



**NAIROBI CITY  
COUNTY**

# **INFRASTRUCTURE ASSET MANAGEMENT: CASE OF NAIROBI CITY, KENYA**

**INTERNATIONAL MAYORS FORUM  
DAKAR, SENEGAL**

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# Presentation Outline

- Background information on Nairobi
- Infrastructure Asset Management
- Approaches to Infrastructure Assessment management in Nairobi City
- Takeaways

# CONTEXT: NAIROBI KENYA

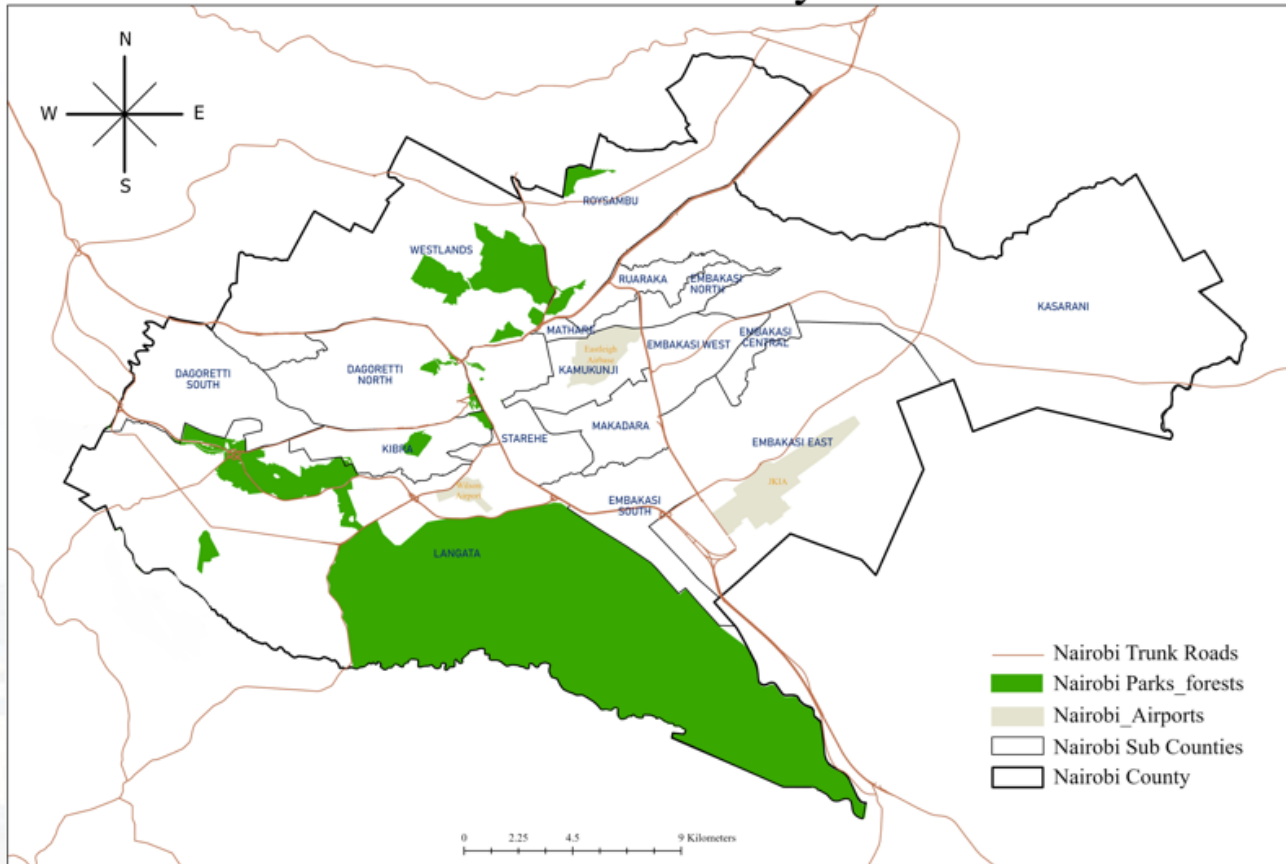




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# Nairobi Administrative Map

Nairobi County



- Land Area – Approximately 700 Km<sup>2</sup>
- Population – 4.3 Million
- Growth rate- 4.1%
- Contributes 60% of Kenya's GDP
- Nairobi National Park- a park within the city boundary covering 100Km<sup>2</sup>

- Capital of Kenya
- Located at an altitude of 5672m above sea level.
- Has 17 administrative units (Sub-counties) and 85 Wards





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# Governance Structure

- Kenya has a two tier system of Government i.e. the National Government and the County Government. There are 47 County Governments. The Nairobi City County Government is one of the Counties and the Capital city.
- The governance structure comprises the executive arm and the legislative arm. The Executive arm is headed by a Governor and is an elective post every five years. The Governor heads the Executive committee which comprises County Executive Committee members responsible for the various 10 functions devolved from the National Government.
- The Legislative arm is the County Assembly which is headed by the Speaker and comprises 85 elected Ward representatives and 38 nominated members. Their main responsibility is to oversee the executive, budgeting, formulation of laws and policies and representation of the electorate to ensure infrastructure assets are planned and operated in a transparent manner.

# SDG Implementation Status



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- The SDG implementation mandate is under the Ministry of National Treasury and Economic Planning. It is the focal point for the Voluntary Local Reviews.
- Ministries, Departments and Agencies at County and National Government level are mandated to mainstream their activities to the national Vision 2030 strategies and the SDGs.
- So far two reports have been prepared to evaluate the status of SDGs in the country.
- The policy direction is more inclination to inclusivity and expanding spaces where diverse voices can be heard in decision making to achieve sustainable development
- There is a lot of interlinkages across the SDG targets as one goal has correlation to others so they cannot be addressed in isolation.

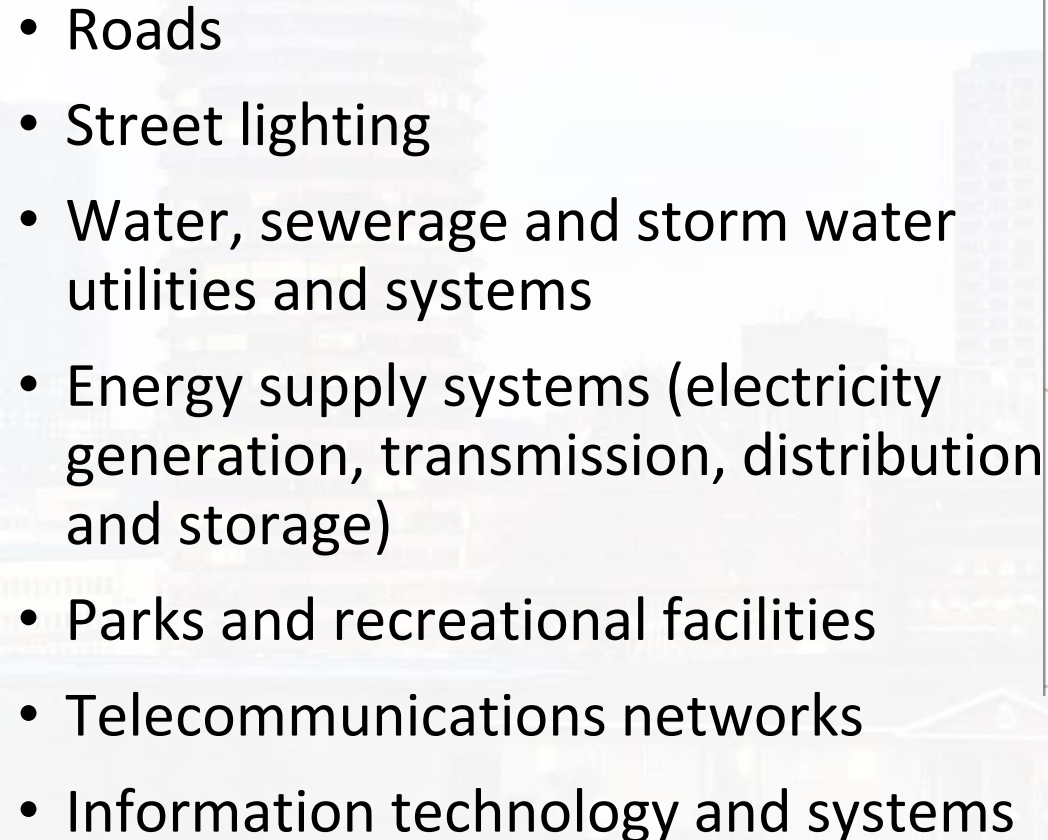


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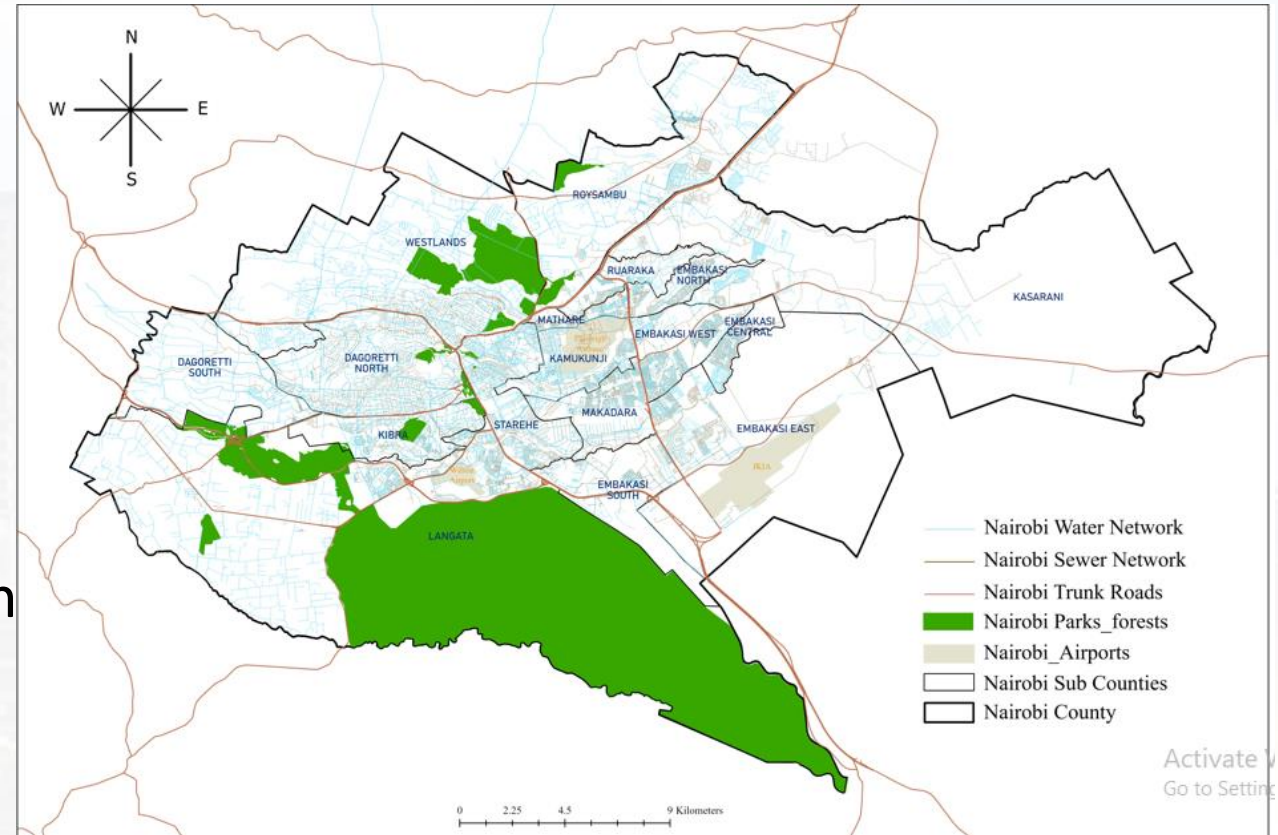
# Infrastructure Assets

- Infrastructure assets are all the physical assets that are essential to the delivery of basic public services and are owned or managed by a local or central government.
- Asset management allows governments to maximize both the financial and the service value of physical assets to the benefit of communities.
- A critical first step in the asset management journey is for governments to take stock of the assets they own or manage.
- Assets have to be managed adequately over their entire life cycles to ensure that initial investments in new infrastructure are sustained for present and future generations.
- Each phase of an asset's life cycle (planning, acquisition, use and disposal) requires policies and actions that draw on human, material and financial resources.





- Roads
- Street lighting
- Water, sewerage and storm water utilities and systems
- Energy supply systems (electricity generation, transmission, distribution and storage)
- Parks and recreational facilities
- Telecommunications networks
- Information technology and systems





# Key Aspects of Nairobi Infrastructure:

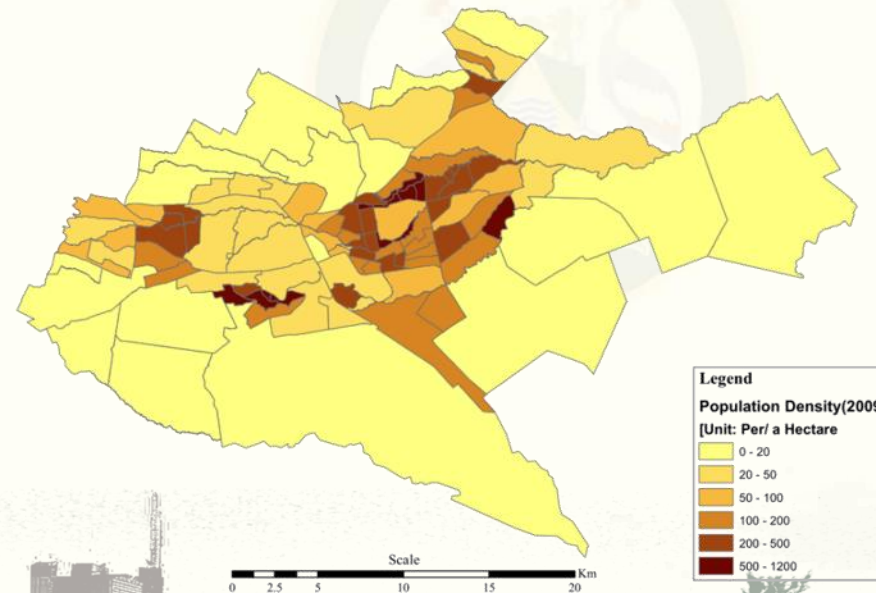


Spatially, most of public infrastructure has been supplied to Western, Northern and Central parts of the city. Lower provision is seen to the Eastern and Southern parts



Most of infrastructure provision is demand driven & public sector provided, management is insufficient

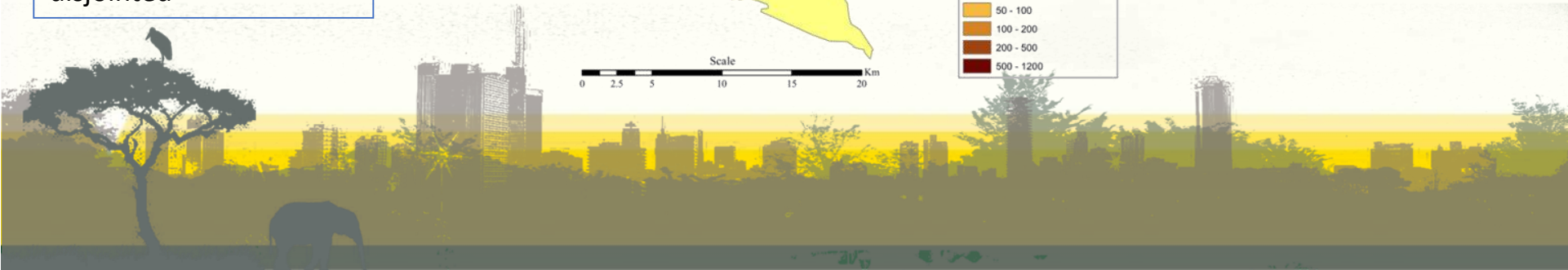
Increasing population exerts pressure on existing infrastructure and requires upgrading



Development, maintenance & management of infrastructure requires substantial technical & financial resources

Most infrastructural interventions are disjointed

Strengthening framework for stakeholder engagement & participation is a priority





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# Benefits

Best practices in asset management yield many benefits for local authorities, central governments and communities:

- Economic sustainability is enhanced by reducing the cost of delivering services.
- Social equity and benefits are realized because the community has more resources for services and amenities.
- Environmental sustainability and reliance are stronger because resources are conserved, and attention is given to long-term solutions rather than short-term affordability or convenience.
- Proper valuation of natural assets, such as land, lakes, rivers and groundwater, helps mobilize resources and political will to protect them and to ensure they serve present and future generations.
- Governments can improve the resilience of public services to a variety of hazards, including climate change and health-related emergencies.
- Citizens enjoy better, more dependable services without unexpected failures or indefinite interruptions.

# Approaches for Infrastructure Assets Management in Nairobi

## Enabling Policy and Legal instruments

- The overriding objective of the Kenyan Government is to transform the country into an industrialized middle income country offering a high quality of life in a clean and secure environment.
- In pursuit of this objective, the government places great emphasis on achievement of the Sustainable Development Goals as panacea for attaining a balanced socio-economic development.
- The Kenya Vision 2030 comprising of three key pillars; Economic, Social and Political provides the frameworks for the integration of the three dimensions of sustainable development.
- Requirement by National environmental law for all projects to undergo social and environmental assessment prior to commencement.



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LAWS OF KENYA

CONSTITUTION OF KENYA, 2010

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# Approaches for Infrastructure Assets Management C'td



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## Planning and integration of SDGs into National Policies and Plans

- Under the devolved system of government, functions are shared between the national and county governments. The county governments are required to develop five year County Integrated Development Plans (CIDPs). These include infrastructure assets to spur development.
- Kenya Vision 2030 strategies directly and indirectly address the targets of Global 2030.
- The Constitution 2010 provides that sustainable development is a national principle and value and provides for efficient, equitable, sustainable and productive management of land resources.
- The Nairobi Integrated Urban Development Master Plan provides a framework for equitable development through a rational utilization of space. The plan has a structure plan aimed at integrating land use and transportation planning. There are infrastructure strategies/programs in the Plan.

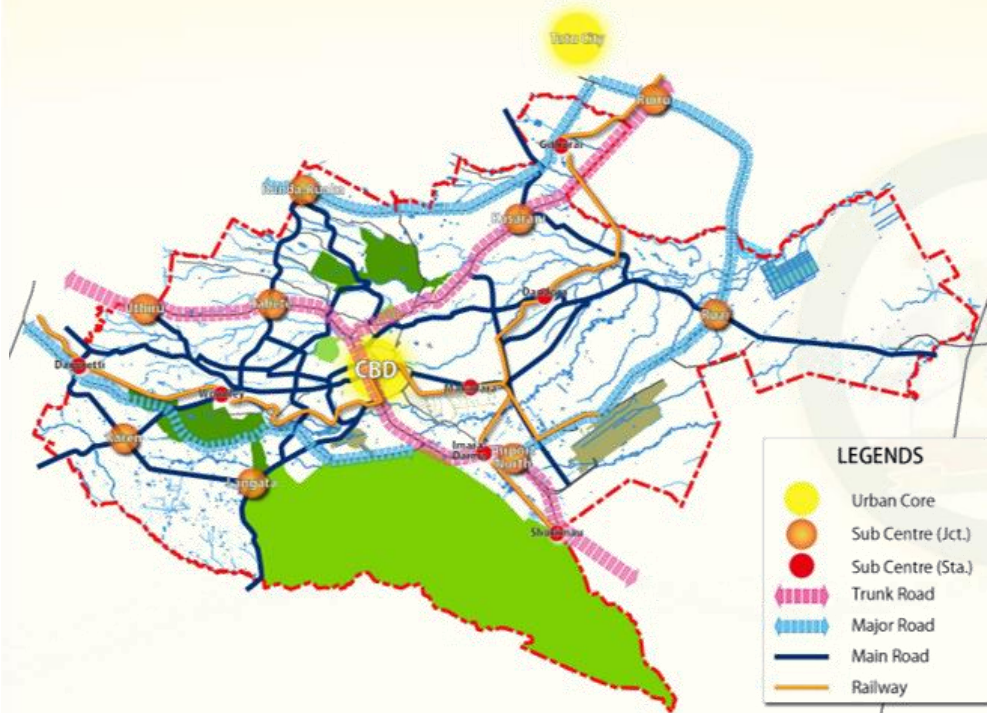
NAIROBI CITY COUNTY



COUNTY INTEGRATED DEVELOPMENT PLAN  
(CIDP)  
2018-2022



# Sub - Centre development



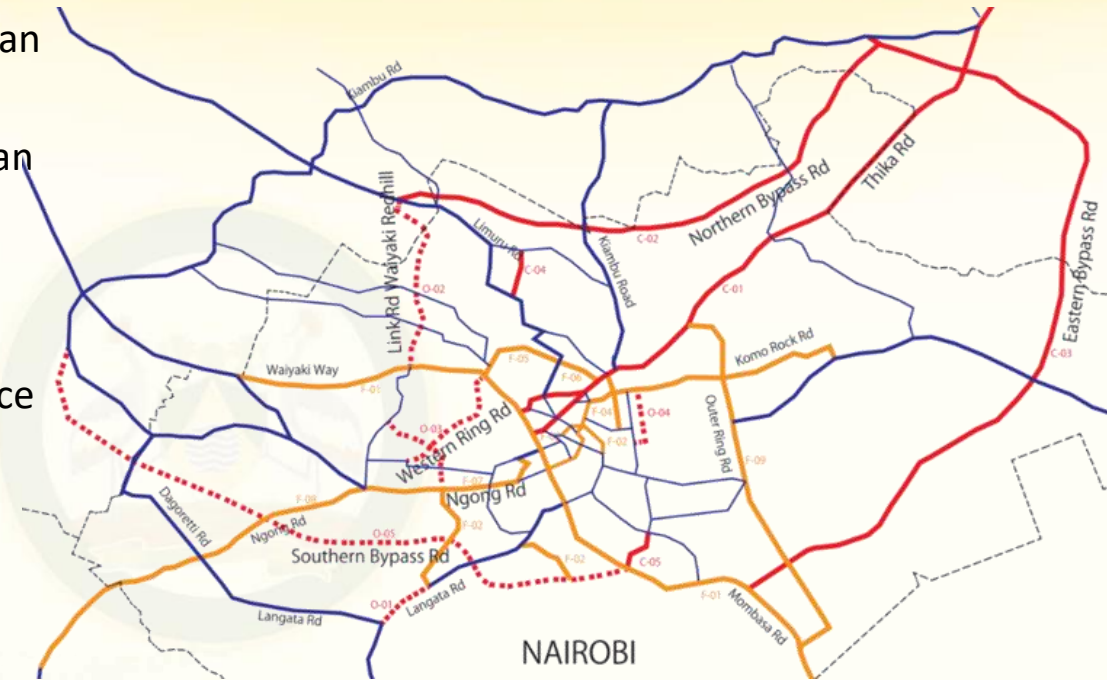
- Major Commercial, Retail & Business centres
- Centres will require Transport Networks
- Water supply, Sewerage & Telecommunications,
- Social & Community Infrastructure
- Public Transport Facilities.
- Energy Infrastructure
- Small & Medium Enterprises Infrastructure



# Urban Transport Development.



- Support to forming urban structure, Urban core revitalization & the Sub-Centres.
- Development of a common duct for urban services.
- Development of BRT along identified priority corridors.
- Infrastructure Development at to enhance commuter rail service.
- Implementation of Intelligent Traffic Management System.



## Legend

- Completed
- ..... Under Construction
- Under Design



# Urban Transport Development.



## Planned Route of Nairobi Metro Line 1



- Adopting Linear Motor System (Linear Metro) connecting between Show Ground and Kasarani.
- Line length 19.69 km with 15 stations.
- Electrified double track operation.
- Standard Gauge Track.
- 6 car – 8 car train, depending on the future demand.
- Station: every 1.0 to 1.5 km distance.
- Maximum speed: 70 - 80 km/h.
- Transportation Capacity: PHPDT 30,000 to 60,000
- Construction Contract: Design-Build
- Construction period: 4.5 to 5 years (including Detailed Design by the Contractor).
- Estimated Project Cost: USD 1.8 to 2.0 billion approx.







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# Approaches for Infrastructure Assets Management C'td

**To mitigate flooding, improve urban accessibility, mobility and safety, the following have been undertaken in recent past**

- Non-Motorized Transport (NMT) constructed; The pedestrianisation of most roads has been done
- Improvement of storm water drainage
- Increase in street and security lighting
- 3 No. Bus parks completed in Nairobi to improve mobility
- 20 No. hospitals in informal settlement areas constructed
- Markets completed in various parts of the city
- Missing link roads constructed in various parts of the city
- Tarmac roads in informal settlements to enhance mobility
- Increased waste management efforts



# Approaches for Infrastructure Assets Management C'td



## Administrative Actions at local level

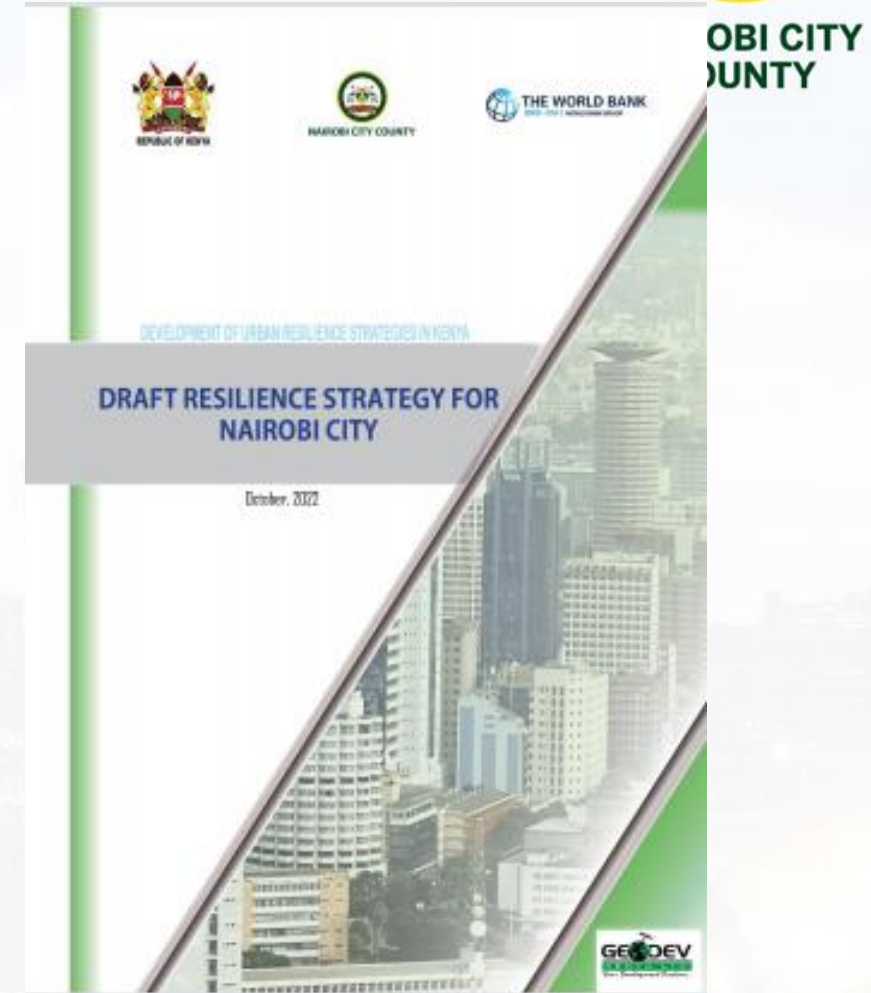
- Activities at Ward and Sub-county level

For example for mitigation against flooding and damage to roads:

--Regular cleaning of drains, proper solid waste management

## Continuous studies

- Studies with strategies on integration of climate mitigation measures in design of assets. Currently a study on urban resilience strategies for Nairobi city is underway. The aim is to identify strategies to deal with shocks in the infrastructure.



# Approaches for Infrastructure Assets Management C'td



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## Integration of Economic, Social and Environmental Dimensions in Budgeting

- The Constitution of Kenya 2010 stipulates that “Integrated Development Planning” will govern the preparation of national annual budgets and those of the counties and that no public funds will be appropriated without a planning framework.
- Budgeting for infrastructure funding is done within the framework of County Integrated Development Plans. The main sources of funding are: National government, Own source revenue, Development partners.
- For road and transport, the function is split between the County Government and the National Government. National Government agencies-Kenya Highways Road Authority, Kenya Urban Roads Authority and Kenya Rural Roads Authority are responsible for the main highways across the county while the County government takes care of local roads.



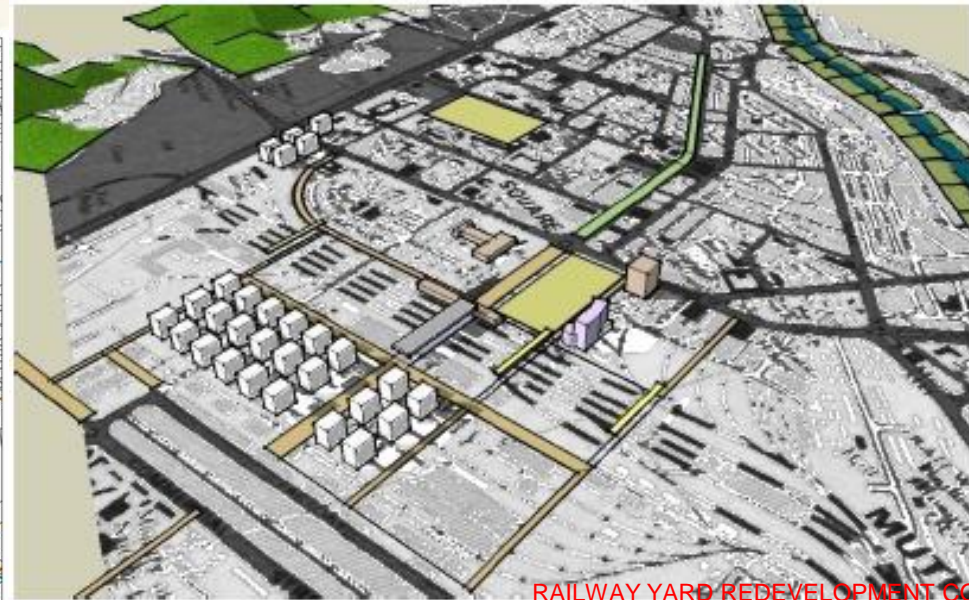
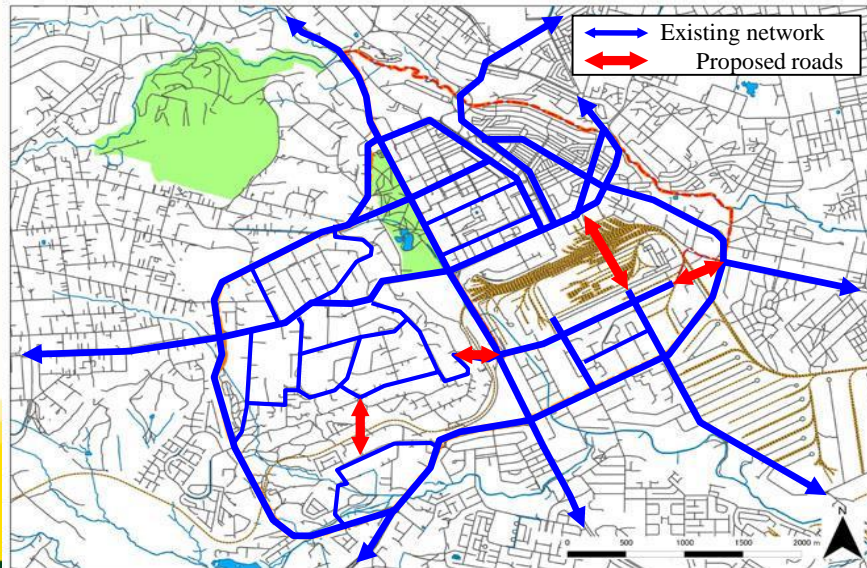
# Opportunities in Railway city Redevelopment :



- Optimization of prime & serviced urban land.
- Redevelopment of the areas provides an opportunity for development of quality infrastructure;
  - Business parks
  - Commercial activities,
  - Hotels, shopping arcades, parking facilities
  - Roads, Telecommunication, power infrastructure & drainage
  - Recreational facilities

MASTER LAYOUT PLAN FOR NAIROBI RAILWAY STATION.

## Land Use Plan





# Urban Renewal of old County Estates



## Eastlands Urban Renewal

- Integrated redevelopment & transformation of the old institutional housing estates
- 475Ha land of ten estates belongs NCCG estates with approx. 9,557 households.
- Development of new housing stocks, upgrade of infrastructure, water and sewerage services, commercial/social centres & light industrial parks development.

## Urban Renewal Housing Projects

- Focusing on 7 housing sites - using Joint Venture Arrangement
- Priority infrastructure investments identified from the Urban Renewal projects – Roads, Retail Markets, Fire Stations, Social Amenities, Telecommunication & Utilities.





# Proposed 5 corridors for Mass Rapid Transport Plans





Aims to promote urban development through urban facilities development

## Water Supply

- Currently water supply in the county is 540,000 CM/day against a demand of 670,000 CM/per day & expected to grow to 1.2 Million CM/day by 2030.
- Opportunity in sustainable supplies to bridge shortfall and use efficiency.
- Rain water harvesting – creating an opportunity to capture, treat and direct it for domestic usage.
- Existing distribution is old & requires renewal
- Growing settlements without water supply.





## Storm Water Drainage & sewerage

- Currently storm water drainage focuses on localized drainage networks.
- Opportunity in preparation & implementation of storm water Drainage plan.



- About 50 % of city's population is served/ connected to the existing sewerage network.
- Opportunity to invest in expansion of the sewerage network & embrace alternative eco-friendly waste disposal systems.
- Investment in localized sewerage treatment facilities.
- Opportunity for waste water recycling & energy co-generation.







## Power

- Current county power demand about 1240MW expected to rise to 6000MW by 2030.
- This will account for 42% of the National demand which will be 14,275MW.
- Opportunity for renewable energy, green building technologies and promotion of resource efficiency.

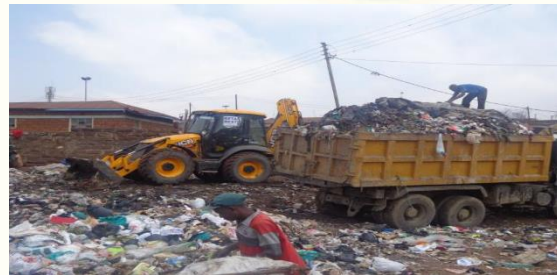


# Infrastructure development program :



## Solid Waste Management

- Waste collection & transportation
- Intermediate waste treatment – investment in waste to energy, Compositing facilities.
- 3 Rs Concept.
- Solid waste Final disposal infrastructure.





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## Take Aways

- Need for infrastructure assets inventory- the item, who is responsible, its conditions, map it spatially.
- Identify challenges in infrastructure asset management and identify possible solutions.
- Institutional integration (NAMATA in Nairobi Metropolitan area).
- Have legislative and policy support.
- Identify sources of funding and budget for all assests.
- Regular maintenance expands the use of the infrastructure beyond the design period.
- Participatory and inclusive approach for sustainability.



# Take Aways



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- The UN has developed a handbook that can guide national governments and local government in infrastructure asset management - diagnostic tool, asset management action plan, asset management information e.g. by developing asset register database, improving climate resilience.





# Thank you

