapid development across multiple sectors including agriculture, health, manufacturing, housing, and the environment. However, the absence of a current, unified physical and land use planning framework has contributed significantly to uncoordinated and disorderly development, particularly in urban areas.

The Constitution of Kenya, 2010, the National Land Policy, 2009, the National Land Use Policy, 2017, and the Sectional Properties Act, 2020, all recognize the necessity of planning prior to development. Moreover, constitutional devolution has reshaped how planning functions are organized across national and county governments. The national development blueprint, Kenya Vision 2030, together with emerging phenomena such as techno and resort cities, corridor development, and disaster risk management, underscores the need for a comprehensive guide for physical and land use planning. Therefore, the updated handbook seeks to address this need.

The purpose of this revised handbook is to align planning practices with constitutional, policy, and legal obligations, and to provide uniform standards and guidelines that enable coordinated and sustainable development across the country.

In its preparation, the handbook adopted a collaborative, multi-disciplinary, multi-sectoral and participatory methodology, engaging stakeholders from public institutions, the private sector, academia, civil society, and communities. Desktop studies and benchmarking of international best practices were also conducted to inform its development standards.

The handbook is intended for use by: National Government Ministries, Departments, and Agencies, County Governments, built-environment professionals and practitioners, academic institutions offering training in planning and related fields, professional bodies in the built environment, non-governmental and community-based organizations, civil society, and the general public.

Key highlights incorporated in this updated handbook include guidelines and standards for: disaster risk management, groundwater recharge basins, green cities, the blue economy, techno and resort cities, smart cities, vehicle-charging infrastructure, multi-modal transport interchanges, and corridor development, among others.

The handbook is organized into six chapters:

1. **Introduction** – providing the justification, objectives, methodology, and guiding principles for plan preparation and implementation.
2. **Policy, Legal and Institutional Context** – outlining the constitutional, legal, and policy frameworks underpinning its preparation.
3. **Physical and Land Use Planning** – describing procedures for plan preparation and implementation, including types and contents of physical and land use development plans.

4. **Development Control** – detailing various development application types, requirements, and approval processes.
5. **Planning Standards and Guidelines** – providing sector-specific minimum standards for planning, development approval, implementation, and enforcement.
6. **Human Resources and Institutional Requirements** – outlining the distribution of the physical and land use planning functions among the national planning authority, the county planning authorities, and the National Land Commission; specifying required capacity (personnel and equipment) for effective planning and implementation.

Overall, the handbook provides a comprehensive, legally grounded, and forward-looking framework. It aims to enable coordinated, resilient, and sustainable development, balancing economic growth, environmental conservation, social welfare, and equitable access to land and resources.

PLANNING TEAM

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DEFINITION OF TERMS

"*Aerodrome*" is a defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure or movement of aircraft.

"*Artisanal mining"* means traditional and customary mining operations using traditional or customary ways.

"Bio retention" means landscaped depressions or shallow basins used to slow and treat on-site stormwater runoff.

"*Buffer zone plan"* is a plan for the area surrounding the city, a strategic installation whose integrity it intends to protect.

"Building Lines" means a limit beyond which a building must not extend to a street.

"Bus Rapid Transit" (BRT) is a high-quality bus-based transit system that delivers fast, comfortable, and cost-effective services at the metro level.

"Bus Rapid Transit Corridor" is a section of a road or contiguous roads served by a bus route or multiple bus routes with a minimum length of 3km that has dedicated bus lanes and otherwise meets the BRT basic minimum requirements.

"Carbon sequestration" is the process of capturing and storing atmospheric carbon dioxide.

"Carbon sink" refers to any reservoir, natural or otherwise, that accumulates and stores some carbon-containing chemical compound for an indefinite period and thereby lowers the concentration of carbon dioxide (CO^2) in the atmosphere.

"Child care" means temporary care and supervision of a child conducted in a location other than the provider's permanent residence or separate from a provider's living quarters and shall include welfare, protection, supervision, and training of a child.

"Child care facility" means a designated place in which childcare is offered at any time to more than five children, all of whom are less than four years of age and who are not related to the child care provider.

"Clear height" is the vertical distance between the lowest edge of the sign and the ground level.

"*Corridor development planning*" is an approach that supports regional development, aiming at linking regions within the country to its trans-border regions mainly through transport corridor planning that spurs economic growth and addresses infrastructure gaps.

"Desalination" is a technique where the excess salts are removed from seawater or grey water converting it into safe, portable or usable water.

"Disaster" is a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity.

"Disaster Risk" is the potential loss of life, injury, or destroyed or damaged assets, which could occur to a system, society or a community in a specific period, determined probabilistically as a function of hazard, exposure, vulnerability and capacity.

"*Disaster risk management*" is the application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses.

"Export Processing Zones (EPZs)" is a customs area where one is allowed to import plant, machinery, equipment and materials for the manufacture of export goods. It is confined to manufacturing establishments.

"Fire tender" is a unit of apparatus used by a fire protection service to transport men, extinguishing agents, and equipment to the scene of a fire.

"Greenfield smart cities" are cities that are built on a greenfield and bring together eco-friendly elements and highly developed infrastructure thus blending both sustainable development and the next level of human habitation.

"Kiss-and-ride" denotes a facility designed to allow commuters to be dropped off by car and complete their journey by public transport.

"Marine bioprospecting" means the search for bioactive molecules and compounds from marine sources that have new, unique properties and the potential for commercial applications. Its applications include medicines, food and feed, textiles, cosmetics and the process industry.

"Marine Spatial Planning" A long term process integrating human settlements, economic activities (fishing, aquaculture, shipping, tourism, renewable energy generation, and seabed mining) and infrastructural developments with environmental conservation at the land-sea interface to ensure sustainability and resilience of maritime ecosystems and services

"Park-and-ride" is a system for reducing urban traffic congestion in which drivers leave their cars in car parks on the outskirts of a city and travel to the city centre on public transport.

"Passage width of platforms" is the intermediate distance between departure bays and waiting bays.

"Resort city" is an urban area where tourism or vacationing is the primary component of the local culture and economy.

"Retrofitted smart cities" are existing cities that are developing, upgrading, or furnishing infrastructure with technology.

"*Roadside stations"* are designated rest areas found along highways to provide restrooms, restaurants, and health facilities for travelers to address fatigue and enhance road safety for both drivers and passengers.

"Service area" is the sum of all areas on all floors of a building used for custodial supplies, janitorial sink rooms, closets and public restrooms.

"Special Economic Zone" (SEZ) is a designated area in a country that is subject to unique economic regulations that differ from other areas in the same country.

"Techno City" is a well-defined and delineated geographical urban area characterized by advanced technology and or devoted to technological research, development or production.

"Transit Oriented Development" (TOD) is an urban planning strategy that creates compact, mixed-use neighborhoods clustered around public transit stations. Its goal is to encourage walking, biking, and transit use, thereby reducing car dependency, traffic congestion, and sprawl while promoting sustainable, equitable, and vibrant communities.

"Mixed-use developments" are urban projects that integrate multiple functions, such as residential, commercial, institutional, and cultural spaces, into a single property or area, creating walkable, vibrant, and sustainable communities.

"Transport interchange" is the place where transfers between different public transport lines or modes occur. Either interchange can be the physical action of transferring between services or modes as part of the passenger's journey or it can be the physical location that provides access to the public transport system.

"Vegetated swales" are open, shallow channels densely planted with a variety of trees, shrubs, and/or grasses to slow runoff, filter water, and promote infiltration into the ground.

"Water towers" means an elevated geographical area comprising of mountains, hills, and plateaus where the topography, geology, soils and vegetation support reception, retention, infiltration, and percolation of precipitation.

ACRONYMS

4Rs	Reduce, Reuse, Recycle and Recover
BRT	Bus Rapid Transit
BTS	Base Transceiver Station
CAK	Communication Authority of Kenya
CaT DDO	Catastrophe Deferred Drawdown Option
CBD	Central Business District
CECM	County Executive Committee Member
CIDP	County Integrated Development Plan
CNZ	Cross National Zones
CSP	County Spatial Plan
DRM	Disaster Risk Management
EA	Environmental Audit
EEZ	Exclusive Economic Zones
ESIA	Environmental Impact Assessment
GFA	Gross Floor Area
IEC	International Electro-Technical Commission
ISUDP	Integrated Sustainable Urban Development Plan
KCA	Kenya Civil Aviation Authority
KDF	Kenya Defence Forces
KeNHA	Kenya National Highways Authority
KeRRA	Kenya Rural Roads Authority
KFS	Kenya Forest Service
KMA	Kenya Maritime Authority
KPC	Kenya Pipeline Company
KpH	Kilometer per Hour
KRC	Kenya Railway Corporation
KURA	Kenya Urban Roads Authority
KWS	Kenya Wildlife Service
LAPSSET	LAMU Port-South Sudan-Ethiopian-Transport
LCDA	LAPSSET Corridor Development Authority
LH	Lower Highlands
LM	Lower Midlands
LU	Livestock Units
MDAs	Ministries, Departments and Agencies
MGR	Meter Gauge Railway
MoD	Ministry of Defence
MPA	Marine Protected Areas

MSP	Marine Spatial Plan
NCA	National Construction Authority
NEMA	National Environmental Management Authority
NMT	Non-Motorised Transport
NSP	National Spatial Plan
OLS	Obstacle Limitation Surface
PLUPA	Physical and Land Use Planning Act, No.13 of 2019
PLWD	Persons Living With Disabilities
PPP	Private Public Partnership
SBP	Science-Based Parks
SEA	Strategic Impact Assessment
SEZ	Special Economic Zones
SGR	Standard Gauge Railway
SIA	Social Impact Assessment
TOD	Transit-Oriented Development
TVET	Technical and Vocational Education and Training
UH	Upper Highlands
UM	Upper Midlands
WRA	Water Resources Authority

1 CHAPTER ONE: INTRODUCTION

1.1 Background

Physical and land use planning is the continuous process of designating, regulating, evaluating, and organizing the present and future use and development of land to achieve the optimum level of land utilization in a sustainable manner. This process has to be guided by a set of rules, regulations and standards based on Article 66 (1) of the Constitution of Kenya 2010, on regulation in the use of any land, or any interest in or right over any land, in the interest of defence, public safety, public order, public morality, public health, or land use planning. This handbook is also geared towards the implementation of the Physical and Land Use Planning Act No.13 of 2019, section 10 and its subsidiary regulations.

1.2 Problem Statement

Kenya has, since its independence, experienced transformation in terms of investment in physical and social infrastructure, rapid urbanization trends, and exploration of minerals, which have led to changes in land use patterns. This transformation needs to be organized to ensure returns in the economy. The new economic frontiers of the blue economy, techno and resort cities, corridor development and mineral exploration require a framework to guide their development. In addition, there is a need to take cognizance of the emerging global, regional and local trends such as climate change and the level of disaster preparedness to ensure that developments achieve the expected sustainable outcomes.

The need to review the handbook has been necessitated by the enactment of the Constitution, 2010, the Physical and Land Use Planning Act 2019, Sessional Paper No. 1 of 2017 on National Land Use Policy, and other relevant legislations and policies.

1.3 Scope

The handbook will be applicable throughout Kenya as a tool for decision-making on matters relating to spatial planning, land use management and development. The handbook will be reviewed every ten years.

1.4 Purpose

The purpose of this handbook is to standardize the physical and land use planning practice throughout the country.

1.5 Objectives

- To provide guidelines and standards for physical and land use planning practice.
- To provide a reference point for decision-making by the professionals in the built environment.
- To mainstream emerging trends in physical and land use planning.

1.6 Principles

The guidelines and standards are anchored on the following principles:

- *Accessibility:* All parcels of land must be provided with adequate access.
- *Aesthetics:* Developments should be organized in a visually appealing manner.
- *Compatibility:* Land use activities should co-exist in harmony.
- *Convenience:* Movement from one place to another should take the shortest time possible.
- *Conservation:* Protection and care of resources should be upheld.
- *Efficiency:* Resources should be used optimally.
- *Economy:* The available resources are to be used sparingly and synergistically.
- *Equity:* There should be fairness in the provision of human basic needs and employment opportunities.
- *Health, Safety and Welfare:* All developments should ensure health, safety and welfare of the users.
- *Resilience:* All physical and land use development plans must promote the ability of developments to recover and adapt quickly from a disaster with ease.
- *Sustainability:* All resources should be utilized without compromising the needs of future generations.
- *Urban containment:* All developments in urban areas should be concentrated within a delineated boundary.

1.7 Methodology

The preparation of the handbook was done in a multi-sectoral, multi-disciplinary, consultative and participatory manner through the following stages:

1. **Formulation of concept paper**

This was done to conceptualize the assignment and give a road map to the preparation of the handbook.

2. **Identification of thematic areas and formation of technical working groups**

Thematic areas were identified based on sectors, namely, agriculture, environment and natural resources, human settlement, economy, industry, tourism, transport, infrastructure, blue economy and energy. This informed the formation of the technical working groups.

3. **Desktop literature review and benchmarking**

They were done by reviewing various National policies and legislations as well as drawing best practices from other countries, namely Ghana, Rwanda, Uganda, South Africa, China, Hong Kong, Japan, Australia, India, and the United States of America.

4. Work sessions

Brainstorming sessions and group discussions were conducted to gather different views and ideas to inform the preparation of the handbook.

5. Stakeholder engagement

Stakeholder engagements were undertaken at different stages of the handbook preparation**.** They included, among others, NLC, NCA, KCA, KNBS, COG, NEMA, KURA, Public Works, TUK, UoN, KIP, AAK, County Governments, and the Chamber of Commerce.

2 CHAPTER TWO: POLICY, LEGAL AND INSTITUTIONAL CONTEXT

2.1 Overview

The physical and land use planning mandate is regulated by policy, legal and institutional frameworks which form the basis for preparation of this handbook.

2.2 Policy Framework

The key policies include; the Kenya Vision 2030, Sessional Paper No. 3 of 2009 on National Land Policy, Sessional Paper No. 1 of 2017 on National Land Use Policy and the National Spatial Plan (NSP) 2015-2045. Other thematic policies include; National Policy for Disaster Management in Kenya, 2009, National Urban Development Policy (NUDP), 2012, Integrated National Transport Policy (INTP), 2024, National Environment Policy, 2013, National Forest Policy, 2020, Kenya National Adaptation Plan 2015-2030, Ministry of Health Norms and Standards for Health Service Delivery, 2006 and the National Industrialization Policy 2012-2030.

2.3 Legal Framework

Article 66 of the Constitution of Kenya 2010 mandates the state to regulate use of land in the interest of defence, public safety, public order, public morality, public health and land use planning. Regulation on use of land is primarily governed by the Physical and Land Use Planning Act (PLUPA), CAP 303 which is the principal law. Other relevant legislation include; Environmental Management and Coordination Act, (1999), County Governments Act, No. 17 of 2012, The National Construction Authority Act No.41 of 2011, Urban Areas and Cities Act, No. 13 (Amendment) of 2019, National Land Commission Act, No. 5 of 2012, Land Act No. 6 of 2012, Agriculture, Fisheries and Food Authority Act, (2013), Water Act (2002), Mining Act, No. 12 of 2016, The Forest Conservation and Management Act, No. 34 of 2016, Petroleum Act, No. 2 of 2019 and Maritime Zones Act, 2012.

2.4 Institutional Framework

Implementation of the handbook will require concerted efforts by various institutions which will play different roles as shown in Table 1.

Table 1: Implementing Institutions

INSTITUTION	ROLE
Directorate of Physical Planning	Formulating national physical and land use planning policies, regulations, guidelines and standards
	Collaboration with the MDAs and County Governments to coordinate, and consult the preparation, implementation and review of the handbook
	Preparation and implementation of physical and land use development plans

	Capacity building and technical support to County Governments and MDAs in the implementation of the handbook
	Dissemination and sensitization of the handbook to the County Governments, MDAs, Development Partners and the general public
County Governments	Formulating policies, regulations, guidelines and standards specific to the Counties
	Preparation and implementation of County Physical and Land Use Development Plans
	Development control, compliance and enforcement
	Dissemination and sensitization of the handbook to the public
Ministries, Departments and Agencies	Formulating policies, regulations, guidelines and standards specific to the sectors
	Preparation and implementation of sectoral plans
National Land Commission	Oversight, monitoring and evaluation of the implementation of physical and land use development plans prepared by the National and County Governments
	Preparation of oversight, monitoring and evaluation tools for land use planning
Academic Institutions	Training, research and dissemination of information
	Offering consultancy services
Professional Bodies	Require their members to abide by the guidelines and standards provided in the physical and land use planning handbook
	Corrective measures to ensure adherence to the provisions of the handbook
	Training and Continuous Professional Development
Built Environment Practitioners	Execution of physical and land use planning consultancy services
	To use the handbook as a reference in preparation of development projects
	As a basis for best practices
Development Partners	For compliance of projects to the guidelines and standards in the handbook
	As a basis for partnership, funding and consultancy

Source: Directorate of Physical Planning, 2025

3 CHAPTER THREE: PHYSICAL AND LAND USE DEVELOPMENT PLANS

3.1 Overview

This section highlights the types and contents of plans as stipulated in the Physical and Land Use Planning Act No. 13 of 2019. It covers the processes to be followed during plan preparation, presentation of maps, criteria for identification and mapping of stakeholders and modes of stakeholder engagement during plan preparation.

3.2 Types of Plans

The Physical and Land Use Planning Act No. 13 of 2019 prescribes the preparation of different types of plans. These plans can be categorized into long-term (10-20 years) and short-term (3-5 years).

Long-term plans include:

1. National Physical and Land Use Development Plan (Section 21).
2. Inter-County Physical and Land Use Development Plan (Section 29).
3. County Physical and Land Use Development Plan (Section 36).

Short-term plans include:

1. *An action/renewal/redevelopment plan* for comprehensive planning of areas selected for intensive change, which is to commence within a specified period, by improvement, redevelopment or new development, restoration and re-use of derelict land;
2. *An advisory plan/zoning plan* indicating permitted subdivision and use of land specified in such plan;
3. A subject plan for a detailed treatment of a particular aspect of planning in relation to a part or the whole of a local physical development plan;
4. *Part development plans* indicating precise sites for immediate implementation of specific projects or for alienation purposes. A Part Development Plan is prepared for purposes of land alienation, reservation of public land, regularization of existing county, inter-county and national projects and projects of strategic national importance;
5. *Site Plans* indicating a detailed layout of the whole site and the relationship of the proposed works with the boundary of the property, nearby roads, and neighboring buildings. The following should be contained in the plan;
    - all existing buildings and structures, open areas, trees and any other structures.
    - all the proposed developments within the site.
    - the position and size of existing and proposed hard-surfaced areas, such as parking spaces, turning areas, and paths.
    - the whole of the boundary of the property, indicating the position and height of all boundary walls and fences.
    - any buildings or structures to be demolished.
    - all roads/footpaths/public rights of way adjoining the site.

- All existing buildings and structures on the land adjoining the application site and structures on land adjoining the site must be clearly shown unless the applicant has demonstrated that these would NOT influence or be affected by the proposed development.

3.3 Planning Process

The planning process is outlined below;

Step 1: Pre-planning

- Planning needs assessment- Undertake planning needs assessment to identify the issues to be addressed by the plans, type of plans to be prepared, and prepare the budget.
- Reconnaissance - Undertake a visit to the planning area to familiarize with the site.
- Scoping - Scan the planning area to determine the major issues and impacts that will be important in decision-making and need to be addressed by the plan. It clarifies geographic and legal context which inform the formation of technical working groups and the identification of key local stakeholders and experts.
- Preparation of the Terms of Reference- Describe the objectives, scope (spatial and broad assignment activities), deliverables, timelines, team composition and qualification.
- Stakeholder mapping- List of all key stakeholders involved in the plan preparation process.
- Notice of intention to plan- through a prescribed form as provided under PLUPA.

Output: Concept Paper and TORs.

Step 2: Data Collection

- Delineation of the planning area - Outline the extent of the planning area.
- Preparation of a base map.
- Literature review - Secondary data collection.
- Primary data collection- Prepare data collection instruments, administer questionnaires and interviews, conduct transect walks and observe the environs.

Output: Base Map and Survey Report (existing situation report).

Step 3: Visioning

- Vision and objective setting - Guide the community in deciding the future they want using break- out groups and vision cards.

Output: Visioning Report.

Step 4: Draft Physical and Land Use Plan Preparation

- Data analysis and interpretation.
- Formulation of land use models/ scenario building.
- Integration and the selection of the preferred model.
- Formulate land use proposals - detailed land use plans and zoning regulations.
- Action area plans and strategies.

Output: Draft Physical and Land Use Development Plan.

Step 5: Plan Validation

- Present the draft plan to the stakeholders for input and adoption.

Output: Stakeholder Validation Report.

Step 6: Notification of Completion of the Plan

- Publish notice of completion of the draft plan in the Gazette, in at least two newspapers of national circulation, and through electronic media.

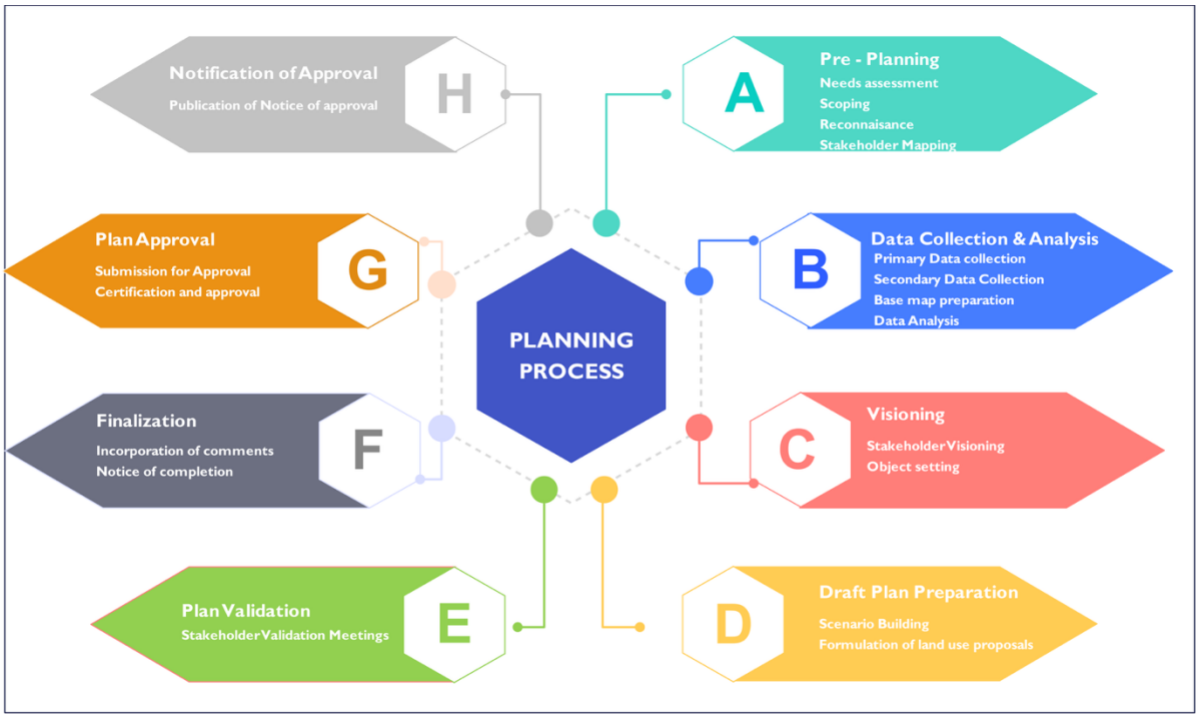
Output: Notice of Completion of the Plan.

Step 7: Plan Approval

- Submit the plan to the relevant planning authorities for certification, adoption and approval where applicable.

Output: Approved Physical and Land Use Development Plan and Notice of Plan Approval.

Figure 1: Summary of the Planning Process



Source: Directorate of Physical Planning, 2025

The percentage of work done at the various stages of plan preparation can be calculated based on the intensity of the activities and output under each stage, as indicated in Table 2 below:

Table 2: Percentage of Work at Various Stages in the Planning Process

Planning Process	**Overall percentage of work**
1. Pre-planning	10
2. Data collection	20
3. Visioning	10
4. Draft plan preparation	35
5. Adoption of the Survey Report	5
6. Validation	5
7. Finalization	10
8. Approval	5
TOTAL	**100**

Source: Directorate of Physical Planning, 2025

3.4 Presentation of Plans and Maps

Physical and land use development plans should be GIS-based requiring land use information to be contained in a database that allows for ease of storage, retrieval, querying and presentation.

3.4.1 Scale of the Maps

a. **National, Inter-County, County and Local context maps**: These maps indicate relative contextual location and position of the planning area to match international standards. These are to be on the scale of:
   - National context: 1:250,000.
   - Inter-county and County context: ranges between 1: 100,000 and 1: 50,000.
   - Local context is 1: 25,000.

b. **Base Map** - the map includes key physiographic and natural features such as rivers, wetlands, lakes, forests and hills, main man-made features such as trunk roads, railway lines, water reticulation facilities, termini, way leaves, and human settlements, urban nodes, contours, among others. The maps prepared shall adopt a scale of a multiple of 500. The recommended scale ranges from 1:500, 1:1,000, 1:2,500, and 1:5,000. The choice of any of these scales should be guided by the level of detail the plan intends to portray.

c. **Situational Analysis Context maps**- to illustrate features and aspects of various thematic areas. The scale depends on the level of detail to be illustrated or presented. The recommended scales range from 1:10,000 to 1: 25,000.

d. **Plan Proposals -** These maps indicate the location of various Plan proposals. The scale depends on the level of detail required to be illustrated or presented. The recommended scales range from 1:10,000, and 1: 25,000.

e. **Action Plans -** These maps indicate areas for detailed action. The scale of the maps depends on the area to be covered and the particular aspects to be captured. The recommended scales range from 1:5,000 to 1:10,000.

f. **PDPs -** between 1:2,500 and 1:5,000.

g. **Site plan**- 1:2,500.

3.4.2 Plan Layout and Paper Size

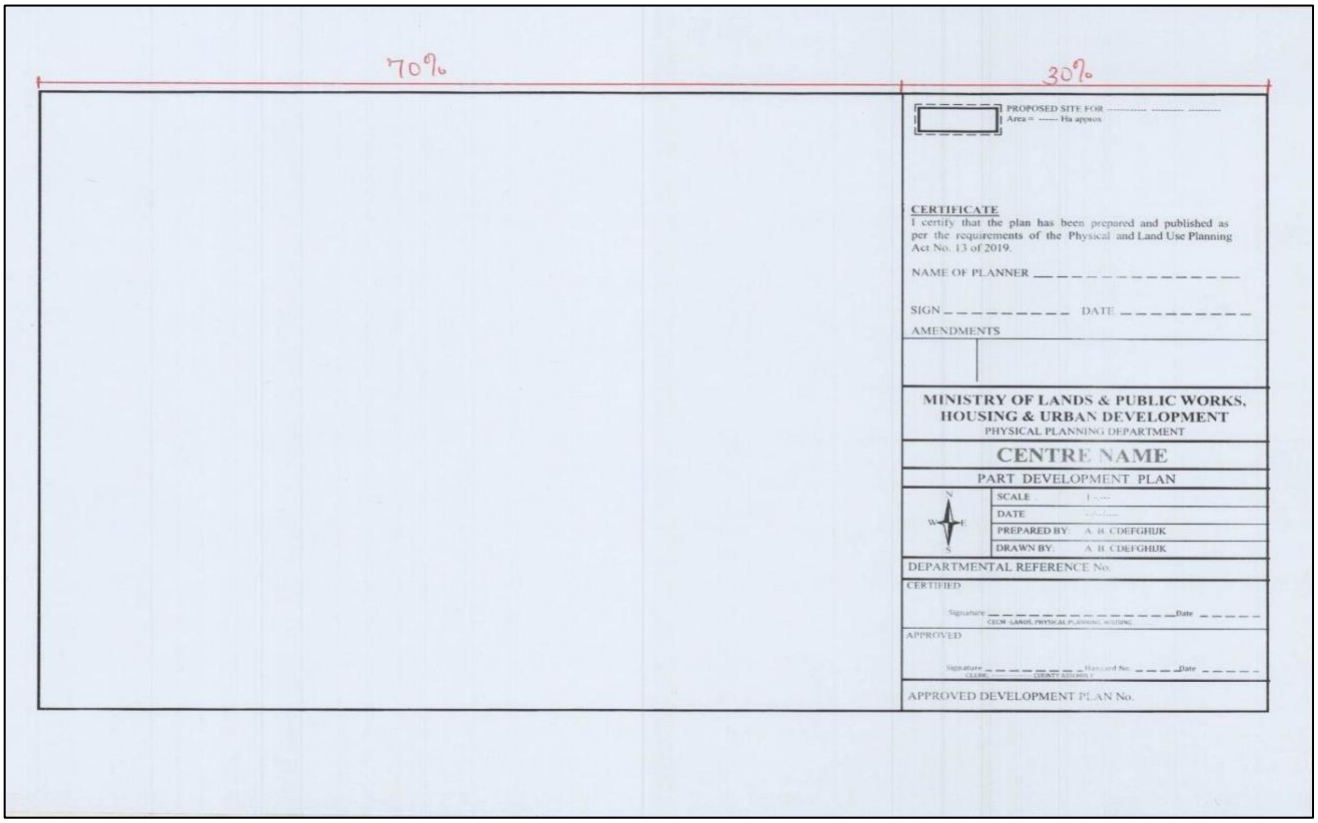
The plan layout may take either a landscape or a portrait orientation, depending on the layout of the region. The plan layout shall have the larger portion of the paper displaying plan details (drawing), and the remaining part shall contain the legend information. Depending on the paper size, the plan layout will be as shown in Table 3:

Table 3: Percentage of Plan Display

Paper Size	Map Face (%)	Legend (%)
A0 and A1	80	20
A2 and A3	75	25
A4	70	30

Source: Directorate of Physical Planning, 2025

Figure 2: An illustration of Layout Proportioning on an A4 Paper Size



Source: Directorate of Physical Planning, 2025

3.4.3 Land Use Colors and Codes

Land uses are classified into 10 broad categories, each requiring planning considerations. These include residential, industrial, education, recreation, conservation, public purpose, commercial, public utilities, transportation and agriculture. Each of these land use categories is assigned a colour code. Sub-codes can be created out of the main planning codes to distinguish different categories of usage within the same class of land use, as shown in Table 4:

Table 4: Recommended Land Use Colour Codes & Zones

Code	Zone	Category	Colour	*Shade*
0	Residential	High Density	Brown	
		Medium Density	Mid Brown	
		Low Density	Pale brown	
1	Industrial	Heavy Industrial	Purple	
		Light Industries	Pale Purple	
2	Educational		Orange	
3	Recreational		Green	
4	Public Purpose		Yellow	
5	Commercial	Commercial	Red	
		Business Cum Residential	Pale Red	
6	Public Utilities		Blue	
7	Transportation	Roads/Rails/Airports etc.	Grey	
		Bus Park	Dark Grey	
8	Conservation		Pale Green	
9.	Agricultural		Pale Yellow	
10.	Mixed use		Hatched Shading	The color will be hatched shading, with the dominant land use color taking the most pronounced shade

Source: Directorate of Physical Planning, 2025

Note: *Waterbodies can be shown by a lighter shade of blue.*

Table 5 indicates how to achieve the colour shades through the combination of proportions (%) of Cyan, Magenta, Yellow, and Black (CMYK).

Table 5: The Recommended Combination of Colours, CMYK

Code	Zone	Category	Colour	Cyan	Magenta	Yellow	Black
0	Residential	Low Density	Brown	8	12	20	0
		Medium Density	Mid Brown	10	20	30	0

		High Density	Pale Brown	20	30	40	0
1	Industrial	Heavy Industrial	Purple	10	50	0	0
		Light Industries	Pale Purple	10	25	0	0
2	Educational	Educational	Orange	0	20	50	0
3	Recreational	Recreational	Green	55	30	55	0
4	Public Purpose	Public Purpose	Yellow	0	0	35	0
5	Commercial	Commercial	Reddish	0	60	60	0
		Business Cum Residential	Pale Red	0	40	40	0
6	Public Utilities	Public Utilities	Blue	80	60	0	0
7	Transportation	Transport	Grey	0	0	0	20
		Bus Park	Dark Grey		0		30
8	Conservation	Conservation	Pale Green	20	0	20	0
9	Agriculture	Agriculture	Pale yellow	15	0	25	0

Source: Directorate of Physical Planning, 2025

Table 6 indicates how to achieve the colour shades through the combination of proportions of Red, Green and Blue (RGB).

Table 6: Recommended combination of Colours (RGB)

Number	Land Use	Red	Green	Blue	Colour
0	Residential	215	194	158	Brown
1	Industrial	197	0	255	Purple
2	Educational	255	170	0	Orange
3	Recreation	163	255	115	Green
4	Public purpose	255	255	0	Yellow
5	Commercial	255	0	0	Red
6	Public utilities	0	112	255	Blue
7	Transportation	20% grey or fill #CCCCCC or stroke #ffffff			Grey
8	Conservation	255	255	190	Pale green
9	Agricultural	255	255	230	Pale yellow

Source: Directorate of Physical Planning, 2025

Note: *CYMK is the best colour profile to use when designing for a printed format while RGB colour mode is suitable for screen display*.

3.4.4 Legend

Explanation of Symbols used

List in the following order: point features, line features, and area features. The order shall always be, natural features (base elements), and mapped themes.

Land Use Categories

Use planning codes and sub-codes, e.g., residential may have low, medium and high-density codes.

Details of Preparing and Approving Authority

Indicate: the name of the county; the department preparing the plan; the certifying authority; the approving authority at the lower section of the legend for National, Inter-County, County and Local plans.
Include: the scale used; true north; date of completion; plan reference number and approval number i.e., County no/Area or town/Planner's registration no/year of preparation/Serial Plan No.
Figures 3, 4, 5, 6 and 7 show samples of the legends of different types of plans:

Figure 3: Legend Sample: Local Physical and Land Use Development Plan

TITLE			
CERTIFICATE I certify that the plan has been prepared and published as per the requirements of the Physical and Land Use Planning Act No. 13 of 2019 Name of Registered Physical Planner …… Registration Number …… Signature ……. Date ……			
AMENDMENTS			
1.			
2.			
ZONE	**LAND USE**	**COLOUR**	**AREA IN HA**
0	Residential		
1	Industrial		
2	Educational		
3	Recreational		
4	Public Purpose		
5	Commercial		
6	Public utility		
7	Transportation		
8	Conservation		
9	Agricultural		
County Government of (Name of county) **Department of Lands and Physical Planning**			
Name of urban area/town/city			
Local Physical & Land Use Development Plan			
		Scale:	
		Date:	
		Prepared By:	
		Drawn By:	
Departmental Reference No.			

Figure 4: Legend Sample: Development Plan

CERTIFIED: County Director of Physical Planning Name…… Reg No…….. Signature……. DATE……
RECOMMENDED: Signature……. DATE…… CECM in charge of Lands and Physical Planning
APPROVED: Hansard NO. Signature……. DATE…… Clerk to County Assembly
APPROVED DEVELOPMENT PLAN No.

Source: Directorate of Physical Planning, 2025

Figure 5: Legend Sample: Part Development Plan

<table>
<tr><td colspan="3">Title</td></tr>
<tr><td rowspan="4">Proposed site + Grids & contours</td><td></td><td>Proposed site for …… (approximate size in ha)</td></tr>
<tr><td colspan="2">CERTIFICATE
I certify that the plan has been prepared and published as per the requirements of the Physical and Land Use Planning Act No. 13 of 2019

Name of Physical Planner …… Registration Number …… Signature ……
Date ……</td></tr>
<tr><td></td><td>AMENDMENTS</td></tr>
<tr><td>1.</td><td></td></tr>
</table>

	MINISTRY OF LANDS AND PHYSICAL PLANNING Directorate of Physical Planning	
	Name of urban area/town/city	
	PART DEVELOPMENT PLAN	
		Scale:
		Date:
		Prepared By:
		Drawn By:

Source: Directorate of Physical Planning, 2025

Figure 6: Legend Sample: Part Development Plan - National Government

	DEPARTMENTAL REFERENCE No.
	CERTIFIED BY SIGNATURE……. Date……. Director General
	APPROVED BY SIGNATURE……. Cabinet Secretary Ministry in charge of Lands and Physical Planning Nairobi Date……
	APPROVED DEVELOPMENT PLAN No.

Source: Directorate of Physical Planning, 2025

Figure 7: Legend Sample for Part Development Plan - County Government

<table>
<tr><td colspan="3">Title</td></tr>
<tr><td rowspan="10"></td><td colspan="2"></td><td>Proposed site for..(approx. size in ha)</td></tr>
<tr><td colspan="3">CERTIFICATE

I certify that the plan has been prepared and published as per the requirements of the Physical and Land Use Planning Act No. 13 of 2019
Name of Physical Planner ……
Registration Number …… Signature ……. Date ……</td></tr>
<tr><td></td><td colspan="2">AMENDMENTS</td></tr>
<tr><td>1.
2.</td><td colspan="2"></td></tr>
<tr><td colspan="3">MINISTRY OF LANDS AND PHYSICAL PLANNING
Directorate of Physical Planning
COUNTY GOVERNMENT OF …….</td></tr>
<tr><td colspan="3">Name of urban area/town/city</td></tr>
<tr><td colspan="3">PART DEVELOPMENT PLAN</td></tr>
<tr><td colspan="2" rowspan="3"></td><td>Scale:</td></tr>
<tr><td>Date:</td></tr>
<tr><td>Prepared By:</td></tr>
<tr><td rowspan="2"></td><td colspan="2"></td><td>Drawn By:</td></tr>
<tr><td colspan="3">DEPARTMENTAL REFERENCE No.</td></tr>
</table>

Title	
	CERTIFIED BY SIGNATURE……. Date……. County Director of Physical Planning
	RECOMMENDED BY SIGNATURE…….. Date……. CECM, Lands
	1st APPROVAL BY HANSARD NO ……Date……. County Assembly
	COUNTY PLAN APPROVAL NO. …….
	CERTIFIED BY SIGNATURE……. Date……. Director General
	APPROVED BY SIGNATURE……. Cabinet Secretary Ministry in charge of Lands and Physical Planning Nairobi Date……
Proposed site + Grids & contours	**APPROVED DEVELOPMENT PLAN No.**

Source: Directorate of Physical Planning, 2025

3.4.5 Grids

Grid values to be indicated along neat lines and the borderline in the form of full grids or ticks. The grid interval is 10% of the grid value, e.g., for a scale of 1:2500, the grid interval is 250.

3.4.6 Location Plan

Provide a location map at the top left corner of the plan showing the planning sites' position in relation to abutting areas. Include location coordinates to enable the use of Google Maps/or any other digital tool used to find locations.

3.4.7 Coordinate System

The standard coordinate system to be used in mapping is the UTM arc 1960.

3.5 Public Participation

It's a deliberate and interactive process by which stakeholders are actively involved in the plan-making process to influence decisions and outcomes of the planning process. This is done during the preparation, implementation, monitoring, and review stages.

3.5.1 Criteria For Identification and Mapping of Stakeholders

The following criteria should be used to identify and map stakeholders:

1. **Influence**: Organizations and individuals that substantially influence preparation and implementation.
2. **Partnership**: Opportunities for building partnership relations between the project developer and a given social group in the framework of the project implementation
3. **Dependency:** Groups significantly affected by the implementation of the provisions of Physical and Land Use Development Plans
4. **Representation:** Individuals representing interests concerning the provisions of the Physical and Land Use Development Plan, including the representatives of the vulnerable groups
5. **Expressed interest:** Individuals and social groups that express interest in the implementation as they are directly or indirectly affected by related operations.

Categories of stakeholders have been listed in Table 7.

Table 7: Categories of Stakeholders

CATEGORY	EXAMPLES
Registered property owners	Individuals, companies and institutions
Development Partners	World Bank, UN-Habitat, Food Agriculture Organization, European Union, Inter-Governmental Authority on Development (IGAD)
Constitutionally elected leaders	Members of Parliament, Members of County Assembly, Governors, Senators, women representatives

Defined vulnerable groups	Elderly, Persons Living with Disabilities (PLWD), women-headed households, low-income groups, unemployed, youth
Service providers	Kenya Power, water and sewerage companies, communication companies, transport operators/logistics
State Actors	County Governments, Ministries, Departments and Agencies
Professional bodies	Architectural Association of Kenya, Kenya Institute of Planners, Town & County Planning Association of Kenya, Institution of Surveyors of Kenya
Regulatory boards	Physical Planners Registration Board, Law Society of Kenya, Engineers Board of Kenya, Land Surveyors Board
Individuals with business interests	Small and medium enterprises, investors, the business community, and community-based organizations
Representatives of the private sector	Chamber of commerce, private sector foundation, producer cooperatives, representatives of the informal sector, neighborhood associations
Professions in the Built Environment	Physical planners, engineers, architects, valuers, environmentalists, urban designers, surveyors
International and Regional agencies	East Africa Community, United Nations, Institute for Transportation and Development Policy, United States Action Aid
Civil society	Registered faith-based, community-based institutions and Non-Governmental Organizations
Academia	Universities, Kenya Agriculture and Livestock Research Organization (KALRO), Kenya Forest Research Institute, Kenya Marine and Fisheries Research Institute
Local leaders and opinion leaders	Chiefs, village elders, influencers

Source: Directorate of Physical Planning, 2025

3.5.2 Modes of Stakeholder Engagement

Stakeholder sensitization

Use memos, social media, advertisements, press conferences, talk shows, Gazette notices, Newsletters, displays, posters, exhibitions, and brochures to inform the stakeholders.

Stakeholder engagements

Use focused group discussions, town hall meetings, Stakeholder forums (workshops), virtual meetings, public hearings, consultative fora, and public fora. The engagement is informed by the type of plan, context, tools and methodology. For projects of strategic national importance, the preparation and approval of plans require linkages with the subject institutions through plan circulation and consultative meetings.

4 CHAPTER FOUR: DEVELOPMENT CONTROL

4.1 Overview

Development control is the process of managing or regulating any works on land and ensuring that operations conform to approved spatial development plans as well as policy guidelines, regulations and standards issued by the planning authorities. The PLUPA, 2019 highlights provisions for Development Control in Part IV and the Third Schedule. These sections, read together with PLUPA Regulations, 2021, provide for the objectives of development control, types of development applications, authorities involved, processes and procedures, considerations for development applications, penalties and various forms to be used in administering development control and different types of development applications.

4.2 Principles and Objectives of Development Control

The principles contained in Chapter One above apply to development control. The general objectives of development control are to;

1. Ensure conformity of developments to approved development plans;
2. Enforce actions in case of contraventions against the approved development plans, policy, and legal provisions;
3. Ensure orderly and planned building developments, design, construction, operation and maintenance;
4. Promote public health, safety and welfare;
5. Protect and conserve the environment;
6. Ensure rational planning decisions.

4.3 Development Control Process

The development control process as practiced is linear in nature and in conformity to an approved development plan. The process is as outlined in Figure 8.

Figure 8: Development Control Process

Pre-application Stage

The applicant consults the planning authority to provide guidance, compliance requirements and facilitate informed decision making before the submission of a formal application by the applicant

Application Stage

The development application and all required project components are prepared and submitted to the planning authority.

Consideration Stage

The application is circulated to the relevant authorities for comprehensive review and feedback. The planning authority considers the application based on, among others: the feedback from the planning authorities, zoning regulations and national and county policies.

Decision Making Stage

Issuance of a notice of approval/deferment/ refusal with conditions of approval or reasons for refusal or deferment.

Implementation Stage

The approved development is executed in accordance with the specifies approval conditions. The planning authority conducts regular inspections to ensure adherence and compliance.

Enforcement Stage

The planning authority carries out corrective measures against unauthorized or non-compliant developments that violate approved permissions, plans or specifications.

Source: Directorate of Physical Planning, 2025

Table 8 indicates the process for the various aspects of development control, their requirements, the approving authority and circulation to the relevant authorities.

Table 8: Development Control Process

Type of Development	**Process**	**Requirements**	**Approving Authority**	**Relevant Authorities & Agencies**
Change of User/Extension of User/Extension/Renewal of Lease	• Application for development permission • Issuance of submission certificate with a tracking number by the County Director of Physical and Land Use Planning • Circulation of the application to technical officers of the relevant authorities and agencies for review and comments and submission of the comments within fourteen days • Analysis of the comments received during circulation and submission of the report to the CECM	• Completed form for application for development permission. • A certified copy of the Title Deed, Certificate of Lease, or any other legal documents. • A current certificate of search for the property. • A certified copy of a land rate clearance certificate. • A survey Plan. • A location Plan prepared by a registered and practicing physical planner. • Notice published in at least one newspaper of nationwide	The CECM in charge of lands and physical planning	• NEMA • National/County Departments of; o Environment and disaster management o Survey o Agriculture, fisheries and livestock o Land administration o Water and Sewerage o Public health o Existing Urban management authorities

	by the county director of physical and land use planning • Decision-making and communication of such a decision to the applicant	circulation • A planning brief prepared by a registered and practicing physical planner. • A caption of an on-site notice inviting comments from the members of the public		
Sub-Division/ Amalgamation	• Development application • Circulation to the relevant authorities for comments • Receipt of comments by the relevant authorities • Decision-making on the application	• Completed the development application form. • Copies of the subdivision scheme plan prepared and signed by a registered and practicing Physical Planner. • A geo-referenced scheme plan. • Certificate of current official search • Ownership documents • A planning brief prepared by a registered and practicing physical planner.	Cabinet Secretary / CECM	• Relevant National/County Departments of; o Environment and disaster management o Survey o Agriculture, fisheries and livestock o Land administration o Water and Sewerage o Public health o Existing Urban management boards.

Building Plans	• Application for development permission • Registration of the Application • Circulation of the application to the relevant authorities and agencies for comments • Submission of comments by the relevant authorities and agencies • Decision-Making on the application	• Architectural and structural drawings prepared by a Registered Practicing Architect/Structural Engineer. • Electrical engineer's drawings and specifications. • Mechanical and plumbing drawings and specifications. • Geotechnical survey report. • Land ownership documents.	Cabinet Secretary / CECM	• Relevant National/County Departments of; o Public Works o Environment and disaster management o Survey o Agriculture, fisheries and livestock o Land administration o Water and Sewerage o Public health o Existing Urban management boards. • KENHA • KURA • NEMA • WRA
Outdoor Advertisements	• Application for advertisement • Pre-vetting and issuance of submission certificate • Circulation of the application to the relevant agencies/authorities for comments • Decision-making on the application	• A planning report prepared by a registered physical planner. • A geo-referenced plan indicating the location of the site. • Architectural plans prepared by a registered architect. • Structural designs with calculations prepared by a registered structural	Cabinet Secretary / CECM	• Relevant National/County Government Departments • NEMA • NCA • KENHA • KURA • KERRA • National Museums of Kenya • Kenya Airports Authority • Kenya Civil

		engineer. • Geotechnical Survey, where applicable, prepared by a registered geologist. • Ownership documents. • Recommendation to site a billboard on a road reserve from the relevant road authority or agency. • An environmental and social. assessment license • Any other • supporting document.		Aviation Authority • Communication Authority of Kenya
Developments around Strategic Installations	• Submission of the application • circulation of the application to the relevant authorities and agencies for comments • review of comments received from the relevant authorities/ • Decision-making on the development application	• Concept note and preliminary plans • Security impact assessment • Safety impact assessment • Landscape & visibility impact assessment	Cabinet Secretary / CECM	• Cabinet Secretary/CECM Lands • Relevant MDAs. • Director General of Physical Planning • NEMA • Relevant County Government Departments

Source: Directorate of Physical Planning, 2025

4.3.1 Guidelines for Approval of Change of User/Extension of User/Extension of Lease

- Consider the following:
    - approved physical and land use development plan of the area;
    - area zoning regulation and compatibility of new use/density to the adjacent developments;
    - accessibility, size of road and circulation of traffic;
    - current and proposed use of the land;
    - implications of the proposed development on infrastructure services and utilities.

- Ensure that the subject land has been developed for the intended use before the approval of extension/renewal of a lease.
- Ensure the special conditions attached to the lease have been fulfilled.
- Require an Environmental Impact Assessment for developments that may have a negative impact on the environment.

4.3.2 Guidelines for Approval of Subdivisions and Amalgamations

- Consider;
    - the provisions of the approved physical and land use development plan of the area;
    - the area zoning regulation and compatibility of the new density with the adjacent developments;
    - the implication of proposed densities on infrastructure and utilities.
- Provide for adequate truncations: the truncations should be half the width of the lower hierarchy road.
- The resultant subplots should be of appropriate size and shape and have proper and sufficient access to the street.
- The minimum size of the resultant subplots in a subdivision should not be less than 0.045 Ha. This, however, may increase depending on the expected development on the land, approved physical and land use development plan, zoning regulations and any other applicable policies.
- The sub-plots should be at a right angle to the road
- Plot sizes of 0.045Ha. should not front roads measuring 18m and above.

Comprehensive Land Subdivision

A subdivision is considered comprehensive when land is subdivided into more than 19 portions, and there is an expected significant increase in population, development density and traffic flow within the subject parcel and its immediate neighborhoods. The sizes of the resultant subplots may vary based on the intended use.

- Comprehensive schemes need to be subjected to planning, topographic survey and application of the principles of neighborhood planning.
- For the roads, ensure;
    - 15 meters for distributor roads;
    - 12 meters for secondary distributors and;
    - A minimum of 9 meters for an access road leading to a cul-de-sac;

- Cul-de-sacs do not exceed 60m in length;
- Breaks of 4-6 meters (footpaths) after every eight plots;
- Encourage T-junctions instead of cross and Y-junctions.

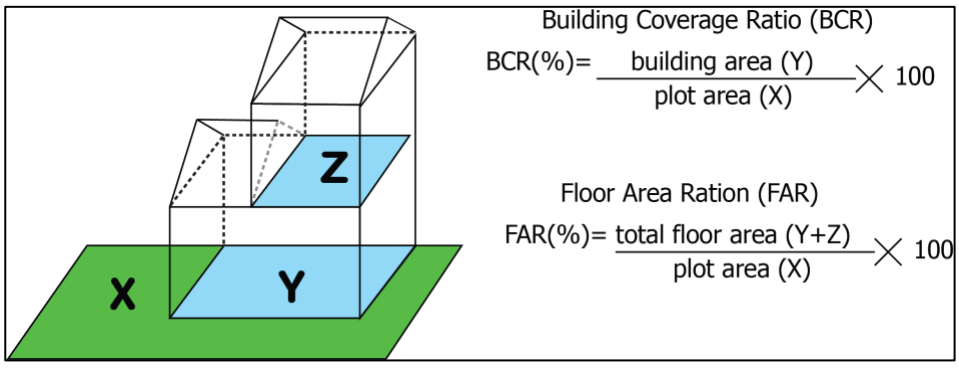
- The layout plan for subdivision or amalgamation schemes should have the following;
  - Plan title;
  - Location plan/an inset;
  - Scale, date, northing, a georeferenced grid system;
  - Size of the property and the size of the resultant subplots;
  - Clear road hierarchy to enhance circulation and accessibility;
- Legend is set on the right or bottom of the paper and contains the following;
  - Property reference;
  - Name, signature, physical address and contacts of the owner of the property;
  - Registration number, seal and signature of the Practicing Physical Planner.
  - Date and scale;
  - Approval section by the approving authority.
- Suitable and adequate land should be surrendered for public use including open spaces, amenities, recreational facilities and a public purpose relating to the area to be subdivided.

Considerations for the Surrender of Land for Public Use on Subdivision

The provision of public utilities should be aligned with the projected population needs. These projections will be based on the intended land use, the scope of proposed developments and the zoning regulations. These dynamics will guide the type, scale, and distribution of public facilities.

1. **Residential Density:** The needs vary across residential zones, with high, medium, and low-density neighborhoods each having distinct utility requirements. The average household size can be used to project the expected population in different zoning areas to refine demographic projections, based on the permitted plot coverage and plot ratio as provided by the respective zoning regulations of an area. See below:

Figure 9: BCR and FAR Calculations



Source: Directorate of Physical Planning, 2025

2. **Commercial & Industrial Land Use:** Employee density (the number of workers per hectare) and traffic volume impact (planning for transportation, parking, and community services) should form the basis of determining the expected population (daytime and night-time).

3. **Existing Public Purpose and Utility Infrastructure Assessment:**

- ***Capacity Analysis****:* Evaluate the current capacity of existing utilities to determine if they can meet projected future demands

- ***Infrastructure Condition*****:** Assessment of the condition of existing infrastructure, identifying areas requiring upgrades or replacement. This includes evaluating the lifespan of existing assets.

- ***Technological Advancements*****:** Consider the potential for technological improvements that might increase efficiency or reduce the land needed for certain utilities

- ***Zoning Regulations*****:** Where zoning regulations exist, provide for permissible land uses, densities, and required amenities, which will be used as a guide.

4.3.3 Guidelines for Approval of Part Development Plans (PDP)

1. A client submits a request to the relevant planning authority for the preparation of a PDP.

2. The planning authority seeks concurrence from the National Land Commission and other relevant agencies.

3. NLC issues an authorization letter for the preparation of the PDP.

4. Preparation of the PDP and the planning report by the respective Director.

5. Advertisement in the Kenya Gazette and 2 local dailies (English and Kiswahili) and circulation of the PDP to the relevant authorities.

6. Incorporation of comments received.

7. Submission for certification and approval to the National Director of Physical Planning and the Cabinet Secretary in charge of Physical and Land Use Planning, respectively.

8. Forwarding of approved copies of the PDP to NLC and the Director of Surveys.

Guidelines for Approval of PDPs

- Consider;
    - Provisions of an approved physical and land use development plan;
    - Area zoning regulations;
    - Compatibility with the adjacent developments;

- Accessibility, size of the road and circulation of traffic;
- Current use of the land.

- For areas without approved development plans, consider the abutting area, existing toposheets and neighbouring development.

4.3.4 Guidelines for Approval of Building Plans

- Ensure:
  - conformity to approved physical and land use development plans, zoning regulations and standards;
  - building lines/setbacks and frontages are observed;
  - emphasis on green energy by providing for rainwater harvesting facilities, water storage tanks, and solar energy;
  - provision of landscaping, greening, ample ventilation and natural lighting.

- Consider:
  - compatibility and use of the building in relation to the neighborhood;
  - the siting of the building;
  - design, shape, facade and aesthetics;
  - provision of infrastructure and utilities (access, sewer, electricity, drainage, water);
  - conservation of the environment and cultural heritage;
  - health, safety and welfare;
  - elevations, height and the plinth area of the building.
- Observe plot coverage and plot ratio.
- Examine the adequacy of accessibility within the plot, parking and loading bays, service area, canopies and projections.

4.3.5 Guidelines for Preparation of a Planning Brief

A planning brief shall be required during the submission of a change of user, extension of user, extension or renewal of lease, subdivision or amalgamation, site plan, and PDPs. It is prepared to describe the nature and scope of the proposed development, compliance with the approved development plans and provide proposals for managing the resultant impacts of the development.

A planning brief shall contain the following:

1. **Title -** should be precise, indicating the development application being made and the land reference number in full. This should be on the front page together with details of the applicant, developer and date of the application.
2. **Introduction -** describe the planning brief.
3. **Context of the application -** include policy, legal and regulatory framework, provisions of approved development plan, guidelines and standards.
4. **Situation analysis –** describe the existing site characteristics.
5. **Project description -** define the proposed development in nature, scope and character and describe

the required additional services.

6. **Justification -** explain the basis for the proposal in terms of the potential and opportunity.
7. **Anticipated impacts on existing infrastructure, urban form and the strategies for their mitigation -** identify all the possible impacts and propose sound strategies on how to manage them, including the actors.
8. **Conclusion.**
9. **Recommendations.**
10. **Attachments/ Annex**- attach the required documents, including certified copies of the ownership documents, official search, rates/rents clearance certificate, notices, location plan, scheme plan, circulation correspondences, stakeholders' concerns and evidence of their engagement.

4.3.6 Absence of an Approved Development Plan

In cases where approved physical and land use development plans are not in existence or are still undergoing the preparation and approval process, the following factors should form the baseline for decision-making:

- The proposed development should adhere to the agroecological zones as provided for in the National Spatial Plan.
- Ensure that the proposed development is compatible with the abutting users.
- Ensure that the proposed development has adequate access.
- Ensure that there is adequate provision of utilities, e.g., water, sewer, solid waste management and other basic utilities.
- Ensure that the proposed development does not compromise the aesthetic nature of the area.
- Ensure that the proposed development does not obstruct the line of sight to public goods, e.g., ocean, mountain, forest, lakes, among others.
- Ensure that the development and all the intended activities promote environmental protection and conservation.
- Any other applicable principles of planning and development control.

5 CHAPTER FIVE: PLANNING STANDARDS AND GUIDELINES

This chapter seeks to provide planning standards and guidelines for the various planning themes. These themes include: Agriculture, Blue Economy, Natural Resources and Environment, Disaster Risk Management and Physical and Social Infrastructure, among others.

5.1 Agriculture

General Standards and Guidelines

- Cultivation on slopes:
    - From 0% to 12% contour farming and soil conservation measures are encouraged.
    - Slopes of 12% to 55%; one is obliged to apply soil conservation measures;
    - Above 55%, land should be used for forests.

- Establish buffers between farms and other land uses to minimize land use conflicts, as shown below.

Table 9: Buffer for various land uses

Land Use/ User	Width of Buffer	Authority
Forests	60m buffer for mangrove 20m road for all other forests	KFS
Military/ security installations	Determined on a case-by-case basis, depending on the use of the security installation.	Ministry of Defence and Ministry of Interior
Power installations	10-60m depending on the KV	Kenya Power/ KENGEN/ KETRACO
Large reservoirs	100m-300m	WRA
Medium reservoirs	50m-100m Limited activities and requires approval	
Small earth dams	50m Prohibit permanent structures and ensure fencing	
Rivers feeding dams	30m	

Airports	Depends on the nature of farming. Not allowed if it attracts birds.	KAA/ KCAA
Major transportation corridors (such as railway lines)	60-120m	KRC/ KENHA
Oil and gas pipelines	60m	KPC

Source: Directorate of Physical Planning, 2025

- Prepare county physical and land use development plans and designate different agricultural zones, including sites for collection centres, agro-based industries and agricultural tourism.
- Delineate urban growth limits to discourage conversion of agricultural land to other land uses and protect grain basket areas as well as other high-potential areas.
- Require land suitability analysis to determine the agricultural capability of the areas.
- The minimum land size allowable for buying centres and collection points for tea, coffee and sugar is 0.1Ha to accommodate basic facilities such as washrooms and canteens.
- The minimum size of land shall be based on the agro-ecological zone as indicated in Table 10:

Table 10: Minimum Land Sizes for Agricultural Land

Agro-ecological zone	**Minimum land size (Ha) (commercial)**	**Minimum land size (Ha) (small scale)**
Low potential area	20	5
Medium potential area	10	2
High potential area	5	0.5

Source: Directorate of Physical Planning, 2025

- Set aside land 5-10Ha for demonstration farming.
- Plan for eco-villages and resilient urban centres within agricultural areas.
- Designate hilly areas above 55% and those below 55% but with stony areas as conservation areas.
- Designate sites for harvesting and storage of rainwater for agriculture.
- Locate buying centres centrally and away from junctions.
- Designate a minimum of 5 km width for wildlife corridors.

5.1.1 Plantation Farming/Estates

Standards and Guidelines

- Provide:
    - minimum land size of 20Ha in high agricultural potential areas.
    - minimum access roads of 20m to the farms and market centres.
    - corridors for livestock and wildlife where necessary.
- Prepare site plans designating residential quarters with amenities such as water and sanitation

facilities.

- Designate space for processing plants, machinery parking yards and garages.
- Preserve and ensure access to cultural and public utility sites.

5.1.2 Horticulture Farming

Standards and Guidelines

- Provide a minimum land size of 0.25Ha
- Site plans must be prepared for horticulture farms of over 5Ha.
- Designate sites for the disposal and management of agricultural waste.

5.1.3 Fish Farming

Standards and Guidelines

- Designate potential areas for fish farming when preparing County Physical and Land Use Development Plans.
- Plan, designate and zone fish caging areas in water bodies.
- Prepare site advisory plans for the fishing zones.
- Designate sites for fish cooling and processing plants.
- Designate sites for the disposal and management of waste.
- Detailed guidelines are provided for in the Aquaculture Handbook.

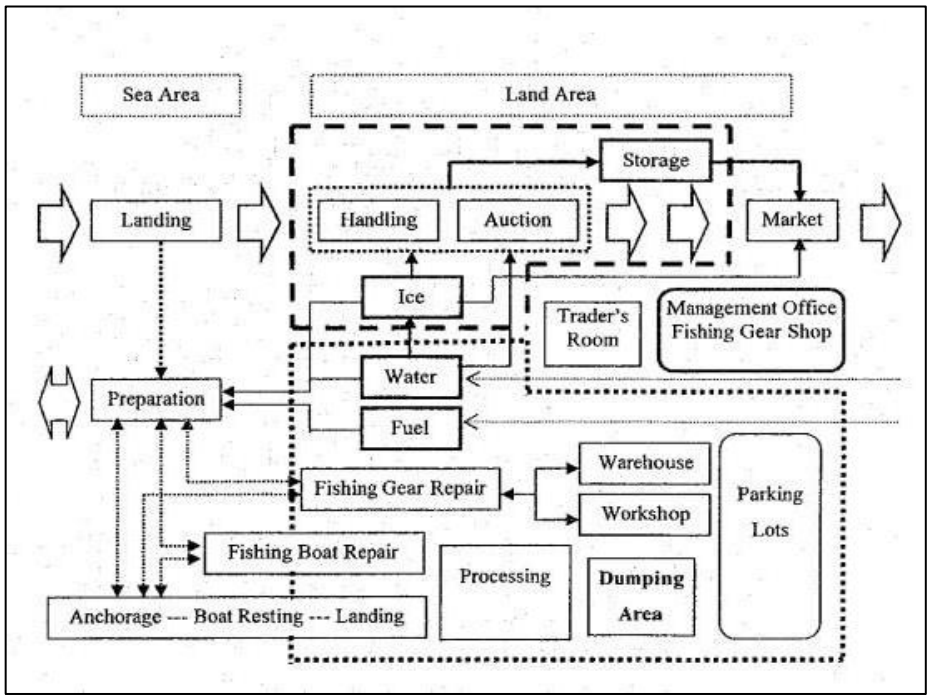
5.1.3.1 Fish Landing Sites

They are categorized into urban and rural. Urban fish landing sites are located in urban areas and attached to markets. They have a big landing volume of more than 1,500 tons per year. Rural fish landing sites are village-type and handle small volumes of less than 1,500 tons per year.

Standards and Guidelines

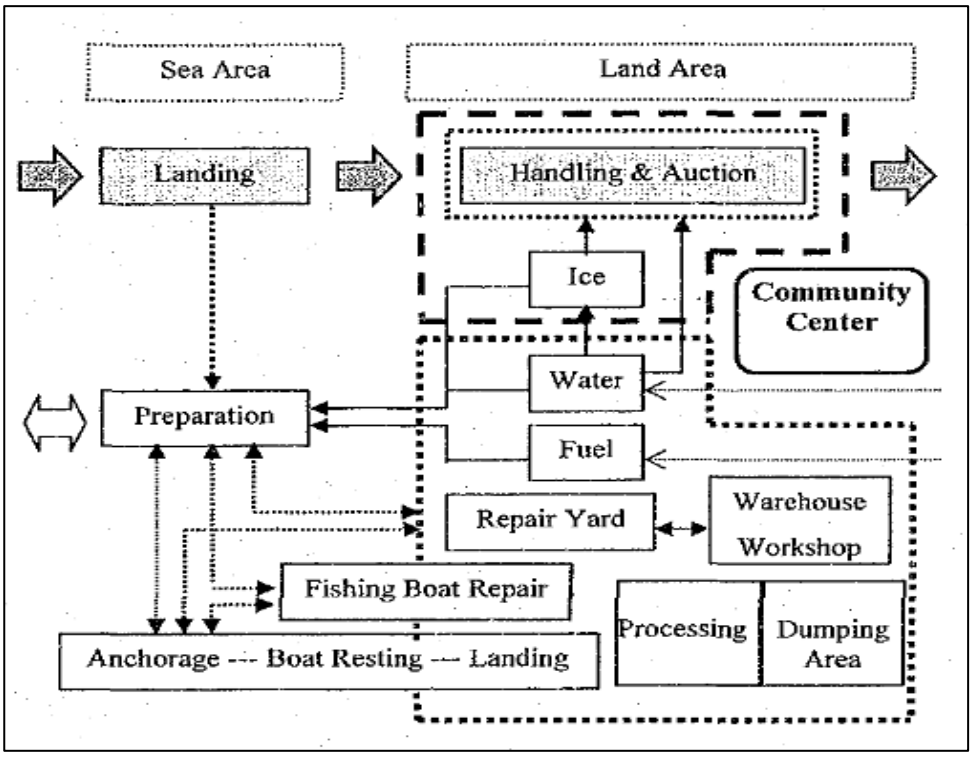
- Provide:
    - minimum land size of 3Ha.
    - minimum of 15m access roads to the fish landing sites.
    - access to basic infrastructure such as electricity and water supply.
    - A minimum of 2km to a power substation or any part of the national grid and a minimum of 3km to main water supply channels.
- Equip fish landing sites with support amenities such as a poly-functional building inclusive of a boat yard facility, modern fish banda, restaurant buildings, ablution block, stall buildings, fish gear shed and boundary wall.
- Provide facilities such as fish storage facilities, processing sections, ice-making plants, waste management systems, and power generators, among others.

Figure 10: Support amenities for urban fish landing sites



Source: Food and Agriculture Organization, 2020

Figure 11: Support amenities for rural fish landing sites



Source: Food and Agriculture Organization; 2020

5.1.4 Urban and Peri-Urban Agriculture

Standards and Guidelines

- Promote urban agriculture through building designs, e.g., flat roof designs and integration of urban agriculture into physical and land use development plans.
- Provide minimum land sizes of 0.05ha for urban agriculture within residential areas and institutions.
- Maintain a maximum height of 0.5m for crops in urban areas
- Prohibit subdivision of land into uneconomic land sizes
- Encourage:
    - sustainable water harvesting and conservation
    - greenhouse technology in peri-urban areas
    - onsite waste management
- Restrict farming activities to enclosed boundaries and away from ecologically fragile areas.
- Allow cottage industries to process the products; small-scale processing can be allowed in urban areas, while dairy processing can be allowed in peri-urban areas.
- Cultivated areas must be set back 1.5m from any property line.
- Ensure that urban agricultural uses do not adversely affect the livability of adjacent properties and the surrounding neighborhoods in terms of noise, water runoff, pesticide runoff, and equipment operation.
- Prohibit agriculture in areas subject to health hazard environments such as solid waste collection points, sewer lines, and drainage channels.
- Table 11 indicates the minimum plot sizes for permissible urban agriculture.

Table 11: Urban agriculture permissible uses

Minimum Plot Size	Land Use Activities
0.05 Ha	Vegetable farming, including sack gardens
0.1Ha	Chicken rearing, fish farming (aquaponics, raised wooden ponds, tanks, and concrete ponds)
0.2Ha	Dairy keeping, Apiculture in peri-urban areas

Source: Directorate of Physical Planning, 2025

5.1.5 Livestock and Ranching

Standards and Guidelines

- Provide a minimum land size of 50ha in ranching areas.
- Observe stocking unit (livestock intensity/density per unit area in hectares), whereas stocking unit is equivalent to a mature zebu cow weighing 300kg or 7 sheep or 7 goats.
- Inventorize, map and register community-grazing areas as per Table 12 below:

Table 12: Agro-Ecological Zones

Code	Zone	Stocking Rate (Lu/Ha)
UH1	Sheep Dairy Zone	0.3
UH2	Pyrethrum Zone	0.4
UH3	Wheat/Barley Zone	0.4
UH4	Ranching/Barley Zone	0.8
UM2/UM3	Coffee Zone	1.1
UM4	Upper Sisal Zone	1.2
LH1	Tea Zone	0.6
UM1	Coffee Tea Zone	0.8

Source: Farm Management Handbook

- Provide a minimum of 80m to 100m wide tracks for livestock movement from the grazing areas to various watering points.
- Ensure siting of livestock handling facilities such as holding grounds, auction rings, cattle dips, pasture conservation, isolation and quarantine areas.
- Set aside areas for common uses when subdividing group ranches, e.g., trading centres, dispensaries and schools.
- Provide;
    - Adequate all-weather access roads for livestock holding ground to ensure linkage to markets.
    - Adequate drainage, water and power supply.
    - Designate a minimum land size of 1Ha and 10Ha for small and large livestock holding grounds respectively.
- Locate away from residential areas to minimize noise and odour.
- Ensure that the siting, distribution and density of watering points and water pans are equitable.
- Zone out wetlands during the process of subdivision of group ranches for conservation and protection.
- Designate areas for the location of processing facilities such as meat processing plants, slaughterhouses, and tanneries to promote value addition of livestock products.

5.2 Blue Economy

Blue Economy is the sustainable use of oceans, lakes and river resources for economic growth and improved livelihoods while preserving the environment. Blue economy can be realized through marine spatial plans that integrate conservation, sustainable use, oil and mineral wealth extraction, bioprospecting, sustainable energy production and marine transport.

5.2.1 Marine Spatial Planning

Marine Spatial Planning should focus on contributing to the sustainable development of the energy sector at sea, maritime transport, fishing and aquaculture, tourism and the extraction of raw materials. It should also include protection of marine antiquities, preservation, improvement of the environment and resilience to the effects of climate change.

The parameters for marine spatial planning include;

- Marine and coastal environment.
- Marine and coastal conservation and designated sites.
- Oceanographic characteristics and climate.
- Coastal land use.
- Operative maritime activities.
- Socio-economic developments.
- Governance.

5.2.2 Marine Park Zoning

Zoning in marine parks helps to manage and protect parks with each zone having different rules for the activities that are allowed and prohibited, as shown below:

Table 13: Marine Zones

Zone Type	Purpose	Allowed Activities	Prohibited Activities
Sanctuary/No-Take Zone	Full protection of ecosystems and species.	Scientific research, non-extractive monitoring.	Fishing, mining, anchoring and tourism.
Habitat Protection Zone	Protect specific Habitats (e.g., seagrass, spawning grounds).	Non-destructive tourism (e.g., snorkeling), limited traditional fishing (with permits).	Dredging, industrial activities, and large-scale fishing.
Sustainable Use Zone	Balance resource use and conservation.	Regulated fishing, eco-tourism, and small-scale aquaculture.	Destructive fishing (e.g., trawling), offshore drilling.
Special Management Zone	Address unique needs (e.g., cultural sites, shipping lanes).	Shipping, cultural/religious practices (e.g., ceremonial fishing).	Activities conflicting with the designated purpose (e.g., tourism in sacred areas).

Restoration Zone	Rehabilitate degraded ecosystems (e.g., coral replanting, mangrove planting).	Restoration projects, community-led conservation.	Extractive or disruptive activities.

Source: Directorate of Physical Planning, 2025

Standards and Guidelines

- Prepare the marine and maritime spatial plans to delineate deep sea fishing zones and routes for shipping, underwater infrastructure (submarine communication, power cables, oil and gas pipelines and sensor networks), areas of biodiversity and international boundaries.
- Undertake ESIA for installations of the fiber optic cables.
- Ensure cables do not disrupt shipping.
- Prohibit shipping in marine protected areas, near naval bases and fisheries zones.
- Promote traffic separation by providing dual ways and buffers.
- Provide ship waiting stop zones.
- Promote green shipping corridors whereby there are zero emissions and satellite surveillance stations for tracking dark ships.

Criteria for Locating Ports

- Ensure access to deep water channels.
- Integrate with multimodal transport for efficient distribution of goods and services.
- Site in areas of moderate tidal range of less than 4m to simplify operations and reduce infrastructure complexities.
- Prioritize sites protected from storms, waves and currents.
- Locate in areas;
    - away from ecologically sensitive areas such as mangrove and reeds.
    - with a minimum depth of 12m-20m.
    - with stable sea beds to reduce foundational costs.
    - with adequate land for expansion.
    - proximate to industrial zones, logistical hubs and markets.
    - proximate to major shipping routes and trade corridors to reduce voyage time and fuel cost.
- Undertake ESIA before establishment.

5.3 Natural Resources and Environment

General Standards and Guidelines

- Identify and plan for areas containing natural resources for purposes of regulating human activities.

- Prepare action area plans for rehabilitation of areas of depleted resources.
- Require an Environmental Impact Assessment for developments within and around natural resource areas.
- Incorporate best management practices to prevent pollution of natural resources and the environment.
- Protection of riparian reserves, permitted use of wetlands and duties of land owners, users and occupiers which address the regeneration and conservation of these areas is provided in the Environmental Management and Co-ordination (Conservation and Management of Wetlands) Amendment Regulations, 2017.
- The guidelines for riparian reserves are provided in the Physical and Land Use (General Development Permission and Development Control) Regulations 2021, Part VII miscellaneous.

5.3.1 Water Resources

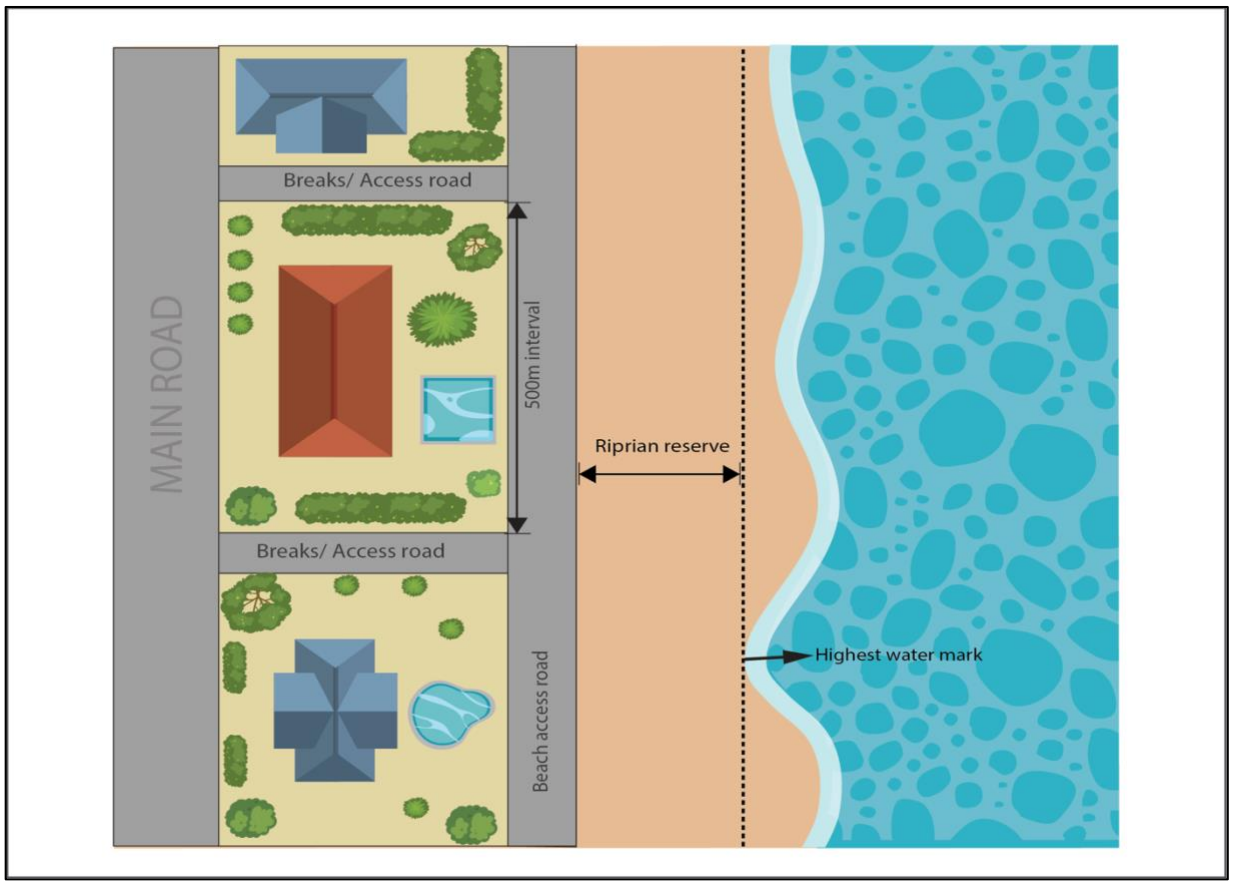
a. Oceans

Standards and Guidelines for Management of Oceans

- Prepare an inter-county physical and land use development plan for Kenya's coastline.
- Prepare marine spatial plans to guide the distribution of land uses.
- Anchor the coastal management plan to the marine spatial plans.
- Identify and map ecologically and environmentally sensitive areas and prohibit development in these areas.
- Map out cultural and heritage sites and facilities and prohibit tourism development and activities that derail local cultures, traditions, and heritage.
- Delineate a riparian reserve of 300m from the highest watermark for oceans.
- Regulate permissible developments within the 300m riparian reserve.
- Provide a buffer zone as illustrated in Figure 12.
- Adopt a radius of 700m buffer zone around all aids to navigation.
- Regulate developments to ensure the required visibility to aid navigation is maintained.
- Designate a minimum of 6m walkway access to the beach.
- Allow only non-motorised transport along the 6m walkways
- Beach accesses should be at a maximum interval of 500m.
- Designate routes and trails on the surface or underwater to guide tourists.
- Designate space for permissible activities in the riparian reserve, such as trails, games, picnic sites, swimming trails, cycling, conservation, and restoration.
- Designate areas for museums, theatres, markets, stalls, aquariums, public parking, bicycle stands, cycling paths, restaurants, and parks after the riparian reserve.
- Designate sites for renewable technology developments such as solar-powered desalination plants.
- Provide wayleaves for undersea cables and bridges.

- Regulate the heights of all developments crossing a navigable water body e.g., bridges, power lines.
- Ensure that developments do not block public access to the beach.
- Subject all developments in the front row from the sea to Environmental and Social Impact Assessment before approval.
- Prohibit;
    - heavy industrial developments within 3km of the beach.
    - sand excavation in the active zone (within a distance of 1km from the low tide)
    - fishing on artesian waters 1km into the sea from the low water mark, to avoid destruction of shallow fauna breeding grounds and marine biodiversity.
    - vehicular access to the beach unless for emergencies.
    - shore protection facilities that block tidal movement e.g., sea walls, unless allowed by the specification of the relevant authority.
    - discharge of effluents into the sea
    - any development on dunes, mangrove forests, salt marshes and estuaries

Figure 12: Illustration for Riparian reserve for the Ocean



Source: Directorate of Physical Planning, 2025

b. Lakes

Standards and Guidelines

- Maintain a riparian reserve of not less than 100m as measured from the highest watermark for all lakes.
- The riparian reserve for Lake Naivasha shall be maintained at a 6210ft contour.
- Provide a 12m road buffer around the lakes.
- Prepare lakefront action area plans.
- Regulate developments to ensure the required visibility to aid-to-navigation is maintained.
- Prohibit
  - sand excavation in the active zone within a distance of 1km from the low tide
  - heavy industrial developments and polluting agricultural activities within 3km of the beach
  - discharge of effluent into the lake

c. Beaches

Standards and Guidelines

- Identify, map and plan the beaches.
- Designate breeding zones, including turtle nesting grounds and fish breeding sites.
- Locate designated sites for temporary structures at 500m intervals.
- Provide walkways, public baths and toilets, and lifeguard towers.
- Ensure that tourist zones such as hotels comply with setbacks.
- Mandatory provision of biodegradable facilities.
- Promote reduce, reuse, recycle of waste by providing bins at intervals of 100m.
- Prohibit permanent developments.
- Prohibit sand harvesting.

d. Floating Hotels

Standards and Guidelines

- Ensure that stability and safety adhere to the KMA Safety Code.
- Designate secure zones for anchoring and mooring.
- Ensure zero discharge into the ocean by providing onboard liquid waste treatment systems, and off-board discharge of solid waste.
- Utilize solar and wind energy.
- Prohibit the use of antifouling paints and drenching to protect marine life.
- Ensure 200m setback from the marine park and breeding grounds.

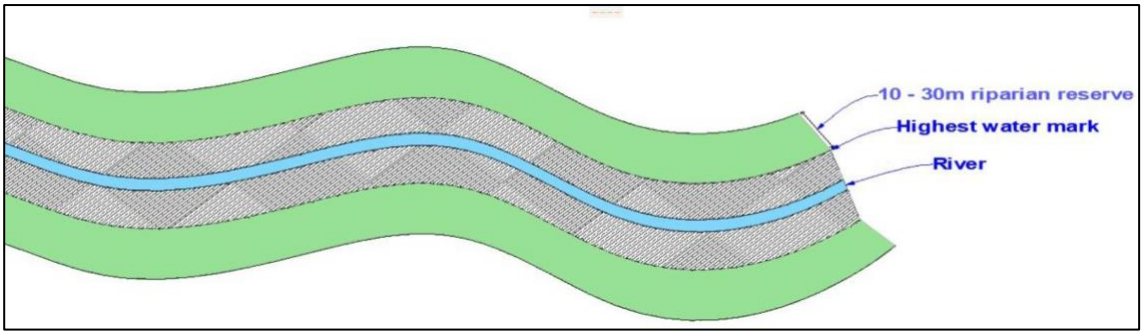
- Locate away from fishing zones.
- Require Environmental and Social Impact Assessment before establishment.

e. Rivers

Standards and Guidelines

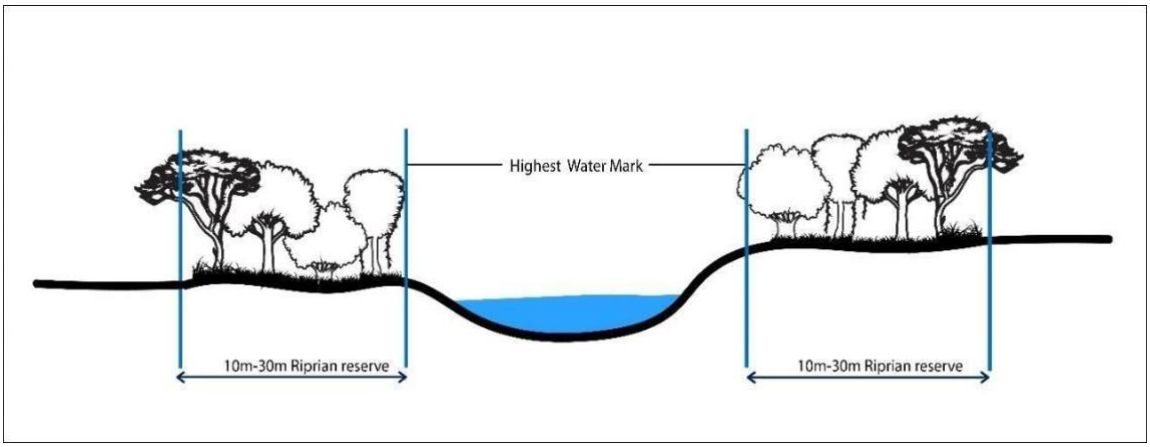
- Maintain a riparian reserve of 30m from the highest watermark, on either side of the river as illustrated in Figures 13 and 14.
- Prepare riverfront action area plans.
- Designate sites for watering troughs and pans at strategic locations to discourage direct access to the rivers by livestock.
- Preserve and maintain the rivers, natural streams and drainage ways within the developed areas by designating them as part of the open space system.
- Prohibit modification/physical developments within the riparian reserve unless they are necessary for flood protection, preservation of water quality, protection of aesthetic and biological resources, hydroelectric power generation, water intake, eco-tourism, research and landing sites for marine vessels.
- Permit users such as recreation and conservation on the riparian.

Figure 13: An Illustration of a Riparian Reserve for Rivers



Source: Directorate of Physical Planning, 2025

Figure 14: An Illustration of a Riparian Reserve for Rivers – Side Profile



Source: Best management practices for Riparian reserves; 2022

f. Swamps

Standards and Guidelines

- Identify, map, and prepare local physical and land use development plans and wetland management plans for swampy areas.
- Maintain a riparian reserve of at least 50m from the highest watermark, for swamps measuring more than 1 acre.
- Maintain a riparian reserve of at least 20m from the highest watermark, for swamps measuring less than 1 acre.
- Fish ponds constructed within the swamps shall be constructed on the sloping sides to make use of the gravity flow of water.
- Excavation of fish ponds into a swamp must preserve a favorable ratio of surface area to the perimeter of vegetation. Individual ponds should not exceed a size of 1000 square meters (0.1 hectares), and there should be sufficient uncleared vegetation separating the ponds for use by other activities.
- Prohibit developments in swamps.

g. Springs

Standards and Guidelines

- Delineate spring riparian reserves as conservation zones and undertake the easement process where necessary.
- Maintain a riparian reserve of at least 6m from the source of the spring.
- Prepare action plans for the maintenance and rehabilitation of springs and drainage ways.
- Prohibit any development within the riparian reserve and maintain the natural vegetation around the spring.

h. Flood plains

Standards and Guidelines

- Identify, map, and plan flood plain areas to mitigate the impacts of flooding.
- Ensure flood resilient developments,
- Prohibit uncontrolled deforestation, dredging and pollution.
- Permissible activities include:

In urban areas

- Controlled human settlement, general habitat restoration and, outdoor plant nurseries, forestry, wildlife sanctuary, bird watching, and related uses.
- Ground-level loading areas, parking areas, boat launches and other similar ground-level area uses.
- Lawns, gardens, play areas, and other similar uses in urban areas.
- Picnic grounds, parks, hiking or horseback-riding trails, open space, and other similar public recreational uses.

In rural areas

- General habitat restoration, pasture, outdoor plant nurseries, forestry, wildlife sanctuary, bird watching, and related uses
- Afforestation and conservation

i. Water catchment areas

Standards and Guidelines

- Identify and prepare an integrated plan for water towers.
- Provide a minimum of 60m buffer around the water towers.
- Prohibit developments in these areas except for eco-tourism, research and essential infrastructure.

j. Ground water

Standards and Guidelines

- Identify and map areas with hydro-geological groundwater.
- Designate and plan for a managed aquifer recharge system.
- Provide a buffer of 10m wide around the boreholes and wells to protect them from contamination.
- Provide a buffer zone of a planted strip of 50m between the irrigation schemes and groundwater sources.
- Maintain a radius of influence of 800m between one borehole and another to ensure that abstraction rates do not exceed recharge rates.
- Locate heavy industries such as tanneries and other activities likely to cause pollution away from groundwater sources.
- Require an environmental impact assessment before the development of boreholes.

5.3.2 Forests

A forest is a large area dominated by trees with diverse plant and animal life, playing a key role in climate regulation. Types of forests include montane forests, savannah woodlands, dry forests, coastal forests and mangroves.

Standards and Guidelines

- Identify and delineate forests for conservation.
- Zone and protect water catchment areas in hilltops, hillsides, mountains and forests.
- Designate firebreaks and access roads.
- Delineate forest boundaries (cutline) and provide 20m road buffer.
- Provide 60m buffer for mangrove forests.
- Maintain the minimum sizes for gazetted and non-gazetted forests provided in the Forest Conservation and Management Act, No. 34 of 2016.
- Prohibit development in forest areas except for eco-tourism, research, and infrastructural developments such as transport, power and water.
- Encourage at least 10% of land holdings to be under trees as per the gazetted "Farm Forestry Rules" of 2009.

5.3.3 Biological Diversity

Standards and Guidelines

- Identify, delineate and protect existing key biodiversity areas.
- Prepare biodiversity management plans for the establishment of botanical gardens in every county headquarters.
- Designate land for gene banks for endemic species.

5.3.4 Hilly / Slope Areas

Standards and Guidelines

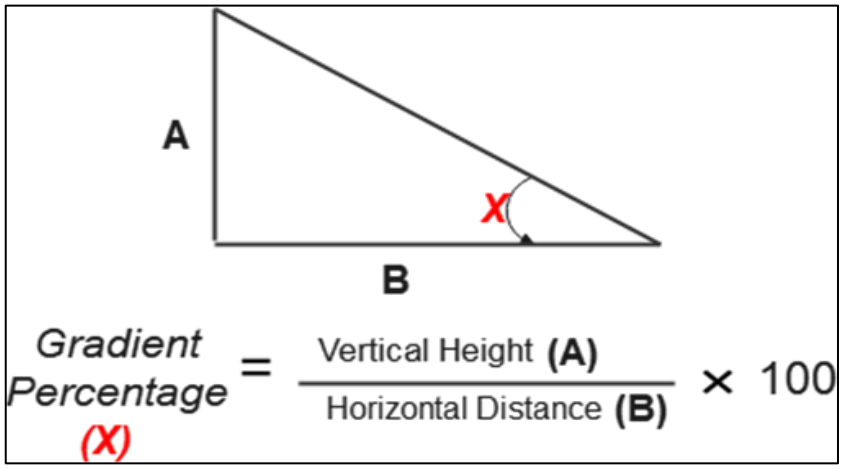
- Zone water catchment areas in hilltops and hillsides for conservation.
- Provide for a planted buffer between the foothill and the settlement to mitigate disasters such as falling boulders.
- Prohibit any form of development and cultivation on hilltops and hillsides of beyond 55% slope. The areas should be left for conservation.
- Encourage the planting of trees in the hilly areas.
- Delineate various land uses as per their suitable gradient percentage.

Gradient

Gradient is a measure of how steep a slope is. The greater the gradient percent, the steeper the slope is, while the smaller the gradient, the shallower the slope is.

To calculate the gradient of a slope, the following formula and diagram can be used:

Figure 15: An Illustration of Calculating Gradient



Source: Directorate of Physical Planning, 2025

Parameters for slope allocation

- **Slope Stability and Risk of Erosion**: As the gradient increases, the risk of erosion and landslides typically increases as well. Steeper slopes require careful analysis of soil stability and may necessitate engineering solutions
- **Soil Composition and Quality**: The type and quality of soil on a slope can greatly affect its usability. Certain soil types are more prone to erosion, while others may not support certain types of construction.
- **Water Drainage and Hydrology**: The gradient affects water runoff and drainage patterns. On steeper slopes, rapid runoff can lead to erosion and may impact downstream water quality.
- **Vegetation and Ecosystem Impact**: Different slopes support varying types of vegetation. Steeper slopes may be home to unique ecosystems and wildlife habitats that need protection. Planning should include strategies to preserve local biodiversity.
- **Land Accessibility**: Steeper gradients can be challenging to access, affecting the feasibility of development. Infrastructure, such as roads and utilities, may require additional investment to accommodate these areas.
- **Local Climate and Microclimates:** Slope orientation can influence sunlight exposure and wind patterns, creating microclimates that might affect land use decisions, particularly for agriculture and residential planning.

Table 14 indicates the type of development and the development conditions in hilly areas.

Table 14: Development conditions within slope areas

Slope Percentage (%)	Type of development	Development Condition(s)
0-12	1. **Residential** Optimal: ≤10% Example: High-Density Development Moderate (with engineering): 10-20%. Example; Low & Medium Density 2. **Commercial** Optimal: ≤5%. Example: Business Park and commercial hub Moderate: 5-10%. Examples: Small Retail shops 3. **Industrial** Optimal: ≤5%. Example: Heavy & Light Industries, Logistics Moderate (with modifications): 5-10% Example: Loading docks and Logistics 4. **Agricultural** Intensive Crops: 0–5% Example: Maize, Wheat plantation Pasture: 5–15% Example: Terracing or contour farming 5. **Transportation** Highways: ≤6% Local Roads: ≤10% Railways: ≤2%	

12- 44	Contour farming Controlled development	Implementation of slope-control measures such as contour farming and soil conservation measures are encouraged for cultivation.
44-55	No development except pipelines, tunnels, telecommunication infrastructure and roads	Extensive terracing of perennial/permanent crops
Above 55	No development except pipelines, tunnels, telecommunication infrastructure and roads	Forests Eco-tourism-related activities such as mountain climbing and nature trails

Source: Directorate of Physical Planning, 2025

5.3.5 Transboundary Resources

Standards and Guidelines

- Identify, map, and prepare integrated plans for sustainable use of transboundary resources.
- Provide a buffer zone for the respective resources as provided in this handbook.

5.3.6 Oil and Gas

Standards and Guidelines

- Identify and map out areas with high potential for oil and gas exploitation.
- Prepare an integrated plan for oil and gas areas, pipeline network, including planning areas for emergency and rehabilitation, waste disposal and resettlement areas.
- Prepare site layout plans which should include parking lots for pipeline, petroleum trucks, gas handling and storage facilities.

- Seek development permission for all exploration and exploitation from the relevant national and international bodies.
- Provide a minimum buffer of 2km around the oil and gas exploration areas, which shall be free from settlements. Tree planting is encouraged to improve air quality.
- Maintain a setback of 500m from the boundary of the exploration block when drilling an oil and gas well.
- Require preparation of Emergency Preparedness and Response Plans.
- Undertake Environmental and Social Impact Assessments for exploration and exploitation to mitigate pollution and environmental degradation.
- Prohibit exploration and exploitation on approved shipping routes.
- Prohibit exploration of critical terrestrial habitats, cultural heritage areas, conservation areas, game parks and reserves.
- Encourage the use of sustainable technology in oil and gas exploration and exploitation.

5.4 Tourism and Wildlife

Standards and Guidelines

- Map tourism potential areas.
- Identify and map wildlife migratory corridors, dispersal areas and breeding grounds.
- Prepare a local physical and land use development plan to link the tourism facilities and the tourist attraction sites.
- Conserve significant views associated with tourist attraction sites.
- Designate space for ancillary facilities such as hotels and lodges. A minimum hotel density of 100 hotel rooms per hectare is recommended.
- Provide adequate parking.
- Provide for water, electricity, drainage systems, waste disposal, telecommunication and parking space.
- Plan for tourist stopovers that offer minor tourist facilities (restaurants, snack bars, shops and toilets) along tourist circuits at points of tourist interest.

5.4.1 National Parks and Game Reserves

Standards and Guidelines

- Provide a minimum land size of 404.7Ha.
- Provide a 5km buffer zone around national parks for potential park extension and wildlife and livestock grazing.
- Locate water points near existing natural pans and river beds

5.4.2 Coastal Reserves

Coastal reserve areas are set aside to be maintained in their natural state for research, education and compatible recreation and enjoyment of natural and scenic beauty.

Standards and Guidelines

- Preserve rare coastal resources, including coastal strand vegetation and dunes, through the establishment of buffer zones around these areas.
- Permit activities that do not degrade the environment, such as research, recreation, conservation of wildlife and eco-tourism.
- Designate deltas and estuaries as conservation areas during plan preparation.
- Prohibit developments around coastal resources including coastal strand vegetation, dunes and anchialine pools.
- Prohibit the construction of sea walls along the shoreline
- Designate space for search and rescue facilities.
- Protect animal sanctuaries and wildlife breeding grounds from encroachment.
- Provide a buffer of 30metres from the highest water mark for wildlife conservation, grazing and movement in wildlife areas.
- Require ESIA on proposed and ongoing projects for harbour and ports.
- Prohibit:
    - damaging activities near the shore coral reefs, such as dredging and alterations that cause soil erosion and source pollution.
    - developments that pollute or block the natural water flow or movement in the coastal boundary development zone.
    - developments that disrupt the marine ecosystem and pollute water quality in the open coast zones.
    - off-road vehicles in ecologically sensitive areas such as sea turtle nesting sites and habitats for benthic organisms.

5.4.3 World Heritage Sites

A natural and man-made site, area, or structure recognized as being of outstanding international importance and deserving special protection. The sites are designated by the World Heritage Convention.

The prime objective in planning for World Heritage sites is the preservation of the fabric for beneficial use.

Standards and Guidelines

- Delineate and map site boundaries and setbacks for gazettement.
- Preserve significant vistas associated with archaeological features.
- Provide facilities such as sanitation and limited parking.

5.5 Mining

Mining is the extraction of valuable geological materials such as precious stones and minerals from the earth. This extraction of minerals on the earth's surface, underground or underwater involves dredging,

blasting, which releases metals and chemical compounds through acid mine drainage and erosion of waste dumps.

General Standards and Guidelines

- Prepare plans for mines and quarries which shall include emergency services, waste disposal and proposals for site rehabilitation.
- Ensure that a change of user is undertaken.
- Maintain buffer zones as in Table 15.

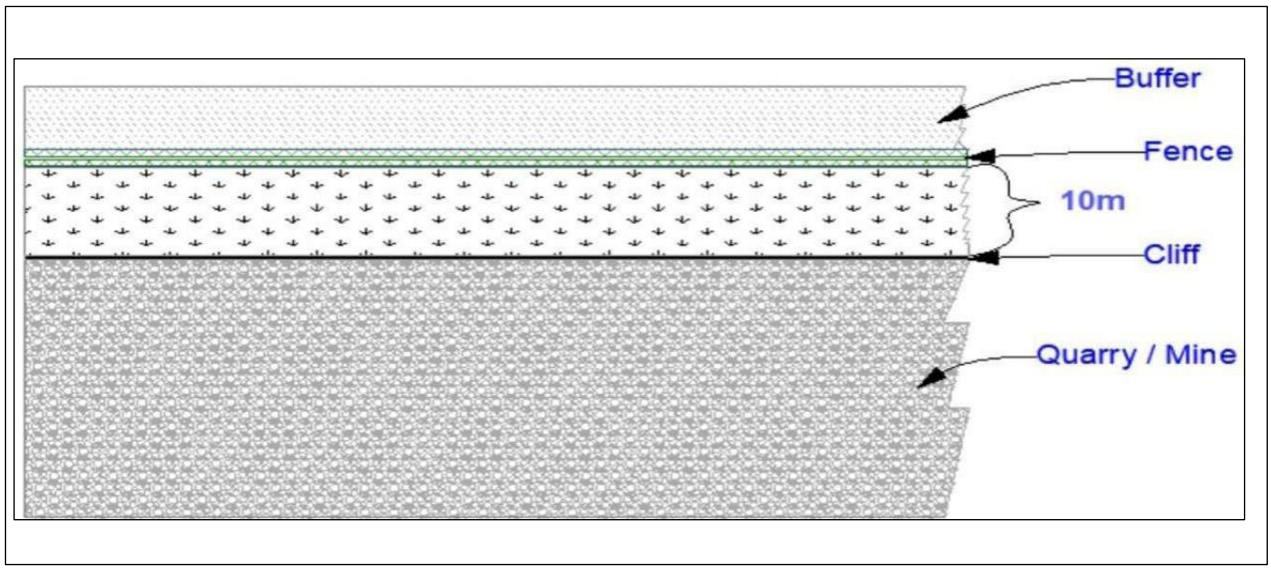
Table 15: Buffer zones for the various mining areas

Type of Mining	**Buffer zone**
Large scale mining	500m-1km
Artisanal/small scale mining	100m-300m
Forests and protected areas	1km

Source: Research Gate, 2025

- Provide a minimum of 10m buffer zone between quarries and riparian reserves as shown in Figure 16.
- Require a rehabilitation plan and geotechnical survey for mining
- Require change of users, blasting permits, ESIA and periodical environmental audits
- Ensure that the siting of quarries is in harmony with other land uses.
- Rehabilitate disused mines to suitable alternative land uses such as recreation, and forestry, among others.
- Provide access roads, water, sanitation facilities, dispensary and staff quarters.
- Prohibit mining activities in ecologically sensitive areas.
- Require all quarry faces and cliffs to be securely fenced at least 10m from the edge of the cliff and at least
- 1.5m high.
- Prohibit mining of riverbed occurrences within 300m, up & downstream from any bridge, regulator or hydraulic structure.
- Prohibit undercutting and tunneling in mining, quarrying and sand harvesting near built-up areas to avoid damage to property, injury, or loss of life.
- Encourage the erection of barriers to check material rolling down the slope.

Figure 16: Illustration of a Quarry Site



Source: Directorate of Physical Planning, 2025

- Table 16 shows safe distances to be maintained in quarry operations where blasting is not involved. Where blasting is involved; the concerned relevant authorities shall determine safe distances.

Table 16: Safe Distances to be Maintained in Quarry Operations

Land use	Safe distances
Aerodromes and landing ground (15km radius)	To be determined by Kenya Civil Authority and Kenya Airport Authority
Shopping centre, school and hospital	300m - 500m
Individual house/Residential areas	300m - 500m
Road/rail/pipeline reserve	100m
Riparian areas	40m - 100m

Source: Directorate of Physical Planning, 2025

5.5.1 Sand Harvesting

Standards and Guidelines

- Identify, map and plan for sand harvesting sites.
- Designate controlled access points for loading.
- Prohibit sand harvesting:
  - in an area within 100m of either side of any physical infrastructure, including bridges, roads, railway lines, dykes, among others
  - in areas of bio-diversity.
  - beyond 1.8m in depth in lake shores and sea shores.

5.5.2 Red Soil and Murram Harvesting

Standards and Guidelines

- Undertake an ESIA and EA for large-scale harvesting.
- Prohibit red soil and murram harvesting within road reserves, near dwelling places, and other environmentally sensitive areas.
- Prohibit vertical faces exceeding 2.5m when harvesting red soil. This should be worked in terraces/ benches or at a safe angle of slope.
- Divide soil and marram harvesting sites into blocks to ease rehabilitation.

5.5.3 Drilling, Boring, Shafting and Tunnelling

Drilling, boring, shafting, and tunneling are all construction methods that involve digging a tube-like passage through the earth.

Standards and Guidelines

- Undertake planning to secure land banks for future underground works such as sewer, subways, underground interchanges and water conveyance
- Require ESIA, EA and geological reports and studies
- Restore the sites after decommissioning of tunnels for other appropriate uses such as recreation and tourism.

5.6 Energy Sources

Energy sources are either renewable or non-renewable. Non-renewable energy sources include petroleum, natural gas and nuclear energy. Renewable energy sources include solar energy from the sun, geothermal energy from heat inside the earth, wind energy, biomass from plants and hydropower from flowing water.

5.6.1 Solar Energy

Standards and Guidelines

- Provide a minimum land size of 2ha for small-scale solar farms and 4ha for large-scale solar farms.
- Provide a minimum access of 15m.
- Locate solar farms;
    - on flat or gently sloping terrain for ease of installation and maintenance, and away from obstructions like trees or tall buildings which may cast shadows on the panels.
    - near grid infrastructure for ease of transmission.
    - In areas free of mountains, forests, water bodies, buildings, wetlands, and floodplains.
    - on reclaimed or rehabilitated land and not on agricultural land.
- Designate recycling and waste disposal sites within the solar farms.
- Prohibit location along wildlife and birds' migratory corridors.
- Solar energy shall utilize wayleaves for electricity supply.

- Require an ESIA and EA before establishment.
- Conduct site and soil analysis to ensure the suitability of the land for solar farm development.

5.6.2 Wind Energy

Standards and Guidelines

- Designate and plan sites for the development of wind power generation facilities.
- Designate wayleaves for power line installation connecting to the national grid.
- Locate wind turbines where the annual average wind speed is at least 9 miles per hour (mph)—or 4.0 meters per second (m/s)—for small wind turbines and 13 mph (5.8 m/s) for utility-scale turbines.
- Locate on top of gentle undulating hills, open plains, water surfaces, and mountain gaps that funnel and intensify wind.
- Consider the following when siting a wind power farm:
    - wind potential
    - proximity to energy highways
    - radar interference
    - site accessibility
    - geology, groundworks and excavation
    - ecological interest
    - historic and tourist interest
    - wind shadow
- Locate the wind farms away from flight paths and military aircraft flying areas because of the height of the turbines and electromagnetic fields generated.
- Prohibit location along wildlife and birds' migratory corridors.
- Prohibit the location of wind power generation facilities in areas of scenic beauty, national parks and habitats of bird species.

5.6.3 Nuclear Energy

Standards and Guidelines

- Identify and map potential nuclear energy sites.
- Designate sites for cooling and waste management facilities.
- Provide adequate wayleave for the transmission of energy generated.
- Require an ESIA before establishment and periodic EA.
- Encourage preparation and implementation of an appropriate emergency preparedness and response plan.
- Encourage greening to act as buffers.
- Ensure the observance of radiation protection requirements as guided by the Nuclear Regulatory Act, No. 29 of 2019.
- Require baseline site survey, including radiological conditions, before the construction and

operation of a nuclear facility.

- Require in situ nuclear waste disposal and management.
- Provide the siting consideration of the nuclear facility as shown in Table 17.

Table 17: Siting considerations for nuclear energy facility and radioactive waste disposal facility

Criteria	Desirable Parameters
Distance from population centers of more than 10,000 people	More than 10 km
Distance from large population centers of more than 100,000 people	More than 30 km
Geology and hydrogeology	The hydrogeological characteristics of groundwater, its magnitude, and the direction of its flow
Terrain	Reasonably flat up to 20km
Distance from facilities involving storing, handling inflammable, toxic, corrosive material and any mining activities.	More than 5 km.
Compatibility	The potential impact of the plant on the surrounding area, population distribution and environment
Existing infrastructure	Proximity to the main grid, rail, and water to enable transportation of heavy equipment

Source: Directorate of Physical Planning, 2025

5.6.4 Geothermal Energy

Standards and Guidelines

- Map and designate identified strategic areas suitable for geothermal energy production.
- Identify and map the recharge catchment areas for conservation purposes.
- Prohibit residential development within 5km of the geothermal power stations.
- Consider the area's topography when selecting a location for the power plant and determining routes for the gathering and injection system.
- Locate power plants near well pads to minimize overall facility costs.
- Prepare a site plan considering the following:
    - Power plant excavation requirements and soil characteristics
    - Equipment orientation
    - Utility supply (including access to water)
    - New access roads
    - Existing infrastructure

5.6.5 Hydroelectric Energy

Standards and Guidelines

- Provide safety features like sidewalks, guard rails, fences, locked gates and parapets in the general site plan.
- Provide adequate drainage, a water supply, and lighting in the areas near the power-house.
- Maintain a buffer of 70m as measured from the highest watermark for all dams.
- Maintain a buffer of at least 20m and not more than 100m downstream of the dam, as measured from the toe of the dam.
- Require Environmental and Social Impact Assessments.
- Prohibit developments within the riparian reserve.
- The land requirement for hydroelectric plants is shown in Table 18

Table 18: Land Requirement for Hydroelectric Plants

Type	Land Size
Large dams (with large reservoirs)	10–50 hectares per MW
Run-of-river plants (which don't require large reservoirs)	2–5 hectares per MW.

Source: Finley-Brook, 2014

5.6.6 Tidal Energy

A tidal energy plant is a facility that harnesses the energy from tidal movements in oceans and seas to generate electricity.

Standards and Guidelines

- Designate and prepare plans for the installation of tidal energy plants.
- Locate in areas with differences in water levels of at least 5 meters high to produce electricity.
- Set aside a minimum land size of 1Ha for tidal stream generators (underwater turbines) and a minimum of 5Ha for tidal barrage plants (in dams).

5.6.7 Ocean Thermal Energy Conversion (OTEC)

Standards and Guidelines

- For land-based power plants, locate along the oceanfront on land that is stable and flat enough for a large power facility.
- Set aside a minimum land size of 5Ha for the plant.

5.7 Electricity Supply

5.7.1 Overhead Cables

Standards and Guidelines

- Observe the minimum setbacks from fuel and gas tanks shown in Table 19.
- Encourage installation of new transmission lines along existing power line corridors.
- Prohibit uses and activities that could interfere with a power line operation within the right-of-way including buildings, swimming pools, above-ground fuel tanks, tall signs or billboards, tall trees, obstructions, mounding of soil, burning of material, and excavations, among others.

Table 19: Minimum Setbacks from Fuel and Gas Tanks

Voltage Levels	0.4 kV	15 kV	30 kV	132kV	220 kV	400 kV
Horizontal Clearance from power line conductors to petrol tanks and vents (m)	15	15	15	15	15	20

Source: Kenya Power and Lighting Company, 2025.

Recommended minimum vertical clearances shall be as in Table 20.

Table 20: Minimum Vertical Clearances from power cables

Description of Clearance	Minimum clearance (m) at 400KV	Minimum clearance (m) at 275KV
To ground	7.6	7.0
To a normal road surface	8.1	7.4
To the road surface of designated '6.1m high load' routes	9.2	8.5
To a motorway or other road surface where Sky cradle can be used	10.5	9.8
To the motorway road surface where scaffolding is to be used: (i) Normal 3 lane motorways (ii) Elevated 2-lane motorways	16.3 13.3	15.6 12.6
To any object on which a person may stand including ladders, access platforms, etc.	5.3	4.6
To any object to which access is not required and on	3.1	2.4
which a person cannot stand or lean on a ladder.		
To trees under or adjacent to the line and: (i) Unable to support ladder/climber (ii) Capable of supporting ladder/climber (iii) Trees falling towards line with line conductors hanging	3.1 5.3 3.1	2.4 4.6 2.4

vertically only		
To trees in orchards and hop gardens	5.3	4.6
To irrigators, slurry guns and high-pressure hoses	30.0	30.0
To street lighting standards with: (i) Standard in normal upright position (ii) Standard falling towards line with line conductors hanging vertically only (iii) Standard falling towards line	4.0 4.0 1.9	3.3 3.3 1.4

Source: Kenya Power and Lighting Company, 2025

5.7.2 Underground Cables

- Underground cables shall utilize the road reserve space, and where cables traverse private/public property, the necessary approvals should be sought.
- The minimum proximity limits to other facilities in joint-use manholes and vaults shall be as specified in Table 21.

Table 21: Horizontal Separation in Co-Shared Power Lines Ducts

Voltage levels	**0.4kV**	**15kV**	**30kV**	**110kV**	**220kV**	**400kV**
Surface-to-surface clearance (m)	0.15	0.15	0.23	0.3	0.6	0.6

Source: Kenya Power and Lighting Company, 2025

- Maintain minimum clearance heights over/under other services as specified in Table 22.

Table 22: Recommended clearance heights

S/No	Type of Service	Recommended Clearance or Depth (M)
1.	Telecommunication cables	2
2.	Telecommunication cables in ducts	0.25
3.	Water pipes	0.5
4.	Oil pipelines	0.5
5.	Fuel storage tanks	1.2
6.	Crossing public roads	1.2
7.	Crossing railway tracks	1.6
8.	Low and medium voltage lines	0.25

Source: Kenya Power and Lighting Company, 2025

5.7.3 Submarine Cables

- Prepare a site plan showing coordinates for the entire route and any existing sensitive areas, e.g., coral conservation areas, existing submarine services, and water intake among others.
- Require ESIA and soil surveys to be conducted before approval and implementation of the project.
- Ensure development permission is sought from the relevant authorities before the installation of submarine cables.

5.7.4 Electric Power Generating Plants and Sub-Stations

Standards and Guidelines

- Provide adequate land for electricity substations as shown in Table 23.

Table 23: Land Requirements for Electricity Sub-Stations

Sub-stations	Land size (Ha)
Main receiving sub-station	1.6
Main distribution sub-stations	0.2
Electricity sub-stations	0.05
Single chamber	0.05
Double chamber	0.05

Source: Adopted from Kenya Power and Lighting Company, 2022

- Provide:
    - buffer of 2 km for electric power-generating plants.
    - power wayleave of 30m on both sides of the National Grid.
    - 0.5km buffer between the main receiving sub-stations (275KV) and residential areas, recreational open spaces and public facilities.
    - buffer zone of 50m between sub-stations and other land uses.
- Reserve a minimum of 5% of the exterior spaces in the main receiving sub-stations for landscaping.
- Locate substations central to the distribution area to be served.

5.8 Road Transport

Roads in Kenya are classified into National Trunk Roads and County Roads. These roads are classified further as follows:

5.8.1 Road Networks

1. National Trunk Roads

These are divided into primary and secondary national trunk roads.

a. Primary National Trunk Roads

i. Class S Highways

These are roads connecting two or more cities meant to safely carry a large volume of traffic at the highest legal speed of operation. They are provided with a road reserve of **90-120m.**

ii. International Trunk Roads (Class A)

These are roads that form strategic routes and corridors, connecting international boundaries at identified immigration entry and exit points and international terminals such as international air or seaports. The road reserve is **60 -110m.**

A minimum road of **40m** should be adopted only when necessary for economic, financial, or environmental resources, or when the provision of the desirable width would incur unreasonably high costs because of physical constraints. For dual carriage roads, it may be necessary to increase the road reserve width above the recommended values.

iii. National Trunk Roads (Class B)

These are roads that form important national routes, linking national trading or economic hubs, county headquarters and other nationally important centres to each other and the national capital or Class A roads. The road reserve is **60m -90m**.

A minimum road of **40m** should be adopted only when necessary for economic, financial, or environmental resources, or when provision of the desirable width would incur unreasonably high costs because of physical constraints. For dual carriage roads, it may be necessary to increase the road reserve width above the recommended values.

iv. Urban Major Arterials (Class H)

Urban major arterial highways are meant to carry through traffic and relatively long-distance traffic between widely separated parts of the city or municipality. They provide mobility within an urban area as opposed to access. The road reserve is **60–90m.**

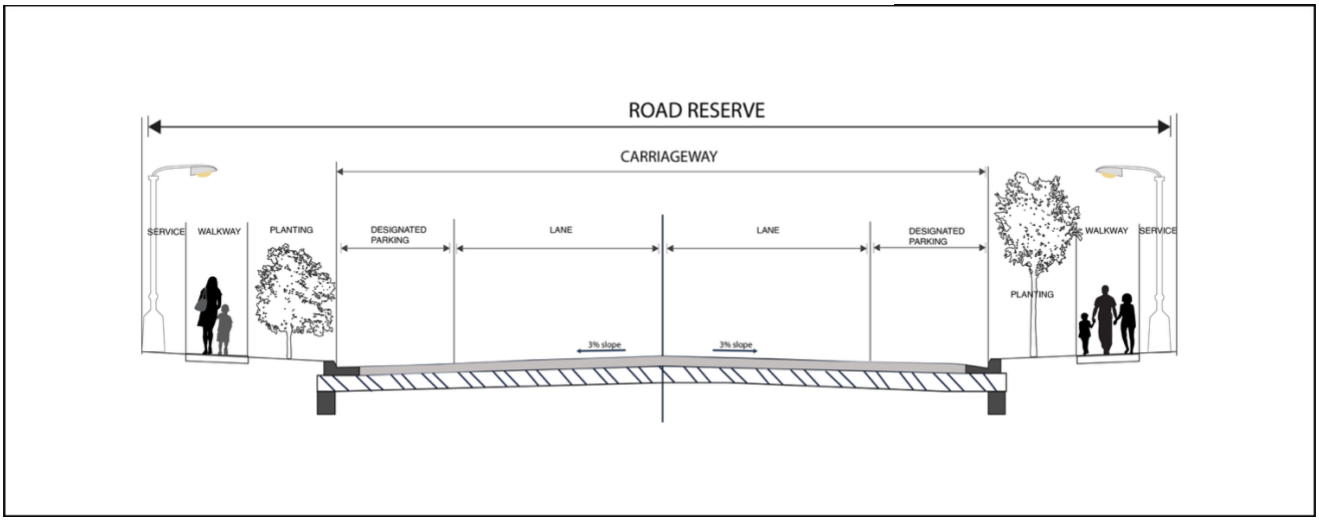
v. Minor arterials (Class J)

They carry traffic between different zones of the urban area and include the principal urban bus routes. They include roads within economic zones that are planned by the National Government and roads within State Houses and Lodges and their access roads. They provide mobility as opposed to access. The road reserve is **40-60m.**

vi. Urban major collector roads (Class K)

They collect traffic from the local roads and channel it to the major and minor arterial roads. They provide mobility and access, with a road reserve of **25-40m.**

Figure 17: Illustration of a road reserve



b. Secondary National Trunk Roads

i. Primary Roads (Class C)

They link county headquarters or other regionally important centers to Class A or B roads. The road reserve is **40-60m.**

ii. Secondary Roads (Class D)

They link constituency headquarters, municipal or town centers and other towns. They collect local traffic from lower-class roads and channel it to the higher-class roads. The road reserve is **25 - 30m.**

2. County Road Networks

i. Major Feeder Roads (Class E)

They link important constituency centres and channel traffic to class D roads. The road reserve is **20- 25m.**

ii. Minor Feeder Roads (Class F)

They link market centres and channel traffic to class E roads. The road reserve is **15-25m.**

iii. Urban minor collector roads (Class L)

They collect traffic from the local roads and channel it to the arterial roads. The road reserve is **15-30m.**

iv. Local urban access roads (Class M)

They provide access to commercial properties and residential areas and also cater to a high level of pedestrian traffic. The road reserve is **12-15m.**

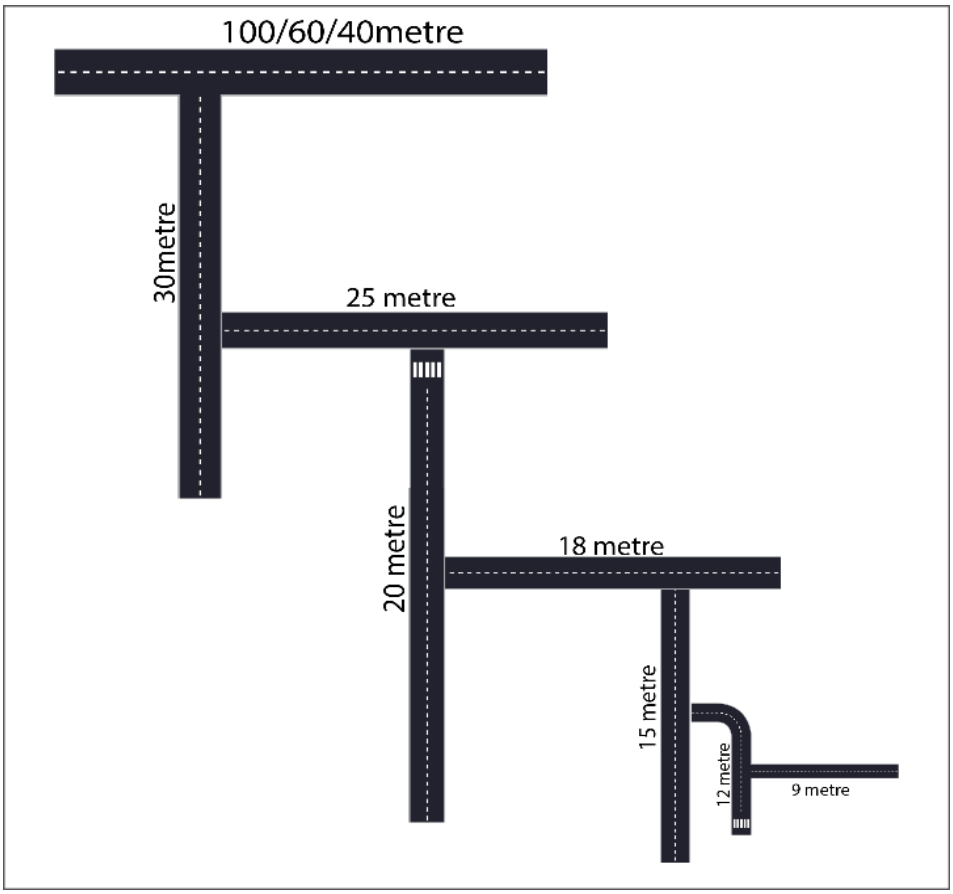
v. Class N

They provide direct access to individual or groups of properties, and residential areas, or to places of specific social or economic activity, including industrial, commercial areas and government institutions. The road reserve is **12-15m.**

vi. Class P

They provide direct access to groups of residential properties and other public access not provided by higher-class roads. The road reserve is **9-15m.**

Figure 18: Hierarchy of Roads



Source: Directorate of Physical Planning, 2025

5.8.2 Access Roads

These roads give direct access to buildings and land within neighborhoods and localities. The minimum road width is 12m. They include:

i. **8or Dead-end Streets:** meant to eliminate through traffic in a cluster of houses. A dead-end street should be aligned such that it shall give access to not more than 10 residential plots. It should not exceed 60m in length and shall have a turning of at least 15m at the inner end.

ii. **Loop Street or Crescent:** a variation of the Cul-de-Sac but eliminates the necessity of dead-end and therefore provides continuous circulation in the residential cluster and ensures easy accessibility to properties without road frontage.

iii. **Service Lane:** this is a road parallel to the main access road to buildings, provided for parked loading or off-loading of goods. Service lanes should be separated/screened from the main roads.

iv. **Slip roads:** a short road on which vehicles join or leave a main road. They allow vehicles to

join new roads without stopping. A slip road may remain alongside the main road as an extra lane, or it may merge with the bigger road, narrowing before disappearing completely.

It is recommended that the width of streets or access lanes in a residential area be determined by the number of dwelling units or plots to be served. The minimum street width for a given number of plots is indicated in Table 24.

Table 24: Access roads widths

Number of plots	Street widths
1-8	9m
Above 8	12m

Source: Directorate of Physical Planning, 2025

NOTE: Road reserves shall serve the purpose of establishment of the carriage, the support road furniture, future expansion and carrying out of road maintenance works. A separate provision for wayleaves shall be considered for laying out other physical infrastructure.

5.8.3 Siting of Roads

The following factors should be considered while sitting of roads:

- The topography
- Hydrological characteristics
- Environmental and geotechnical considerations
- Economic viability
- Social characteristics, including cultural heritage, archaeological sites, etc
- Existing land uses
- Conformity to the existing road alignments
- Catchment population

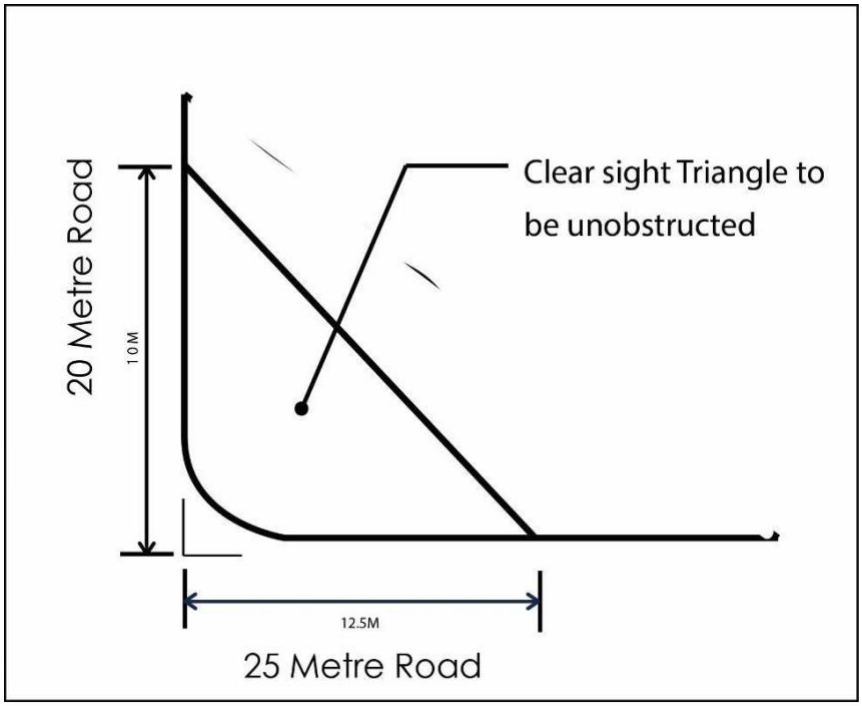
General Standards and Guidelines

- Consider safety, functionality and environmental sustainability during planning and designing for roads.
- Designate service lanes, pedestrian walkways, space for signage, street lighting and cycling paths.
- There should be no direct access to properties from Class S, Class A, Class B and Class H roads.
- Provide:
    - slip roads on Class S, Class A, Class B and Class H roads to human settlements.
    - standard wayleaves for electricity supply, stormwater, fibre optic cables and sewer.
    - waste recycling bins on pedestrian walkways.
- Restrict direct access to individual plots from arterial roads.
- Increase road reserve widths of classified roads passing through urban centres to allow for

parking, segregation of traffic, street furniture or for controlled accessibility to properties, where necessary.

- Encourage water-harvesting facilities from stormwater drains.
- Control encroachment of human activities along the bypasses and major roads
- Encourage landscaping and tree planting along the roads to enhance aesthetics and encourage walkability.
- Provide road truncations which shall be half the width of the adjourning road with clear markings as illustrated in Figure 19.
- Permitted developments include:
    - Public utilities such as water and sewer wayleaves, electricity wayleaves, and fibre optic cables.
    - Bus stops and roadside drop-off and pick-up points.
    - Street furniture, road marking, street landscaping, water points, street toilets, street lighting, waste recycling bins, among others.
    - Non-Motorized Transport.
    - Advertisements and signage.
    - Parking facilities.
    - Street vending facilities

Figure 19: Illustration of Truncations



Source: Directorate of Physical Planning, 2025

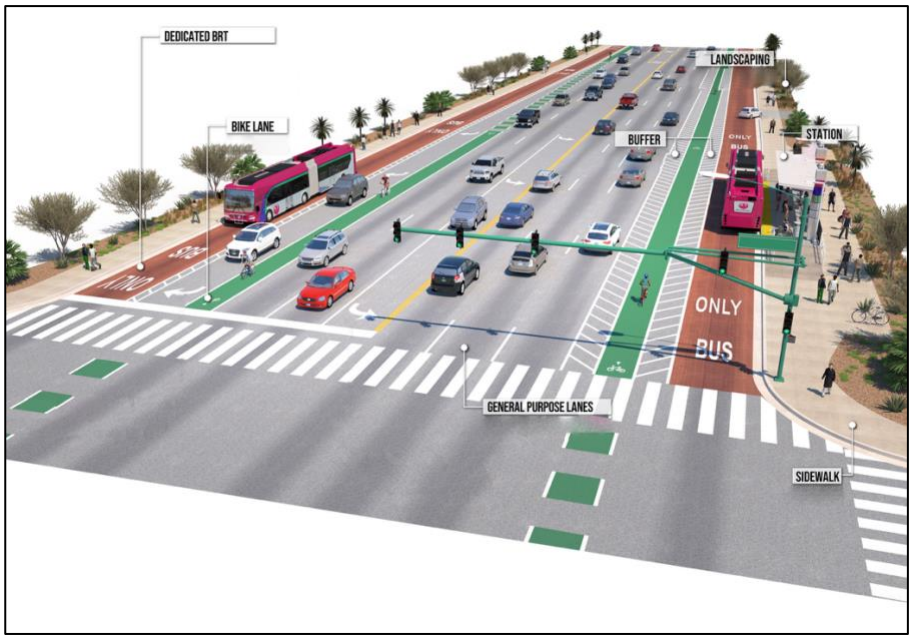
5.8.4 Mass Rapid Transit System

a. Bus Rapid Transit

Standards and Guidelines

- Provide a minimum road reserve of 65m for roads that serve the BRT corridor.
- Designate areas for pedestrian drop-off and pick-up points

Figure 20: Illustrates a BRT Model



Source: Directorate of Planning, 2025

Figure 21: Bus Rapid Transit Illustration

Source: Directorate of Planning, 2025

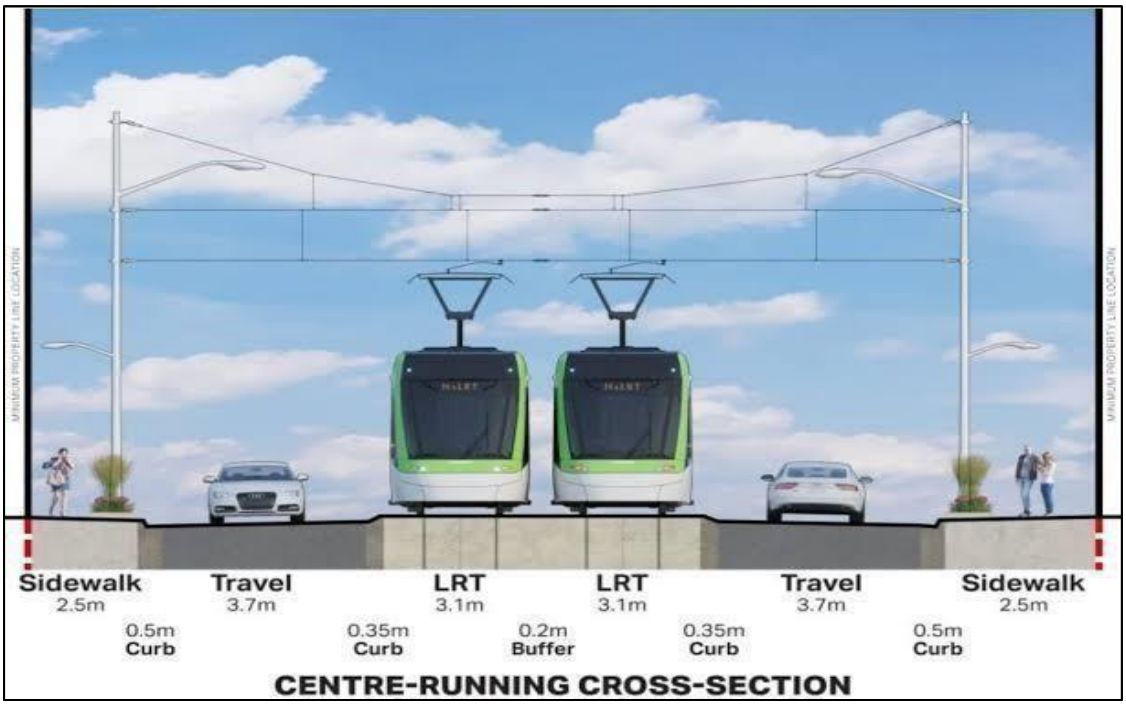
b. Light-Rail Transit (LRT)

LRT is a system of railways used for medium-capacity local transportation in metropolitan areas.

Standards and Guidelines

- Ensure the alignment of LRT integrates well with the existing urban landscape, minimizing disruptions and enhancing connectivity.
- Consider using exclusive right-of-way to improve safety and efficiency, especially in densely populated areas.
- Locate the Light Rail Transit station after every 1.5-3km as shown in Figure 22.
- Provide a minimum land size of 5ha for the maintenance station (an overhaul depot for rolling Stock, signaling, communication, operation control centre and training facilities).

Figure 22: Light Rail System



Source: Directorate of Planning, 2025

c. High-Rail Transit

HRT is an electric rail-based public transport system, often referred to as “Metro,” with high passenger capacity that generally precludes sharp turning movements.

Guidelines

- Locate near existing transportation facilities such as airports, railways, bus stops, and highways for ease of accessibility and inter-modal integration.

- Terminal stations (stations at both ends of the corridor) should be close to the city center or downtown area of major cities to enhance ridership potential.
- Prohibit location within environmentally sensitive areas such as forests, wetlands, water bodies.

5.8.5 Transport Interchanges

a. Inter-modal interchanges

It is a facility that allows commuters and cargo to transfer between different modes of public transport or between two services of the same mode. Commuters can join or leave the public transport system on foot, bicycle, motorcycle or car.

Standards and Guidelines

- Siting considerations include: mobility needs, transport integration, zoning regulations, proximity to urban centers, availability of basic services, development character of the area, and integration of modern technology, among others.
- Locate interchanges within major destinations in town or district centers or shopping centers.
- Locate residential areas away from the interchanges.

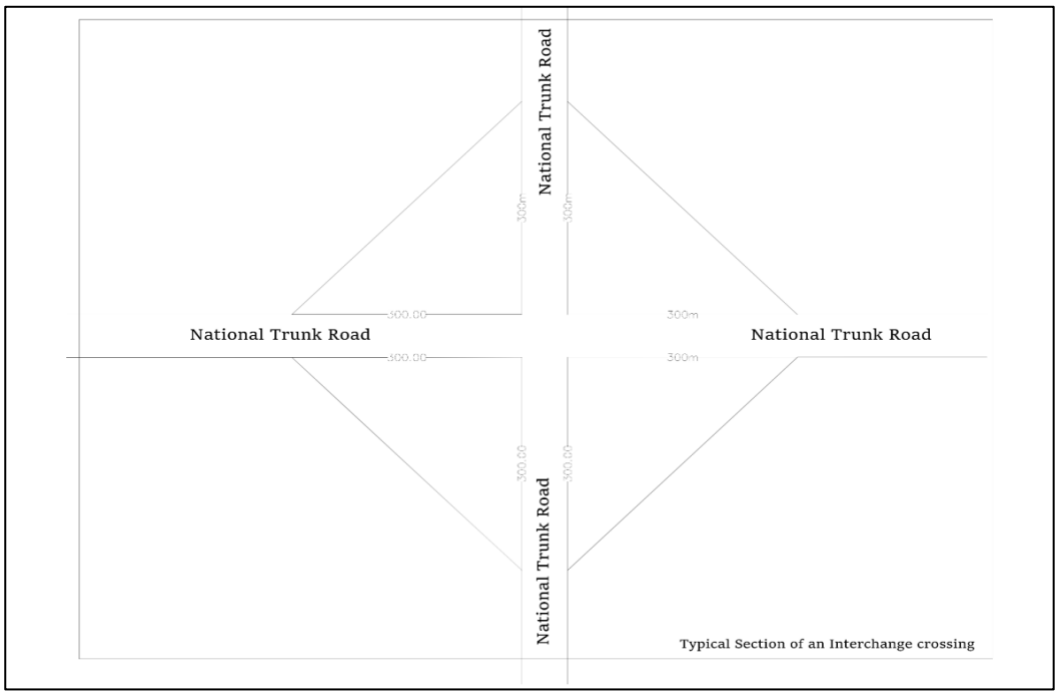
b. Road interchanges

It is a junction of two or more roads, typically highways or major roads, designed to allow traffic to move between them without interfering with other traffic streams. It often involves overpasses, underpasses, or separate lanes for different movements.

Types of interchanges

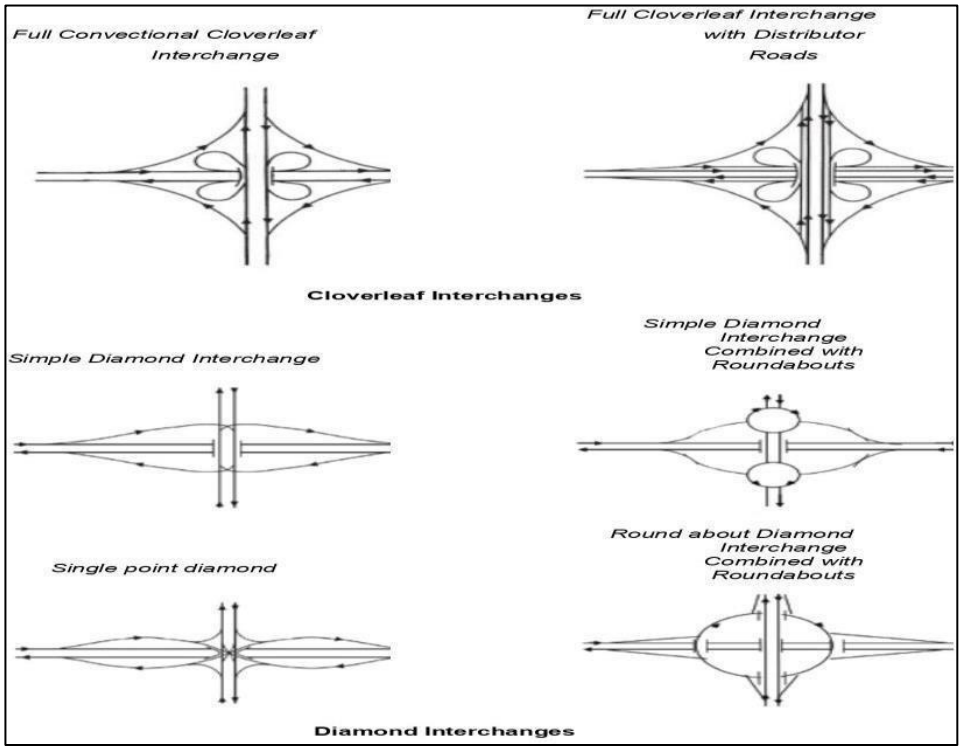
- **Systems/Major Interchanges**: These are critical nodes within the main network, connecting high- capacity roads such as those in functional classes A and B, which have full access control. They often link freeways and other major roads and are designed to handle significant traffic volumes with high-speed ramps and free-flowing terminals.
- **Access/Minor Interchanges**: These link individual highways without access control, often connecting lower-capacity roads. They are designed to integrate smaller roads into the broader transportation network. Figures 23 & 24 illustrate examples of interchanges.

Figure 23: Illustration of a section of an interchange crossing



Source: Directorate of Physical Planning, 2025

Figure 24: Road Interchange



Source: Japan International Cooperation Agency (JICA), 2020

5.8.6 Bus Termini

Standards and Guidelines

- Locate outside the CBD with intermodal linkage to minimize traffic congestion and pollution.
- Provide adequate space to accommodate facilities such as benches, signage, shelters, waste bins, parking, eateries, health clinics, police booths, and sanitation areas, among others.

5.8.7 Parking

Parking is a space designated for leaving vehicles, bicycles, and motorcycles temporarily. Parking facilities should be provided to manage vehicular traffic and eliminate obstruction to vehicular traffic flow.

Standards and Guidelines

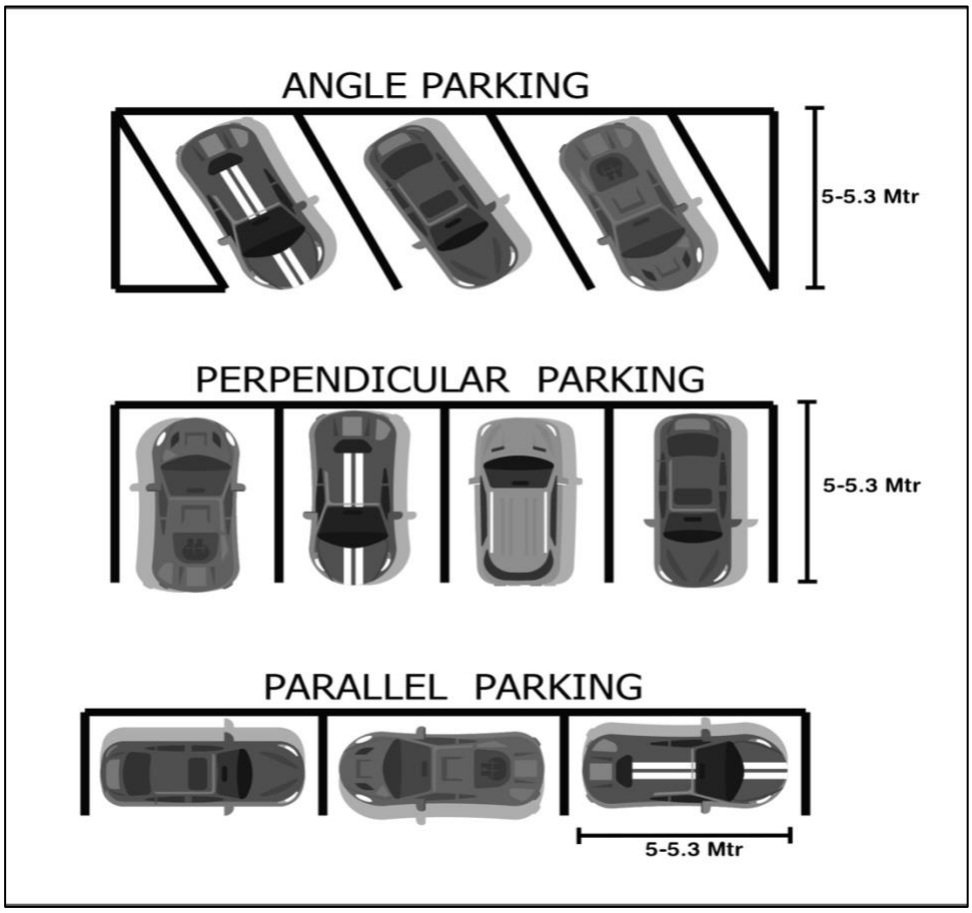
- The siting considerations include drainage, access, and safety.
- Integrate parking lots with the intermodal interchanges.
- Orient the parking lot layout in relation to the building entrance to ensure that pedestrians walk parallel to vehicular movement rather than crossing parking rows and drive aisles.
- Locate parking close to building entrances, ensure that it is easily identifiable and separate from pedestrian circulation areas.
- Integrate traffic calming techniques into the transportation and site layout to slow and divert traffic, thus enhancing safety. These include wide-speed humps, raised crosswalks, and raised intersections.
- Encourage solar street and smart energy-efficient lighting.
- Provide on-plot parking in the central commercial and business zones.
- Provide adequate parking space in residential areas.
- Prohibit on-street parking along the carriageways on national highways.
- Locate parking for trucks that weigh 7 tonnes outside the CBD.
- Tables 25 & 26 provide for parking requirements

Table 25: Space Requirements for Vehicles

	Flush/Parallel Parking	**Angle Parking**
Cars	5.0-6.5m by 2.5m	5.0-6.5m by 2.5m
Buses	10.0m by 3.3m	10.0m by 3.3m
Trailers and Trucks	30.0m by 4.0m	40.0m by 2.5m at an angle of 30 degrees

Source: Directorate of Physical Planning, 2025

Figure 25: Types of parking



Source: Directorate of Physical Planning, 2025

Table 26: Car Parking Requirements Based on Usage

Use	Proposed New Minimums	Justification
Residential	Minimum ratio of parking spaces per dwelling unit; a) Low density- 1:2	1 car park per 2 housing units
	b) medium density – 1:2	1 car park per 2 housing units
	c) High density –1:3	1 car park per 3 housing units
	d) Studio/bedsitter = 1:10	1 car park per 10 housing units
	e) One bedroom unit 1: 3	1 car park per 3 housing units
	f) 2 or more-bedroom unit = 1: 2	1 car park per 2 housing units
	NB: 25% of the total required parking is provided for guest parking outside on individual parking spaces.	
Specialized market	1:2	1 parking space for every 2 stalls

Market	a) 10% of the permitted total area	Minimum land size for market=0.1ha Parking space 10%*0.1ha =0.01ha 1 car parking space= 21m^2 or 0.002ha Total parking slot for 0.1ha market 5
	b) Roadside stalls = 1:2	1 parking for 2 roadside stalls
Neighborhood Shopping Centers	10% of permitted total areas	
Office Administration	-	1:25
Hotel	1:	1
School		1:1 equivalent to 1%
Hospital		1:2
Sports field & outdoor and indoor recreational facilities	1: 3 persons anticipated at maximum capacity	1:2
Nursing Home	1: 3	1 parking for 3 beds
Cemeteries & Crematorium	30% of the total area	1 car park =0.0021ha Expected population per function: 150 Expected parking per function=150/3=50 car parking Expectation functions at any one time =3 Total car parking at any time: 50*3=**150** Total car park space needed 150*0.0021=0.3Ha **(30% of the land)**
Industries	20% of the total area	1 car park of 21m^2 per 100m^2 of the industrial space

Source: Directorate of Physical Planning, 2025

a. Parking Requirements for Persons Living with Disabilities (PLWD)

Standards and Guidelines

- Provide a minimum parking lot width of 3m.
- The lots should be located as close as possible to ramps, walkways, entrances, and elevators.
- Reserve at least one parking space or one percent of the parking spaces, whichever is more, for

persons living with disabilities.

b. Bicycle Parking

Standards and Guidelines

- Designate parking spaces of 2m long and 1m wide for each bicycle.
- Designate bicycle parking with the land uses as shown in Table 27

Table 27: Bicycle Parking Standards

Land Use	Parking Space
Residential	20% of the total parking area.
Industrial	5% of the total parking area
Educational	20% of the total parking area
Recreational	50% of the total parking area
Public purpose	30% of the total parking area
Commercial	10% of the total parking area
Transportation	30% of the total parking area

Source: Directorate of Physical Planning, 2025

5.8.8 Non-Motorized Transport (NMT)

Non-motorized transport is active transportation, which includes walking, cycling, and variants such as small-wheeled transport (skates, skateboards, push scooters and hand carts) and wheelchair travel. NMT facilities are provided within the road reserves.

a. Cycling Lanes and Walkways

Standards and Guidelines

- Provide a minimum of:
    - 3m for a combined cycle lane and walkways.
    - 2m for a separate cyclist lane and skateboards, scooters and bicycles.

- Provide minimum NMT size as shown in Table 28.

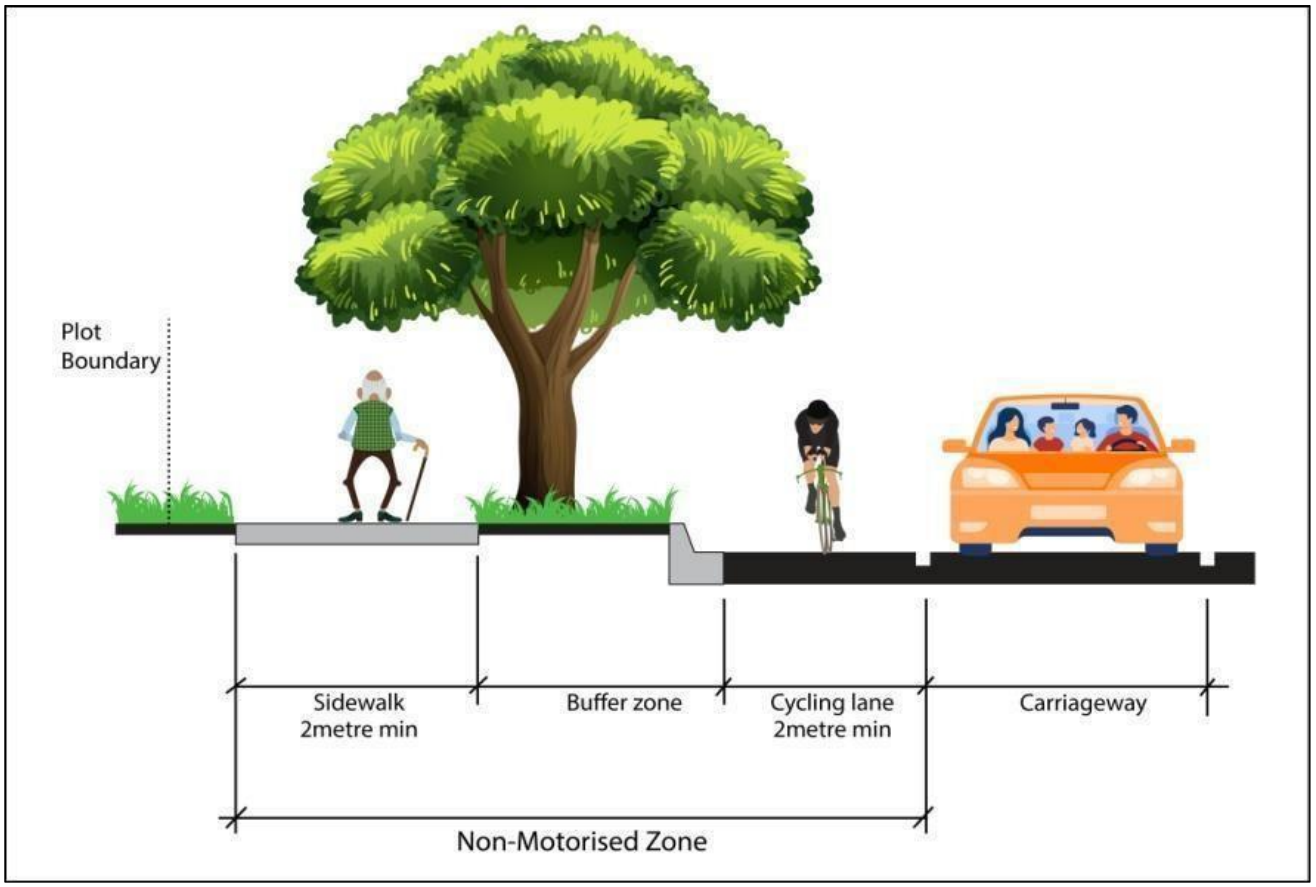
Table 28: Standards of NMT for different categories of roads

Type of road	Minimum NMT size	Facilities
Urban Major Arterials (Class H)	5m	Street furniture (benches, security lights) Waste bins Landscaping and ornamental tree lining
Urban Minor Arterials (Class J)		
Local urban access roads (Class M)	2m for a cycle lane 2m for a dedicated walkway	

Source: Directorate of Physical Planning, 2025

Figure 25 shows an illustration of NMT

Figure 26: Section of non-motorized transport



Source: Directorate of Physical Planning, 2025

5.8.9 Roadside Stations

Roadside stations are rest areas situated alongside roads to provide a safe and comfortable environment for vehicle users and promote the local economy.

Categories of roadside stations

1. **Large**
   - Located along international trunk roads class (S) and major highways class (A).
   - Provide a minimum land size of 4Ha.

2. **Medium**
   - Located within the national trunk roads class (B) roads.
   - Provide a minimum land size of 2.4Ha.

3. **Small**
   - Located within the urban trunk roads class (H-K) roads.
   - Provide a minimum land size of 1.2Ha.

Standards and Guidelines

- Provide a parking space of 10 percent of the total area.
- The minimum recommended distance between roadside stations is 200km.
- Integrate with the electric vehicle charging stations.
- Alternate on both sides of the road to provide adequate resting options for travelers in both directions.
- The minimum facilities required in a roadside station include:
    - parking space,
    - garages,
    - petrol station,
    - recreational area,
    - administrative and security offices,
    - drainage,
    - signages,
    - street lighting,
    - restrooms/hotels,
    - washrooms,
    - restaurants, shops/supermarkets,
    - health clinics
    - emergency response centre and
    - bank/bureau office.
    - prayer rooms
- The size of these individual facilities shall be provided in line with the standards laid out in this handbook.

Figure 27 shows an illustration of a roadside station.

Figure 27: Basic concept of roadside station (Michinoeki)

Source: Ministry of Land, Infrastructure, Transport and Tourism website, Japan

5.8.10 Electric Vehicle Charging Stations

Standards and Guidelines

- The minimum land size for an electric vehicle charging station is 0.25ha.
- Provide a minimum of 5% of parking space for electric vehicle charging.
- Integrate charging stations within roadside stations, petrol stations and commercial buildings.

5.8.11 Corridor Development

Standards and Guidelines

- Provide a buffer zone of 50km on both sides along the corridor to prevent urban sprawl.
- Prepare a comprehensive strategy to guide developments within the corridor.
- Establish strategic towns within the corridor and encourage compact development.
- Establish special economic zones and industrial parks.
- Conserve the patterns of livelihoods and settlements.
- Preserve local cultural and historic sites and resources.
- Provide for parking and roadside stations along the corridor.

5.9 Railway Transport

5.9.1 Railway Reserve

A railway reserve is land vested in the Kenya Railway Corporation (KRC) by any written law and land conveyed or otherwise placed at the KRC's disposal is reserved for its use.

Standards and Guidelines

- Provide:
    - minimum reserve of 60.96m (200ft) for a Meter Gauge Railway (MGR).
    - minimum reserve of 30.48m (100ft) on either side of the centre track of the main line of a meter gauge.
    - minimum reserve of 70m for Standard Gauge Railway (SGR) and at least 130m in protected areas.
    - minimum of 91.44 m (300ft) on either side from the center of the main lines in standard station areas.
    - minimum of 12m building lines and setbacks for properties abutting the railway corridor.
    - Private sidings shall be at least 7.5m wide. Sidings in industrial areas shall be 30.48m on either side of the center of the track.
- Regulate human activities along the railway reserves.
- In case of realignment of the track, the land shall not be allocated for any other use before due process is followed. The land shall be gazetted, and a deed of surrender issued in line with the NLC Act.
- Railway construction projects shall be based on topographical, geo-technical surveys, and ESIA /SEA reports.
- Provide underpasses and overpasses for pedestrian and bicycle crossings across railway corridors, to connect neighborhoods and key destinations.
- Integrate interchange facilities such as bus stations, parking, airports and ferry slips within railway stations.
- Provide a street between the railway operating corridor and the surrounding area, to provide an active frontage in metropolitan areas.
- Designate a noise buffer for adjacent buildings and the surrounding areas.
- Subject all development applications abutting railway reserves and operational areas to the prescribed KRC and PLUPA processes.
- Buildings, roads, pipelines, water pipelines, sewage lines, power distribution infrastructure, and telecommunication masts shall be required to seek the approval of Kenya Railways before crossing, abutting, or running along any railway reserve.
- Access to buildings shall not be provided on the side facing the railway reserve.
- No alteration of existing roads passing through railway reserves shall be permissible except with the express authority from KRC.
- Prohibit cultivation on slopes of more than 35% and within 9.14m (30ft) from the center of the track.
- Prohibit explosive or radioactive materials around the railway network.

5.9.2 Level Crossing Reserve (Diamond)

An intersection where a railway line crosses a road or a path.

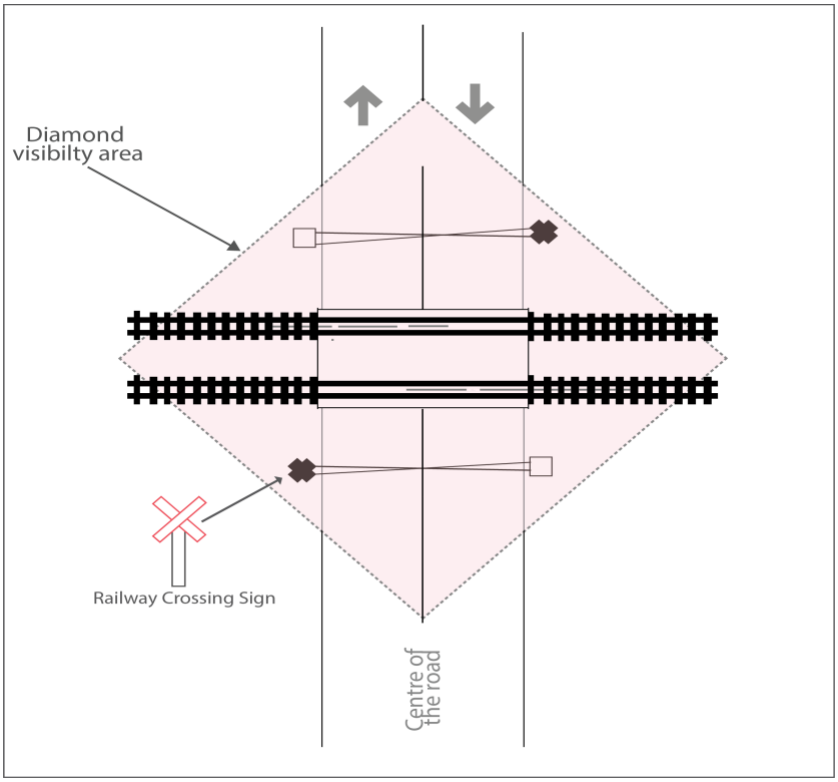
Site selection considerations

- Safety of the road and rail traffic
- Clear sight visibility.
- Land adjoining the railway track should not be above the rail level.
- Land adjoining the road shall not be more than 0.9m (3ft) above the road.
- Railway and road shall cross at right angle (90 degrees).
- Level crossing shall not be sited on sharp curves.

Diamond visibility

Means a distance of **100m** in each of the four directions along diagonals at the intersection of the road and the railway.

Figure 28: Illustration of diamond visibility



Source: Directorate of Physical Planning,2025

5.9.3 Standard Gauge Railway (SGR)

- Provide:
    - crossing access after every 2km for foot traffic and 5 km for vehicular traffic.
    - overpasses in cuttings and where SGR crosses the meter gauge
    - animal corridors in collaboration with relevant authorities (KWS, KFS, and

County Governments).

5.9.4 Railway Stations

Standards and Guidelines

- Prepare site layout plans for railway stations.
- Provide:
    - facilities for persons living with disabilities.
    - adequate space to accommodate facilities such as station furniture, waste recycle bins, sanitary facilities, security, health facilities, and lighting.
    - warning signs and speed restriction boards.
- Locate railway stations within the proximity to other transport termini to ensure short and seamless transfers.
- Locate commuter car parking areas away from main pedestrian entrances to the railway station.
- Refer to the Railway Engineering Manual, Vol I, 1962 during planning and development approval processes.

5.10 Air Transport

General Guidelines and Standards

- Prohibited developments in the Obstacle Limitation Surface (OLS) include:
    - Quarries
    - Slaughterhouses
    - Hospitals
    - Schools
    - Greenhouses
    - Agricultural activities
    - Dumpsites
- Developers should make formal applications to KCAA for any proposed structure detailing the following;
    - Coordinates in WGS-84 format
    - Proposed height required
    - Purpose/use of the proposed development
    - Proposed plans
    - Letter of no objection from relevant authorities
- Overhead wires, cables and their supporting towers that are crossing a river, waterway, valley or highway should be marked and lighted if an aeronautical study indicates that they could constitute a hazard to aircraft.
- The siting considerations include:
    - Topography of the aerodrome site and its surroundings.
    - Geological considerations including soil and rock types, presence of fissures, landslides and soil stability

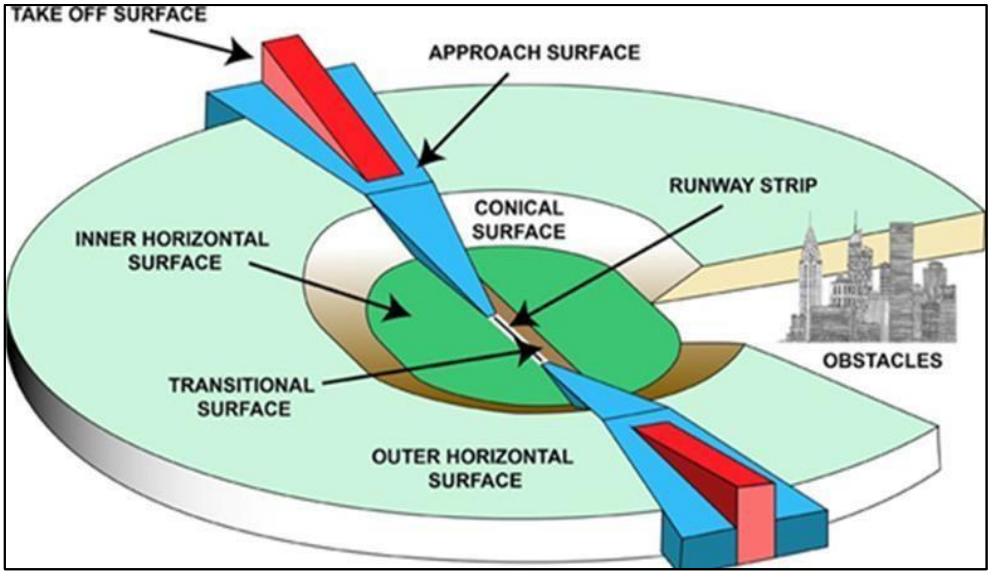
- Weather particularly wind distribution and the occurrence of localized fogs. The primary runway should be oriented in the direction of the prevailing wind.
- Type and amount of air traffic to be served, including air traffic control aspects. The number of runways must be sufficient to meet air traffic demands, which consist of the number of aircraft arrivals and departures, and the mixture of aircraft types, to be accommodated during the busiest periods.
- Aeroplane performance considerations.
- Environmental considerations.
- Natural obstruction -all runways should be oriented so that approach and departure areas are free of obstacles and, preferably, so that aircraft are not directed over populated areas.
- Adjacent land use -the orientation and layout should be as far as possible from the particularly sensitive areas such as residential, school, and hospital zones; to avoid the discomfort caused by aircraft noise
- Future expansion capability.

5.10.1 Airports

Guidelines and Standards

- Prohibit the development of any obstacles within a 15 km radius of the runway strip to protect the Obstacle Limitation Surface (OLS). OLS is the airspace around aerodromes that is to be maintained free from obstacles to permit the intended Air System operations at the aerodromes to be conducted safely, as shown in Figure 29.

Figure 29: Obstacle Limitation Surface (OLS)



Source: ICAO, Annex 14

Note: KAA has the ultimate responsibility of controlling obstacles on airport property and arranging the removal or lowering of existing obstacles outside the airport boundaries.

- Developments that extend above a take-off climb surface within 3000m should be marked and lighted.
- Developments beyond the limits of the OLS, which extend to a height of 150 m or more above ground elevation, should be regarded as obstacles unless an aeronautical study indicates that they do not constitute a hazard to aeroplanes.

5.10.2 Airstrips

An airstrip is an area used for the landing and take-off of aircrafts, including buildings and structures.

Site considerations

- The airstrip should be located in a flat terrain to accommodate the physical layout of the landing strip.
- Convenient connection to an existing transport facility.
- Availability of land for expansion to accommodate future needs.
- The soil should be well-drained, preferably sand soil.
- It should be sited away from the residential areas, schools and hospitals due to noise pollution.
- High-rise buildings and tall trees should be avoided to clear space for landing and take-off.
- Provide an airstrip in every city and municipality.
- The minimum length of the landing strip should be 975m (3,200 feet).

Note: Land sizes for airports and airstrips are provided by KAA based on the feasibility studies conducted.

5.10.3 Helipads and Heliports

A helipad is a designated landing and take-off area for helicopters, generally smaller, typically used for private or emergency helicopter operations and may be located on rooftops, in parking lots, or on smaller properties.

Heliports are larger than helipads and are designed for commercial or public helicopter operations, often supporting more complex helicopter operations, maintenance, or passenger services.

Standards and guidelines

- Locate
  - On level, well-drained ground with good load-bearing capacity.
  - In areas free from dust and debris.
- Orient helipads and heliports away from prevailing winds.
- Provide
  - minimum distance of 500m between helipads/heliports and residential areas and schools.
  - minimum distance of 750m between two helipads/heliports to avoid airspace conflicts.
  - a landing area twice the length of the largest expected helicopter to use the heliport/helipad.

5.10.4 Advanced Air Mobility

Advanced air mobility focuses on emerging aviation markets for on-demand aviation in urban, suburban, and rural communities. It serves a minimum area of about 80km radius in rural, urban and intraregional areas.

Standards and Guidelines

- Provide a minimum land size of 0.2Ha for vertiports.
- Prohibit flying heights below 2.5m for drones and air taxis.
- Observe a minimum separation distance between vertiports in urban and rural areas, respectively as advised by KCAA.

5.11 Maritime and Inland Water Transport

Standards and Guidelines

- Consider the depth of the water and strength of waves and winds in the siting of ports.
- Identify, map and prepare action plans for accident-prone areas.
- Permissible activities within the riparian reserve include recreation and conservation.
- Regulate developments to ensure the required visibility for the aid to navigation is maintained.
- Designate land uses with consideration of the existing rail lines, roads, ports, harbors and waterways.
- Designate spaces for emergency response and health facilities.
- Designate spaces for bunkering, waste reception facilities, oily waste reception facilities, sewerage reception and garbage waste.
- Identify and map ecologically and environmentally sensitive areas and prohibit development in these areas.
- In determining the port size, the following factors should be considered:
    - Passenger carriers, vessel sizes and handling equipment
    - Road and rail access
    - Safety and emergency facilities
    - Utilities
    - Parking and loading/unloading spaces
    - Ancillary facilities such as shelters, lighting, security facilities, markings and signage and seating.
    - Routes and destinations
    - Security and administrative facilities
    - Frequency of service
    - Seaports and marine terminals
- Require
    - a bathymetric survey for proposed developments.
    - ESIA and EA for proposed and existing projects, respectively.
    - comprehensive oil pollution emergency plans and fire control plans

5.11.1 Marina

Marinas are specially designed harbors with moorings and supplies for yachts and small boats. It does not handle large passenger ships or cargo from freighters.

Standards and Guidelines

- Prohibit direct road access to the boat launching ramps
- Provide:
    - separate site for fueling dispensing at least 8m away from other activities.
    - physical barrier for the bulk fuel storage to stem unauthorized access.
    - fire hydrants for fire protection.
- Locate bulk fuel tanks on the mainland and not on the floating docks.
- Locate the bulk fuel tank storage in a well-ventilated structure to prevent the accumulation of gas, which could lead to an explosion.
- Prohibit fuel spillage into the ocean.
- Conduct ESIA and EA for the construction of Marina.

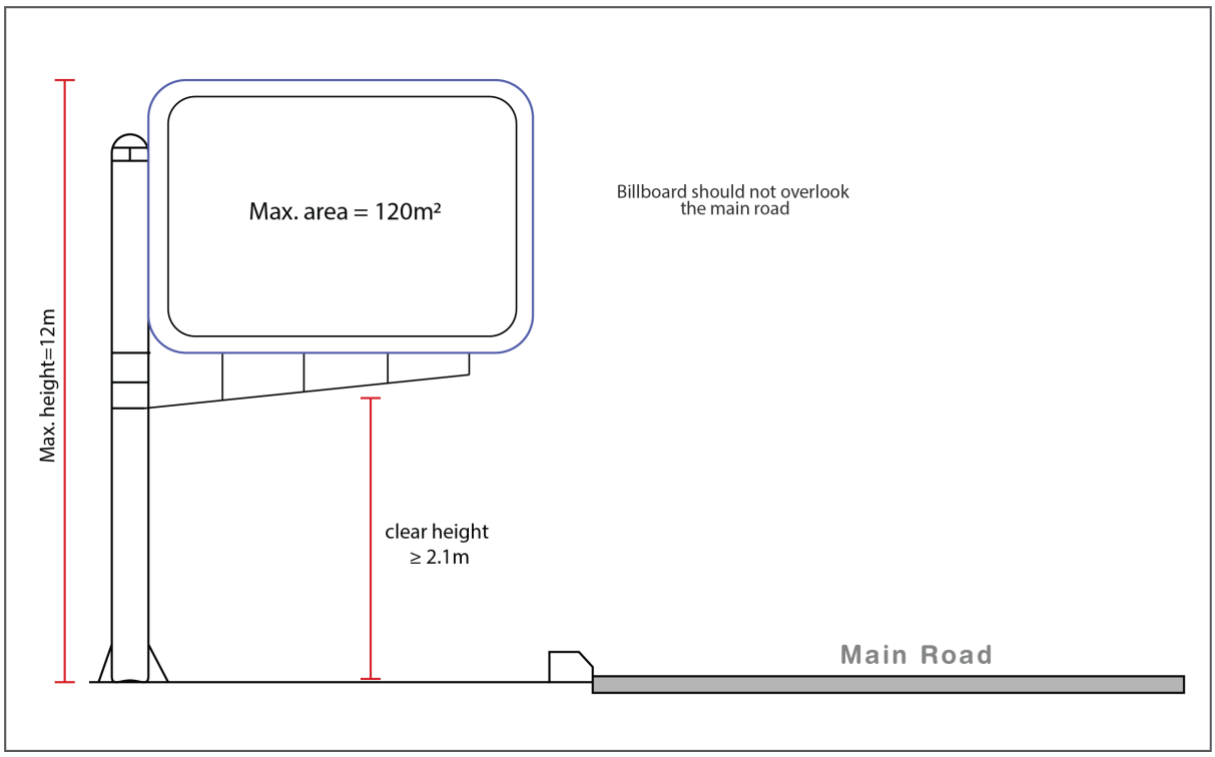
5.12 Advertisements

Standards and Guidelines

5.12.1 Billboards

- Observe a minimum distance of 250m on either side of the road between billboards along classes S, A and B roads and those within 1Km radius of the boundary of a municipality, town, or market centre irrespective of the classification of the road.
- They should not be displayed within 30m of junctions and roundabouts.
- Observe a minimum distance of 100m between billboards along urban trunk road corridors and railway corridors.
- They should be buttressed from the roadsides to avoid incidents of falling on the carriageway.
- Prohibit billboards in residential areas, on rooftops or in recreational areas.
- Erect within 70m of traffic control lights and not less than 100m from the outer width of a roundabout.
- Prohibit display within 30m of the carriageway on national trunk roads
- The maximum height should be 12m with a clear height of 2.1m.
- The maximum area of billboards should be $120m^2$.
- Regulate the number of billboards and roadside advertising screens to reduce obstruction, and negative visual effects and enhance road safety.
- Prohibit placement of billboards on overhead footbridges to enhance pedestrians' security and avoid obstruction to motorists.

Figure 30: Billboard Measurements



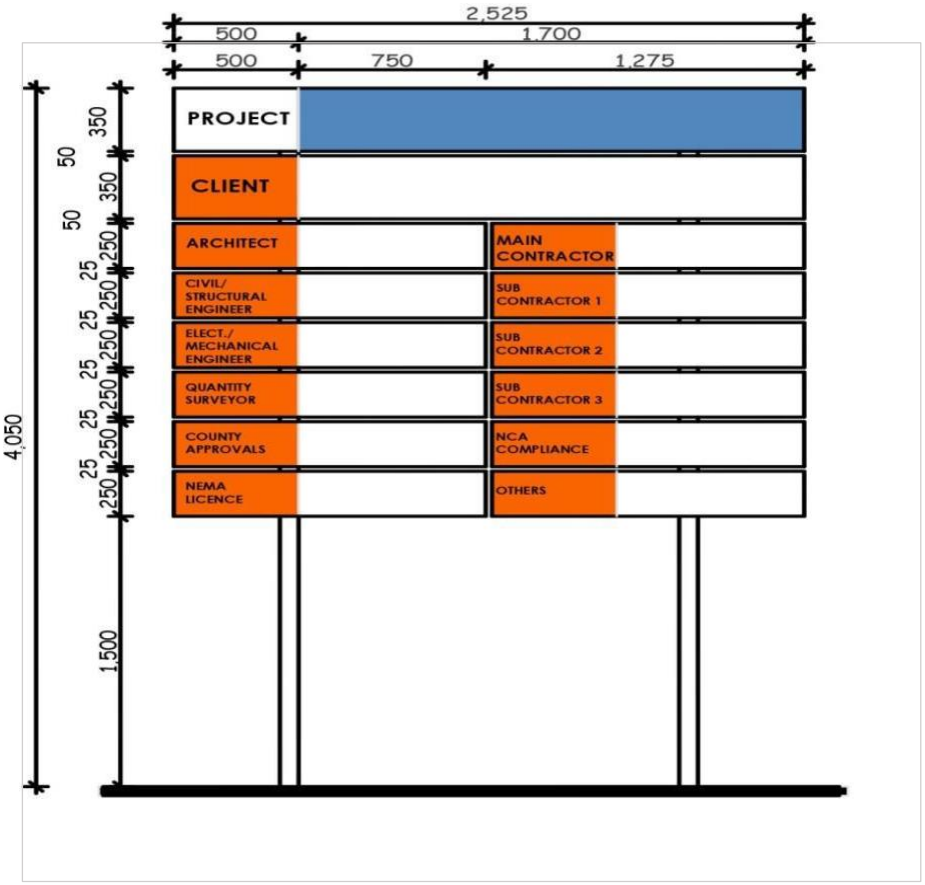
Source: Directorate of Physical Planning, 2025

NOTE: Billboard advertisements should not be placed on road reserves but on properties adjacent to road reserves.

5.12.2 Construction Site Notice

- Ensure the on-site construction notice is displayed before the commencement of construction measures 1.2m by 0.7m and a height of 1.7m from the ground as illustrated in Figure 31.

Figure 31: Illustration of a construction site board.



Source: Adopted from The National Building Code, 2024

5.13 Telecommunication Lines and Cables

Telecommunication infrastructure refers to the physical and technical systems enabling the transmission of information across long distances, including technologies like telephone lines, wireless networks, and fibre optic cables.

5.13.1 Overhead Cables

Standards and Guidelines

- Ensure a minimum pole span length of 40m - 55m and 60m- 64m for aerial cable routes and drop wire routes, respectively.
- Observe the minimum vertical clearances for overhead cables as illustrated in Table 29.

Table 29: Minimum Vertical Clearance for Overhead Cables

S/No.	Vertical Clearance	Minimum Height (M)
1.	Railway crossings	6.1
2.	Plantation railways crossings	4.88
3.	Road crossings	4.88
4.	Alongside town road	3.66
5.	Alongside country roads	3.05
6.	Across country	3.05

Source: Directorate of Physical Planning, 2025

- Observe the minimum horizontal clearances for poles planted close to the railway permanent way, as provided in Table 30.

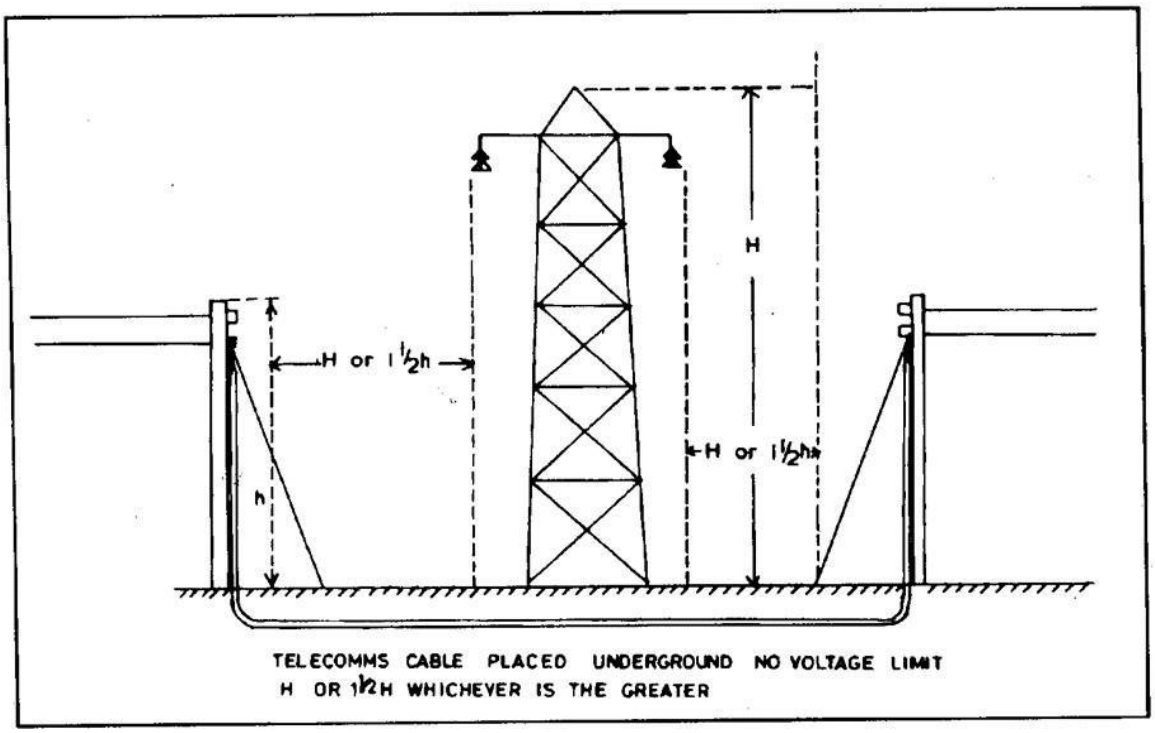
Table 30: Minimum Horizontal Clearance for Overhead Cables

S/No.	Horizontal Clearance	Minimum Height (M)
1.	Inside stations	2.44m
2.	Outside the station	The pole length+1.83m

Source: Directorate of Physical Planning, 2025

- Observe a minimum height of 7.32m for poles erected where there is vegetation of any significant height under the pole routes.
- Provide a minimum horizontal separation distance of 1.5h where power lines and communications cables run on the same side of the road or street, where h is the height of the telecommunications pole and H is the height of the power pole, whichever is greater. This is illustrated in Figure 32.

Figure 32: Horizontal Separation Distance for Telecommunication and Power Masts



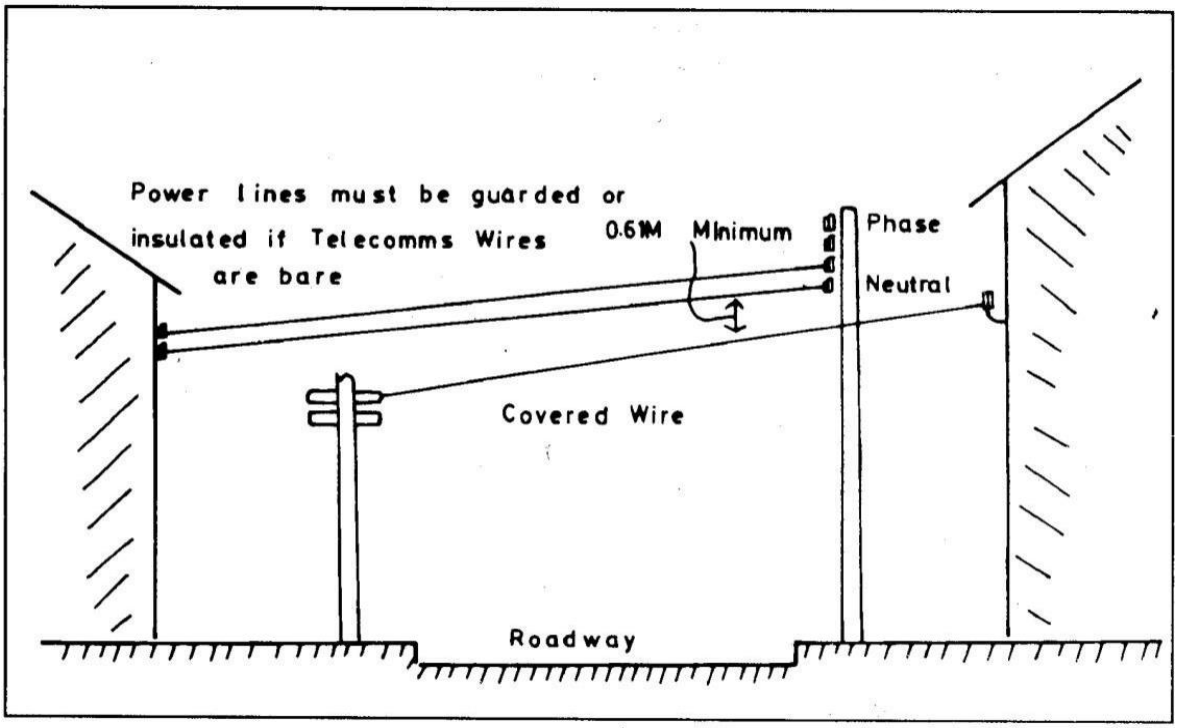
Source: CCK, 2012

- Observe a vertical clearance of between 0.61 m and 3.05 m, where power wires and communications cables run on the same side, depending on the voltage on the power line, as illustrated in Table 31 and Figure 33.
- Utilize road reserve space for telephone lines and cables,

Table 31: Minimum Vertical Clearance from Power Lines

S/No.	Power Voltage	Vertical Clearance (m)
1.	High voltage (HV) exceeding 66 kV	3.05
2.	High voltage (HV) exceeding 11 kV but not more than 66 kV	1.83
3.	High voltage (HV) exceeding 650V but not more than 11kV	1.22
4.	Medium voltage (MV) exceeding 250V but not more than 650V	0.610
5.	Low voltage (LV) not exceeding 250V	0.610

Figure 33: Minimum Vertical Clearance from Power lines



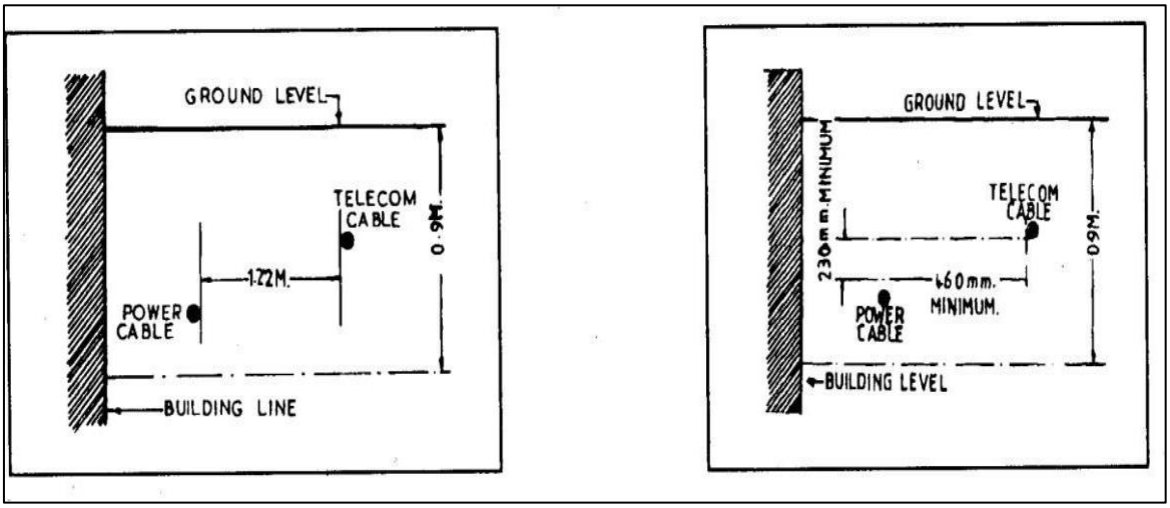
Source: CCK, 2012

5.13.2 Underground Cable Ducts

Standards and Guidelines

- Provide a clearance of between 0.46m to 1.22m between power cables and telecommunication cables when planning a cable run, as illustrated in Figure 34.
- Reserve a wayleave on one side of the road for underground power cables and the other side for underground telecommunication cables.
- Provide cable chambers at a spacing of not more than 150m unless limited by:
    - Length of conduit that can be rodded.
    - Obstructions and change of direction.
- Provide a minimum clearance of 0.025m of ducts and cables laid directly in the ground from water mains, service pipes, sewers, subways and jointing chambers belonging to other utilities.

Figure 34: Clearance between power cables and telecommunication cables



Source: Guidelines for Supply Installation and Maintenance of External Communication Infrastructure (CCK, 2012)

5.13.3 Communications Masts, Base Stations and Towers

Telecommunications masts enable wireless communication by facilitating the transmission and reception of signals between mobile devices and the network infrastructure. Base stations are fixed transceivers that are the main communication point for one or more wireless mobile client devices.

Standards and Guidelines

Table 32 provides general standards and guidelines for communications masts, base stations, and towers in relation to setbacks, accessory utility buildings, parking, and height, among others.

Table 32: Standards and Guidelines for Communications Masts, Base Stations and Towers

Item	Standards and Guidelines
Land size	• Minimum land size of 0.05Ha for a self-support tower base station.

Setbacks	• Provide a setback for towers at a distance equal to 1.5 times the height of the tower from any residential structure and/or property line.
	• Encourage the location of towers in existing forested areas with a minimum depth of 30m. The tower may have a 20% reduction in the required setbacks.
	• In industrial areas, towers may encroach into the rear setback area, provided that the rear property line adjoins another industrially zoned property and the tower does not encroach upon any easements.
	• Towers should not be located between a principal structure and a public street, with the following exceptions:
	  ○ In industrial zones
	  ○ On sites adjacent to public streets on all sides

Accessory utility buildings	● Design utility buildings to blend in with the surrounding environment ● Observe the minimum setback requirements of the zones
Parking	● Minimum of one space per user on the facility site. ● Provide access by a gated, all-weather gravel or paved driveway.
Visual appearance	● Enhance compatibility with the surrounding natural or built environment by designing structures and equipment that use materials, colours, textures, screening, and landscaping that minimize the visual impact.
Separation	● Observe a minimum separation distance of 2km between new towers and existing masts.
Physical barrier	● The barrier should be a minimum of 3m in height within the curtilage of the site to prevent intrusion.
Height	● Ensure that the maximum height for a telecommunication tower does not exceed 150m. However, towers exceeding 150m may be approved by CAK, and other relevant authorities, provided that they: o Will not be detrimental to public health, safety or general welfare. o Will not harm the neighborhood. o Is in conformity with the planning guidelines of the particular area or with any other applicable laws or guidelines ● Prohibit the erection of telecommunications towers above 25m high in residential areas.
Screening	● Locate all towers as well as guys and guy anchors within the buildable area of the property and not within the front, rear, or side building setbacks. ● Ensure that the screening of telecommunications masts and towers conforms to the following: o Surround the base of all telecommunications towers with an opaque screen of a minimum of 2.5m height. o Use of barbed wire or other security fencing material may be allowed. ● Screening requirements provided above may be waived if the design of the tower is found to be compatible with the adjacent land uses.
Signage	● Prohibit signs, including commercial advertising, logos, political signs, flyers, flags, or banners, except warning signs, on any part of an antenna or communication tower.
Proximity to Power Lines	● Minimum distance of a tower to a high-voltage electrical power transmission line of 120% of the height of the tower. ● Prohibit construction of towers in proximity to high voltage (11Kv and above) electrical power transmission lines.
Prohibited uses	Prohibit the erection of towers and masts within the following developments: o School compounds o Clinics, dispensaries, and hospitals o Aviation fields o Close to high-voltage electrical power lines o Flood-prone areas o Landmark

Other considerations include:

- Avoid siting towers in or near wetlands, near known bird concentration areas or in habitats listed as threatened or endangered species or migratory bird routes.
- Preserve anything of heritage significance (built, cultural and natural).
- Provide accessibility to fire tenders and fuel tankers.
- Apply for approval from KCAA for structures within a 15km radius of aerodromes.
- Install tower masts on the highest point for highly populated urban areas and high ground for rural areas
- Require ESIA before approval of development.

5.13.4 Oil and Gas Transmission Pipelines

Standards and Guidelines

- Provide a minimum 30m right-of-way for pipeline transmission.
- Crossing of oil pipelines by other infrastructure should be at 90 degrees.
- Maintain a minimum distance of 10m from the edge of the pipeline wayleaves for excavations other than quarrying and encourage rehabilitation of excavated sites.
- Prepare a comprehensive emergency plan for upstream, midstream and downstream stages for pipelines.
- Fit overhead power and telecommunication lines that cross the pipeline with reflector balls.
- Encourage recreational activities and facilities such as linear parks and recreational paths in the vicinity of the pipeline right-of-way.
- Prohibit activities that pose public safety risks, including vehicle parking, planting of deep-root trees, above-ground fuel tanks, construction of roads and buildings from pipeline reserves.
- Prohibit structures and uses such as schools, hospitals, nursing homes and high-density residential near transmission pipelines.
- Ensure pipelines running on the surface of the water bed are anchored.
- Observe the following setback requirements from the right of way as illustrated in Table 33.

Table 33: Pipeline Setback Requirements

S/No.	User	Minimum Setback (M)
1.	Homes, businesses, and places of public assembly	15
2.	Community recreation areas	7.5
3.	Telephone, fibre optic cables and linear walkways	3

Source: Directorate of Physical Planning, 2025

5.13.5 Oil pump stations

Standards and Guidelines

- Oil pump stations (pipeline) should be at least 2Ha.
- Locate proposed oil tanks 100m away from any settlements.
- Observe a minimum of 100m away from any building or boundary while burying oil tanks.
- Prohibit parking of oil tanks in residential areas.
- Require an ESIA and EA.
- Ensure that the minimum length of the vent pipes is 4m above ground level, as well as a minimum of 50m away from a loading/discharge point or naked fire.

5.13.6 Liquefied Petroleum Gas (LPG) Plants

Standards and Guidelines

- Prohibit location in residential areas.
- Locate away from any high-tension pylons or cables at a minimum distance of 15m.
- Prohibit all aerial obstructions at the site.
- Require an ESIA and EA.
- Locate 10m away from hazardous areas and sources of ignition e.g. welding, cutting, grinding, use of impact tools, electrical arcs, hot surfaces, and open flame areas.
- Ensure that the plant is fenced at a height of 2m and has entrance and exit ways.
- Ensure that the facility is free from weeds, open drains, depressions, etc., and avoid the use of weed killers, which constitute a fire hazard.

Storage of LPG Tanks

- Observe a minimum of 0.2Ha for commercial liquefied petroleum gas storage.
- Design and locate bulk storage tanks and cylinders in accordance with industry guidelines.
- Observe a safe distance of 15m from the building, boundary, or fixed source of ignition while installing storage tanks at filling plants for both car cylinders and domestic cylinders.
- Observe the following minimum distances between storage tanks:
    - Storage tanks up to 20 tonnes – 5m
    - Storage tanks 20 to 40 tonnes – 7.5m
    - Storage tanks 40 to 60 tonnes – 10m
    - Storage tanks over 60 tonnes – 15m

5.14 Water Supply

A standard water supply system comprises the following elements:

a. Source of water, including water intake.
b. Treatment works.
c. Storage facilities.
d. Distribution and reticulation network.

General Standards and Guidelines

- Provide sites for water intake, water treatment plants, water reservoirs and communal water points.
- Incorporate rain and stormwater harvesting and management in comprehensive layout designs for individual parcels of land or neighborhood development in line with the National Building Code.
- Consider the following factors in the design of a distribution system:
    - Population size
    - Distance from water intake
    - Quality of water/pollution levels
    - Source of water and water intake points
    - Analysis of economic activity, whether for industrial, domestic, or irrigation, to get demand levels.
- Gravity flow
- Piping diameter
- Ensure that all access and inspection lids in the berm shall be set 50mm above the existing ground level, and for chambers in the carriageway, the lid levels shall be flush with the finished road surface.
- Refer to the water demand manual when projecting water demand for various land uses. Generally, water demand is calculated as follows:

Water Demand (m3) = (No. of household members) x (water use per house member).

Efficiency factor

In Kenya, the water requirement for consumption on average is estimated at; -

- human ~ 40lts/ person/day in rural and 120lt/person/day in urban areas
- large stock ~ 30lts/head/day
- small stock ~ 5lts/head/day

5.14.1 Water intake

Intakes are used to abstract water from various sources such as lakes, rivers, reservoirs, or canals. The intake work for each type of source is designed separately according to its requirements and situations.

Standards and Guidelines

- Ensure the structure is easily accessible during floods and does not get flooded.
- Provide a protection belt of a minimum of 50m in width.
- Consider the following when locating a water intake:
    - ample space.
    - proximity to the treatment plant to reduce the cost of conveyance of treated water.
    - in the freshwater zone to reduce the load of the treatment work.
    - connectivity to quality infrastructure, such as roads.

- the upstream side of the settlement.
- shielding of the intake from direct impact from heavy water currents.
- the ability to collect water even when the volume of water in the water source is low, depending on the type of structure

5.14.2 Water Distribution and Reticulation Network

Standards and Guidelines

- Ensure that large pipes are buried a minimum of 1.2m deep while smaller sizes are not less than 1m in open country and streets.
- Provide adequate road reserves and ensure utilization of the existing right-of-ways for laying water mains.
- Locate service chambers away from roadway and traffic to minimize the traffic management required for chamber entry and allow for future road widening.
- All-access and inspection lids shall be in place always to ensure the safety of road users.
- Ensure that all access and inspection lids in the berm are 50mm above the existing ground level, and for chambers in the carriageway, the lid levels should be flush with the finished road surface.

5.14.3 Water Treatment Plants

Standards and Guidelines

- Provide a minimum buffer of 100m between treatment plants and the residential areas.
- Locate:
  - close to the water source, where feasible.
  - water treatment plants utilizing chlorination at least 300m away from residential areas.
  - on a gently sloping and well-drained site.
  - on soils that are not highly permeable to avoid rapid infiltration.
  - downwind to minimize odour and aerosol problems.
- Provide land requirements for water treatment plants as shown in Table 34.

Table 34: Land requirements

Catchment Area	Population	Land requirement (includes space for the main treatment processes as well as ancillary facilities and land for future expansion)
Municipality	At least 50,000	At Least 20Ha
City	At least 250,000	At least 200Ha

Source: Directorate of Physical Planning, 2025

5.14.4 Water reservoirs

A reservoir is an artificial lake where water is stored. Most reservoirs are formed by constructing dams across rivers. A reservoir can also be formed from a natural lake whose outlet has been dammed to control

the water level.

Recommended Sites

- Near perennial rivers or streams, which can provide a reliable water source.
- Areas with high groundwater potential.
- Depressions or natural basins can be ideal for reservoir construction.

Guidelines and Standards

- Carry out detailed geologic, geodetic, and seismic studies for feasibility decisions.
- Provide a minimum of 30m and 50m buffer around reservoirs in urban and rural areas, respectively.
- Consider the following factors when siting reservoirs:
    - Projected volumes of water to be stored.
    - The water-holding capability of the soil i.e, the hills surrounding the reservoir and the bed of the reservoir, should be impervious.
    - Availability of good storage capacity with minimum submergence of the adjacent land.
    - Loss of reservoir water, i.e, Availability of deep gorge, which results in a larger capacity with lesser water surface area and lesser evaporation loss.
    - The cost of other associated works is less.
    - Land use, where land further away from residential, non-intensive agriculture, and economic areas is preferable
    - Where possible, the site should be close to compatible users such as; agricultural land, forestry, communication and large industries with high water demand.
    - Avoid siting reservoirs downstream of tributaries that bring in excess sediment into the river.
    - Avoid sites with the possibility of landslides into the reservoir.
    - Avoid sites with high seismic activity
    - Avoid sites with mineral deposits in and around the reservoir.
- Encourage a vegetative management program to prevent soil erosion around the reservoir.
- Encourage installation of drains to relieve water pressure and other flood mitigation measures.
- Prohibit settlements along the spillways and downhill of the reservoir.
- Provide land requirements for water reservoirs as shown in Table 35.

Table 35: Land Requirements for Water Reservoirs

CAPACITY	LAND REQUIREMENTS	USE	POPULATION	
			Urban	Rural
Less than 1 million m^3	5-20 Ha	• Agricultural irrigation • Small-scale water supply • Recreational purposes (e.g., fishing, boating) • Flood control in small catchment areas	30,000	45,000
More than 1 million m^3	50-1000 Ha	• Municipal water supply • Large-scale agricultural irrigation • Industrial water supply • Hydropower generation • Flood control and management	60,000	90,000
Small community-based reservoirs	1- 10 Ha	• Livestock watering • Domestic water supply • Aquaculture	1000	1400

Source: Directorate of Physical Planning, 2025

5.14.5 Service Reservoir / Water Tanks

Elevated storage tanks are recommended for all water supply utilities. In particular, hospitals, institutions, and industrial plants should be provided with separate elevated storage tanks.
The minimum space requirement is 0.1ha.

5.14.6 Public Water Points

Standards and Guidelines

- Locate water in inaccessible and well-lit areas to ensure the safety of users.
- Maintain a maximum walking distance of 200m between any household to the nearest water point.
- Provide adequate wayleaves for reticulation to the public water points where the water points are situated away from road reserves.
- Designate separate water points for livestock.
- The recommended maximum number of people per water point shall be as shown in Table 36.

Table 36: Maximum Number of People per Water Source

Number of people	Water flow
250 people per tap	based on a flow of 7.5 litres/minute
500 people per hand pump	based on a flow of 16.6 litres/minute
400 people per single-user open well	based on a flow of 12.5 litres/minute

Source: The Sphere Handbook; 2018

Note: These guidelines assume that the water point is accessible for approximately eight hours a day only.

5.14.7 Boreholes

Standards and Guidelines

- Provide a minimum of 0.05Ha for public boreholes in urban areas.
- Borehole to accommodate auxiliary infrastructure such as elevated water tanks, water points and parking space for water bowsers
- Locate boreholes away from the sea shore, and any wetland, stream, river, spring and other abstractions to avoid any reduction in stream or spring flow, or water level in nearby wetlands and other abstractions, and to avoid 'pulling in' seawater into the aquifer.
- Ensure assessment of the geophysical properties of the underlying area by hydro-geologists to detect natural hazards or man-made infrastructure (pipelines, cables, communication lines, etc.)
- Locate boreholes up the slope and with a minimum distance of 50m from sources of contamination such as septic tanks, slurry pits and poorly drained areas, which receive contaminated run-off.
- Provide a 10m buffer around the borehole.
- Maintain a minimum horizontal separation distance of 800m between one borehole and the other.
- Prohibit storage, mixing, spraying, spillage, burying or dumping anything that could contaminate the borehole.

5.14.8 Dams

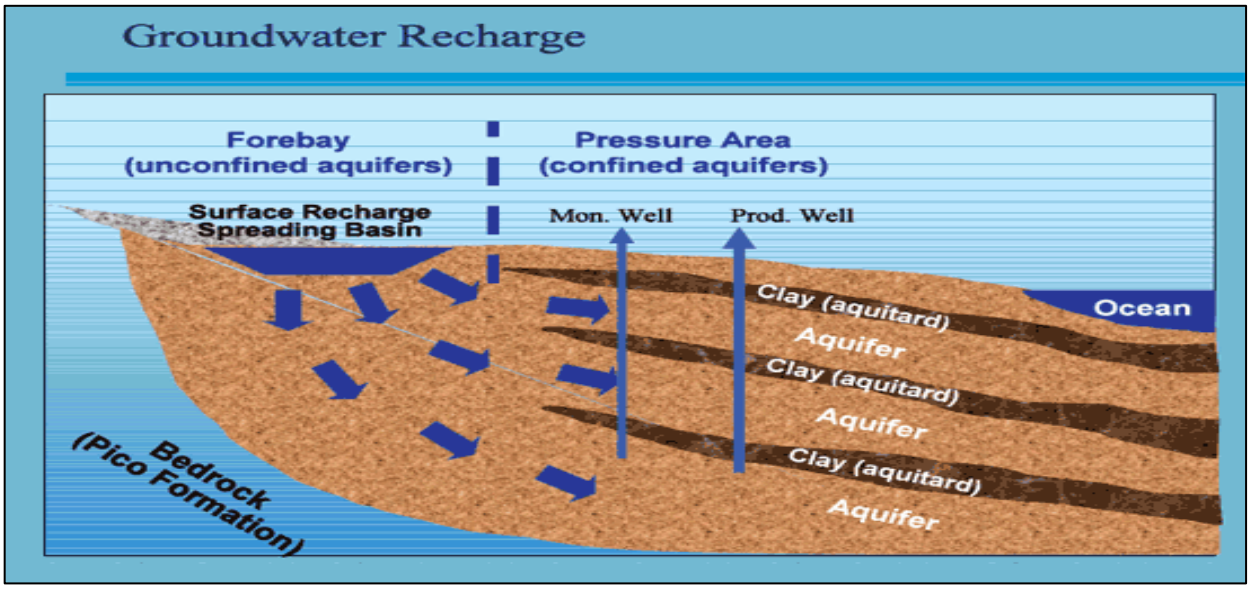
Standards and Guidelines

- Prepare local physical and land use development plans and integrate management of water catchment area developments around dams.
- Prepare Re-settlement Action Plans for any displaced persons.
- Maintain a buffer of 70m as measured from the highest watermark for all dams.
- Maintain a buffer of at least 20m and not more than 100m downstream of the dam, as measured from the toe of the dam.
- Prohibit developments within the riparian reserve.
- Require Environmental and Social Impact Assessments

5.14.9 Groundwater Recharge Basin

A groundwater recharge basin is a man-made or natural basin designed to capture and retain surface water, allowing it to percolate into the ground, replenishing underground aquifers. Figure 35 illustrates a groundwater recharge basin.

Figure 35: Illustration of groundwater recharge



Source: Johnny, 2013

Standards and Guidelines

- Provide:
    - sites for water recharge basins within cities and municipalities.
    - for a recharge basin in an area of 4.5ha.
    - buffer of 60m around the recharge basins.
- Conduct an Environmental and Social Impact Assessment (ESIA) in accordance with NEMA guidelines to assess potential environmental impacts.
- Obtain necessary permits and approvals from the Water Resource Authority (WRA), particularly if diverting water from natural sources and ensure compliance with county-specific regulations regarding land use, zoning, and construction permits.
- Prioritize sites with permeable soils, such as sandy or loamy soils, that allow for efficient water infiltration.
- Avoid steep or rocky terrain. Identify sites with gentle slopes ranging from 1 to 5% to facilitate efficient water infiltration without causing erosion. The bottom of the basin should be flat to maximize infiltration.
- Ensure the site has a sufficient depth to the groundwater table to prevent contamination. A minimum depth of 3-5 meters to the water table is recommended.
- The site should be compatible with surrounding land uses. Recharge basins should not be located in areas where land use conflicts might arise, such as near industrial sites that could contribute to pollutants.
- Locate the basin near water sources such as rivers, streams, or stormwater drainage systems to minimize conveyance costs and energy use.
- Ensure the selected site has adequate land area for the basin and associated infrastructure, including buffer zones.

- Implement measures to ensure that water entering the basin is free from contaminants. Pre-treatment options may include sedimentation basins, vegetative buffers, or silt traps.
- Develop a maintenance plan that includes regular inspections, sediment removal, vegetation management, and repairs to inlet and overflow structures.

5.15 Sanitation

Sanitation includes the management of wastewater and solid waste. For these to happen, sites for sewage treatment works, collection centres and transfer stations, incinerators, sanitary landfill and recycling plants and sewerage wayleave are required. Care must be taken to ensure that sewage effluent does not infiltrate groundwater aquifers in a manner that causes pollution of water sources.

5.15.1 Sewerage Treatment Plant

Standards and Guidelines

- Provide trunk sewer system and treatment plants for all urban settlements with a population of 3,000 or more.
- Provide septic tanks in settlements where a sewer system is not provided.
- Provide a distance of 3km to 5km between built-up areas and a sewer treatment plant.
- Provide a minimum distance of 300m between a sewer treatment plant and a river or other ecologically sensitive areas.
- Provide a minimum 15m buffer zone between the site and the residential areas. Encourage a tree belt in the buffer zone for protection against blows and environmental purposes.
- In areas lacking a sewer system, buildings beyond four floors are prohibited.
- Consider the topography when locating the treatment plants. It is preferable that the sewage flow into the site by the natural slope of the drainage.
- Locate the treatment plants far away from the city and the network service.
- Locate the treatment plant downwind of the prevailing wind direction so that foul or distinctive odours are not transmitted to the neighbouring population.
- Locate treatment plants close to infrastructure such as electricity supply and access roads necessary for operation.
- Ensure that the location of the treatment plant does not interfere with the future expansion of the urban areas.
- Consider future expansion areas needed by the plant for the next 50 years.
- The location of the final discharge point should be adjacent to or close to the treatment works.
- Consider sites whose soils are not highly permeable to avoid contamination of groundwater.

5.15.2 Biodigesters

Bio digesters are used for domestic and commercial wastewater management, as replacements for traditional soak pits, pit latrines and septic tanks that would require frequent emptying.

Guidelines

- Locate on the sloping side of the property to allow the discharge of the sludge and the effluent.
- Locate at the rear of the property where it is free from activities.
- Provide recycling plants within industrial and commercial establishments.

5.15.3 Public Toilets

Public toilets should be provided for users of public places, such as markets, recreational areas, and public transport terminals.

Standards and Guidelines

- Provide a minimum land size of 0.05Ha for public toilets.
- Maintain a minimum distance of 500m between two public toilets in busy commercial and recreational areas.
- Maintain a minimum distance of 30m from the nearest water body for public toilets not connected to a sewer line.
- Provide:
    - service lane of 6m for exhaustion of public toilet connected to a septic tank.
    - minimum of eight toilets per toilet block considering the needs of Persons Living with Disabilities (PLWDS).
    - one toilet/bathroom block for every 100m in informal settlements.
    - public toilets in every street in all types of centres.
- Locate at least 3m away from adjoining roads.
- Consider the following when siting:
    - Availability of regular water supply.
    - Adequate lighting and ventilation.
    - Relatively gentle slope.

5.15.4 Stormwater Drainage

Storm drainage is used to collect and carry rain or surface water to a natural watercourse or body of water to prevent flooding. Storm drainage design must include provisions to adequately control runoff from all public and private streets and the roof, footing, and area drains of residential, multifamily, commercial, or industrial buildings.

Standards and Guidelines

- Provide 10% of the land size for stormwater drainage
- Provide minimum wayleaves of 3m for retention/detention (R/D) facilities or a combination of both to maintain surface water discharge rates at or below the existing design storm peak discharge
- Maintain a minimum width of 9m access easement from an existing public road to a R/D facility
- Provide future extension of the drainage system to the entire drainage basin
- Ensure that surface or subsurface drainage, caused or affected by changing the natural grade of the ground or removal of natural ground cover or placement of impervious surfaces, does not

flow over adjacent public or private property in a volume or location materially different from that, which existed before development occurred.

- Provide wayleaves for an Approved Point of Discharge (APD) including storm drain, existing open channel, creek, detention, or retention pond.
- Prohibit development on the wayleave, which may restrict flood flows.
- Ensure that all drains in the Central Business District and major commercial centers are covered and designed to meet flow capacity.
- Establish vegetation cover on areas disturbed by or on areas of construction to control and minimize erosion, in accordance with NEMA standards.
- Require preparation of an Erosion Control Plan for all projects that may impact the velocity, volume, or quality of surface water on adjacent properties, or which may impact any permanent natural body of water in accordance with NEMA standards.
- Provide control measures for runoff during all three phases of construction ie prior, during and after construction.
- Provide sites for storage of storm waters and propose measures for water recycling.

5.15.5 Solid Waste

There are four major categories of waste: municipal solid waste, industrial waste, agricultural waste and hazardous waste.

General Guidelines and Standards

- Ensure garbage collection sites are environmentally friendly and locate them on the leeward side.
- Establish collection centers/transfer stations at strategic areas within a town.
- Equip these stations with colour-coded or labelled waste receptacles to promote waste segregation.
- Encourage modern automated waste collection and management.
- Provide sites for incineration in facilities that meet the requirements in the Third Schedule of the Environmental Management and Coordination (Waste Management) Regulations of 2006.
- Prohibit dumping of waste in open landfills.

a. Waste collection bins

- Provide the following minimum distances between bins:
    - 350m in urban areas and low-density residential areas.
    - 200m in medium-density residential areas and;
    - 150m in high-density residential areas
- Ensure the provision of five waste bins for waste separation as follows:
    - Household wastebin- (Brown)
    - Plastic wastebin- (Yellow)
    - Paper wastebin- (Blue)
    - Glass wastebin – (Grey)
    - Electronic wastebin- (Red)

b. Waste collection points

- Designate a minimum land size of 0.1Ha within residential, commercial, light industrial, and recreation areas for waste receptacles.
- Designate a minimum land size of 0.1Ha within heavy industrial areas for waste receptacles.
- Ensure the provision of four waste receptacles for the separation of waste.
- Provide waste collection points within a maximum walking distance of 500m.

c. Waste transfer stations

Waste transfer stations are facilities where solid waste, mainly municipal solid waste, is unloaded from collection vehicles and containers for sorting, recycling, and reloading into larger, long-distance vehicles for transport to landfills or other permitted solid waste facilities for final disposal.

Guidelines

- Designate a minimum land size of 0.2Ha within industrial areas
- Locate at the edge of residential areas.
- Ensure the waste is transferred within 2 days.

d. Waste recycling plants

- Maintain a minimum radius of 25km away from residential areas.
- For standards on recycling plants, refer to section 5.33 on standards for industries.

e. Sanitary landfills

They are sites where waste is isolated from the environment until it is safe.

Classification of landfills

Class A:

They pose a high risk to the environment and is characterized by the following features:

- Serves a population of more than 5,000 people.
- Holds industrial, commercial and institutional waste.
- Leachate contamination is visible on or around the site.

Class B:

They pose moderate risk to the environment and is characterized by the following:

- Primary source of waste is residential or incinerator ash from the burning of residential waste.
- Leachate contamination is visible on or around the site.

Class C:

They pose a low risk to the environment and is characterized by the following features:

- Primary source of waste is residential or incinerator ash from the burning of residential waste.
- Leachate contamination is not visible on or around the site.

Standards and Guidelines

- Designate a minimum land size of 20Ha.
- Integrate the sanitary landfills with recycling plants.
- Consider the following when siting a landfill;
    - Ease of vehicle access.
    - Areas not prone to flooding and landslide risk.
    - Proximity to sewer treatment plant for flow and treatment of the leachate.
    - Provide a distance of 3-5km between landfills and settlements and cultivated land.
    - Provide a distance of 40km between landfills and urban areas.
    - Provide a distance of 15km from the airport.
- Provide a minimum distance of 300m between rivers and landfills
- Provide a minimum distance of 500m between landfills and environmentally fragile areas and restricted areas
- Provide a 100m tree belt as a buffer around the landfill for protection against blows and environmental purposes
- Consider future expansion areas needed by the facility for at least 50 years.
- Ensure that sites are secured and manned to discourage scavenging and exposure to hazardous chemicals.
- Require a plan for decommissioning a landfill.
- Require onsite monitoring of environmental systems to check for groundwater contamination and emission of ground gases.
- Prohibit disposal of household appliances and hazardous wastes Radioactive Waste Management.

5.15.6 Radioactive Waste Management

Radioactive waste is a result of many activities, including nuclear medicine, nuclear research, nuclear power generation, rare earth mining, and nuclear weapons reprocessing. Radioactive waste management refers to the safe treatment, storage, and disposal of liquid, solid, and gas discharge from nuclear industry operations to protect people and the environment.

Standards and Guidelines

- Provide a land size of 100-400 ha for a radioactive waste management plant.
- Locate in close proximity to the ocean.
- Provide a 10km buffer for greening and securing to keep out people and animals.
- Designate radioactive waste and disposal sites suitably in underground repositories.
- Require ESIA for all establishments that process, use, deal in or handle radioactive materials.
- Encourage material recycling to minimize waste.
- Ensure landfill sites and decommissioned nuclear plants are clearly marked and fenced with warning signs against radioactivity on the site.
- Ensure continued monitoring of disposal sites in decommissioned nuclear plants.
- Ensure no wildlife areas and residential developments are established within a 10km radius of hazardous waste landfill site.

5.15.7 Electronic Waste Management

Electronic waste or e-waste describes discarded electrical or electronic devices. E-waste management is a process of collecting e-waste, recovering and recycling material by safe methods, and disposing of e-waste by suitable techniques to reduce its adverse impacts on the environment.

Standards and Guidelines

- Maintain a minimum distance of a 5km radius between the e-waste recycling sites and residential developments.
- Electronic waste to be disposed of within the designated bins.
- Locate the electronic waste receptacle within the designated land size for the waste collection point as provided in section 5.16.5.
- Designate areas for household hazardous waste drop-off stations.
- Designate areas for dismantling, recycling and disposing of electronic waste.
- Ensure that computers and other e-waste are not incinerated, put in landfills, or melted down.
- Prohibit the emission of fumes, gases, and particulate matter into the air, and the discharge of liquid waste into water and drainage systems or on agricultural land during recycling activities.

5.16 Wayleaves

A wayleave is a public right of way for construction and maintaining physical infrastructure on the land by authorized persons or bodies.

Guidelines and Standards

- Provide a separate 10m wide wayleave along the roads to accommodate utilities as shown in Table 37.
- Existing utilities on the road reserve shall be laid in the parking area and service lanes.
- The right-of-way for water distribution pipes may vary from the provided recommendation based on various factors.

Table 37: Wayleaves for utilities

Utility	Wayleave(m)
Power	3
Distribution water pipes	3
Fibre optic cables	2
Telephone lines and cables	2

Source: Directorate of Physical Planning, 2025

Wayleaves for overhead electricity cables

The actual right-of-way can vary from the minimum recommendations provided, depending on the topography, structure type, span length, and other factors that might be determined by the service provider. Table 38 shows the variation of wayleaves for electricity cables.

Table 38: Minimum Horizontal Right-of-Way for overhead power lines

Voltage Levels	Way Leaves Trace Widths (M)
11kV-33kV	10
66kV:	20
132Kv:	60
220Kv:	60
400Kv:	60
500HVDC	60

Source: Kenya Power and Lighting Company, 2025

Note: Wayleaves exceeding the above provisions shall be as demarcated in the survey maps

5.17 Educational Institutions

Educational institutions include pre-primary schools, primary schools, junior and senior secondary schools, special schools and tertiary institutions (universities, colleges, and research institutions, Technical and Vocational Education and Training (TVET)).

Siting criteria

- Consider: -
    - the spatial distribution of existing schools.
    - availability of suitable and adequate land.
    - availability of utilities including water, electricity, internet, incinerator, and sewer, among others.
    - topographic characteristics such as gentle undulating slope.
    - proximity to residential areas and community facilities.
    - maintain a minimum distance of 3km from hazardous establishments such as heavy industry, waste sites, and LPG facilities.
    - compatibility with the surrounding land uses
    - accessibility- locate within neighborhoods with easy vehicular and pedestrian access
- Undertake a graphical analysis of demographic data to determine the catchment population and potential demand for enrolment.

General guidelines

- Prepare site layout plans for all educational institutions.
- Provide: -
    - ten percent tree cover for greening
    - fire assembly points.
    - for the separation of traffic
- Reserve land for educational purposes in areas of greatest residential expansion and adjacent to community centre.
- Consider the use of multi-campus schooling arrangements where two or three schools e.g., primary and secondary, share sites and facilities.
- The designs should cater to the needs of Persons Living with disabilities.
- In the ASALS area;
    - Provide feeder schools where children walk more than 3 km to reach the nearest primary school.
    - Attach a pre-primary school to every feeder and mobile school.
    - Provide a minimum of one feeder school in every clustered settlement.
    - The minimum enrolment for mobile and feeder schools shall be 10 pupils.
    - The feeders and mobile schools shall be satellite learning centres for regular primary schools.
    - Provide supporting amenities such as water, sanitation, classrooms and play areas in the mobile and feeder schools.
- Permitted uses around education facilities include: residential developments, corner shops, clinics, other educational facilities, and public open spaces.
- Prohibited uses around the education facilities include large-scale commercial activities, industries, warehouses, animal rearing, slaughterhouses, crematorium, cemeteries, bars, and offensive billboards.

5.17.1 Child Care Facilities

Siting Considerations;

- Consider: -
    - Proximity to compatible social facilities such as schools, religious facilities, community centres and recreational parks.
    - Near or within residential areas, employment areas, town centres, business centres, and shops.
    - Accessible via public transport.
    - Have non-motorized transport connectivity.

Standards

- Minimum size of 0.05Ha.
- Maximum travel distance of 500m.
- Catchment population of 5000 people.
- Plot development requirements: Plot area of a minimum 500m^2 and plot coverage of a maximum 0.3.

- Indoor space per child of 3–5m^2 per child and an outdoor play area of at least 7–10 m^2 per child.

Table 39: Room Requirements for Child Care Facilities

Age	No. of children and adults in each room	Total number of rooms	Remarks
6 weeks – 1 year	6 children 2 caregivers	1	▪ Provide enough room for a distinct sleeping area where cots can be 1meter apart. ▪ Adequate space for meals and other activities.
1 year – 18 months	8 children 2 Caregivers	1	
18 months – 2.9 years	10 children 2 Caregivers	2	
2.9 years – 4 years	6 children 2 Caregivers	2	

Source: Directorate of Physical Planning, 2025

Guidelines

- Maximize the use of natural light and sunshine.
- Ensure proper ventilation and temperature control.
- Proximity to residential neighborhoods, workplaces, or public transport for convenience.
- Adequate parking and drop-off/pick-up areas for parents.
- Separate spaces for infants and toddlers to ensure safety.
- Compliance with fire safety regulations, e.g., fire extinguishers and emergency exits.
- Childproofing measures, e.g., rounded furniture, secured cabinets, and non-slip floors.
- Ensure clean water supply and proper sanitation facilities.
- Adequate indoor and outdoor facilities, i.e., indoor playrooms, nap areas, dining space, washrooms, storage for toys and supplies, secure outdoor fencing, age-appropriate playground equipment, and green spaces.
- Recommended child-to-caregiver ratio: infants: 1:3, toddlers: 1:5, preschoolers: 1:8.
- Inclusive spaces for children with disabilities.
- The amenities which should be provided include: reception area, parent and staff resource rooms, administrative offices, meeting spaces, indoor gross motor room, kitchen, sick bay area, laundry room, adult bathrooms, storage spaces, changing area and changing area storage and children's sleep area.
- Child care facilities should not be in proximity to heavy or hazardous industry, waste transfer depots or landfill sites, LPG tanks or service stations, odour (and other air pollutant) generating

uses and sources and noise generating uses.

- Ensure adherence to local zoning, building code, and public health regulations.

5.17.2 Pre-Primary Education

These are preparatory schools where children between 4-6 years are taught before joining primary schools. A pre-primary school should be attached to a primary school.

Standards and Guidelines

- Provide a minimum land size as shown in Table 40.
- Provide one pre-primary school for a catchment population of 2500.
- Locate within a maximum walking distance of 500m.
- Maintain a maximum distance of 1km between two schools.
- Designate an area for safe pick-up, drop off and parking.
- Locate along major pedestrian routes.
- Ensure that all schools have outdoor soft playing areas.
- Encourage integration of pre-primary schools with primary schools for easy transition.
- Prohibit storey buildings for pre-primary school classes.

Table 40: Summary of planning standards for pre-primary school

Land requirements	Space requirements and facilities	Surrounding Permitted uses	Prohibited uses
0.2-0.25Ha	• Groundfloor+1 for the administration block • Classroom- @ 80m² for 25 children • 1 sanitation facility for every 10 girls, including a shower room • 1 sanitation facility for every 20 boys, including a urinal and a shower room • Soft play area- 246m² • Swing/seesaw- 28.6m² • Sand pit- 28.6m² • circulation space- 24.60m² • Kitchen- 9.1m² • Office/store- 10.2m² • Parking- 104.92m²	Residential developments Corner Shops Clinic Educational Facilities Public Open Spaces	• Large-scale commercial activities, • Highly polluting industries, • Transportation • Warehouses, • Animal rearing, • Slaughterhouses, • Hospitals, • Crematorium/cemeteries • Bars • Offensive billboards.

Source: Directorate of Physical Planning, 2025

Note: A minimum of 0.15Ha may be provided in urban informal settlements if it meets basic conditions of safety, play space, sanitation and health.

5.17.3 Primary Schools

They comprise Grade 1-6 and Grade 7-9 schools (Comprehensive Schools)

Standards and Guidelines

- The catchment population should be 3000 and 5000 in rural and urban areas, respectively.
- Observe a minimum size of 3.9Ha for a multi-stream high-rise comprehensive primary school as shown in Table 41.
- Maintain a maximum distance of 4km between two schools.
- Observe a maximum walking distance of 2km.
- Maintain a single-storey building for pre-primary facilities within the primary schools
- Provide at least two staircases and a ramp or elevator on all buildings exceeding one storey for

access to upper floors

- Maintain a maximum of ground +3 floors for storey buildings
- Provide:
    - adequate spaces in common areas for mobility and air circulation
    - land for future expansion where possible.
    - double or triple streams.
    - facilities for safe pick-up, drop off and parking
- Provide amenities such as playgrounds, classroom blocks, offices, libraries, etc.

Table 41: Minimum Plot Areas for Primary Schools

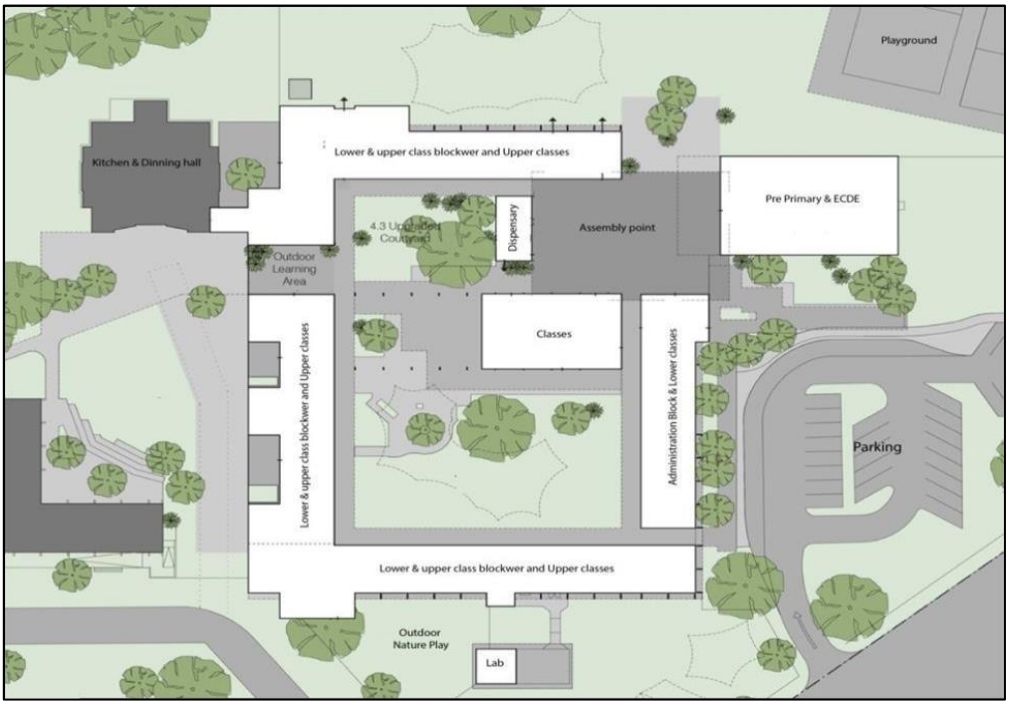
Facilities	**Single stream-Day(Ha)**	**Single Stream-Boarding(Ha)**	**Double stream-Day(Ha)**	**Double stream-Boarding(Ha)**
Classrooms, administration	1.0	1.0	2.9	2.9
Playfields, gardens	1.0	1.0	1.0	1.0
Dormitories	-	0.4	-	0.4
Staff Accommodation	-	0.8	-	0.8
Plot area	**2.0**	**3.2**	**3.9**	**5.1**

Source: Ministry of Education, 2018

Note: A minimum of 2Ha may be provided for private schools that may wish to invest only in junior secondary schools and 0.2Ha in urban informal settlements if it meets basic conditions of safety, play space, sanitation and health.

Figure 36 gives an illustration of a site layout plan for a primary school.

Figure 36: Illustration of a primary school site layout plan



Source: Directorate of Physical Planning, 2025

1.1.1.1 Observe the standards in Table 42 when planning for primary school facilities

Table 42: Standard requirements for primary school facilities

Facility	**Standard**
Classroom (40 pupils)	12m*10m
Floors	Ground+3
Staff housing	0.8Ha
Dining halls and dormitories in a storied building for boarding schools	0.4Ha for every 200 students
Library	15m*12m
Skills Development Rooms (40 pupils) (Science Rooms, Workshops, ICT/Innovation and Art and Craft)	12m*10m for each.
Agricultural demonstration plots	0.4-0.8Ha
Sanitation	1 facility for every 10 girls, including a shower room. 1 facility for every 20 boys, including 2 urinals and a shower room One facility for every additional 30 males and females

Source: Directorate of Physical Planning, 2025

5.17.4 Secondary Schools (Senior Secondary)

Standards and Guidelines

- The catchment population should be 10,000 in rural areas and 25,000 in urban areas.
- Provide minimum land sizes as shown in Table 43.

Table 43: Minimum Plot Areas for Secondary Schools

No. of streams	Area (Ha)	Walking distance.
1	2.0	500m-3km
2	2.5	
3	3.5	

Source: Directorate of Physical Planning, 2025

Note: A minimum of 2Ha may be provided for private schools that may wish to invest only in senior secondary schools and 0.25Ha in urban informal settlements if it meets basic conditions of safety, playground, sanitation and health.

- Provide students' dormitories, dining halls, playgrounds, teachers' quarters, laboratories, workshops and places of worship.
- Provide at least two staircases and a ramp or elevator on all buildings exceeding one storey for access to upper floors.
- Maintain a maximum of ground +4 floors for storey buildings
- Integrate with major open spaces whenever possible for disaster management and to encourage the sharing of open spaces and playgrounds with members of the public.
- Maintain a maximum distance of 6km between two schools.
- Observe the standard requirements for secondary school facilities.

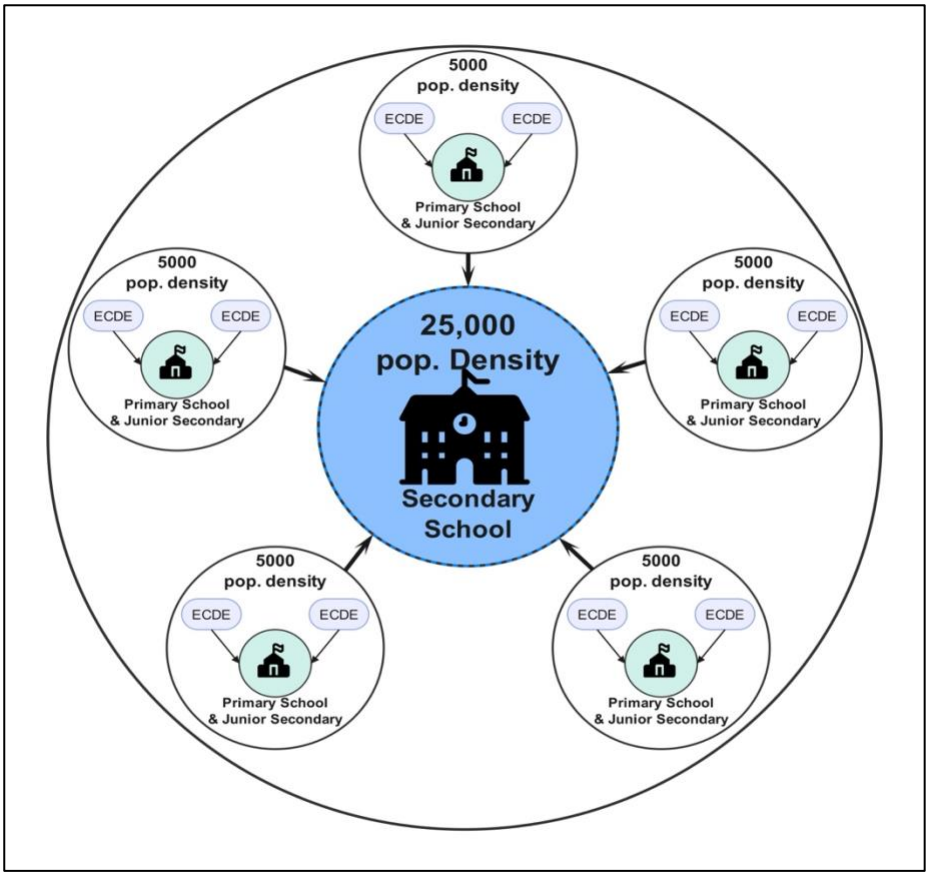
Table 44: Standard requirements for secondary school facilities

Facility	Standard
Classroom (40 pupils)	15m*13m
Floors	Ground+4
Staff housing	1Ha
Agricultural demonstration plots	10% of the land size
Laboratory	15m*12m
Skills Development Rooms (40 pupils) (Science Rooms, Workshops, ICT/Innovation and Art and Craft)	12m*10m for each.
Sanitation	1 facility for every 10 girls, including a shower room. 1 facility for every 20 boys, including a urinal and a shower room One facility for every additional 30 males and females

Source: Adopted from Ministry of Education Guidelines, 2022.

Figure 36 provides a pictorial of the distribution of education facilities in a neighborhood

Figure 36: Distribution of Education Facilities in a Neighbourhood



Source: Directorate of Physical Planning, 2025

5.17.5 Tertiary Institutions (Universities, Colleges, TVETS, Research Institutions) Standards and Guidelines

- Locate the institutions
    - in easily accessible areas near community facilities.
    - in areas well served by public transport.
    - in areas free of pollution from noise, smoke, odour and dust.
    - away from industrial areas, wetlands or forest reserves
- Provide the following facilities
    - Lecture rooms, auditorium or lecture theatre.
    - Student common rooms with indoor recreational facilities and a student centre with restaurants and shops.
    - Departmental areas, staff offices and seminar rooms, and staff common rooms.
    - Library, ICT and innovation centres, laboratories, workshops, research centres among others.
    - Kitchen and dining facilities.
    - Outdoor recreational facilities, including games or sports facilities.

- Water supply, sewage treatment plants and drainage system.
- Student accommodation, including adequate laundry and storage facilities.
- Health facilities and places of worship.

- Locate in proximity to a police station.
- Prohibit highly polluting industries, warehouses, crematoriums, cemeteries, animal husbandry and mining activities.
- In areas with access to physical infrastructure including roads, electricity and water.
- Develop workshop buildings with heavy machinery and frequent deliveries as single-storey buildings and separate them from the other buildings.
- Allow vertical developments for optimal utilization of space.
- Maintain the minimum land sizes for facilities as provided in Table 45

Table 45: Land requirements for tertiary institutions

S/No.	Facility	Land requirement
1.	Classrooms	224m^2
2.	Tennis court	528 m^2
3.	Swimming Pool	500 m^2
4.	Gymnasium	1188 m^2
5.	Circulation area	5760 m^2
6.	Science rooms	843 m^2
7.	Agriculture room	281 m^2
8.	Home science room	562 m^2
9.	Art & Craft	562 m^2
10.	Playfields	17,100 m^2
11.	Learning resource centre	150 m^2
12.	Administration block	200 m^2
13.	Multi-purpose Hall	1093 m^2
14.	Ablution block	67 m^2
15.	Boarding facilities	2 Ha.
16.	Teaching staff quarters	2.5 Ha. (Flats)
17.	Non-teaching staff	0.4 Ha.
18.	Agriculture extension	2Ha
19.	Auditorium/ Lecture theatre	1093 m^2

- Provide a minimum land size of 10Ha. A minimum of 2Ha to be observed in central business district areas where land is scarce.
- A TVET offering agriculture as a course should provide 5Ha of land for a farm.
- Integrate medical training colleges with National Teaching and Referral hospitals and County referral hospitals.

5.17.6 Universities

Standards and Guidelines

- Provide for the establishment of one university per region (Nairobi, Central, Eastern, North Eastern, Coast, Western, Nyanza and Rift Valley)
- Provide a minimum land size of 40Ha (main campuses) consisting of the following:
    - 20Ha or more to support up to 5,000 students for main campuses.
    - 2Ha or more for auxiliary services, e.g., pre-primary and primary schools, day-care facilities, and staff quarters.
    - 2Ha or more for open spaces and car parking exclusively.
    - 2Ha of land set aside for a sewerage plant where there is a lack of a local authority sewerage system.
    - 5Ha or more for outdoor sports for 5,000 students
    - A University offering agriculture as a course should provide 10 ha of land for a farm.
- Provide a minimum of 10Ha for satellite campuses.
- Observe a minimum of 2Ha satellite campuses in urban areas where land is scarce.
- Encourage vertical development.

5.18 Community Centres

They are multi-purpose facilities comprising social halls, libraries/resource centers, ICT hubs, innovation centres, fitness centres, and cultural museums.

Standards and Guidelines

- Maintain a minimum land size provided in table 46.

Table 46: Minimum Land sizes for community centres

Facility	**Minimum Land Size (Ha)**
Social Hall/grounds for public baraza	0.3
Cultural museum	0.3
ICT hubs, innovation centers, library/ resource centre and fitness centre	0.4
Total	**1.0**

Source: Directorate of Physical Planning, 2025

- Provide: -
    - one community centre for a catchment population of 20,000.
    - at least one social hall for each market centre and neighborhood.
    - facilities such as a restaurant, children's play areas, sanitation blocks, lactation and changing rooms and adequate parking.
- Locate: -
    - central to the catchment population and along main pedestrian routes,
    - in close proximity to existing services such as electricity, water, and public transport
    - within 400m walking distance from public transport stops.
    - in a safe and secure environment, especially for night users (incorporating crime

prevention through design principles).
    - near open spaces to allow for related outdoor activities.
    - near safe drop-off/pick-up areas and pedestrian access.
- Cluster with other facilities such as shops, schools, childcare centres, community health facilities and public libraries to promote convenient access and create a focal point for community activity.
- Encourage landscaping using screen mounds, hollows, low walls in children's playgrounds, fountains, trees and bushes, among others.

5.19 Sporting Facilities

General Guidelines

- Prepare a site layout plan.
- Locate;
    - in a relatively flat and well-drained area.
    - near educational and social facilities to encourage sharing of the facilities and interlink them with parks and other public spaces.
    - in areas accessible by public transport and non-motorized transport.
    - in a safe and secure environment.
- Provide;
    - support facilities such as sanitation blocks and eateries, first aid kits, emergency lighting, emergency exits and fire extinguishers.
    - separation of traffic.
    - adequate parking facilities and fire assembly points.
    - ancillary services such as water supply, electricity, waste disposal points, car parks, and restaurants, among others.
    - sporting facilities using the measurements in Table 47
- The design should cater to the needs of Persons Living with Disabilities.

5.19.1 Playgrounds

Standards and Guidelines

- Provide a minimum of 0.5Ha per 1,000 persons, out of which 0.15Ha will be dedicated to children’s playground.
- Distribute the sports fields and sports pitches evenly throughout urban residential areas.
- Provide 15m road access to playgrounds.

5.19.2 Skating Rink (Roller Sports or Ice Skating)

Standards and Guidelines

- Provide a minimum land size of 0.2Ha.
- Rink surface to be clear of obstructions.

Table 47: Land Requirements for Sporting Facilities

Facility	Length(m)	Width(m)	Support facilities
Football pitch	Maximum 120m Minimum 90m	Maximum 90m Minimum 45m	sanitation block, eateries, changing rooms
Rugby pitch	Maximum 100m	Maximum 70m	sanitation block, eateries, changing rooms
Athletics field	The track should be 400m Have 6- 8 lanes of a standard width of 1.22m. The tracks should be on the outer sides of a football pitch.		sanitation block, eateries, changing rooms
Netball court	30.5	15.5	sanitation block, eateries, changing rooms
Volleyball court	18	9	sanitation block, eateries, changing rooms
Tennis court	24	11	sanitation block, eateries, changing rooms
Handball pitch	20	10	sanitation block, eateries, changing rooms
Badminton	13.4	6.1	sanitation block, eateries, changing rooms
Squash Court Squash box (ground surface) Wall	9.7 64	6.4 4.5	sanitation block, eateries, changing rooms
Basketball court Board	26 1.8	14 1.2	sanitation block, eateries, changing rooms
Swimming pools, Olympic size, Short course Diving pool	50.1 m 25.1	21.1 by 8 Lanes Optional	-Diving Tower to be above the deep end -Elevation of Tower must not exceed 10m
Springboard ceiling	3m	-	
Skating rink	60	30	
Children playground	-	-	Slides, bouncing castles, trampoline

Source: Directorate of Physical Planning, 2025

5.19.3 Stadiums

A stadium is a place for outdoor activities such as sports, concerts, or other events and consists of a field or stage either partly or surrounded by a tier up structure for spectators. When combined with, a yachting marina, indoor games, hard courts, swimming pools, golf, and putting ranges, it forms a sports complex.

Standards and Guidelines

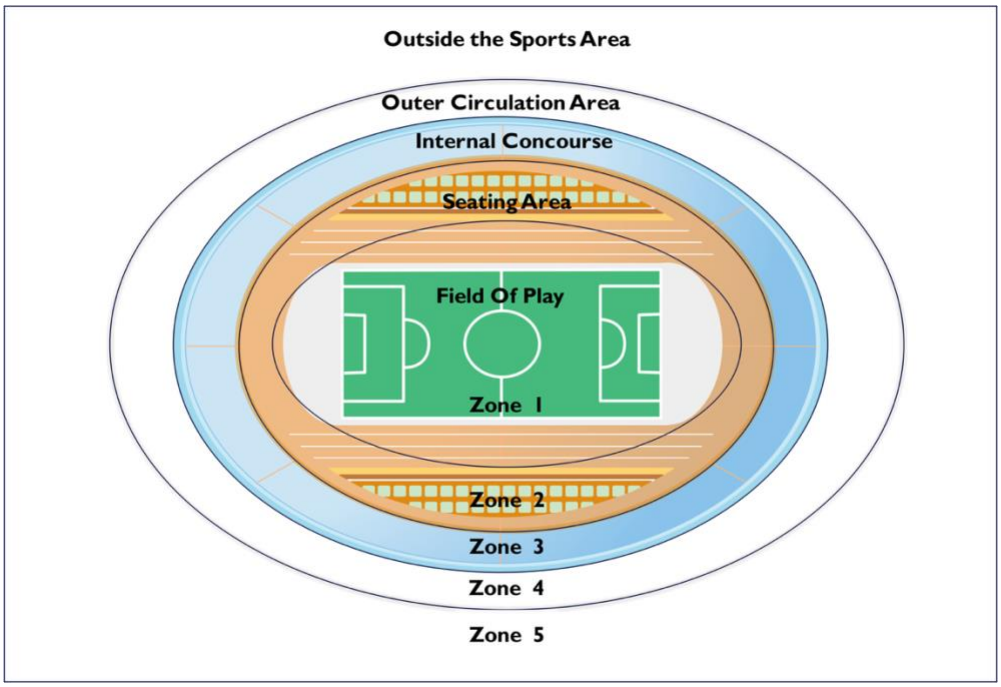
- Provide a minimum of 6Ha for an international stadium and 3Ha for local stadiums.
- Provide 18m road access to the stadiums
- International stadiums should have a minimum seating capacity of 40,000 persons.

Zoning of a stadium

Model a stadium into five zones to enhance safety as described in Figure 37.

- Zone 1- the activity area (the central area where the games take place)
- Zone 2- the spectator terraces.
- Zone 3- the squares surrounding the activity area such as restaurants, accommodation facilities, shops, sporting museum and other social areas.
- Zone 4- the circulation area surrounding the stadium structure and separating it from the perimeter fence.
- Zone 5- the open space outside the perimeter fence and separating it from the car parks.

Figure 37: The Zones of a Stadium



5.19.4 Golf Course

Standards and Guidelines

- Prepare a site layout plan identifying areas for restoration, replanting, and enhancement of riparian habitat. Ensure it is surrounded by a forest or light tree cover with natural features such as streams, lakes, and sand; with a maximum tree canopy coverage of 60%.
- The number of 'holes' and their length determine the size of the golf course. For instance, a 9-hole and 18-hole golf course requires minimum land sizes of 12ha and 48.5ha, respectively.

- Provide a 9-hole course for a catchment population of at least 100,000.
- Provide an 18-hole course for a catchment population of above 100,000
- Establish golf courses on slopes that are not more than 20%. Portions of the course may be sited in areas with slopes exceeding 20%, provided that those portions require minimal grading.
- Locate clubhouse facilities and other noise-generating uses and facilities away from land users who may be negatively impacted.
- Do not locate golf courses, clubhouse facilities, or parking lots in areas requiring substantial alteration of the existing terrain or vegetation.
- Preserve significant natural features such as rock outcroppings and natural riparian areas.
- Permit facilities such as clubhouses, lakes, including those for non-commercial fishing, parking lots, water wells, and on-site identification signs.

5.20 Health Facilities

Hierarchy of Health Facilities

The Kenyan health system defines six levels of the hierarchy from the lowest to the highest, as shown in Table 48.

Table 48: Hierarchy of Health Facilities

Health Facility	Level
Community health facilities	1
Dispensaries, medical clinics, dental clinics & eye clinics	2
Basic health center	3A
Comprehensive health center, medical dental center, funeral home, nursing home & maternity home	3B
County hospital or internship training center, county specialized hospitals & medium-sized private hospitals	4
County referral hospitals & large private hospitals	5
National referral and teaching hospitals, specialized hospitals & large private teaching hospitals	6

Source: Adopted from Ministry of Health, 2020

Standards and Guidelines

- Provide minimum land sizes as illustrated in Table 49.
- Provide a minimum land size of 0.1Ha for the veterinary clinic.
- Site considerations:
    - Gentle slope
    - Relatively well-drained area to avoid flooding,
    - Availability of public utilities such as water supply, sewer system, electricity, and solid waste management system, among others.
- Locate:
    - in areas with adequate access.

- away from railroads, freight yards, children's playgrounds, airports, and industrial and disposal plants.
- in pollution-free areas such as air, noise, water and land pollution

- Prohibit direct access to highways
- The design should cater to the needs of Persons Living with disabilities.

Table 49: Summary of Planning Standards for Health Facilities

Facility	Level	Minimum land size	Catchment Population	Distance (radius)	Basic facilities
National Teaching and Referral Hospital	6	20Ha	-	-	Water supply, sewerage system, approved waste disposal system, incinerator, electricity, parking, optic fiber, staff accommodation, morgue,
County referral hospital	5	8Ha	-	-	Same as above
Sub-County hospital	4	4Ha	100,000-500,000	8 Km	Water supply, sewerage system, approved waste disposal, incinerator, electricity, parking, optic fiber, canteens.
Health centre	3	3.0Ha (Rural) 1.0 Ha (Urban) 0.5Ha (Slums)	25,000 (Rural) 30,000 (Urban)	2 Km	Water supply, sewer system, approved waste disposal, incinerator, electricity, parking, optic fiber.
Dispensary	2	1.0Ha (Rural) 0.5Ha (urban) 0.1Ha (Slums)	10,000 (Rural) 15,000 (Urban)	1Km	Water supply, sewer system, approved waste disposal, incinerator, electricity, optic fiber.
Community health facilities	1	-	5,000		Water supply, sewerage system, approved waste disposal, incinerator, electricity, optic fiber.
Nursing Homes		0.4Ha			Water supply, sewerage system, approved waste disposal,

					incinerator, electricity, optic fiber.
Veterinary clinics		0.1Ha			Water supply, sewerage system, approved waste disposal, incinerator, electricity, optic fiber.

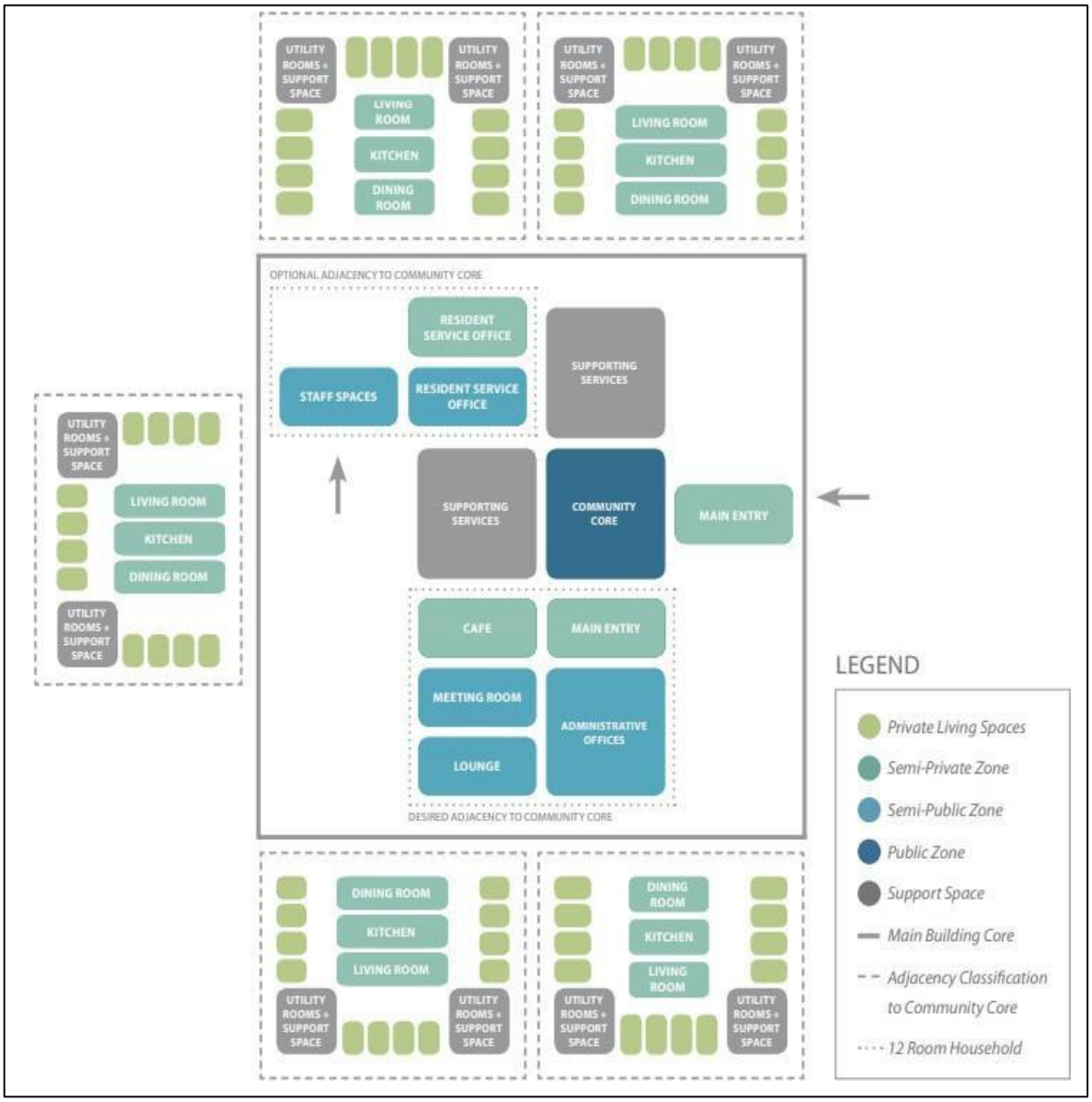
Source: Directorate of Physical Planning, 2025

5.20.1 Care Facilities for the Elderly

Standards and Guidelines

- Provide a minimum land size of 0.5Ha.
- Locate;
    - within a neighborhood, with access to medical facilities.in a serene environment
    - in a relatively flat and well-drained area.
    - in areas accessible by public transport.
- Provide facilities such as common rooms, dining rooms, sleeping areas, open gardens, prayer rooms, laundry facilities, medical facilities, and parking.

Figure 38: Illustration of a Site Layout Plan of a Care Facility for the Elderly.



Source: Directorate of Physical Planning, 2025

5.21 Funeral Establishments

These are facilities used to prepare the dead for burial or cremation, i.e., mortuary or funeral homes.

Categories of funeral establishments

a. Category I

These are independent/ standalone funeral establishments.

b. Category II

These are usually attached to health facilities.

Standards and Guidelines

- Maintain a minimum distance of 200m between funeral establishments and health facilities, food establishments such as restaurants, and food processing zones such as abattoirs.
- Maintain a minimum distance of 500m between funeral establishments and schools.
- Ensure compatibility with neighboring land uses.
- Provide adequate utilities such as water, waste disposal, sanitation, electricity and incinerators.
- Locate in an enclosed and safe environment.
- Require Environmental Impact Assessments or Environmental and Social Impact Assessments
- Provide buffer to neighboring land uses such as green belts, roads or high walls above 2.1m
- Ensure accessibility via public transport
- Prohibit direct access to major highways.
- The design should cater for the needs of Persons Living with Disabilities.

The land requirements and facilities for the various categories are provided in Table 50.

Table 50: Land requirements and facilities for Funeral Establishments

Category I- Funeral Homes (2Ha)	**Category II- Lower-level funeral homes (1Ha)**	**Category III- Morgues/mortuary/funeral parlor (0.6 Ha)**
• Administration Offices • Chapels • Family room • Preparation room • Selection room/casket display room • Comfort room • Garage • Parking area • Viewing room (optional) • Embalming room • Business area	• Administration Offices • Chapels • Family room • Preparation room • Selection room/casket display room • Comfort room • Garage • Parking area • Viewing room (optional) • Embalming room • Business area	• Casket display area • Business area Storage room • Parking area • Preparation room • Embalming room • Chapel (optional)

Source: Directorate of Physical Planning, 2025

5.21.1 Cemeteries

Standards and Guidelines

- Provide a minimum setback of 3m from the right-of-way for plots fronting roads where no above-ground structure may be constructed.
- Ensure a minimum height of 1.5m for a perimeter fence
- Provide a buffer comprising either a 20m vegetated area with trees or a 15m road reserve.
- Locate:

    - on a ground where the water table is not higher than 3-4m below the ground surface
    - away from rocky grounds.
    - away from areas at risk of flooding
    - in areas with firm and non-porous soils
    - away from water sources to avoid contamination
    - away from busy routes where funeral processions would not interfere with traffic.
    - at the periphery of urban areas
- Prohibit direct access through major highways
- Decommissioned cemetery sites shall be available for other uses such as parks, car and lorry parks.
- Provide minimum land requirement based on the catchment population as shown in table 51.

Table 51: Land Requirements for Cemeteries

Catchment population	Minimum Size(ha)
1-5,000	1.0
5000-15000	1.5
Upto 100,000	10

Source: Directorate of Physical Planning, 2025

5.21.2 Crematoriums

Standards and Guidelines

- The minimum land size is 2.0Ha.
- Provide a buffer of 100m from a crematorium (vegetated area with trees), taking into consideration the nature of the wind, topography and the distance between emission points and neighbouring uses.
- Locate:
    - in areas accessible by public transport.
    - in a woodland setting, or an area of undulating ground with good natural features.
    - in areas with adequate water, electricity and drainage services.
- Consider the direction of the prevailing wind on locating the site.
- Allow vertical development for optimal utilization of space.
- Ensure compatibility with neighboring land uses.
- Prohibit direct access through major highways.

5.22 Firefighting Facilities

They include fire stations and sub-fire stations. Their standards and guidelines have been provided in Table 52.

Table 52: Standards and Guidelines for firefighting facilities

Fire station	Sub- fire station
Provide a fire station with at least 4 fire engines to serve a population of 100000-200000.	Provide a sub-fire station with at least 2 fire engines to serve a population of between 50,000-100,000
Maintain a minimum land size of 0.825ha with 0.4ha for the structure, 0.4ha for staff accommodation and drills and; 0.25ha for parking and manoeuvring of vehicles.	Maintain a minimum land size of 0.2ha.
Observe a minimum frontage of 47m	Observe a minimum frontage of 35m.
Provide a minimum of 18m access roads	Provide a minimum of 15m access roads
Provide overhead water storage tanks of at least 250,000 litres capacity.	Provide overhead water storage tanks of at least 120,000 litres capacity.
The design should cater for the needs of Persons Living with Disabilities.	The design should cater to the needs of Persons Living with Disabilities.

Source: Directorate of Physical Planning, 2025

General Guidelines

- Provide:
    - access from a major road.
    - site utilities such as electricity, telephone, ambulance and water.
    - a designated road/lane.
    - support facilities such as an alarm's communication centre, apparatus room, training room, gym and jogging track, staff quarters, dining area, administration, maintenance, storage and repair facilities.
    - hydrants at 120m intervals along major town roads, which should be located at a minimum distance of 15m from the nearest building.
- Designate space for a firefighting institution for training fire marshals among community members to enhance timely response to fire outbreaks.

5.23 Administrative Offices

These include National and County Government offices established to provide public services.

Standards and Guidelines

- Maintain a maximum plot coverage of 75% and 60% for the CBD and other areas, respectively.
- Provide 1 car park for every 200m2 and 50m² of office space in the CBD and in other areas, respectively.
- Locate:
    - centrally from most residential zones, preferably within 45 minutes driving time from most homes in large cities and 45 minutes walking time from home in smaller towns
    - in areas with good vehicular access and accessible via public transport
- Provide basic site utilities such as water, sanitation, electricity, telephone, fiber optic and passenger drop-off points.
- Permitted uses include; - libraries, post offices, police posts, banks, food stalls and restaurants, child care centres, car parks and public open spaces and other services ancillary to government business.

- Maintain minimum land sizes as shown in Table 53.

Table 53: Minimum land requirements for administrative offices

Office	Land size(ha)
National	20
County	10
Sub-county	5
Ward/Division	1.0
Location	0.5
Sub location/	0.2
Village	0.1
Town halls	1.2
County halls	1.2

Source: Directorate of Physical Planning, 2025

5.24 Law Enforcement Facilities

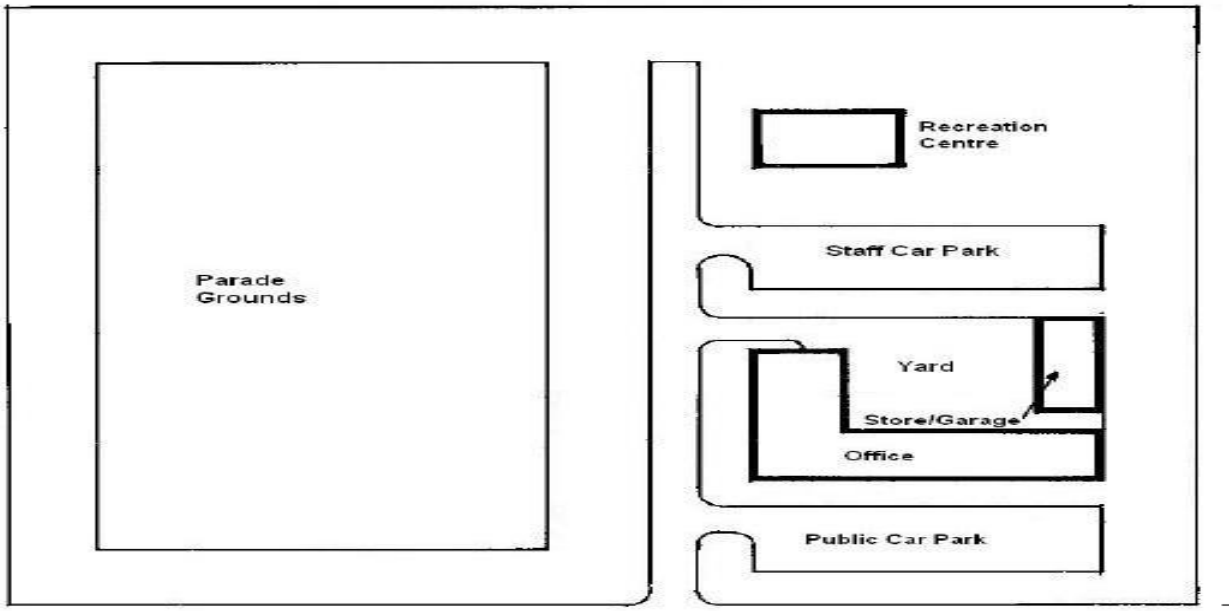
Standards and Guidelines

- Locate:
    - in county headquarters, residential neighborhoods, large commercial/industrial areas or large institutions, depending on their functional requirements. if their administrative function is dominant, they may be located in county headquarters, but generally, they should be located within residential neighborhoods.
    - in areas easily accessible to the general population.
- Provide a minimum of 3.4m2 per person for police cells.
- Provide adequate ventilation, lighting, means of rest (chair or bench) and a bed in police cells for persons obliged to stay overnight in custody.
- Provide designs that cater to the needs of Persons Living with disabilities.
- Permitted uses include: - the chief's offices, retail shops, workshops, places of worship, sports grounds, clubhouses, canteens, accommodation facilities (police lines), education facilities, health facilities, farms, helipads and yards.
- Provide for the separation of the various modes of traffic
- Prohibit uses such as conference halls and restricted areas for shooting ranges
- Maintain minimum land sizes as provided in Table 54.
- Figure 39 illustrates the site layout plan for a police station

Table 54: Land requirements for the various levels of stations

Type	Land size in ha	Catchment population
Police station	2	10,000-20,000
Police post	0.2	5,000-10,000
Patrol base	0.1	Below 5,000

Figure 39: Illustration of a site layout plan for a police station



Source: Directorate of Physical Planning, 2025

5.24.1 Courts

Standards and Guidelines

- Prepare a site layout plan.
- Locate in a secure and safe environment.
- Maintain minimum land sizes as provided in Table 55.

Table 55: Land Sizes for Courts

Type	Land size (Ha)	Facilities
Supreme Court, Court of Appeal, High Court	2	• Administrative block • Courtroom space for each court sitting • Prisoner holding facilities • Parking
Magistrates' Court, Kadhi Court, Tribunal, Children's Court	1	

Source: Directorate of Physical Planning, 2025

5.24.2 Correctional Institutions

These include prisons, remand centers and borstals (approved schools) and youth training centers. They are categorized into three, each with different land requirements as provided in table 56.

Table 56: Land Requirements for Correctional Institutions

Prison category	Minimum land size (Ha)	minimum space requirement per prisoner
Closed (Main security prisons)	16	$3.7m^2$
Semi-closed (Medium security prisons)	10	
Borstal institutions/youth training centers/remand centers	5	

Standards and Guidelines

- Locate;
    - away from wetlands, flood plains, fragile landscapes, or historic/archaeological sites.
    - in a secure environment.
    - in areas with access to a road network, electricity, telephone, fibre optic and potable water and sanitation.
    - in areas well serviced by public transport.
- Ensure compatibility with neighboring land uses. They can co-exist with other government bodies such as the courts and police stations.
- Prepare a site layout plan to provide for vehicular traffic access to delivery and collection points, kitchens, workshops, waste collection, maintenance and emergency responses.
- Provide:
    - two sanitation facilities for every 25 female detainees.
    - two sanitation facilities for every 25 male detainees in cases where urinals are not provided.
    - three sanitation facilities for every 50 male detainees in cases where urinals have been provided.
    - support facilities such as fire service, surveillance, accommodation, workshops, prison farms, conference halls, education facilities, ICT and innovation centers, places of worship, water and sewerage systems, electricity, outdoor areas, sports grounds, health-care facilities and child care centers.
- Ensure the design and provision of facilities and consider the needs of Persons Living with Disabilities.
- Prohibited uses in surrounding areas include: - major commercial development, educational, warehousing and large markets, transportation and residential other than staff housing.

5.25 Military Barracks, Camps, Garrisons, Training Institutions, and Other Installations

Military land is classified based on locations where the specific military activities take place, as follows:

i. Class A – Physical Garrisons/Bases/Units.
ii. Class B – Training Areas and Reserved Land.

iii. Class C – Temporary Use.
iv. Class D – Special Use Lands/Patrol Bases/Forward Observation Bases.
v. Class E – Off-Camp Accommodation Areas.
vi. Class F – Safeguarding Areas, Buffer Zones, Easements and Wayleaves.

Standards and Guidelines

- Factors to be considered while locating military installations include:
    - Proximity to physical infrastructure.
    - Socio-economic considerations, including the presence of settlements and siting away from high-potential agricultural land.
    - Regional development considerations, such as the multiplier effect of the installations.
    - Climatology, topography and altitude.
    - Environmental and ecological considerations.
    - Location of projects of strategic national importance.
    - Strategic considerations, including proximity to international borders.
- Provide a buffer zone between the military camps and civilian settlements.
- Conduct an Environmental and Social Impact Assessment before the establishment of any military camps and other installations.
- Acquisition of military land should be done in consultation with relevant agencies and local communities.
- Prepare a site layout plan showing support facility, including training areas, base areas, administrative areas, recreation areas, maintenance areas and store depots, ammunition depots, weapon ranges, naval bases, helipads, air force bases, telecommunication installations and rifle ranges.

Confidentiality of Military Land Planning

- Military installations are part of Strategic National Installations and information concerning their planning and development will be restricted and shared on a need-to-know basis.
- Development control by Counties and other statutory bodies will not apply to the planning and development of military installations.
- Where discussion on the planning and development of military installations is necessary outside the Ministry, it will be handled, in confidence, by the CS Defence and CS in charge of Physical and Land Use Planning and the relevant agency(s).
- Where necessary, all plans touching on, relating to, bordering, involving, or in any way affecting the Kenya Defence Forces (KDF) shall be subjected to conditions set by the National Security Council.
- All plans prepared by or for the MoD-owned lands and installations shall be exempt from any form of publication.
- All plans having an impact on military lands, including lands required for military operations, such as along the country's borders, will be required to be done under the parameters of special planning areas.
- Military lands will, of necessity, be surrounded by buffer zones which will be co-managed between the military, the counties and other agencies.
- All lands along the Kenyan international borders to provide for an easement of 200m for purposes of military deployment along the border, and regulate the type and density of development.

- All Part Development Plans (PDPs) prepared for MoD lands will only be done by the National Director of Physical Planning and in confidentiality.
- All survey plans prepared for MoD lands will be done by the Director of Surveys.
- No development will be erected within safeguarding areas without MoD approval.
- All Military land shall be gazetted for protection from unauthorized access to protect the installation as well as for the safety of the public.
- The military will be a key stakeholder in the development of national plans and county plans where they have an interest.

Note: Refer to Legal Notice 247 for guidelines on military facilities.

Environmental Health Issues

The National and County planning authorities, in liaison with MoD, shall provide guidelines for:

- land use and forest cover within the training areas and all their lands.
- safe disposal and transportation of hazardous materials (HazMat) such as Nuclear, Biological and Chemical (NBC).
- adequate buffer zones and safety distances.
- handling and disposal of remains of munitions, including regular clean-up of training areas.

5.26 Religious Institutions

Standards and Guidelines

- Observe a minimum land size is 0.2Ha.
- Prepare a site layout plan for all religious institutions.
- Locate at the periphery of residential neighborhoods.
- Ensure the use of acoustic materials to reduce noise pollution.
- Provide for the needs of Persons Living with disabilities.
- Provide for open spaces, parking spaces for vehicles, fire assembly points and other related uses.
- Provide for the separation of the various modes of traffic.
- Locate;
    - away from wetlands, flood plains, fragile landscapes, or historic/archaeological sites.
    - in a secure environment.
    - in areas with access to a road network, electricity, telephone, fiber optic and potable water and sanitation.
    - in areas well-served by public transport and NMT.
- The permitted uses include religious buildings, social centres, basic schools, playgrounds, open spaces, bookshops and canteens.

5.27 Social Emergency Centers (Rescue Centers and Disaster Management Centers)

Standards and Guidelines

- Locate:
    - in a safe and secure environment.
    - away from wetlands, flood plains, fragile landscapes, or historic/archaeological sites.
    - in areas with access to a road network, electricity, telephone, fiber optic and potable water and sanitation.
    - in areas accessible by public transport and NMT.
    - away from hazardous facilities.
- Provide:
    - a minimum land size of 2Ha.
    - in all county headquarters and municipalities.
    - support facilities such as accommodation, water, sanitation, community center (library, classrooms, innovation center, etc), health facility, recreational spaces and electricity.
    - an Emergency Operations Center.

5.28 Human Settlements

A human settlement is the totality of the human community - whether city, town, or village - with all the social, material, organizational, spiritual, cultural and physical elements that sustain it. They are categorized as urban and rural.

General Standards and Guidelines

- Provide:
    - designated locations for the establishment of public utilities and social amenities taking into consideration the interrelationships between various land use types.
    - a minimum of 9m access road to every residential plot
    - access to emergency services and public transport within 500m from every plot.
- Encourage;
    - NMT oriented settlements
    - green infrastructure
    - promotion of urban-rural linkages
    - balanced development through the relocation of administrative services from major urban centers and the dispersal of urban centres in remote areas
- Promote adequate and functional open spaces in settlements to enhance circulation, liveability and aesthetics.
- Prohibit settlements and development in protected areas, reserves and way leaves.

5.28.1 Urban Settlements

Standards and Guidelines

- Provide services in line with the provision of UACA.
- Consider the hierarchy of centres in the distribution of functions and services
- Encourage compact developments
- Discourage informal settlement by providing affordable housing and social housing.

- Provide buffer zones between residential and non-compatible land uses such as industries.
- Encourage attractive urban design, landscaping, and tree planting to enhance the aesthetics of urban areas.
- Encourage NMT and transit-oriented settlements
- Prohibit linear/ribbon development along the main roads
- Observe the standards in Table 57 when allocating land uses.

Table 57: Urban Land Use Allocation

S/N o	User	Land Allocation %
1	Commercial	5-10
2	Residential	35-50
3	Industrial	7-10
4	Recreational/Open spaces	4-8
5	Institutional (Education)	3-6
6	Infrastructure	20

Source: Department of Physical Planning, 2025

a. Upgrading of Informal Settlements

Informal settlements mean unplanned residential areas where a group of housing units has been constructed on land to which the occupants often have no legal claim. Upgrading of these settlements can be done via the provision of social and affordable housing.

Affordable housing offers below-market-rate homes to low- and middle-income earners, often through subsidies or incentives for private developers.

Social housing is government or non-profit-owned, mainly rental, deeply subsidized, and reserved for the most vulnerable, with strict income eligibility.

Guidelines

- The design of these upgrading projects shall be guided by specific standards on residential land use.
- Access should be planned via local distributors rather than directly from major roads.
- Provide for shared communal facilities such as parking, social halls, playgrounds, day care centre, education, health facility, and solid waste collection points.
- Provide commercial zones for convenience and light industries close by for employment.
- Promote vertical development to maximize on space.
- Provide conduits to facilitate utilities and service provision.
- Promote use of green energy.
- Provide fire hydrants.

b. Urban Renewal/ Regeneration

Urban renewal is the process of upgrading and redeveloping decayed areas in cities.

Guidelines

- Prepare urban renewal and redevelopment plans for decayed urban areas within the context of the whole town and emerging realities.
- Preserve areas/ buildings with historic and natural significance, local characteristics and social networks of the local community including scientific, cultural, technological, archaeological and paleontological buildings.
- Provide open spaces and community centres.
- Provide for road widening/redesigning programs to ease and discourage traffic congestion and encourage non-motorized transport.
- Provide for modern high-rise buildings and environmentally friendly designs to save on available space.
- Mainstream use of green energy, water harvesting and waste reduction technologies
- Encourage the use of efficient management systems in redeveloped buildings to enhance efficiency.
- Upgrade existing infrastructure such as water and sanitation

5.28.2 Rural Settlements

Standards and Guidelines

- Prepare comprehensive plans for public settlement schemes and communal land before settlement to ensure adequate provision of services.
- Plan for nucleated settlements to restrict homesteads to 25% of the total land size of the individual parcel
- Provide
    - an efficient, reliable and effective transport system by ensuring adequate and quality road networks that integrate non-motorized transport.
    - secondary, minor and special-purpose roads of 25m, 20m and 20m respectively.
    - infrastructure such as social halls with open spaces, community centres, a public cemetery, water, and electricity among others.
- Promote compact development to enable the sharing of social amenities and the release of land for agricultural development.
- At least 10% of the land for agroforestry.
- Create buffer zones between game parks and settlement zones.
- Observe a minimum building line of 3 meters.
- Indicate permitted and restricted land subdivision sizes during the preparation of zoning regulations.

5.29 Residential

Categorization of the residential areas should be based on development density and the level of services to avoid segregation of people.

General Standards and Guidelines

- Prepare land use development plans for all areas to be used for residential use.
- Segregate residential zones using roads.
- Ensure planned residential plots are rectangular, or close to rectangular, depending on the topography
- Observe the number of floor levels depending on the approved plot ratio of the areas
- Site considerations shall include site layout, topography, open space, location of buildings, and access
- Provide:
    - basic supporting facilities such as corner shops, shopping centre, parking spaces, health facilities, public open spaces, sanitary areas, basic educational facilities, ample supply of water, trunk sewer system, electricity, roads
    - provide for ramps in buildings to enable access to the Persons Living with Disabilities.
    - Residential developments within rural and sub-urban including unserved areas to be provided with permitted and restricted areas for septic systems.
    - Fire exits, fire extinguishers in buildings and a hydrant within a 90m radius in a densely populated area.
    - Rainwater harvesting tank to supplement conventional water supply.
    - Minimum setback lines to ensure the provision of open areas around structures for: visibility and traffic safety, access to and around structures, natural light, ventilation, and space for landscaping.
    - At least 10% of the land for greening.
- Ensure that all setback areas are open and unobstructed from the ground upward.
- Observe civil aviation requirements for all buildings if the subject site is adjacent to an airstrip or airport.
- Ensure perimeter walls do not exceed 2.1m in height to ensure proper circulation of air and aesthetics.
- Preserve the natural vegetation and topography to enhance attractiveness and compatibility within the neighborhood
- Observe development densities as shown in Table 58.

Table 58: Standards for Various Housing Densities

Development density	**Typology**	**Min. plot size (Ha)**	**Plot coverage**	**No. of Dwellings**	**Plot ratios**
Low density	Bungalow	0.20	30%	1-4	N/A
	Maisonette				1:2
Medium density	Detached and Semi-detached Bungalow	0.10	50%	5-20	N/A
	Detached and Semi-detached Maisonette				1:3
	Multi-family dwelling				1:4

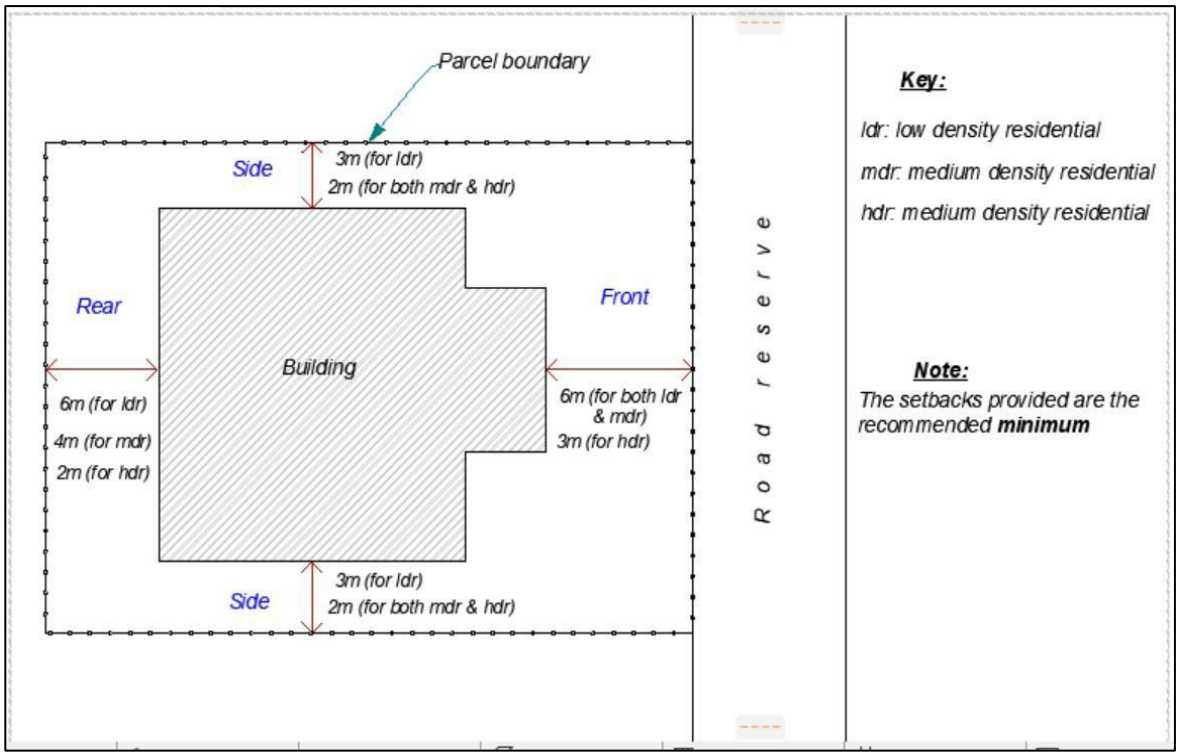
High density	Multi-storey Flats/apartments	0.045	70%	20 and above	1:5-1:8
Mixed density (for comprehensive development)	Multi-storey; Flats/Apartments,	0.045	70%		1:5-1:8
	Detached and Semi-detached Bungalow	0.10	50%		-
	Detached and Semi-detached Maisonette	0.10	50%		1:3
	Multi-family dwelling	0.10	50%		1:4 – 1:6

Source: Directorate of Physical Planning, 2025

a. Building lines and Setbacks

A building line is a limit beyond which a house must not extend to a street, while a setback is the distance between the building and the property boundary. Setbacks in buildings are important for reasons of privacy, amenity, health and safety. They are illustrated in Table 59, Figures 40 and 41, respectively.

Figure 40: Setbacks for residential developments



Source: Directorate of Physical Planning, 2025

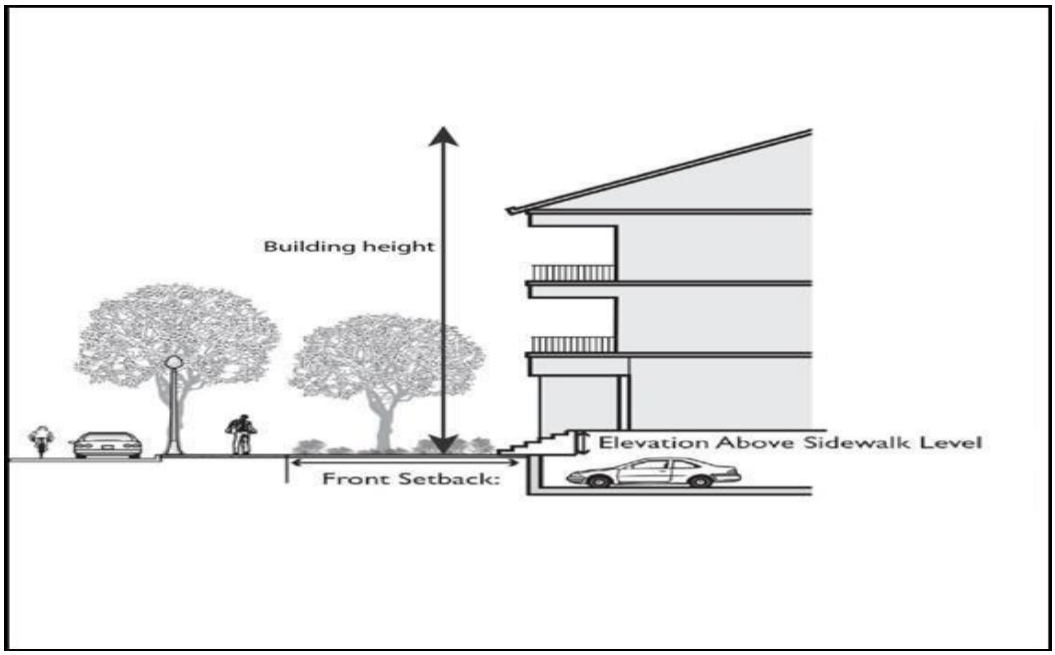
Table 59: Minimum setbacks and building lines

Orientation	Low Density(m)	Medium Density(m)	High Density(m)	Allowable Use
Front	6	6	6	Parking and greening
Side	3	2	2	Landscape greening
Rear	6	4	2	Parking and landscape greening

Source: Directorate of Physical Planning, 2025

- Use setbacks, frontage, rear and rooftops for purposes of greening.
- The minimum building lines may be determined by the road fronting that plot.

Figure 41: Illustration of a Setback and Building Height



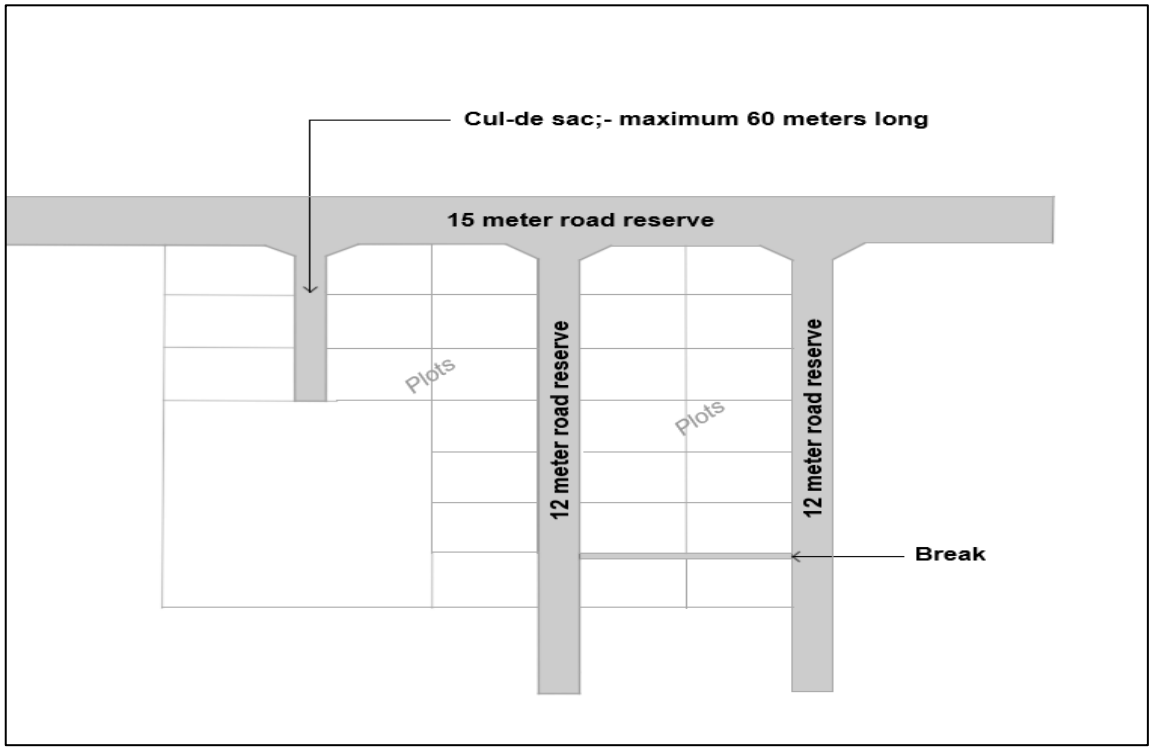
Source: Directorate of Physical Planning, 2025

b. Plot access within residential neighborhoods

- Maintain a road hierarchy by providing adequate access and connectivity through 15m major distributor roads, 12m secondary roads and 9m cul-de-sac.
- Observe a minimum road size of 9m within high and mixed density.
- Provide NMT lanes on all roads.
- Ensure the length of any cul-de-sac does not exceed 60m.
- Discourage cul-de-sacs in slopes of more than 10 degrees to avoid drainage challenges.
- Provide breaks of 3m after every 100m in medium, high and mixed density.
- Every plot must have direct vehicular access to a road.
- Separate any two adjacent driveways on neighboring plots by at least 1.5m of soft landscaping.

- Figure 42 gives an illustration of access within a residential neighborhood.

Figure 42: Access in Residential Areas



Source: Directorate of Physical Planning, 2025

c. Layout of a Residential Plot

- Orient structures in relation to the sun and prevailing winds, in consideration of the topography of the area.
- Ensure that plot layouts respect the physical configuration of the site, and the placement of houses follows natural contours.
- Locate service areas, including waste segregation and collection points and storage away from public view, through planting hedges.
- Position and design detached developments like servants' quarters and guesthouses in a manner that ensures privacy for the main house occupants.

d. Utilities

- Provide;
    - adequate water supply and drainage channels for surface water runoff.
    - waste segregation containers and collection points equipped with containers within neighborhoods.
    - adequate septic tanks and ventilated improved pit latrines (VIP) in areas not connected to trunk sewer.
    - electricity supply and internet in all habitable buildings.
- Require the use of solar and wind systems in residences.

e. Mixed Density and Use

Mixed residential development refers to the planning and construction of neighbourhoods or communities that incorporate a variety of housing types, densities, and land uses within a single area. It encompasses residential development containing tenants of different incomes, such as low, middle and high income. Mixed housing aims to reduce social segregation in residential neighbourhoods.

Mixed density focuses more on the physical density and types of residential units, while mixed use emphasizes the integration of residential uses with other compatible land uses to support a complete urban lifestyle.

Standards and Guidelines

- Prepare Local Physical and Land Use Development Plans with standard plot sizes to accommodate low, medium and high-density buildings within blocks.
- Observe flexibility by promoting various housing typologies: single units, semi-detached, row houses, and apartments.
- Promote mixed-use development through
    - Zoning areas of low, medium, and high residential density in a comprehensive development.
    - Allowing for commercial and educational uses in a multi-story residential building.
    - Allowing for non-polluting small-scale light industrial land use within residential or commercial areas.

5.30 Commercial Developments

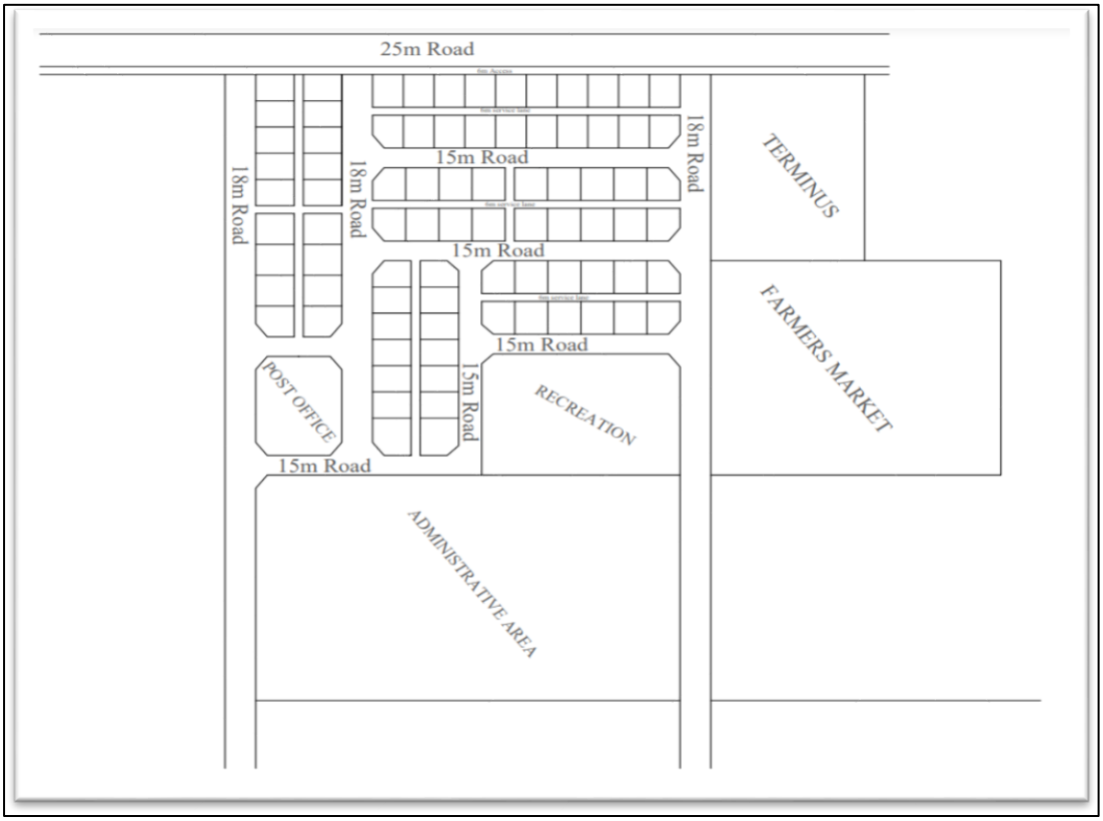
These are spaces designated mainly to conduct business, retail or other non-residential purposes.

General Standards and Guidelines

- Designate 5-10% of the total urban area to commercial use.
- Observe a minimum plot size of 0.045Ha.
- Observe a maximum plot coverage of 80% to allow for verandas and pedestrian walkways.
- Integrate the commercial developments with open squares at designated places throughout the area, interconnected with walkways to act as recreation and carbon sinks.
- Observe a minimum street width of 15m to cater for vehicular and pedestrian traffic and laying out of other infrastructure, such as water, sewer, stormwater drains, electricity, fibre optic cables among others.
- Observe building lines of 6m where roads range between 15-18m wide.
- (Note: Minimum distance may vary depending on an area's topography)
- Ensure that all infrastructure facilities and services are laid underground to optimize the use of space.
- Provide 18-25m local roads to link the minor distributors.
- Prohibit direct access to buildings/plots within the CBD by providing loop streets and service lanes.
- Discourage cul-de-sacs within commercial areas.

- Provide a 6m service lane at the rear of all commercial plots
- Provide minimum 3m and 2m wide cycle lanes and pedestrian footpaths respectively.
- Provide a minimum of 5% green cover.
- Rear yards may be enclosed with walls not exceeding 2.1m in height.

Figure 43: Road Hierarchy in Commercial Areas



Source: Directorate of Physical Planning, 2025

5.30.1 Cities, Municipalities and Towns

Guidelines

- Locate the tall buildings either at the center or around an open space in the center of the CBD at a plot ratio of 600% which could vary within the CBD depending on the designated blocks.
- The city skyline should gradually descend from the centre to the periphery at intervals of 150%. e.g., from 600% to 450%, 300% and 150% depending on the existing infrastructure and desired townscape.
- Channel all external traffic to a bypass.
- Provide for BRT and MRT.
- Provide parking silos on ringroad junctions to encourage NMT in the CBD.
- Provide setbacks and building lines based on the size of the fronting road.

5.30.2 Market Centre and Neighborhood Shopping Centre

Market centres provide lower-order goods for the surrounding population. These centres are complementary to the major towns and do not undermine the higher-order functions of those towns. A neighborhood shopping centre satisfies the daily needs and conveniences of the surrounding population. These centres are complementary to the market centers.

Standards and Guidelines

- Catchment population of up to 2,000 persons.
- Locate close to other neighbourhood facilities such as health facilities.
- Observe a minimum land size of 2.5Ha.
- Provide;
    - 15m access road and encourage Non-Motorized Transport
    - Vertical separation of vehicles and pedestrians by constructing pedestrian walkways.
    - Minimum land size of 0.2Ha for parking.
    - Basic facilities including electricity, water, sanitary area, and refuse disposal site.
    - Open spaces and parks.
- Plan a network of strategically located service centres offering basic services to ensure the most efficient use of capital resources and services.

5.30.3 Local Shops

These small retail buildings offer convenience goods and services to nearby households.

Standards and Guidelines

- Catchment population of up to 100 persons
- Observe a minimum plot size of 0.045Ha (mixed use).
- Locate along major pedestrian routes
- Ensure it does not obstruct the free flow of vehicular and pedestrian traffic.
- Provide adequate access and other support amenities such as water and electricity.

5.30.4 Market

It is a place where the exchange of goods and services takes place. It can either be open-air or closed and can be regular or periodic.

Table 60 provides the categorization of markets and their respective standards

Table 60: Standards and Guidelines for Markets

Market Category	Characteristics	Standards and guidelines
A- Local	▪ Limited to the local region or area. ▪ Targets low-income groups in suburban areas. ▪ Usually sell perishable goods for daily use. ▪ Hours of operation are Limited.	▪ Provide a land size of 0.1-0.2Ha ▪ Provide central waste collection points, central water points and ablution blocks. ▪ Provide fixed stalls and hard-standing surfaces.
B- Open-air market	▪ An outdoor market where local traders sell their merchandise. ▪ Operation of the market can be periodic or daily. ▪ They have designated areas for the sale of specific goods	▪ Observe a minimum land size of 0.3Ha ▪ Provide central waste collection points, central water points, ablution blocks and public bathrooms. ▪ Provide adequate pedestrian access ▪ Provide fixed stalls and hard-standing surfaces ▪ Designate common entry/exit points ▪ Designate a fire assembly point
C- Closed markets/ specialised markets	▪ Characterized by permanent stalls and shops in a built structure. e.g., Economic stimulus markets ▪ They have designated areas for the sale of specific goods.	▪ Observe a minimum land size of 0.3Ha ▪ Based on the zoning regulations. ▪ Provide adequate parking facilities ▪ Provide central waste collection points, central water points, ablution blocks and public bathrooms. ▪ Provide adequate pedestrian access ▪ Provide fixed stalls and hard-standing surfaces ▪ Provide fire assembly points ▪ Designate common entry/exit points ▪ Encourage vertical development

Source: Directorate of Physical Planning, 2025

5.30.5 Shopping Malls

A large retail complex containing a variety of stores, restaurants and other business establishments. These may be housed in a series of connected or adjacent buildings or in a single large building.

Standards and Guidelines

- Observe a minimum plot size of 2Ha.
- Locate in;
    - areas with a minimum access road of 15m.
    - proximity to public transport.
    - Proximity to residential areas.

a. Site design, access and connectivity

- Cluster buildings in relation to the interconnecting quality of landscaping, open space and pedestrian areas
- Provide;
    - an acceleration and deceleration lane of a 100m stretch.
    - on-site vehicular and pedestrian circulation routes, including accelerating and decelerating lanes.
    - clearly delineated crosswalks where pedestrian circulation routes cross vehicular traffic aisles and driveways.
    - adequate public restrooms, lactation and baby changing rooms and steps and ramps across retaining walls and slopes
- Integrate drive-thru lanes with the overall site layout to provide safe, efficient and integrated vehicular/ pedestrian circulation.
- Integrated drop-off zones into the design with attractive paving, adequate separation of vehicles and pedestrians, and convenient location near building entrances.
- Integrate separate freestanding sites (pad developments) in parking lot layouts.
- Locate seats and benches in shaded areas that are close to site facilities but will not otherwise block or cause congestion along circulation routes.
- Designate emergency exits, fire assembly points
- Observe 10 percent greening.
- Ensure compatibility with the surrounding areas in terms of materials, colours and design details.

b. Parking

- Encourage parking silos.
- Locate parking close to building entrances, ensure that it is easily identifiable and separate from pedestrian circulation areas.

c. Traffic Calming

- Integrate traffic calming measures into the transportation and site layout strategy.
- Encourage the use of traffic calming techniques such as wide speed humps, raised crosswalks and raised intersections to enhance safety.

d. Public Open Spaces

- Locate in proximity to areas of activity, such as primary circulation routes and building entrances.
- Encourage courtyards to provide effective intermediary gathering points and serve as an organizing element for multiple pedestrian circulation routes.

5.31 Industries

Industries are a group of productive enterprises or organizations that produce or supply goods and services. They are generally classified as primary, secondary, tertiary, and quaternary. Secondary industries produce finished goods or are engaged in construction, consume large quantities of energy, and use machinery. For this reason, they are further classified as heavy and light depending on the quantities used.

General Guidelines and Standards

- Observe plot coverage of not more than 75%.
- Create suitably sized plots that are functional and accessible, to accommodate future expansion and enhance the local character.
- Observe building lines of between 6-9m.
- Observe minimum road reserves as follows:
    - Major Communication routes - 60m
    - Spine roads (Major roads) - 40m
    - Collector Roads - 30m
    - Access streets - 25m
    - Service lanes - 15m
- Ensure the road reserves accommodate the following provisions;
    - Stormwater drainage.
    - Conveyance of industrial effluents.
    - Water reticulation mains.
    - Curb parking.
    - Communication cables-fibre optic cables
    - Non-motorized infrastructures (walkways, cycling lanes, designated footpaths)
- Reserve a minimum of 10% of plot coverage for planting trees.
- Integrate green energy i.e, solar energy and wind energy.
- Locate industries in close proximity for agglomeration advantages.
- Require ESIA and EA for proposed and ongoing industrial developments.
- Require a health and safety management plan for all industries.
- Protect and enhance environmental and landscape features.
- Set aside about 5-8% of the total planned urban area for industrial use for the provision of facilities as outlined in Table 61.

Table 61: Percentage Allocation of Land in an Industrial Area

Land use	Allocation (%)
Industrial buildings	55
Green spaces (parks, open spaces, squares etc.)	10
Utilities, services of facilities	20
Roads, parking lots	15

Source: Directorate of Physical Planning, 2025

5.31.1 Heavy Industrial Areas

Heavy industrial areas are zones designated for the manufacturing of large, heavy items involving complex or numerous processes. They may produce heat waste that can cause pollution and pose a risk to the environment.

Standards and Guidelines

- Recommended land size of 40-60ha for a town with a population of 200,000 and 5,000,000 to provide between 4,000 and 6,000 jobs, based on an average industrial density of 40 workers per acre.
- Bus rapid transit systems and rail systems should be incorporated in industrial areas and integrated with other transportation systems to enhance efficient mobility.
- Provide buffer zones of not less than 500m between the industrial zones and residential areas. For noxious and hazardous industries, the distance should not be less than 1km.
- Provide plot sizes in industrial areas depending on the type of industry to be built, number of personnel, densities and plot coverages.
- Require ESIA and EA assessments for all proposed and ongoing noxious and hazardous industries.
- Consider wind direction in the location of industries to control air pollution.
- Permit and prohibit uses in a heavy industrial zone as provided in Table 62.

Table 62: Permitted and Prohibited Uses in Heavy Industrial Zone

Permitted Uses	Prohibited Uses
○ Noxious, offensive or hazardous industry ○ Vehicle repair and transport yard ○ General industries ○ Auxiliary uses in the industry ○ Green spaces ○ Emergency services ○ Car Park and lorry parking area ○ Petrol stations ○ Fire assembly points ○ Warehousing of not above 50% of the gross floor area	○ Residential development ○ Major commercial centres ○ Hotels ○ Educational facilities ○ Child care centres ○ Major transportation uses ○ Animal husbandry

Source: Directorate of Physical Planning, 2025

5.31.2 Light Industrial Areas

Light industrial areas are designated zones or estates for manufacturing that use less capital-intensive machinery or production equipment.

Standards and Guidelines

- Distribute these estates throughout residential areas, at approximately one estate per catchment population of 30,000.
- Provide land sizes ranging from 5-10Ha, to cater for 720-1500 workers at a density of 60 workers per acre.
- Locate on the major internal routes of the town with separated access from residential feeder roads.
- Provide buffers such as green spaces and a boundary wall between these zones and major internal

roads, shopping and commercial centres, community buildings and schools.
- Provide loading and offloading zones depending on the size and operations of the industries.
- Provide spaces for ancillary uses such as:
    - Residential quarters.
    - Operation and logistics offices.
    - Open storage.
    - Retailing/exhibition spaces.
- Provide a minimum of 1Ha for the Juakali zone within the light industrial area.

a. Jua Kali/Workshop Areas

Jua Kali workshops are areas designated for small-scale traders and artisans under temporary or permanent shelters.

Standards and Guidelines

- Observe a minimum plot size of 0.25Ha.
- Provide for sheds with separate entry and exit points.
- Provide common sanitation blocks, power supply, waste collection points and exhibition spaces.
- Provide fire assembly points, fire hydrants and fire extinguishers at strategic locations.
- Locate juakali industries dealing with hazardous and flammable materials 100m away from petrol stations.
- Permitted uses include:
    - Ancillary shop or office to service industry provided it does not exceed 500 m2 or 70% of built floor area, whichever is smaller.
    - Commercial outlets and markets.
    - Recreation areas.
    - Emergency service centres.
    - Service industry, service station, motor trading, vehicle repair and transport yard.
    - Warehousing if not above 50% of the gross floor area.
- Prohibited uses include animal husbandry and noxious industries

b. Petrol Service Stations

Petrol service stations are classified under light industrial use due to the nature of the activity and the risks that they pose to the environment.

They are classified into tier 1, 2, and 3 according to their land size, services offered and storage capacity, with tier 1 being the smallest. Tier 4 is reserved for stations that sell autogas. As per their tier, they can provide certain facilities such as eateries or an office block, as shown in Table 63.

Table 63: Standard requirements for the petrol stations

Requirement	Tier 1	Tier 2	Tier 3	Tier 4
Dimensions				
Min. land size	0.1Ha	0.15Ha	0.19Ha	0.22Ha
Min. entrance/exit	6m	6m	6m	6m
Min. frontage	16m	32m	32m	32m
Auxiliary services				
Car wash/lubrication bay	No	Yes	Yes	Yes
Max. office space	N/A	$60m^2$	$120m^2$	$60m^2$
Max. no of floors	Ground floor	G+1	G+1	G+1
Convenience store	No	Yes	Yes	Yes
Eating facility/banking hall	No	No	Yes	Yes
Additional requirements				
Firefighting system	Yes	Yes	Yes	Yes
Canopy with over 4.5m head clearance	N/A	Yes	Yes	Yes
Washroom facilities	Yes	Yes	Yes	Yes

Source: Adopted from EPRA Kenya Standard 2504:2014

Standards and Guidelines

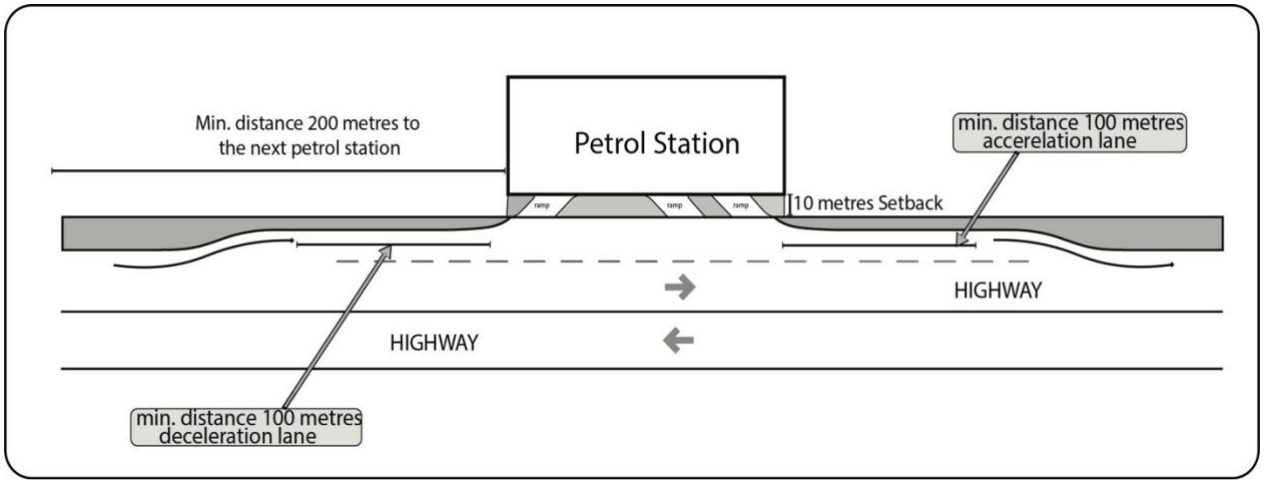
- Require an ESIA and EA.
- Observe minimum distances of:500m between petrol stations along one side of the road.
- 150m for the acceleration and deceleration lane.
- 15m from the edge of the road to the nearest pump.
- Locate at a minimum of 100m from any social facilities such as schools, religious institutions, public libraries, auditoriums, hospitals, clinics, theatres, public playgrounds, etc.
- Provide a buffer of 30m from any residential building for petrol pumps.
- Ensure provision of a 3m high perimeter wall on the side or rear boundary of the petrol station.

c. Petrol Filling Stations

- The minimum land size for petrol filling stations is 0.1Ha.
- Provide a minimum of 10m setbacks from the highways.
- Provide 80-100m acceleration and deceleration lanes as shown in Figure 44.
- Ensure a minimum distance of 1km between two petrol filling stations is maintained.

Figure 44: Illustration of acceleration and deceleration lanes

Source: Directorate of Physical Planning, 2025



5.31.3 Industrial Parks

Industrial parks (IPs) are an agglomeration of both light and heavy industries within a geographical area. They can comprise the EPZs, SEZs and County Aggregation and Industrial Parks (CAIPs)

Standards and Guidelines

- Provide a minimum land size requirement of 30Ha for EPZ and 400Ha for SEZ.
- Consider the following when siting industrial Parks:
    - Land availability and suitability
    - Proximity to rail lines, highways, airports, communication networks, dry ports, and/or sea or river ports, service providers and commercial activities
    - Compatibility to abutting land uses
    - Availability of raw materials, labour and ready market
- Provide for a diversity of plot sizes depending on the type of industry.
- Allocate special infrastructure zones for certification laboratories, quarantine services, and market intelligence units, where required.
- Allocate logistics zones including loading and unloading yards, parking lots, packaging facilities, transportation hubs, cargo-handling centres, raw material collection and storage depots, goods storage warehouses, etc.
- Provide for utility zones such as solid waste collection centres, power sub-stations, etc.
- Provide residential zones that cover employee housing, guesthouses and hotels.
- Allocate space for green zones such as green belts and buffer zones along the park's boundaries, lawns, parks and water features, internal walkways between zones, etc.
- Provide support infrastructure as recommended in Table 64.

Table 64: Recommended infrastructure within industrial parks

Infrastructure	Description
Internal roads	● Arterial and access/distribution roads network, with pedestrian walkways, to provide access to the entire park, as well as to the main highways nearby. ● Bicycle lanes and/or electric light-rail networks, as well as bicycle and/or electric golf-cart sharing systems, to reduce combustion engine-based vehicle dependency for short-distance commuting
Surface drainage	● Drainage on all roadways ● Gravity-based rainwater harvesting and rainwater storage tanks
Water supply	● Sufficient drinking and non-potable water, with separate distribution networks ● Wells, boreholes and reservoirs ● Water pumping station, water treatment plant and smart water metering
Sewerage	● Sewage and effluent collection and storage systems (separate for industrial and household needs) ● Systems for removal of contaminants from wastewater, storm run-off, and domestic sewage, through primary treatment of effluents ● Smart sewage metering
Solid waste management	● Segregation of wastes into different categories and colour-coded bins and containers (industrial hazardous and non-hazardous waste, biodegradable waste, non-biodegradable waste, e-waste, hospital and bio-medical waste, etc.)
Power supply	● Distribution substations at strategic locations, with a network of underground cables or overhead lines ● On-site renewable energy (rooftop solar PV panels or solar farm to serve the park) ● Smart energy metering
Street lighting	● Conventional or solar street lighting ● Smart energy-efficient lighting
IT connectivity, telecommunication, and ICT-enabled resident services	● High-speed Wi-Fi and internet services ● Robust data infrastructure system
Landscaping, public open spaces and green cover or vegetation	● Trees along the boundary and roads ● Open spaces of various types - natural, plazas, parks, or recreation areas (international planning norms require at least 10 % green space) ● Green buffers between zones ● Bio-diversity and planned planting of native flora
Specialized industrial support infrastructure	● Standard factory shells and warehouses with smart, sustainable building design ● Public depot warehousing and cold storage facilities ● Quality assurance services and quality control laboratory ● Truck parking and weighing station ● Fuel pumping station ● Administrative building, operation centre, exhibition centre and showrooms ● Banks, post offices, customs office

	● research and development, incubation, training, innovation and knowledge hub ● Market intelligence centre, one-stop shop, logistics and parking centres
Safety and Security	● Public safety infrastructure, including lighting and CCTV surveillance systems ● Emergency response centre (accidents and first aid, fire and chemical hazards, security incidents, natural disasters and crises, etc.) ● Healthcare centre, medical facilities ● Live air quality monitoring through a smart environment monitoring system ● Licence plate monitoring and speed control
A social and commercial centre	● Buildings for shopping and culture (restaurants, supermarkets, sports facilities, etc.) ● Environment-friendly apartment complexes ● On-site daycare ● Auditorium and meeting rooms suitable for educational/training activities, business meetings, conferences, and community meetings ● Off-site infrastructure

Source: Directorate of Physical Planning, 2025

a. County Aggregation and Industrial Parks (CAIPs)

The County Aggregation and Industrial Parks (CAIPs) are zones for the development of agro-industries for purposes of promoting manufacturing and investments established in each of the counties.

Standards and Guidelines

- Provide for the establishment of CAIPs guided by the availability of raw materials;
- Provide a minimum land size requirement of 40Ha.
- Prepare a detailed master plan that outlines the layout, infrastructure requirements, and zoning regulations for the CAIP.
- Can be located either within a county or two or three counties can come together to create joint CAIPs on their common border.
- Ensure the CAIP is well-connected to major transportation routes.
- Undertake a county-specific needs assessment and analysis of the competitive advantage of counties to identify the specific agricultural products, value chains, and market opportunities relevant to the county.
- Provide land for:
    - essential utilities: water, electricity, communication cables, fibre optic cables and waste management systems.
    - shared facilities like houses, cold storage, testing laboratories, and training centers to support businesses in the park.
    - facilities for collecting, sorting, grading, cleaning, packaging, and storing agricultural produce.
- Include cold storage and facilities where applicable.
- Promote the use of renewable energy sources and energy-efficient technologies.

5.32 New Paradigms in Urban Development

New paradigms in urban development include techno cities, smart cities and resort cities. These new approaches are unique in design, function, efficiency and sustainability. They are a response to the evolving economic, social and environmental needs and as such, they require innovative standards and approaches to their planning and management.

5.32.1 Smart Cities and Techno Cities

A smart city can be defined as a sustainable city where various city services are provided based on city infrastructure constructed by converging and integrating construction technologies and ICT to enhance its competitiveness and livability.

A Techno city or Technopolis is a sustainable, world-class technology hub that connects human capital, social capital and ICT infrastructure to address public issues, achieve sustainable development and increase the quality of life of its citizens.

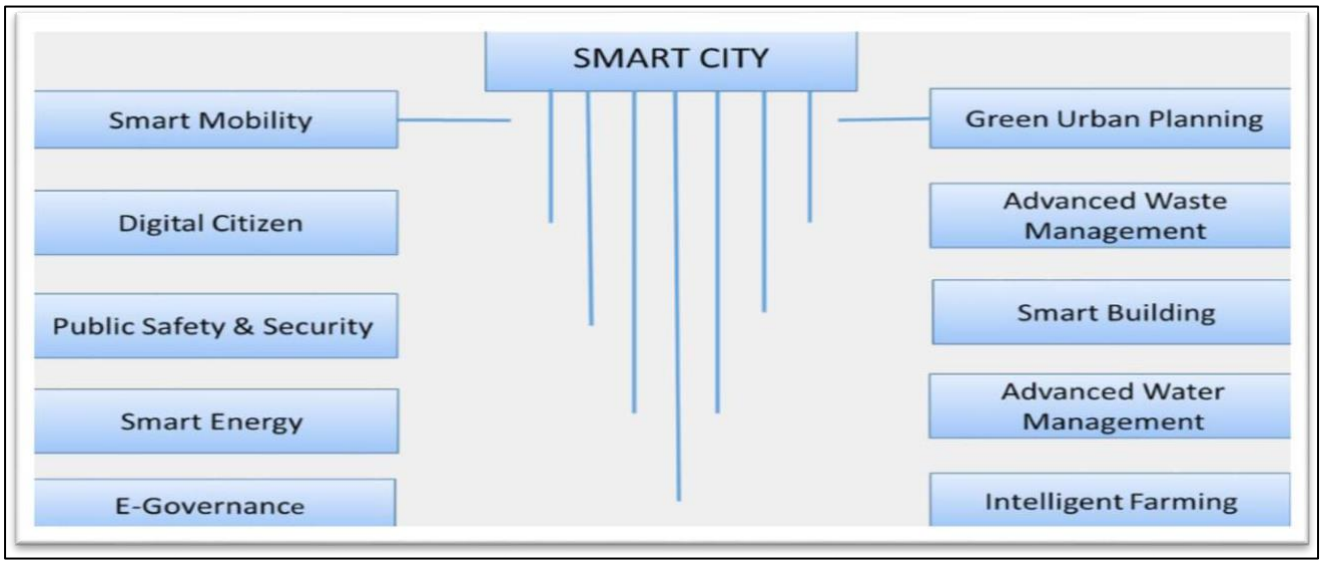
Components of smart cities

A smart city is determined using a set of characteristics, including:

- An infrastructure based on technology.
- Environmental protection initiatives.
- Effective and highly functional public transportation.
- Progressive physical and land use development plans.
- People can live and work within the city, using its resources.
- Collaborative planning and citizen participation.

Figure 45 illustrates various aspects and factors to consider when planning a smart city.

Figure 45: Characteristics of a Smart City



Source: Directorate of Physical Planning, 2025

Standards and Guidelines

- The minimum land size is 1000Ha.
- Delineate a minimum of 10km buffer zone plan around the city. The buffer should start from the edge of the smart city.
- Locate in urban growth centers with good transportation and technological infrastructure.
- Integrate green energy principles in building designs.
- Promote mixed land use, containing a range of compatible activities.
- Promote infrastructure development and base it around technology.
- Provide community gardens.
- Encourage the provision of secure and transparent infrastructure.
- Ensure self-sufficient cities whose people can live and work within, using its resources.
- Provide robust ICT Infrastructure, power supply, water supply, water treatment plant and water reclamation facility.
- For existing cities, consider city improvement, city renewal and city extension plus a pan-city initiative when upgrading to smart cities.

5.32.2 Resort Cities Planning

A resort city is an urban area where tourism or vacationing is the primary component of local culture and economy.

Standards and Guidelines

- Locate these centres as guided by tourist attractions.
- Minimum land size of 500Ha.
- Delineate a minimum of 10 km buffer zone plan around the city.
- Integrate tourism zones with major communication and transportation networks and economic resources.
- Preserve the ecosystem and the primary attraction.
- Cluster and integrate related secondary attractions.
- Encourage mixed-use and compact pattern designs.
- Plan for the location of basic support services such as electricity substations, water reticulation systems and waste disposal sites.
- Prepare a buffer plan establishing the growth limit of the city and directing urban growth away from environmental assets and rich agricultural land.
- Regulate development in scenic and sensitive landscapes to minimize impact on the surrounding natural environment.
- Discourage developments along major wildlife corridors, environmentally sensitive areas and environmentally fragile ecosystems.

5.32.3 Sport Cities and Sports Hub

A sports city is a planned city that is designed and developed with a focus on sports and physical activity. A sports hub is a site/centre with multiple sporting facilities that allow for a variety of sports to be played.

Guidelines

- Locate in high altitude areas.
- Plan for stadiums, arenas, training facilities, community sports centers, sports medicine clinics and

retail stores.
- Plan for hotels, restaurants, and other amenities to cater to sports fans.
- Design public spaces that encourage interaction and celebrate the spirit of sport.
- Provide for traffic segregation along the trunk roads where athletes can train outside the stadiums.

5.32.4 One-stop Border Posts

These are specialized border crossing points that aim to streamline and facilitate trade and movement of goods and people between neighboring countries.

Guidelines

- The size and capacity of an OSBP should be determined by the volume of cross-border traffic it is expected to handle.
- Plan for parking, logistic and storage facilities
- Provide space for integrated facilities and installation of modern technology to facilitate clearance processes.
- Plan for support facilities such as hotels, residential, commercial, health, educational, recreational, waste management, utilities, security and administration.

5.32.5 Metropolis and Megacities

Metropolitan area(s) are urban agglomerations or systems of cities (including urban, peri-urban and surrounding rural areas) that consist of more than one municipality. These surrounding areas are economically and socially linked to the main city through factors like commuting, shared infrastructure, and industries. It's about the urban core and its sphere of influence. Typically has a large population, generally starting around one million people.

A megacity is a very large urban centre with a population of more than 10 million people that is often made of two or more urban areas that have grown so much that they are connected.

Guidelines

- Prepare physical, land use development plans for metropolises and megacities, and integrate with existing Plans.
- Prepare sustainable mobility plans.
- Plan and develop sustainable regional infrastructure projects, e.g., roads, water, sanitation markets and collection centres, etc., to stimulate sustainable economic productivity and strengthen urban-rural linkages.

5.33 Green Spaces

These are areas or landscapes that are undeveloped (do not have buildings or other built structures) and are partly or completely covered with grass, flowers, trees, shrubs, or other vegetation. They include playgrounds, gardens, parks, forests, natural water bodies, etc., set aside for ecosystem sustainability and recreational and aesthetic purposes.

Standards and Guidelines

- Identify, map and prepare an inventory of all existing green spaces,
- Adopt hierarchy in the designation of land for green spaces as shown in Table 65

:

Table 65: Land size requirements and distribution of green spaces

Area	Minimum land size	Distribution
City	5-10Ha distributed	Prominent locations in the city, at the urban fringe areas, or in proximity to major transport interchanges.
Municipality	5Ha distributed	• Prominent locations within the urban area and at the urban fringe areas • Providing facilities for recreational activities of an urban population.
Town	2Ha	
Market Center	1Ha	
Local center/ Neighborhood	0.15Ha,	Providing sitting-out areas and children's playgrounds to serve the neighborhood population.

Source: Directorate of Physical Planning, 2025

- Consider age group and population density when determining the type of green space.
- Prepare detailed site plans for green spaces to enable sustainable use.
- Provide public access with a minimum of 12m.
- Locate close to:
    - neighborhoods to ensure minimum time spent accessing green spaces.
    - car or bus dropping-off points.
    - amenities and facilities such as community centres and social halls, health centres, local shops, police stations, and primary and secondary schools to enhance safety.
- Integrate with other green spaces through walkways, cycling trails and greenways.
- Encourage the planting of trees and other vegetation to enhance the aesthetics and break the monotony of concrete.
- Provide infrastructure for people living with a disability, such as ramps and visual aids, to access green spaces.
- Encourage provision of outdoor gym equipment.

Tables 66 & 67 provide the planning standards for green spaces using the catchment population

Table 66: Planning standards for green spaces using the catchment population

Type Of Green Space	**Location**	**Minimum Land Size**	**Catchment Population**	**Distance To Green Space**	**Building Site Coverage**	**Facilities**	**Prohibited Uses**
Play Ground	▪ Residential Areas ▪ Ecde Schools	0.15Ha	1000	400m	≤5%	▪ Restroom ▪ Benches ▪ Water Points ▪ Litter Bins ▪ Bicycle Racks	▪ Car Parking & Driving ▪ Shops ▪ Dumping
Gardens	▪ Neighbour Hoods ▪ Major Nodal Points ▪ Secondary Roads ▪ Central Business Districts ▪ Hospitals ▪ Commercia L Areas ▪ Governme Nt Offices	0.1Ha	2000-5000	400m-2km	≤10%	▪ Picnic Shelters ▪ Benches ▪ Restrooms ▪ Lighting ▪ Litter Bins ▪ Children Recreation Furniture	▪ Car Parking ▪ Kiosks ▪ Dumpsites ▪ High-Rise Buildings

Parks	▪ Neighbour Hoods ▪ Towns ▪ Cities ▪ High-Density Areas ▪ Peri-Urban/Urban Fringe Areas ▪ Conservati On Areas	0.4Ha	No Limit	▪ 1.2-8km (Parks Within Neighbo Urhoods) ▪ No Limit For Large Parks Within Cities And Peri-Urban Areas	O≤10%-(Small Parks) O ≤20% (Large Parks)	▪ Benches ▪ Restrooms ▪ Picnic Shelters ▪ Fountains ▪ Restaurant ▪ Litter Bins ▪ Sculpture And Artworks ▪ Water Sports Features & Equipment	▪ Kiosks ▪ Dumpsites ▪ Cultivation ▪ Petrol Filling Stations ▪ Residential Houses ▪ Commercial Buildings ▪ High Rise Buildings ▪ Electric Power Plants
Urban Nature Trails	▪ Neighbour Hoods ▪ Conservati On Areas ▪ Disused Railways & Quarries	15-30m Wide	No Limit		-	▪ Benches ▪ Lighting ▪ Restrooms ▪ Litter Bins	No Development Allowed

Source: Directorate of Physical Planning, 2025

Table 67: Planning standards for green spaces using circulation space

Type Of Green Space	Location	Circulation Space	Building Site Coverage
Play Ground	▪ Residential Areas ▪ ECDE Schools	$0.5m^2$	≤5%
Gardens	▪ Neighborhoods ▪ Major Nodal Points, ▪ Secondary Roads, ▪ Central Business Districts ▪ Hospitals ▪ Commercial Areas ▪ Government Offices	$1m^2$	≤10%
Parks	▪ Neighborhoods ▪ Towns ▪ Cities ▪ High-Density Areas ▪ Peri-Urban /Urban Fringe Areas ▪ Natural Spaces Such As Rivers, Forests	$2m^2$	≤10%- Small Parks ≤20% Large Parks
Urban Nature Trails	▪ Neighborhoods ▪ Nature Conservation Areas Such As Rivers And Forests ▪ Disused Railways		-

Source: Directorate of Physical Planning, 2025

5.33.1 Urban Greening Strategy

Urban greening is the process of landscaping and foresting urban areas to create mutually beneficial relationships between city dwellers and their environments, thereby contributing to improved quality of life. It includes:

- **Skyrise greening-** is a strategy aimed at extending greening skywards in the built environment. It refers to both rooftop and vertical greenery.
- **Roof greening-** characterized by planting works on structural slabs with a main focus on the horizontal dimension. Typical examples include roof gardens and greening on top of noise enclosures.
- **Vertical greening**- refers to greenery on vertical facades and surfaces. They include planting of climbing and/or weeping plants along the edges of buildings or structures.

General Guidelines

- Identify and designate tree conservation areas, roads and sites with a significant number of champion trees, i.e., the largest known trees of a particular species.
- Revitalize dry and old river courses or canals by cleaning the watercourse in conjunction with the greening of the banks to create blue ways bordered by greenways to serve as linear urban parks.
- Strengthen local knowledge and the capability of urban greening

- Protect nature-in-city assets, involving spontaneous natural remnants, champion-caliber tree stock, tree preservation in construction sites, salvaging outstanding trees by transplanting, and timely tree care.
- Encourage green walls to bring benefits similar to green roofs, plus the more prominent visual amenity to invigorate the cityscape

a. Greening in residential developments

- Maintain a minimum standard of 0.1m^2 per person of local open space in public housing developments and comprehensive residential developments.
- Observe a minimum of 10% green coverage.
- Encourage roof greening designs in high-density residential areas.
- Encourage green hedges to increase visual amenity.

b. Greening in industrial developments

- Ensure provision of green spaces in physical and land use development plans.
- Observe a minimum of 10% plot coverage for landscaping use.
- Maintain a minimum standard of 0.05m2 local open space per worker.
- Encourage the provision of communal podium gardens and sky gardens with greenery on industrial buildings.
- Rehabilitate disused quarries for alternative uses such as nature trails.

c. Greening in commercial developments

- Observe a minimum of 0.02m^2 local open space per worker for landscaping.
- Use setbacks for urban greenery.
- Encourage roof greening in building plans.
- Encourage green hedges to increase visual amenity.

d. Greening in utilities

- Avoid planting trees or shrubs with penetrating roots within 3m from the center line of any existing or proposed water mains and 3m from the edge of drainage pipes. Clearance distance can be reduced to 1.5m if the size of the water mains affected is below 600mm.
- Avoid planting trees or shrubs within 1.5m around the covers of manholes, and hydrant valves, or within 1m from the hydrant outlet.
- Encourage the use of sky-rise greenery, vertical greening and buffer strips to screen off the utility facilities for aesthetics.
- Integrate drainage channels/systems with greenery.

e. Greening in roads and highways

- Encourage the planting of trees along pavements and road corridors.
- Prohibit planting of trees and/or shrubs and other under-story plants that obscure visibility.
- Locate planter beds and tree pits away from underground utility services and manholes.
- Encourage planting of trees and shrubs after road construction to restore the natural environment.
- All uses within all residential and industrial zones adjacent to major roads shall maintain planted tree strips along the roads. The strips shall consist of visual obstructions from the ground to a height of at least 9m (30 feet) at maturity, including evergreen trees planted.

f. Natural Recreational Facilities

These are located near forests, mountains, hills and water bodies.

Standards and Guidelines

- Provide a minimum of 12m access roads to the sites.
- Provide support amenities like public toilets, parking, waste management, and security.
- Permitted activities include hiking, jogging, camping, boating, swimming, fishing, and biking.

5.34 Land Use Planning and Disaster Risk Management

The manifestation of disaster risks and hazards on land may be broadly classified under four major categories, namely:

- **Environmental:** Floods, drought, landslides, fires, rock falls, earthquakes, tsunamis, heat waves and locust invasions.
- **Economic:** political violence, economic recession, inflation and factory and market fires.
- **Social:** pandemics/diseases, displacements, riots and resource use conflicts.
- **Occurrences on infrastructural facilities and utilities:** accidents, collapse of mines, collapse of buildings, road accidents, fires, oil spillages, hazardous materials, and technological risks

All disasters occur on land and may lead to loss of life, damage to property and reduction of well-being. Land use planning is the arrangement of activities in space for purposes of efficiency, safety, welfare and sustainability. It is a valuable tool for disaster risk reduction. Disaster risk reduction, therefore, is a component of the practice of planning and should be mainstreamed.

Table 68 shows a summary of disaster risks and how they can be mitigated/ managed.

Table 68: Disaster Risk Management

Disaster Risk	Mitigation
Natural and artificial hazards, including earthquakes, storms, volcanic eruptions, and explosions among others	• Identify and plan vulnerable, hazard-prone and environmentally sensitive areas. • Encourage periodic risk assessments, monitoring and early warning approaches. • Identify and integrate evacuation sites in plans. • Provide for emergency operation centers within cities • Observe specific zoning restrictions such as setbacks, buffer zones for high-risk areas. • Restrict/limit development in hazard-prone areas. • Integrating developments with disaster-resilient urban design and technology • Provision of acoustic insulation in establishments that produce loud noises

Floods	• Preparation of a flood mitigation plans • Provide a system of open spaces within the city or towns to regulate water percolation. • Create artificial floodplains in cities. • Encourage harvesting and reusing stormwater by Installing pipes, reservoirs and other conduits • Encourage use of contemporary drainage technologies such as bio-retention, vegetated swales.
Fires	• Provide fire assembly points; with fire hydrants and fire sensors installed at strategic points. • Provide adequate circulation spaces for ease of movement and evacuations • Designate specific smoking zones
Land pollution	• Encourage recycling, reusing, and reduction of waste in green spaces • Preparation of a waste management plan
Climate change and degradation of biodiversity features	• Provide green spaces and urban forest belts in development plans • Encourage the use of energy-efficient systems and smart waste management systems • Promote NMT through the provision of adequate spaces for NMT facilities • Promote the use of green energy such as solar, biogas, wind • Installation of exhaust air scrubbers to filter the noxious gases • Promote the use of greenbelts for buffer zones

Source: Directorate of Physical Planning, 2025

6 CHAPTER SIX: HUMAN RESOURCE AND OFFICE REQUIREMENTS

6.1 Overview

Human resources and office requirements are key requirements in ensuring that physical and land use planning services are carried out effectively by planning authorities at the national and county levels of government. This chapter provides the office requirements and human resource requirements for physical and land use planning authorities and firms.

6.2 Office Requirements of a Physical and Land Use Planning Authority

i. Development Control Unit

Section 20(h) of the Physical and Land Use Planning Act, 2019 provides that the County Director of Physical and Land Use Planning shall issue development permission and other development control instruments with the approval of the County Executive Committee Member.

ii. Land Information System

Section 20(h) mandates the County Director of Physical and Land Use Planning with the responsibility of maintaining a land information system to guide physical and land use planning.

iii. Funding

Implementation of plans will require appropriate financial resources. A range of funding opportunities exists, including National Government Funding Programs, donor funding and public-private partnerships.

iv. Physical Planning Departments

These departments are tasked with the administration and management of physical and land use planning in Kenya.

v. Constant periodic training of staff

Periodic training improves the knowledge and skills of staff, therefore enhancing performance.

vi. Electronic Document Management Systems

The digital system seeks to improve service delivery in land administration and management. It facilitates development control by speeding development application processes and providing timely information to decision-makers.

vii. Geographical Information System Laboratory

This will promote the utilization of the Geographical Information System in capturing, storing and displaying spatial data.

viii. Office equipment (computers, stationery, workstations, cabinets etc)

Office equipment such as computers, stationery, workstations, and cabinets, among others, is vital for increasing the overall functioning speed of an office and its staff members.

6.3 Human Resource Requirements of Physical and Land Use Authorities

For the planning authorities at both levels of government to deliver their mandate, the following staffing levels are required, with the recommended planner-to-population ratio being 1:15,000.

6.3.1 National Physical and Land Use Planning Authority

Human Resource Requirements of a National Physical and Land Use Planning Authority are provided in Table 69.

Table 69: Human Resource Requirements - National Planning Authority

S/NO.	DESIGNATION
1.	Director General
2.	Director (As per the Divisions)
3.	Deputy Director
4.	Assistant Director
5.	Principal Physical Planner
6.	Senior Physical Planner
7.	Physical Planner
8.	Principal Physical Planning Assistant
9.	Senior Physical Planning Assistant
10.	Physical Planning Assistant

6.3.2 County Physical and Land Use Planning Authority

Table 70 provides the Human Resource Requirements of a County Physical and Land Use Planning Authority.

Table 70: Human Resource Requirements- County Planning Authority

S/NO.	DESIGNATION
1.	County Director for Physical and Land Use Planning
2.	Deputy County Director of Physical and Land Use Planning
3.	Assistant County Director in Charge of Divisions
4.	Principal Physical Planners

5.	Senior Physical Planners
6.	Physical Planners
7.	Physical Planning Assistants
8.	GIS technicians
9.	Enforcement officers
	Building Inspectors

NOTE: The aforesaid officers will closely work with technical officers from the County Government departments, namely: surveyors, architects, civil and structural engineers, enforcement officers, public health officers, and environmentalists.

The proposed Five (5) Divisions include: Forward Planning, Research & Policy, Development Control, Enforcement and Compliance, Urban Design and Development.

The urban institutions (City, Municipality, and Town Committees) will have their planning departments as provided for under the Urban Areas and Cities Act, 2011.

6.3.3 Human Resource and Office Requirements for Physical and Land Use Firms

The Physical and Land Use Planning Act, 2019, introduces the procurement of planning services. For this to actualize, planning firms are expected to have the following human resource requirements:

- Principal Consultant (Registered and Practicing Physical Planner)
- Physical Planners
- Assistant Physical Planners
- GIS Experts
- Urban Designers
- Planning Interns

The basic office equipment requirements include**;**

- Workstations (desk, chair, computer)
- File cabinets
- High-speed internet access
- Paper shredder, stapler and paper punch
- Backup drive
- Laptops and computers
- Printer or Multipurpose machine
- Uninterruptible Power Supply (UPS)
- Telephone and/or VoIP
- Surge protector
- Extension cables
- Relevant computer and GIS software
- Network Router
- Adequate storage
- RTK and GPS

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8 APPENDIX 1

Components of Blue Economy

Category	Subcategory	Related Industries/Sector
Harvesting and trade of marine living resources:	Seafood harvesting	Primary fish production
		Secondary fisheries and related industries (e.g., processing, net and gear making, ice production and supply, boat construction and maintenance, manufacturing of fish- processing equipment, packaging, marketing and distribution)
		Trade of seafood products
		Trade of non-edible seafood products
		Aquaculture
	Usage of marine living resources for pharmaceuticals and chemicals	Marine biotechnology and bioprospecting
	Harvesting of marine flora for none food purposes	Use for construction materials e.g. fencing
Extraction and use of marine non- living resources	Extraction of minerals	Seabed mining and shoreline sand harvesting
	Extraction of energy sources	Oil and gas
	Freshwater generation	Desalination
Use of renewable non-exhaustible natural forces	Generation of offshore renewable energy	Renewables including: Offshore, wind, tidal, wave and ocean thermal energy conversion
Commerce around the oceans	Transport and trade	Shipping and ship building, maritime transport, ports and related services
	Coastal development	Coastal urbanization
	Tourism recreation and	Seaside leisure tourism, dive tourism, maritime archaeology, surfing, cruises, ecotourism, recreational fishing operations, marine parks, historical and cultural sites
Ecosystem services and resilience	Blue Carbon	Carbon sinking through mangrove forests
	Coastal Protection	Restoration of the coastal belt
	Biodiversity	Protection of marine species and their habitats through Marine Protected Areas (MPAs).

Source: Directorate of Physical Planning, 2025

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