



# MUKURU SPECIAL PLANNING AREA

## INTEGRATED DEVELOPMENT PLAN REPORT

MARCH 2022



REPUBLIC OF KENYA



NAIROBI  
METROPOLITAN  
SERVICES



NAIROBI CITY  
COUNTY

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# EXECUTIVE SUMMARY

The Mukuru Special Area Plan is aimed to provide the basis for guiding development and enhancing appropriate investment in Mukuru, it covers an area of 689 acres for a period of 10 years from 2022-2032. The plan provides for comprehensive and intensive change of the planning area through designation of transport arteries, public purpose and utilities areas, establishing hierarchical and functional road networks, and identifying environmentally sensitive areas for protection and conservation.

On March 17, 2017, the City County of Nairobi declared the informal settlement of Mukuru Kwa Njenga, Kwa Reuben, and Viwandani as a Special Planning Area (SPA). In the notice, the county government notified the public of the stoppage of any further development in the three settlements until the development of a participatory plan is completed as required under PLUPA. This report is issued in partial-fulfillment of that obligation and represents an Integrated Development Plan for all of Mukuru.

Mukuru has over 100,500 households and an estimated population of 300,000 people. Mukuru is one of the informal settlements within the city of Nairobi, located adjacent to the Makadara industrial zone, around 3 kilometers from the central business district. Mukuru, like other informal settlements in Nairobi, has many challenges including inadequate and poor infrastructure and services, indiscriminate dumping of wastes, high levels of unemployment, lack of security of tenure, encroachment into fragile ecosystems, flooding, poor housing among others. There are over 1,000 industrial facilities surrounding the informal settlement, which are a major source of pollution.

While Mukuru faces many challenges, it has strong community assets such as women-led saving groups, youth leaders, a network of schools and community facilities, and a robust informal labor market that provide opportunities for growth and are already contributing immensely to the economy and social fabric of Nairobi.

The proposals in this Plan will achieve the following principles:

- Address immediate and long-term threats to human health by improving physical & social infrastructure
- Minimize destruction & displacement by accommodating all existing residents within this plan
- Retain & enhance the diversity of the community's residential and commercial land uses
- Integrate Mukuru with the rest of the city in regard to transport and access to social services
- Mitigate environmental & climate change hazards
- Prioritize the needs of the poor, youth, women, the disabled, and seniors
- Combine new physical infrastructure with supportive social programs and services

The preparation of the Mukuru Plan finds its basis in the Constitution which provides that the State may regulate the use of land and any interest in or right over any land in the interest of defense, public safety, public order, public morality, public health, or land use planning (Article 66). The Plan responds to Article 42 on the Bill of rights under Environment, which guarantees the right to a clean and healthy environment, to clean and safe

water in adequate quantities while Article 43 on Social and Economic rights guarantees citizens the right to the highest attainable standard of health, which includes the right to health care services, including reproductive health care; right to accessible and adequate housing, to reasonable standards of sanitation, to be free from hunger, and to have adequate food of acceptable quality.

Preparation of this report employed a multi-disciplinary, multi-sectoral and participatory approach involving stakeholders drawn from the public and private sectors. The planning team was composed of personnel from the County Government of Nairobi, sector experts from the NGOs, CBOs, civil society and members of the Academia. The consultations were carried out by consortiums focused on thematic areas that formed the basis of stakeholder engagement and consensus-building conducted through workshops. More details on the process are included below.

Initially, the Mukuru planning area was public land which was later sub-divided into about 223 plots and allocated to individuals and corporations for the development of light industries. The grantees of these plots were issued with 99-year leasehold titles that were issued in the 1980s and 1990s and contained special conditions of grant. Amongst these conditions was a requirement that the leaseholders develop the land allocated within a period of two years after grant. In the event that they did not develop the land as stipulated, the grant conditions gave the government the power to cancel the titles issued for breach of contract. The grantees, despite these conditions, failed to develop and the land was eventually taken over by a small group of people who built on it adversely and against the wishes of the title holders.

In preparing the Plan, cognizance was given to the various legal provisions as espoused in various statutes and an analysis undertaken. The following section outlines the various legislations that have impacted the preparation of this Plan.

1. The Physical and Land Use Planning Act 2019 - This is the primary

statute that provides for administration, types, content, process and approval of the various types of Physical Development Plans. The Plan has been prepared in conformity with the requirements of the Second Schedule of the Act on contents of local physical development plans.

2. County Governments Act, 2012 -This statute mandates County Governments to carry out the planning function at the county level. The Act stipulates that one of the objectives of county planning is to ensure harmony between national, county and sub-county spatial planning. The Act mandates the County Government to guide development and undertake development control.

3. The Urban Areas and Cities Act, 2011 - The statute provides for classification of urban areas and cities, their governance and management, and for integrated development planning. Mukuru plan is an integrated plan incorporating social, economic, environmental and physical aspects.

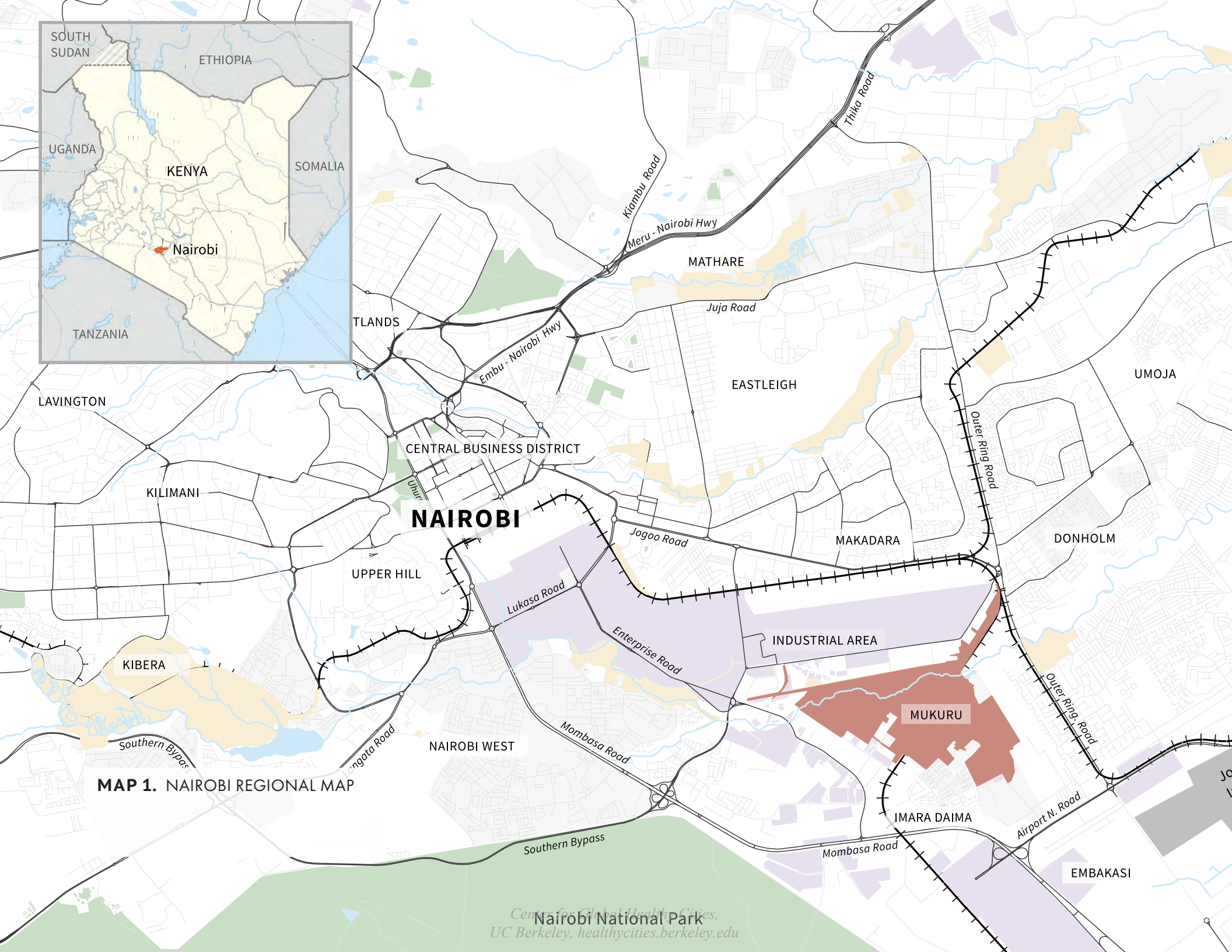
4. Environmental Management and Coordination (amendment) Act, 2015- provides for a framework for environmental management and coordination matters.

5. Water Act, 2002 does provide guidelines on plan proposals touching on management, conservation, use and control of water resources, water supply, and sewerage services.

6. The Land Act, 2012 The Land Act provides for sustainable administration and management of land and land-based resources nationally. This plan acts as a tool for management of land and land resources within Mukuru by providing a basis for development control.

Due to the controversial land issues pertaining to Mukuru & its immediate environmental & health needs, this plan suggests that attention must be paid to equitably resolve land & related issues through the following actions:

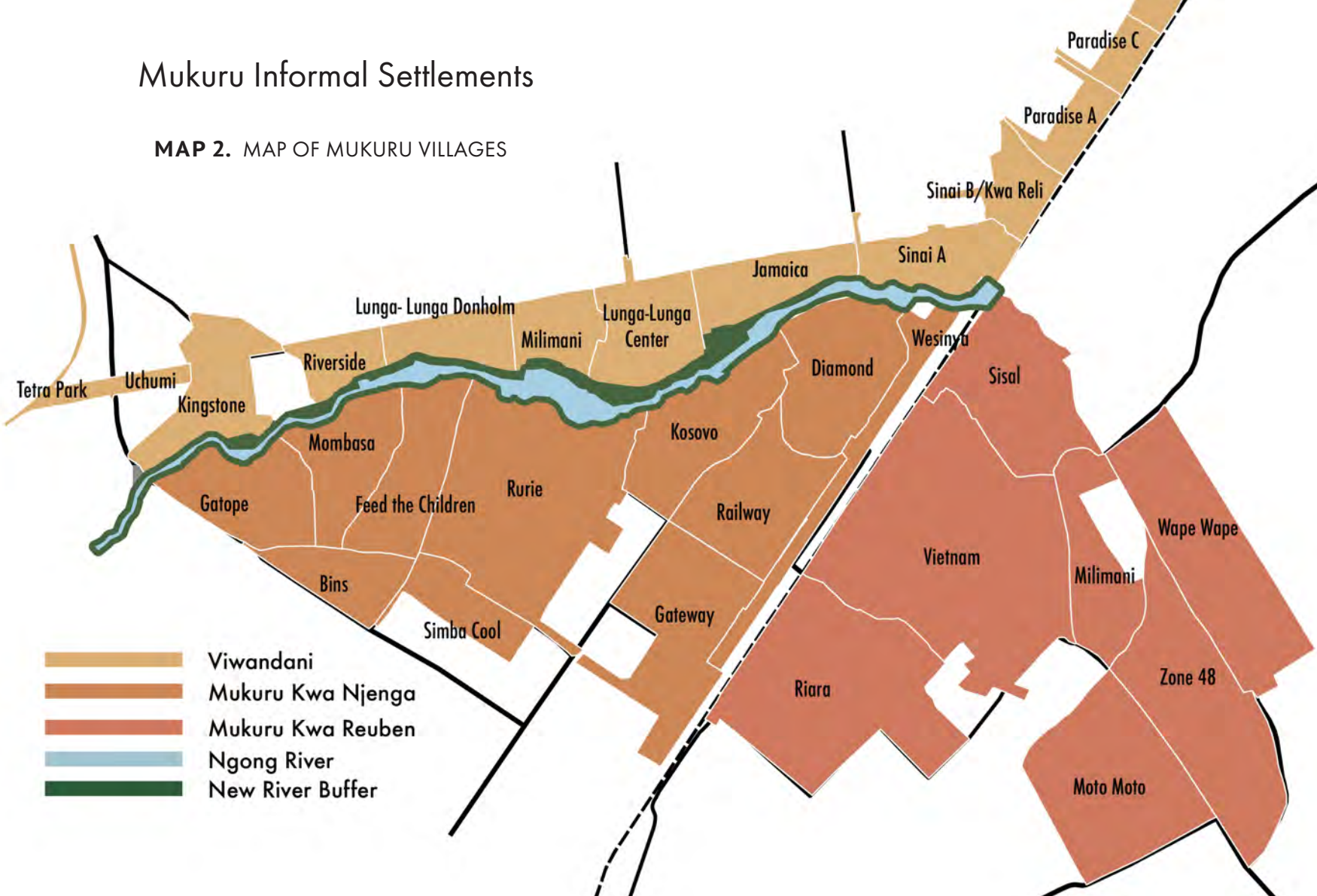
- Creation of a multi-agency team to deal with Mukuru land issue
- Identification of relevant option for resolution of land problem
- Development of strategy on how to resolve the land problem at minimum cost and within the shortest time possible
- Planning and Perimeter Survey for SPA area into a single block
- Registration of title in the name of a relevant government agency as perpetual trustee for the residents of Mukuru
- Establishment of a residents and multi-agency dispute resolution mechanism
- Research on Identification and determination of (Land and Benefit) Tenure Options for SPA
- Development of criterion for land tenure and benefit based on Law and government policy
- Provision of relevant title documents to identified beneficiaries
- Creation of local monitoring teams to work closely with NMS/ NCCG
- Mukuru SPA land transferred to the relevant, government agency as perpetual trustee at minimal cost and in a timely manner
- Establishment of sites and facilities for solid waste management (SWM)
- Ensure 20 local community groups engaged in waste collection and material recovery activities, and create at least 1000 paid jobs for SWM
- Establishment of a recreational park modeled around the Hon. John N. Michuki Memorial Park
- Implement riparian and river-bank improvements that will protect the community from river flooding and destruction of property
- Initiate air pollution control measures and demand an emissions reduction plan from all industries surrounding Mukuru
- Establish a soil contamination remediation plan
- Identify land for 15 new primary and 5 new secondary schools
- NCWSC shall install water pipe network along existing roads & connect each structure/household to water network with an internal tap
- Drill at least 5 new boreholes for clean drinking water
- Finance & construct a simplified sewer network that connects to each structure, allowing for private pour-flush toilets
- Scale-up shared water kiosks & toilets using the pay-as-you-go models
- Construction of last mile sewers, chambers, and connection
- Identify land for new recreation and plan spaces, as well as markets
- Immediately improve 10.3km of arterial, 13.3km of sub-arterial & 25.7km of collector streets, with new widths, drainage, and sidewalks
- Prioritize pedestrian mobility within the community since this is the primary mode of mobility & safety is an ongoing issue
- Locate at least 6 new bus stops along arterial roads, spaced no more than 1 km apart
- Identify sites for new cultural/community facilities to support youth employment and opportunities
- Locate at least 3 new fire stations within Mukuru & ensure they have emergency vehicles, such as ambulances and fire brigades
- Construction of 3 new and expansion of existing TVET institutions in Mukuru
- Recruit & train 200 Community Health Volunteers per year for 3 years.



**MAP 1. NAIROBI REGIONAL MAP**

# Mukuru Informal Settlements

MAP 2. MAP OF MUKURU VILLAGES



Mukuru is one of the largest of over 150 informal settlements in Nairobi, Kenya. Mukuru area includes the settlements of Mukuru Kwa Njenga, Mukuru Kwa Reuben, Viwandani, Mukuru Kayaba, Fuata Nyayo, and Mariguini which are situated in an industrial zone approximately 7 Km southeast of Nairobi’s central business district. Mukuru is bisected by the Kenya Railway, which runs along the border between Kwa Reuben and Kwa Njenga, and the Ngong River, which divides Kwa Reuben and Viwandani. Mukuru is surrounded by an industrial belt of manufacturing and distribution centers. Mukuru is also situated in an area with a growing number of middle class housing estates, along with municipal assets such as hospitals and health clinics, schools, and shopping centres.

# REPORT METHODS

On March 17, 2017, the City County Government of Nairobi (NCCG) declared the informal settlements of Mukuru Kwa Njenga, Kwa Reuben, and Viwandani a Special Planning Area (SPA). This designation was based on evidence provided to the County from a consortium that included Muungano wa Wanavijiji, SDI-Kenya, AMT, Mukuru community members & the Universities of Nairobi, Strathmore, and the University of California, Berkeley. The evidence showed that Mukuru's unique development challenges and opportunities warranted special consideration. The legal declaration was based on the Fourth Schedule of the Constitution and Section 23 of the Physical Planning Act of 1996, which mandated that the County Government prepare a participatory physical development plan for the area and paused further development in the three settlements for a two year period.

This report reflects the research and participatory processes that contributed to the Mukuru Integrated Development Plan (MIDP). The MIDP included tens of research organizations, government institutions, and thousands of community residents.

The SPA planning process was organized into seven sectoral strategies: **1. Education, Youth, and Culture; 2. Environment and Natural Resources; 3. Water, Sanitation, and Energy; 4. Health Services; 5. Housing, Infrastructure, and Commerce; 6. Legal and Land; and 7. Finance. This report highlights key recommendations and proposals from each of the sectoral plans, and integrates them into one master spatial development plan for Mukuru.**

The process included a series of co-created research reports, as documented below.

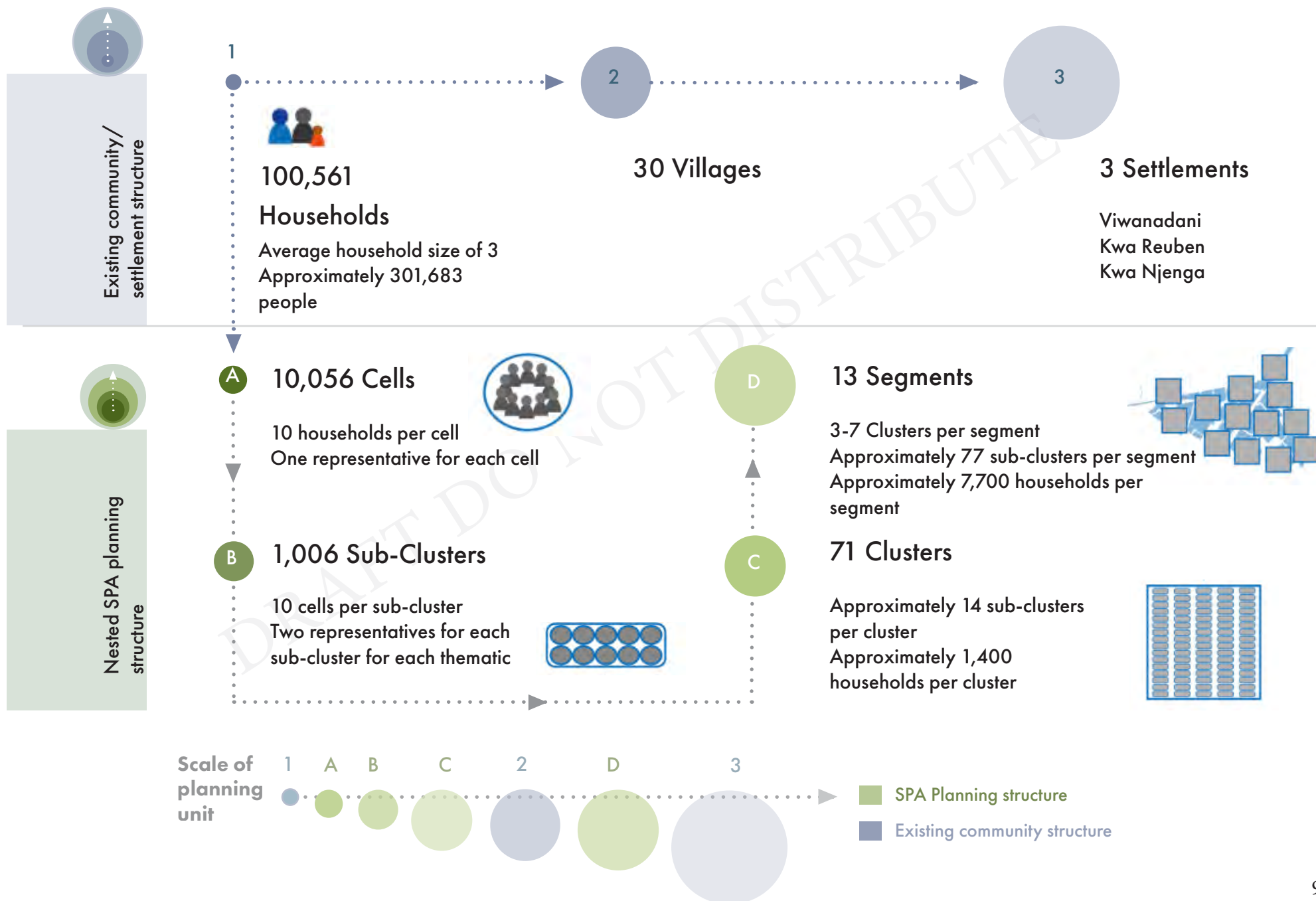
Accompanying all research were extensive community consultation and 'citizen science' activities, where Mukuru residents were active participants in documenting living conditions, surveying their neighbors and analyzing, or making sense, of the research findings for planning purposes. Central to all recommendations is the concept of **resident-centered solutions - that Mukuru residents are involved at all stages of imagination, design, implementation and management of physical upgrading, social programs, & ongoing implementation and evaluation.**



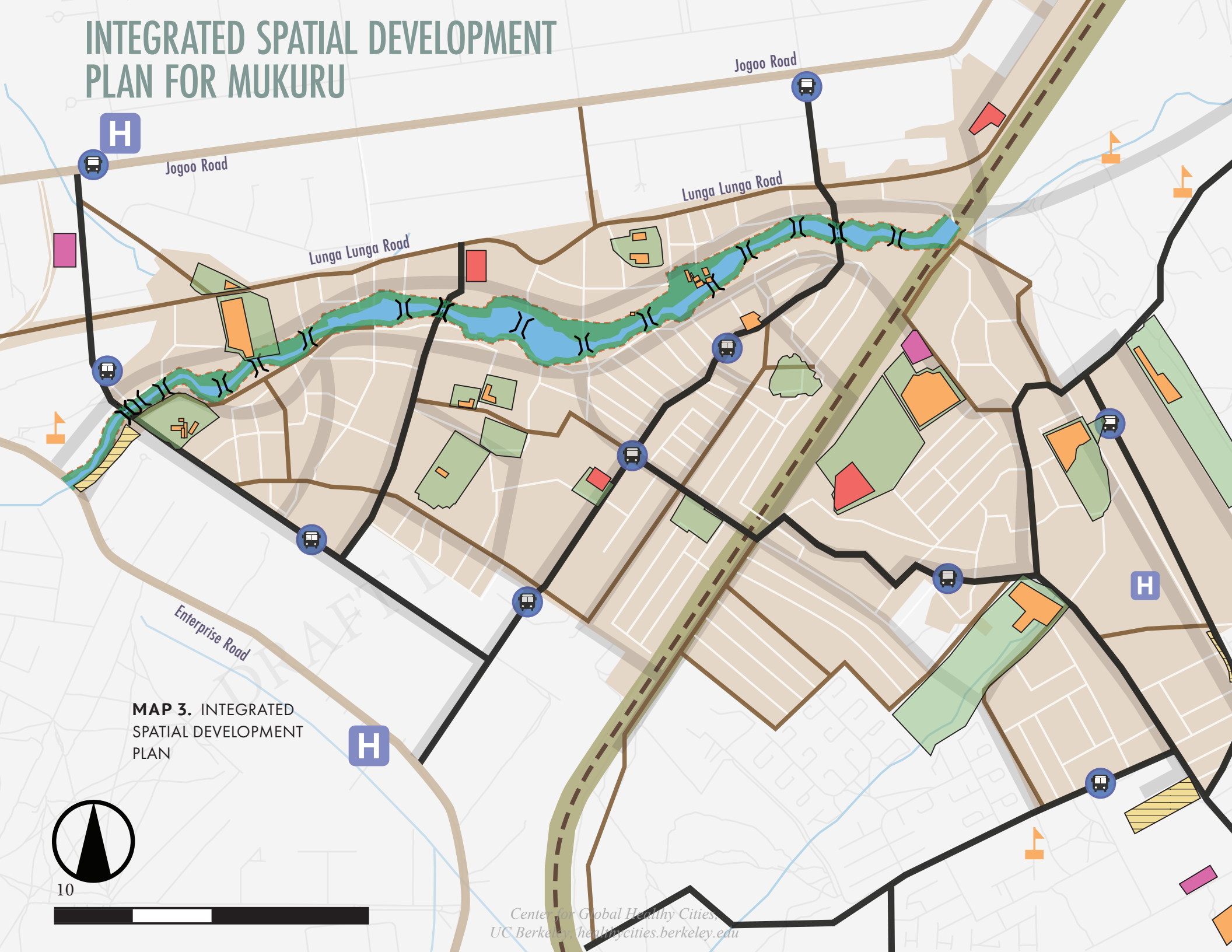


# FRAMEWORK FOR COMMUNITY-CENTERED PARTICIPATORY PLANNING

**FIGURE 1.** SPA COMMUNITY MOBILIZATION PROCESS & STRUCTURE



# INTEGRATED SPATIAL DEVELOPMENT PLAN FOR MUKURU










**MAP 3.** INTEGRATED SPATIAL DEVELOPMENT PLAN



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## MOBILITY AND COMMERCE

-  Upgraded Arterial and Subarterial Roads
-  Improved Internal Collector Roads
-  Railroad
-  New Pedestrian River Path
-  New Pedestrian Bridges
-  New Motorized Bridges
-  Proposed Bus Stops

- New and improved roads make mobility safer for all
- Increased connections to public transport
- New pedestrian and bicycle path along N'gong River riparian increases mobility and recreation
- New bridges improve safe crossings of river

## ENVIRONMENT AND CLIMATE CHANGE ADAPTATION

-  Ngong river
-  Proposed Riparian Buffer
-  Mixed-Use Community Space

- Improved river riparian flood mitigation will reduce damage to structures
- New plantings and ecological features along N'gong River will improve water quality
- New waste management program will eliminate burning and reduce air and soil pollution
- New strategies to reduce industrial dumping and pollution will improve air quality

## SOCIAL INFRASTRUCTURE

-  Upgraded to Level 4 Health Facilities
-  Upgraded to Level 3 Health Facilities
-  Upgraded Educational Facilities
-  Neighboring Educational Facilities
-  Upgraded Markets
-  Health Facilities

- New street design increases space for market stalls
- Improved use of land increases space for markets and economic activities
- New and improved schools increase educational opportunities
- New and improved health care facilities expand access to timely care

## PUBLIC HEALTH

-  Proposed Sewer Pipes

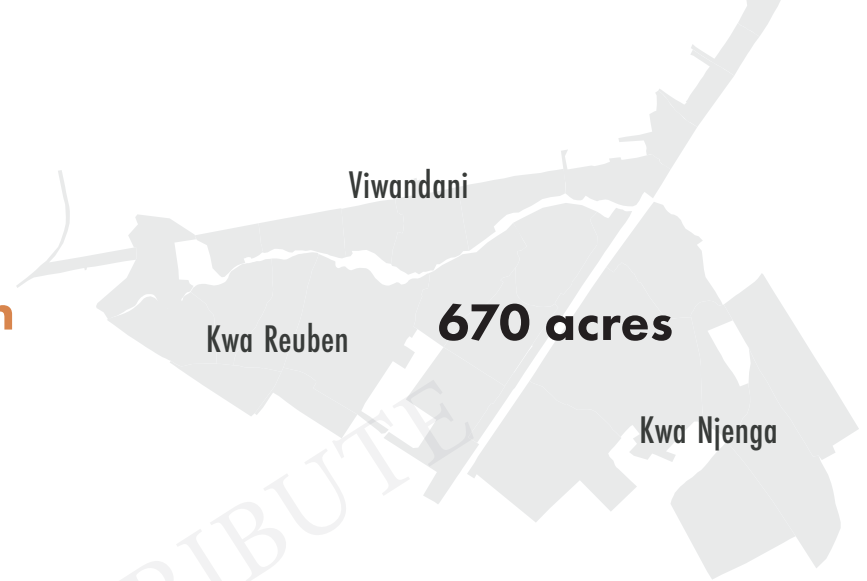
- New water and sewer pipes will reduce disease and food contamination
- Improved access to clean water will reduce infectious diseases
- Flood reduction and mitigation will reduce exposure to toxins and waterborne diseases
- Increased number and safety of toilets will reduce violence, especially for women and girls

## OTHER MAP FEATURES

-  Quarries

# EXISTING CONDITIONS

## Population



100,561 households

Average household size of 3 people



301,681 estimated population

466 estimated population density (people per acre)



Average age 27 years

60% Male 40% Female

## Environment



30% of households flood during rainy seasons



1,151 surrounding industrial sites 67% include toxic production processes



67 ug/m3 PM2.5 annual average



## WASH



234 households share 1 tap on average



67 people share 1 toilet on average

## Household Finance & Economy



50% of households are food insecure  
42% of households forced to skip meals last month



30% of household heads are unemployed  
41.9% of youth have no source of income



6,700 KSh average monthly income  
7 Billion KSh in annual revenue from the Mukuru informal economy

Residents pay over three or more times for inadequate toilets and water than those living in formal settlements in Nairobi.



40% of households report health issues within the last 6 months.



10% of children reported having diarrhea in the last 6 months.



40% of households with children under 5 report stunted growth



5% of health facilities are NHIF accredited, 29% are registered

## Health outcomes & services

# EXISTING CONDITIONS

## Housing



94.5% semi-permanent housing structures  
5.5% permanent housing structures  
97.5% of residents are renters



No Sidewalks but roads have between 10,000 - 30,000 pedestrians per day



50% + of the Mukuru population has at least Form 4 secondary education (twice the national average)



182 informal schools serve over 42,000 children

Of the 194 schools mapped out only 11 schools were registered with Nairobi County Education Board

## Education

## Land Use



41% Residential



2.7% Commercial



1.5% Industrial



10.3% Transportation



0.24% of land for Recreation



2% of land for Public Infrastructure



6.7% of land for Education

## Electricity & Energy



67% of households are connected to electricity through informal connections

35% indicate they have power outages daily lasting for one hour or more



1% of residents have fridges in their homes



6% of residents use electric water heaters

42% use kerosene as cooking fuel

31% use Liquefied Petroleum Gas

17% use charcoal

10% use electricity

## Water Services



550 individuals share a single water point in Mukuru vs 4 persons per water point in Nairobi's Formal Housing Units

1% of Mukuru Residents have access to a private or individual water point

250-1000 KSh per cubic metre of water

## Sewage



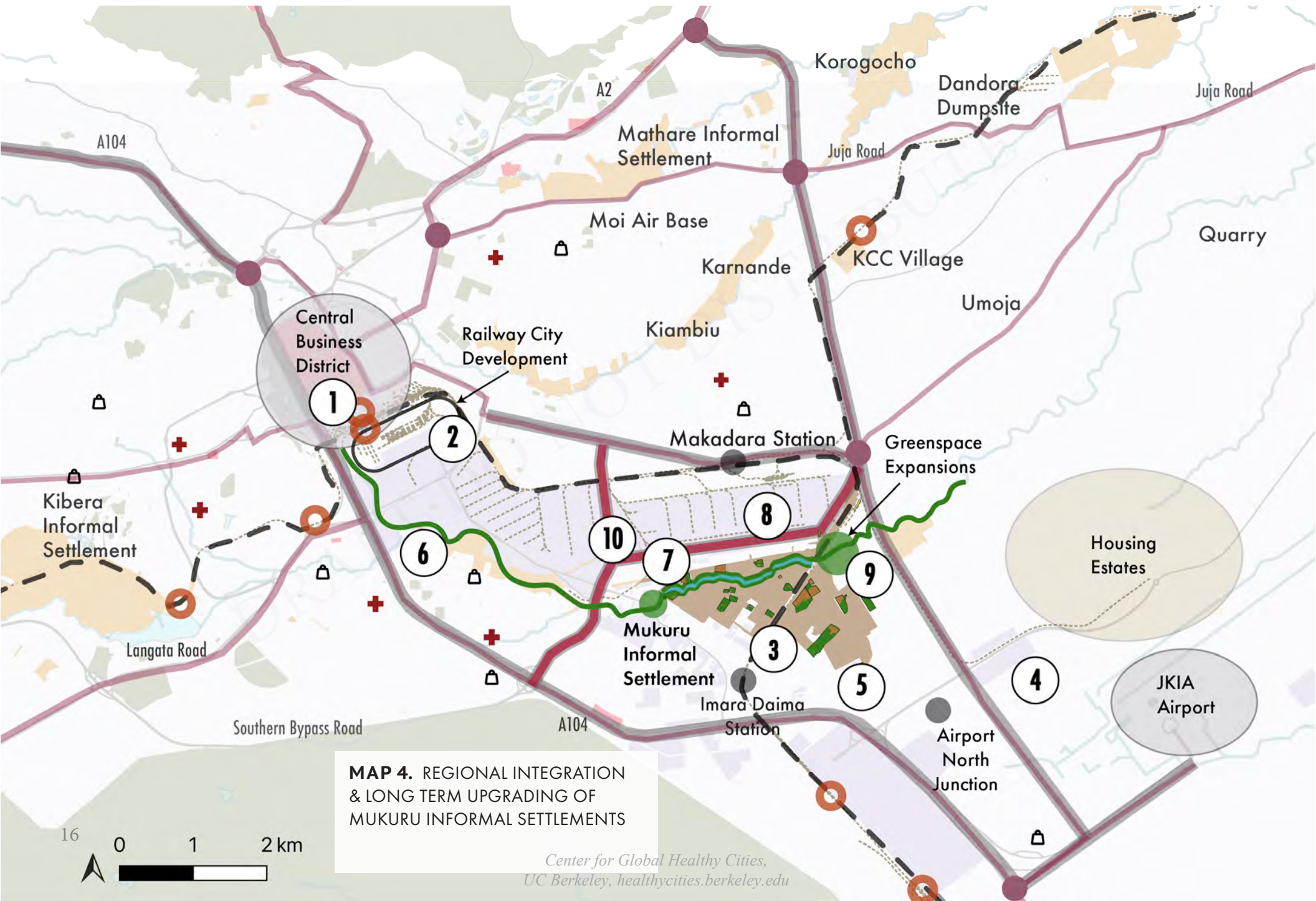
>1% of households have access to a private in-home toilet

Yard-shared toilets are shared with 10-12 neighboring households



50% of households share a pit latrine, covered or uncovered














# REGIONAL INTEGRATION



**MAP 4.** REGIONAL INTEGRATION & LONG TERM UPGRADING OF MUKURU INFORMAL SETTLEMENTS



## MAP LEGEND

	Commuter Rail (2023)		Mukuru
	Commuter Rail Stations (2023)		Industrial Area
	Road Widening		Greenspace
	NIUPLAN Proposed Sub Centres		Informal Settlements
	Rail and Bus Rapid Transit		Shopping Malls
	Transit Interchange		Hospitals
	Road Improvements		

## MAJOR REGIONAL DEVELOPMENT & INTEGRATION PLANS

- 1 Increased access to CBD and economic opportunities
- 2 Increased access to new Railway City Development
- 3 Proximity to sub centre development and opportunity zones
- 4 Improved access to work and employment opportunities
- 5 Connectivity to formalized schools and health services
- 6 Connectivity to regional river and ecological improvements and restoration efforts
- 7 New river pathway for pedestrians
- 8 Integration of industrial areas and increased efforts to improve air quality
- 9 New green/play spaces
- 10 Improved roads and access to transit, shopping and employment opportunities

## RAILWAY CITY

“The Nairobi Railway City is an iconic multi-modal urban development to be situated within the 200-acre prime property that currently serves as the Nairobi Railway Station. The project is one of the priority undertakings embodied under the Nairobi Integrated Urban Development Plan (NIUPLAN) as a strategy for the expansion of Nairobi’s Central Business District. The project’s concept arose from growing concerns regarding the rapid growth of Nairobi City thus the need to start thinking beyond city boundaries.”

“The proposed linkages across the existing rail tracks will increase access to the current CBD and **promote the continuation of the city fabric towards the south.** This network could be expanded to the industrial area on the southern side which, along with land use upgrading of the industrial area, is essential to allow for the CBD peripheral development for commercial / institutional activities.”

## NIUPLAN

“The plan has extensive recommendations on measures to tackle the perennial challenges being experienced in the city, such as traffic congestion, unemployment, inadequate housing, and poor infrastructure, among others. Reordering of the city’s urban structure through creating multiple sub centers will decentralize employment and service delivery to mwananchi and also reduce the need to come to the CBD for similar functions. **NIUPLAN envisages a compact city with multiple core centers and a revitalized Central Business District.** The objective is to have an inclusive city, thus ensuring spatial and social equity.”

The NIUPLAN is founded on seven key development principles:

- Integration
- Inclusivity
- Social sustainability
- Environmental sustainability
- Compact
- Mixed use development
- Self regulation

# KEY UPGRADING PROPOSALS

The County's development framework is guided by the Nairobi Integrated Urban Development Master Plan (NIUPLAN), and the MIDP is linked to this and other initiatives. For example, the NIUPLAN proposes that Mukuru shall be bound by two sub-centres; Makadara to the north and Imara Daima to the South. The MIDP ensures that settlement residents will have access to these development centres and not be segregated from regional development.

The NIUPLAN also proposes a comprehensive transport network, and a diverse public transport network comprising of Light Rail Transit (LRT) and Bus Rapid Transit (BRT) systems. The MIDP connects to regional road, rail, and transit proposals to ensure all Nairobi residents have equal access to infrastructure investments. The MIDP also enhances the safety around rail, road, and transit development proposals, particularly those that may intersect with Mukuru.

The following sections present the key findings and proposals from the SPA Planning Processes, including expert consortium reviews and community consultations. We present the key issues that fall under each section, offer brief background but focus primarily on the priority proposals for upgrading and community improvement. These sections aim to be forward-looking and offer guide, frame-work and in some cases, specific implementation actions. Importantly, a more complete explanation and detailed compilation of

each sector and the upgrading proposals can be found in the respective Sectoral Briefs and Sectoral Plans ([link to web site with these documents](#)).

The objectives of the Planning Proposals are to:

1. Prepare a spatial framework to guide development and re-development of Mukuru informal settlement
2. Determine and guide the future type and density of development in the SPA while ensuring health, safety, order, aesthetics, convenience and the general welfare of Mukuru's residents
3. Provide a framework for the coordination of interventions by various sectors and partners to ensure synergy, avoid duplication and optimize resource use
4. Provide measures of affirmative action to the marginalized residents of Mukuru that will foster the integration of Mukuru into the rest of the city so as to ensure greater equality and cohesion within the County of Nairobi
5. Identify environmentally fragile areas and propose measures for their protection/conservation for sustainability
6. Set practice precedents and inform policy on slum upgrading in Kenya
7. Make recommendations to the county government on options for land availability for public purposes in Mukuru

# ENVIRONMENT & NATURAL RESOURCES



The environment of Mukuru can protect residents from flooding, excessive heat events, and can offer opportunities for recreation. The environment is currently a risk factor that contributes to elevated rates of disease, including respiratory infections, diarrhea, and other illnesses. Children are especially vulnerable as are pregnant women, to environmental contamination that can contribute to disease.

Residents also face safety hazards and burdensome costs from informal electricity provision and daily activities. Informal electricity connections increase the risk of fire and fire-related hazards, as a result of poor connections and potential circuit overloads. Indoor cooking with hazardous cooking fuels increases the risk of respiratory illness. The use of non-renewable energy sources and inefficient products creates additional health risks and increases daily costs.

## Critical Recommendations include:

- An integrated solid waste management plan that includes residents as well as provides jobs for local people, especially youth
- Enforcing air, water, and land pollution regulations, and ensuring the ambient environment meets World Health Organization standards
- Establishing a performance-based riparian, which means a focus on flood protection, increasing recreation area, pedestrian paths and other safe human uses along the river riparian
- remediating soil pollution to ensure children are not exposed to contaminants
- Ensuring local industries do not release toxins into the community and all have a toxic use reduction plan

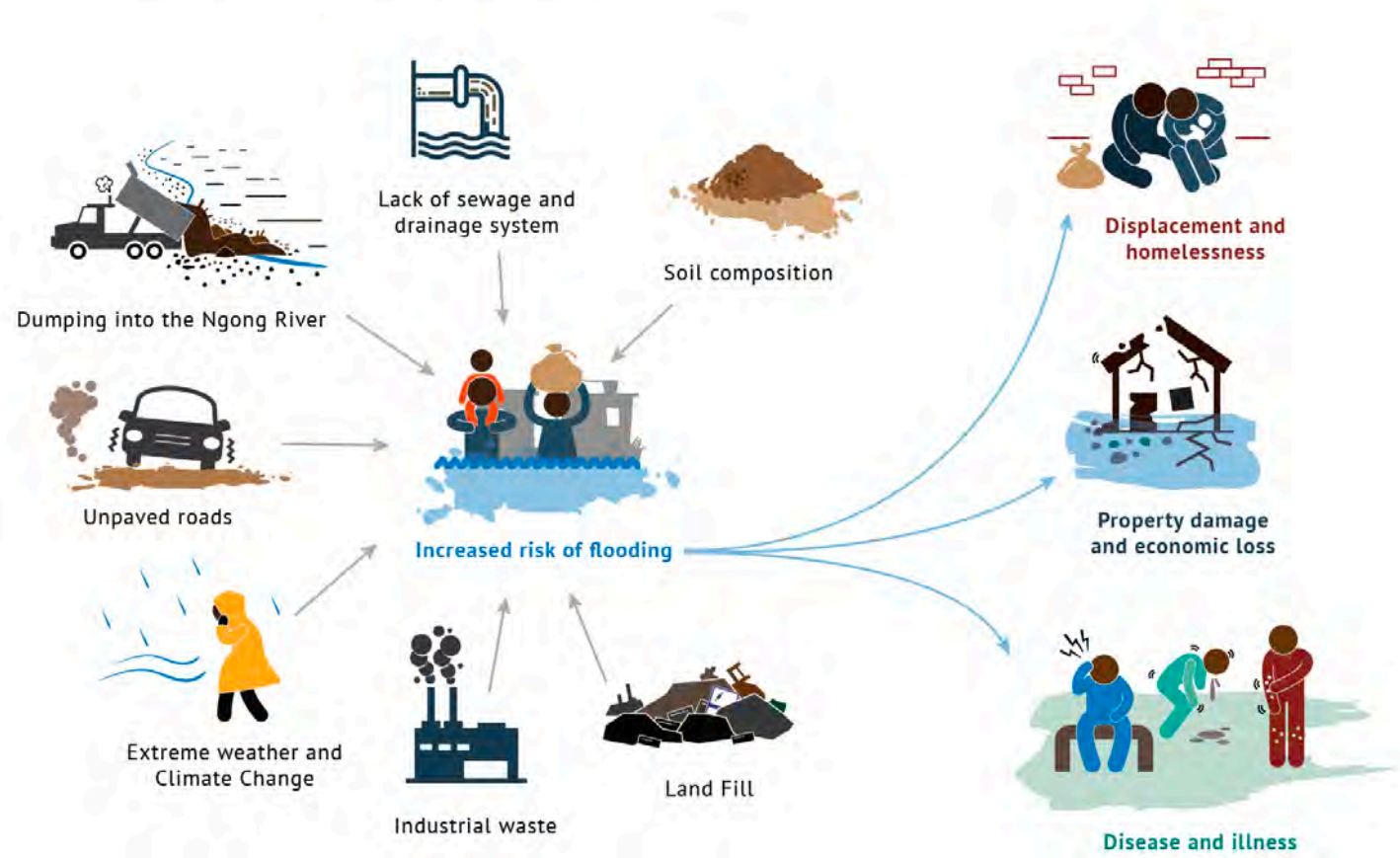
# ENVIRONMENT & NATURAL RESOURCE STRATEGIES AND OUTCOMES

SECTORS	PROGRAMMES/ PROJECTS	SUCCESS INDICATORS	OUTCOME INDICATORS
Waste	Integrated Solid Waste Management	<p>Establishment of sites and facilities for SWM</p> <p>Community and private sector engagement in SWM</p> <p>Small- and large-scale investments for processing organic and inorganic wastes</p>	<p>Environment sustainability and good health</p> <p>20 local community groups engaged in waste collection and material recovery activities</p> <p>Jobs and incomes for &gt;1000</p> <p>13 collection points one in each segment, 6 material transfer stations/material recovery facilities</p>
Riparian land	Mukuru Riparian Rehabilitation Pro-gramme	<p>Establish public recreational facilities on the riparian land.</p> <p>Establishment of a recreational park modelled around the Hon. John N. Michuki Memorial Park</p>	<p>Environment sustainability, good health, and mental well-being</p> <p>Recreational park for over 500,000 people</p> <p>Protection from flooding and destruction of property when river overflows</p>
Air quality	Hewa Safi Pro-gramme	<p>Reduce concentration of air pollutants – conform to WHO standards</p> <p>Address legal gaps associated with air quality and land use</p> <p>Enhance AQM capacity for environment and public health personnel</p> <p>Create AQ awareness in the community</p> <p>Regular air quality monitoring</p> <p>Reduce indoor air pollution</p>	<p>Initiation of air pollution control measures</p> <p>Environment sustainability, good health and well-being</p>
Soils	Udongo Safi Pro-gramme	<p>Eradicate heavy metal contamination to conform to WHO standards</p> <p>Remediate areas of high soil contamination and implement measures to prevent future contamination</p> <p>Use phytoremediation as most economical option</p>	<p>Environment sustainability,</p> <p>Reduction of infections caused by heavy metals</p> <p>Waste recovery and recycling by local CBOs, with Community participation</p> <p>Private sector investments in waste management (biogas, fertilizer, recyclable wastes)</p>

# AIR POLLUTION & FLOODING

The Mukuru settlements are built almost entirely on landfill, in an area containing black clay with high levels of montmorillonite. Our soil sampling data found the presence of Arsenic (As), Lead (Pb), Nickel (NI), Cadmium (Cd), and Zinc (Zn), all of which can be a serious health risk if humans are exposed at elevated levels. The elevated levels of Zn are likely from the burning of waste, vehicle tire debris, and open sewage being discharged into the community. Community air monitoring revealed that outdoor PM2.5 concentrations were consistently higher than the WHO guidelines and that there is likely significant spatial variation across Mukuru. The monitoring data found a mean PM2.5 value of 67 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) across all of Mukuru, while the WHO safe guideline for PM2.5 is 25  $\mu\text{g}/\text{m}^3$ . However, we found a peak reading of PM2.5 in Mukuru Kwa Njenga of 524  $\mu\text{g}/\text{m}^3$  and 367  $\mu\text{g}/\text{m}^3$  in Mukuru Kwa Reuben.

## CAUSES AND IMPACTS OF FLOODING IN MUKURU

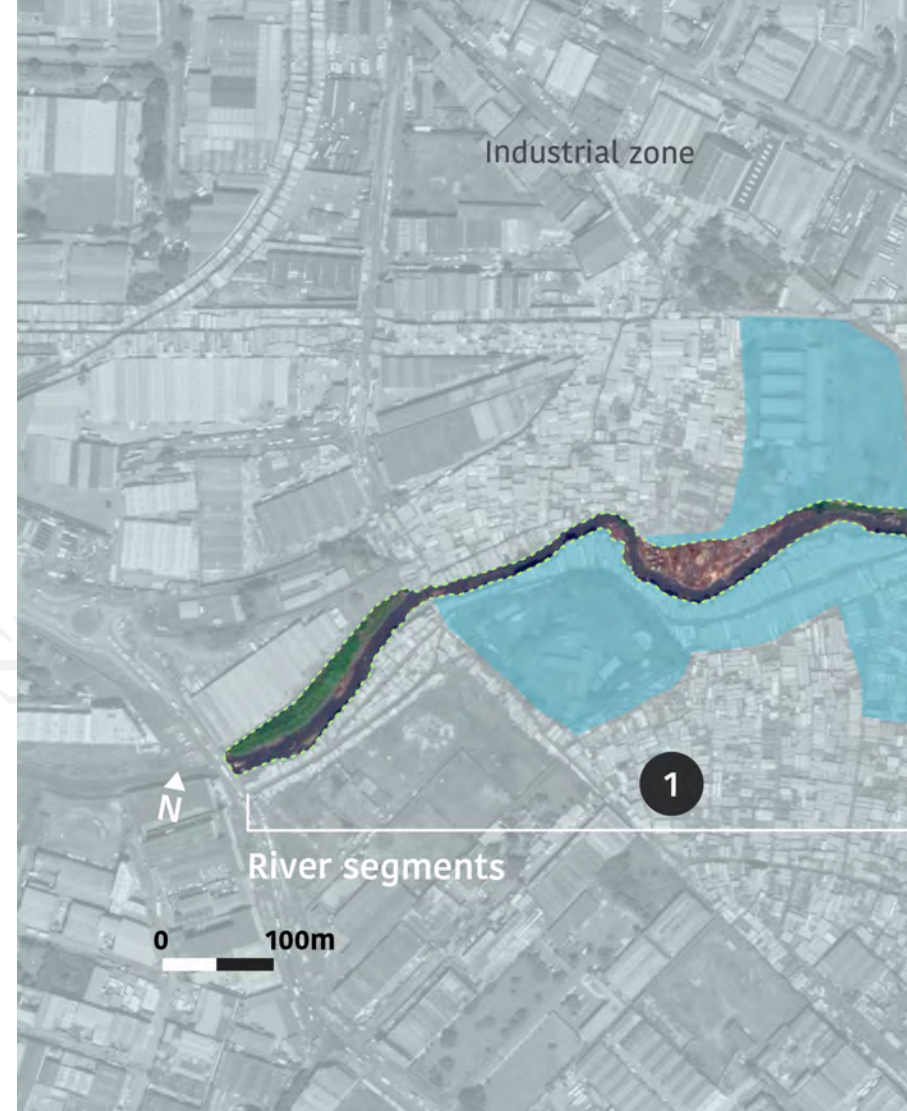


## Ngong River Riparian



Mukuru is mostly low-lying and flat, with an average elevation of 1,623 meters, 39 meters lower than the average elevation in Nairobi. Mukuru is also situated on clay soil, which is mainly comprised of montmorillonite, that absorbs water until saturated and expands when wet. This same clay shrinks in the dry months, causing floors to crack, walls and buildings to tilt, and potholes to form on roads. Twenty-seven percent of all households responding to our survey reported experiencing flooding at least once in the last six months in their homes. However, the frequency of flooding varied by settlement, with 34% of households reporting flooding in the past six months in Mukuru Kwa Reuben, compared to 21% in Viwandani. Forty-two percent of respondents noted that flooding had impacted their health in the last year. Flooding displaces and disrupts residents' livelihoods and their access to healthcare, schools, jobs, clean water, food, roads, infrastructure, and service provision. Flooding can also increase psychological trauma, exposure to vector and gastrointestinal diseases, and food insecurity that puts children at higher risk of malnutrition.

In the following map, we combined historic flooding data, field mapping and observations, media reports, and interviews with residents to identify areas that are most vulnerable to flooding along the Ngong River in Mukuru. The areas shaded in blue are likely to be highly impacted without further flood mitigation measures.

The maps also displays the proposed riparian zone adjacent to the river. We did not find that a standard riparian buffer was adequate to protect the ecology of the river or human well-being in and around Mukuru. We have estimated that in some areas, engineering interventions can allow for a more narrow riparian area and in other areas the riparian zone may need to be expanded. We emphasize that urban river riparian zones can serve multiple functions. These functions can serve both human and ecologic purposes and can include expanded native species plantings, urban gardens, recreation and market spaces.



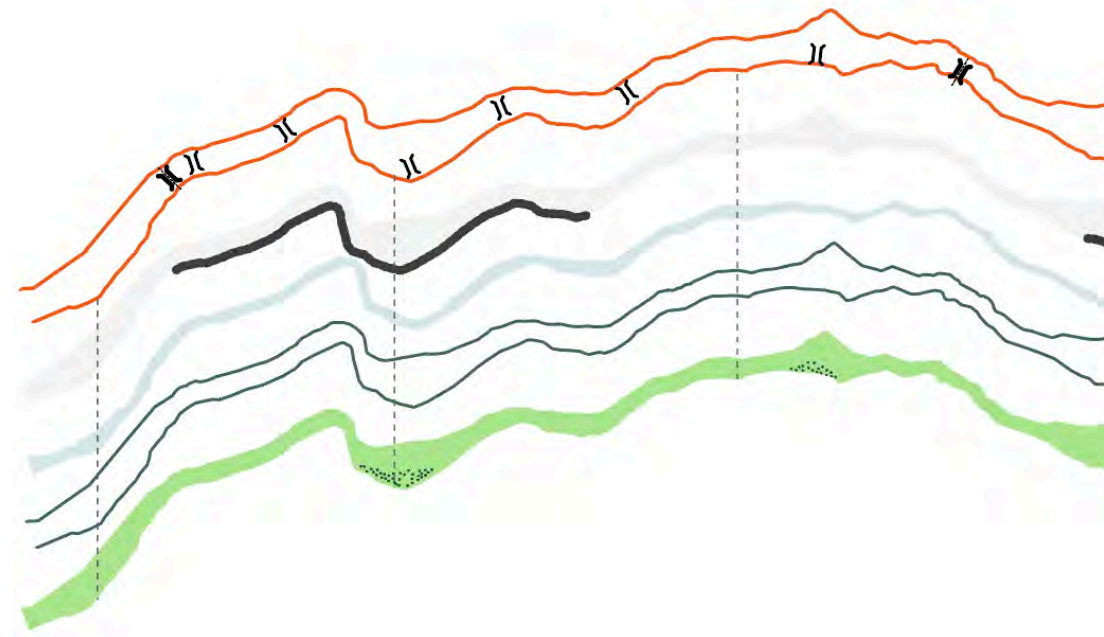
# Mukuru Ngong River - Existing Riparian & Flood Zones

-  Frequent flood zones
-  Riparian zone

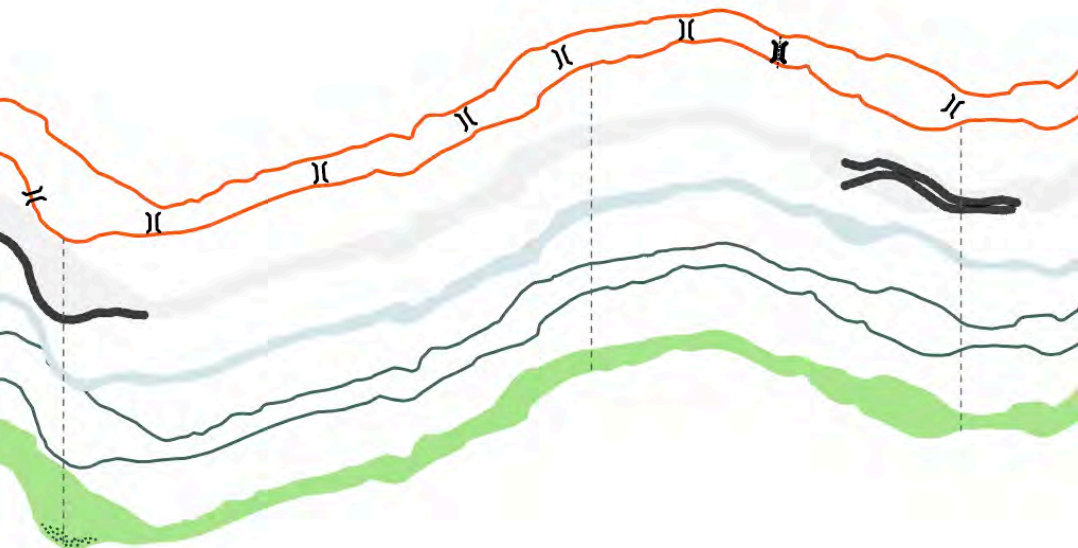


# Integrated Riparian Map

- Pedestrian/bikeway - 3m
- Ecological & mixed use
- Wetland
- Bioswale
- - - Retention wall
- ⌘ Bridge ⌘ Ped/cyclists only
- - - Sewer







1

Construction of drainage and sewer overflow system



2

Mixed use open space accomodating for rising flood levels across seasons



3

Flood mitigation and integrated drainage system following topography of the settlement



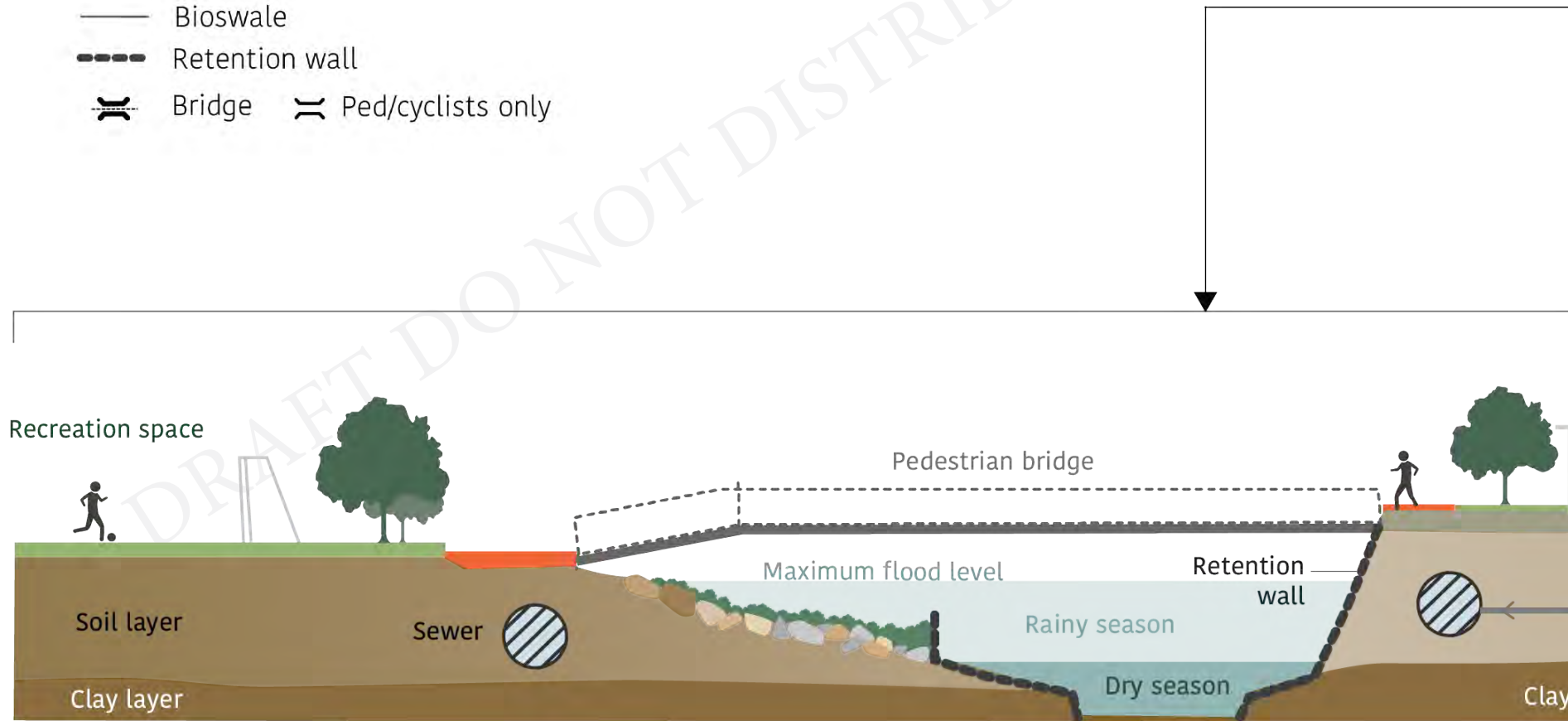
4

Pedestrian only river crossing accomodating for flood levels along mixed use riparian zone

# Mukuru Riparian Section

- Pedestrian/bikeway - 3m
- Ecological & mixed use
- Wetland
- Bioswale
- - - - Retention wall
- ⌘ Bridge    ⌘ Ped/cyclists only

Section view



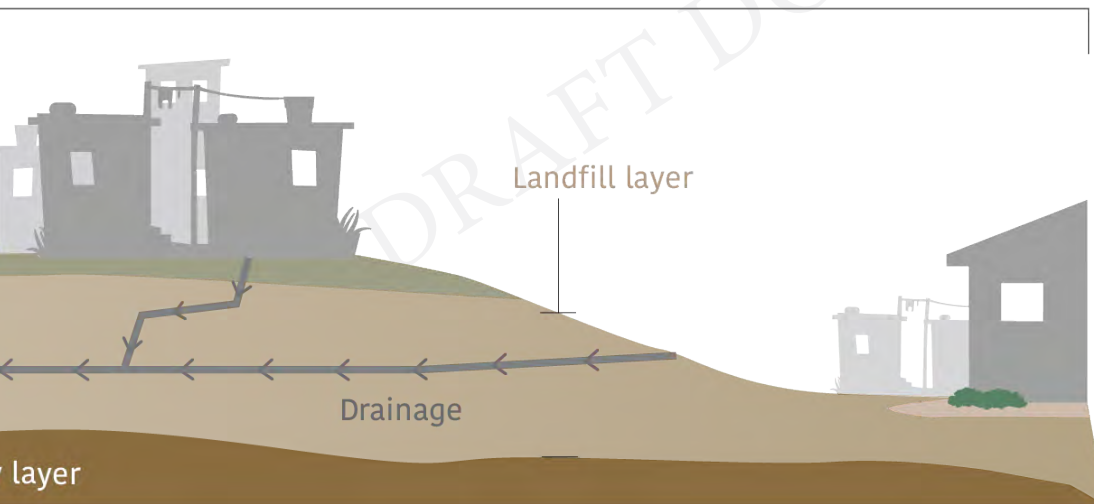
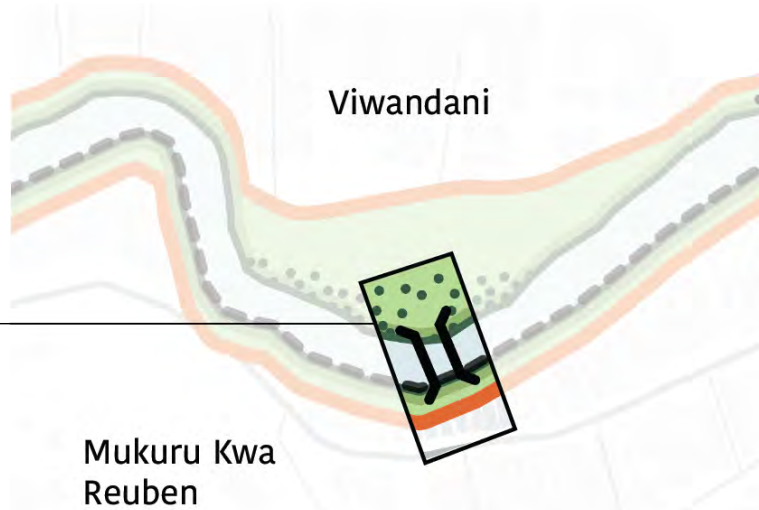
**Viwandani**

Flood mitigation /wetlands & planting

The maps on the previous pages offer proposals for protecting the Ngong River and the residents of Mukuru. We proposed an integrated riparian zone and flood mitigation strategy for Mukuru.

The integrated riparian area will serve to protect the ecological integrity of the river by stabilizing the river bank, creating new wet-land areas, expanding biswales which can absorb flood waters, and planting species that can help filter pollution from the river while also lowering the water temperature. The riparian zone must also serve human needs, and includes areas for community gardens, animal husbandry, recreation areas, markets, and safe crossings for pedestrians. The exact interventions should be negotiated with residents and seek a combination of ecological and engineered interventions that prevent flooding and wastewater from entering the river, provide new, safe open space for residents to use, add multiple safe river crossings, stabilize the river banks, and other benefits. We view the river as an ecosystem service for all of Nairobi, and improvements should build upon other successful river restoration projects.

The cross-section to the left gives an example of the integrated approach. We show how the sanitary sewer can be connected to households and protect the river. There is an engineered retention wall to stabilize the river bank as well as a 'riprap' stones used to manage flooding and drainage. A new pedestrian bridge is shown that would be linked to a pedestrian and bicycle pathway that could run parallel to the river on each side. The pathway can offer a safe mode of travel and exercise while also stabilizing the river bank area. A new recreation space can use created in the expanded riparian zone along some segments of the river.



**Mukuru Kwa Reuben**

# SOCIAL INFRASTRUCTURE

People power  
Community spaces  
Programs & services



Education

Art & Culture

Women & Youth

Entrepreneurship

Health equity

Recreation

Safety

Civic engagement

Health Services

Social infrastructure includes the programs, services, and policies that support the well-being of Mukuru residents. By social infrastructure, we include the amenities and assets that all communities should have to support education, gender equity, youth, play, economic opportunity, and others that together can ensure Mukuru's residents have the opportunities to be healthy, safe, and thrive.

## Critical Social Infrastructure Proposals include:

- Acquire at least 15 acres for primary & 5 acres for new secondary schools in Mukuru
- Train & post more teachers, focusing on existing residents, and ensure they use latest curriculum
- Identify more land for recreation & play adjacent to schools and

- other safe areas
- Enhance existing & find new land for community facilities/centres, and ensure all groups and residents can use these facilities
- Enhance health facilities & ensure all, including elderly & disabled, can access clinics & hospitals
- Locate at least 3 new fire stations within Mukuru & ensure they have emergency vehicles, such as ambulances and fire brigades
- Support social programmes for youth, including art, music, culture & entrepreneurship
- Construction of 3 new and expansion of existing TVET institutions in Mukuru
- Recruit & train 200 Community Health Volunteers per year for 3 years

## BENEFITS OF SOCIAL INFRASTRUCTURE

### Existing Conditions

Stunting, malnutrition, diarrhea, poor child immunization



### Proposed Solutions

Upgraded multi-use education facilities with integrated health services, recreation spaces, & feeding programs



### Health & Wellness Benefits

Improved cognitive & immune function, reduced missed school due to illness especially for girls, pathways out of poverty, increased life expectancy



# EDUCATION STRATEGY AND OUTCOME

PROBLEM	OBJECTIVE	STRATEGY	OUTPUT
Low access to basic education	Improve access rate to basic education in Mukuru	<ul style="list-style-type: none"> <li>Acquire land for public schools</li> <li>Increase number of public pre-primary, primary, and secondary schools in Mukuru</li> <li>Create awareness and mobilize local communities to support education</li> <li>Registration of APBET schools that meet the lowered minimum requirements for registration</li> <li>Strengthening private-public access</li> <li>Implement a comprehensive school-based feeding program</li> <li>Construct new and equip existing TVET institution</li> </ul>	<ul style="list-style-type: none"> <li>20 more primary schools: 15 primary schools and 5 secondary schools in 10 years</li> <li>Provision of 20 acres of land for construction of new public schools (15 acres for public primary and 5 acres for public secondary schools)</li> </ul>
Low quality of education & poor quality facilities	Improve quality of education in pre-primary, primary, and secondary schools in Mukuru	<ul style="list-style-type: none"> <li>Post more teachers to meet the required teacher-pupil ratio</li> <li>Engage QASO to ensure APBET schools adhere to regulation by MOE on employing qualified staff</li> <li>Construct more classrooms</li> <li>Ensure adequate sanitation facilities are provided by the institution</li> <li>Education officers to ensure the institutions adhere to regulations on school governance and management</li> </ul>	<ul style="list-style-type: none"> <li>Expand the existing pre-primary, primary, and secondary schools</li> <li>Provision of new sanitation facilities in existing and new schools to meet the required ratio</li> </ul>
Lack of inclusion and equity	Improve inclusion and equity in education in Mukuru	<ul style="list-style-type: none"> <li>QASO to ensure that institutions provide disability-friendly facilities</li> <li>Provision of psycho-social support to all learners, teachers and parents</li> <li>Implementation of a nutrition-sensitive feeding program and hygiene promotion in all pre-primary and primary schools in Mukuru</li> </ul>	<ul style="list-style-type: none"> <li>Improved counseling &amp; nutrition programs in all schools</li> <li>Programs for disabled</li> <li>Infrastructure and quality audit of all the basic education institutions in Mukuru for registration and quality assurance led students</li> </ul>
Irrelevance of curriculum offered	Ensure institutions offer approved, relevant curriculum	<ul style="list-style-type: none"> <li>Ensure all qualified teachers attend termly CBC training organized by MOE</li> <li>Creating awareness to institution managers on how to access the designs from KICD</li> <li>QASO to enforce adherence to the use of approved curriculum designs</li> <li>Nairobi County Education office to organize standards assessment as required by directorate of quality assurance and standards i.e. at least once a year for primary schools and at least once in three years for secondary</li> </ul>	<ul style="list-style-type: none"> <li>Establishment and implementation of a continuous teacher monitoring and assessment program</li> <li>Quarterly reporting and monitoring on school governance</li> </ul>

# SOCIAL INFRASTRUCTURE PROPOSALS

## PROPOSED UPGRADED HEALTH FACILITIES

1. Bridge International, Sinai
2. Lungalunga
3. Mareba
4. Maendeleo

5. MMM
6. Our Lady of Nazareth
7. Mukuru Health Centre

## PROPOSED EDUCATION FACILITIES

8. Mukuru Skills
9. St. Elizabeth
10. Star of Hope
11. Gatoto Primary
12. Reuben Baptist
13. Hope Centre
14. Barmasai
15. Rurie Ground
16. White House
17. Diamond Ground
18. Motorways
19. Chemindae
20. Embakasi Girls
21. NYS Island
22. Njenga Primary
23. Bimji
24. Kwa Njenga Chief's Camp

## PROPOSED UPGRADED MARKETS

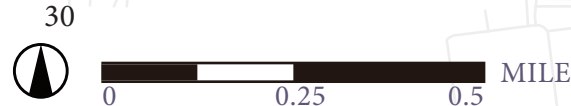
25. Gatoto Market
26. Dakaou
27. Muindi Mweusi
28. Njenga/Railway
29. Reuben/Railway

- Upgraded Health Facilities
- Upgraded Schools
- Upgraded Markets
- Mixed-Use Community Space
- Existing Health Facilities

- Existing Primary Schools
- Existing Primary + Daycare
- Existing Daycare
- Existing Vocational Schools
- Existing Neighboring Schools

- Railway Buffer
- H Existing Neighboring Hospital

**MAP 5. PROPOSED COMMUNITY AMENITIES & ROAD NETWORK**



Recreation is integral in improving the social fabric of a society, improving health and creating an opportunity from the routine work/ live activities. In Mukuru however, this facility is acutely insufficient, as there is only one public recreation ground in Kwa Reuben settlement, called Rurie ground, which serves the entire Embakasi South constituents. To complement this, the residents usually access the hope centre in Kwa Reuben settlement, and Chemi-nade in Kwa Njenga settlement for use as recreational spaces. Star of Hope playground, located in Viwandani settlement, was initially accessible for use by the general public, but has over time made restrictions for public access.

Other social facilities include social halls and fire stations. Mukuru S.P.A has no designated public social hall. Residents within the settlement use the halls in Mukuru skills centre, which is located in Viwandani settlement, and Reuben centre social halls, which are located in Kwa Reuben settlement. However, these halls are not freely accessible and cannot serve the entire Mukuru population. Alternative spaces used as informal social halls include: churches, pubs, hotels and schools' classrooms, especially during the weekends. Residents have to pay a fee to be able to access the existing private halls, or the alternative sites. The rates, coupled by the size of the halls which may restrict the number of people that can meet, often discourage residents from using them.

Mukuru also does not have a fire station within its boundaries. The closest fire station (Mukuru Kayaba fire station) is 2 km from the periphery of the settlement. This facility serves Mukuru S.P.A in case of a fire emergency. Additionally, there is a standby fire engine located along Lunga Lunga road, which compliments the fire station by serving Mukuru residents. However, the response rate to fire emergencies within the settlement is poor, attributed to narrow and inaccessible roads by fire engines.



# HEALTH FACILITIES STRATEGY AND OUTCOME

OBJECTIVE	STRATEGY	OUTPUT
To ensure all health facilities are registered under the MOH in Mukuru SPA	<ul style="list-style-type: none"> <li>Identify gaps in facilities that almost meet the regulations</li> <li>Training and licensing of healthcare providers</li> <li>Register all upgraded facilities</li> </ul>	<ul style="list-style-type: none"> <li>Appraisal report of all healthcare facilities in Mukuru SPA</li> <li>Health facilities upgraded and number closed</li> <li>Number of health facilities registered by the KMPDB</li> </ul>
Construct and upgrade health care facilities within Mukuru SPA	<ul style="list-style-type: none"> <li>Improve access of quality healthcare</li> <li>Improve the medical supply chain within each health facility</li> <li>Improve the emergency response at the health facility</li> </ul>	<ul style="list-style-type: none"> <li>Upgraded health facilities</li> <li>Construction of new health facilities</li> <li>Electronic Medical Records system</li> </ul>
To strengthen the capacity for Community Health Volunteers (CHVs) within the Mukuru SPA	<ul style="list-style-type: none"> <li>Profile all CHVs in Mukuru SPA, recruit more &amp; understand their capacities, training needs and gaps in their operation</li> <li>Supply health products to the CHVs</li> <li>Implementation of the community health policy</li> </ul>	<ul style="list-style-type: none"> <li>All CHVs within Mukuru SPA profiled</li> <li>CHVs retrained</li> <li>A tracking system for CHVs developed</li> <li>CHV compensation policy is implemented</li> </ul>
To Improve the medical products supply chain within Mukuru SPA	<ul style="list-style-type: none"> <li>Suppliers and distributors to develop process to supply health clinics in Mukuru with regulated and non-expired medicines</li> <li>Determine methods to minimize costs by purchasing directly from manufacturers (if possible; remove the distributor)</li> <li>Continuous monitoring and evaluation of medications and medical devices – this will require a tracking process that is suitable for all healthcare facilities within the Mukuru SPA region</li> </ul>	<ul style="list-style-type: none"> <li>Detailed data findings that provide a comprehensive understanding of the medical supply chain across the Mukuru SPA</li> <li>Established contracts and agreements between suppliers and healthcare facilities</li> <li>Tracking methods for medications within each health clinic</li> <li>Number of clinics using the supply chain created by the Consortium</li> </ul>





OBJECTIVE	STRATEGY	OUTPUT
To Improve healthcare financing for residents within Mukuru SPA	<ul style="list-style-type: none"> <li>Register clinics so they can be approved for NHIF accreditation; (this step will most likely depend on whether upgrading is done)</li> <li>Develop strategies to ensure universal health care (UHC) for all Mukuru residents, especially vulnerable populations, youth, women, and those with disabilities</li> </ul>	<ul style="list-style-type: none"> <li>Increase number of facilities that are NHIF accredited</li> <li>Number of NHIF recipients at baseline and after increased NHIF accreditation</li> <li>Data results from the UHC pilot program</li> </ul> <p>Priority: HIGH</p>
Preventive health measures	<ul style="list-style-type: none"> <li>Improve water supply and sanitation and waste management services within the health facilities</li> <li>Promote behavior change of hygiene to reduce negative health impacts</li> <li>Promoting proper nutrition within households</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in disease outbreaks</li> <li>Reduce disease vectors including mosquitoes, rodents</li> </ul>
Improve access to Emergency services in Mukuru SPA	<ul style="list-style-type: none"> <li>Improve road infrastructure for emergency transportation in and out of the Mukuru SPA (In line with the HIC consortium)</li> <li>Identify best entry points into Mukuru for ambulances to reach residents (immediate)</li> <li>Develop partnerships between ambulatory care services (e.g., St. John's) and health facilities in Mukuru (medium-term)</li> <li>Mobile clinics operating within Mukuru to address emergency healthcare needs (immediate)</li> </ul>	<ul style="list-style-type: none"> <li>A Map of traffic congestion points for Mukuru based on time of day</li> <li>Upgrade existing and construct new roads</li> <li>Additional mobile clinics</li> <li>24 hour Ambulance services in health facilities</li> </ul>



# MOBILITY & COMMERCE

Commerce  
Connectivity  
Transportation

Roads

Pedestrian ways

Economic/commercial zones

Informal economy

Public transit

Mukuru's location makes it a critical mobility and economic area. We are already seeing this with new highways being developed around and through the settlement. Mobility is essential for ensuring residents can access services within the community and those within Nairobi and the region.

## Critical Mobility & Commerce Proposals:

- Immediately improve 10.3km of arterial, 13.3km of sub-arterial & 25.7km of collector streets, with new widths, drainage, and sidewalks
- Prioritize pedestrian mobility within the community since this is the primary mode of mobility & safety is an ongoing issue

- Adopt new standards for roadways that reflect existing conditions in the informal settlement (see below)
- Road infrastructure should be implemented alongside drainage, drinking water and sanitary infrastructure.
- Create at least 6 new bus stops, all within 1 km of others, that are safe, especially for women & girls (see maps for locations).
- Enhance sidewalk widths to ensure pedestrians, hawkers and market stalls have adequate space & safety.
- Improve the safety & number of river & railway crossing for pedestrians.
- Enhance existing markets & find new land for new markets

## BENEFITS OF TRANSIT UPGRADING

### EXISTING CONDITIONS

Unplanned road network

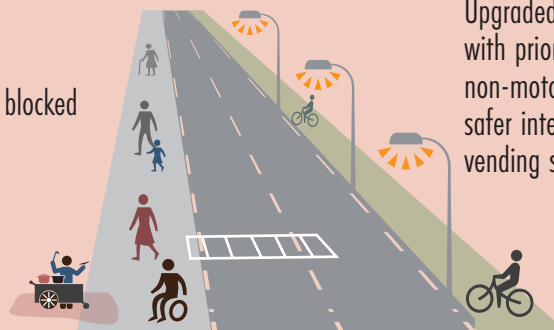
Injuries & death from pedestrian and vehicle accidents

Insufficient or blocked drainage



### PROPOSED SOLUTIONS

Upgraded roads & drainage with priority pedestrian and non-motorized transit features, safer intersections, safer street vending spaces



### HEALTH & WELLNESS BENEFITS

Pedestrian safety, increased physical activity, improved lung function, prevention of food contamination, decreased flooding & water borne illness.



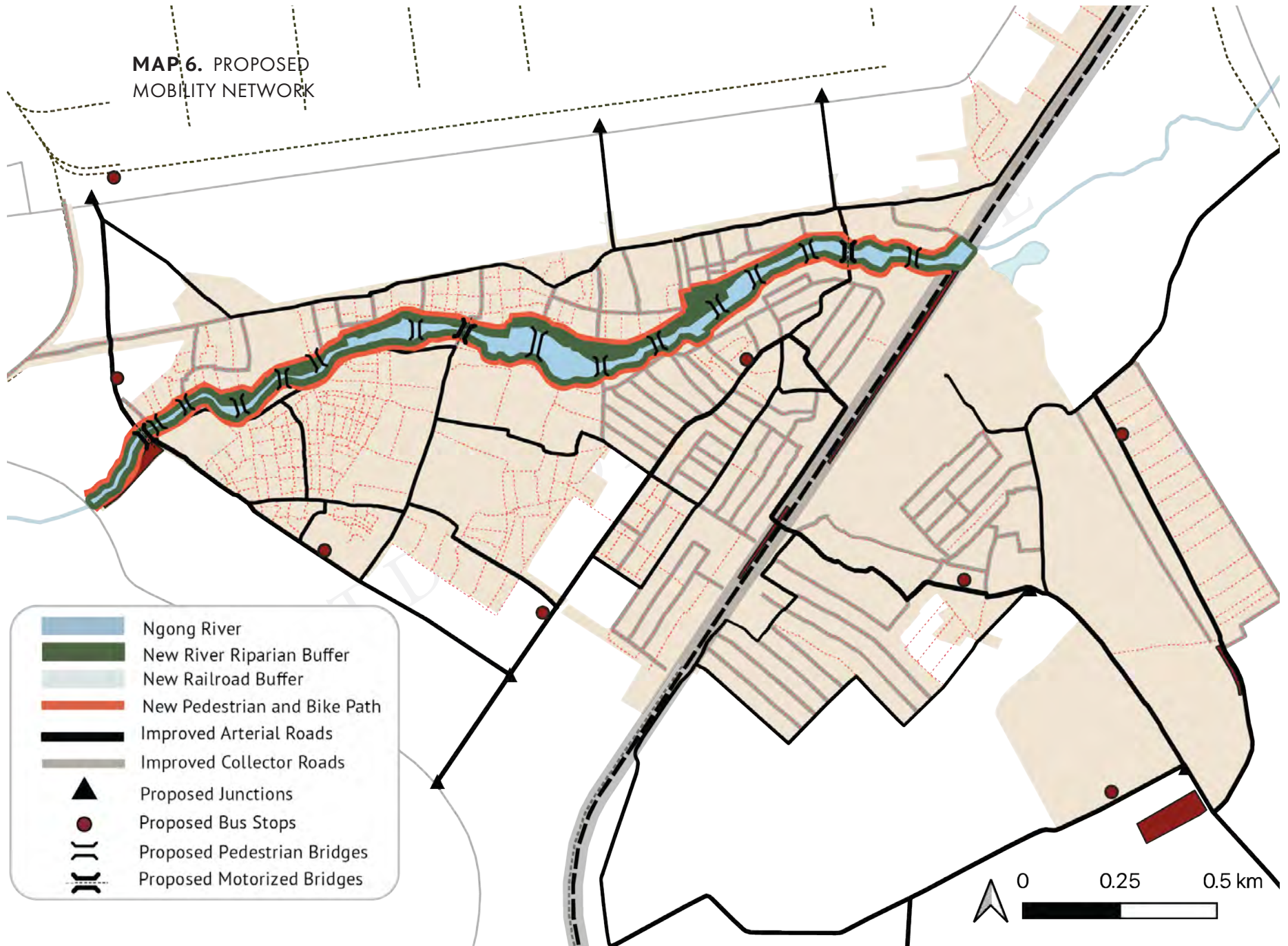
# MOBILITY STRATEGIES AND OUTCOMES

OBJECTIVES	STRATEGIES	OUTPUTS
To improve the road infrastructure network for enhanced service provision	<ul style="list-style-type: none"> <li>Develop an integrated road infrastructure network through participatory planning and implementation process</li> <li>Demarcate and secure the road reserve</li> </ul>	<ul style="list-style-type: none"> <li>Integrated road infrastructure network</li> <li>10.3km Arterial roads (Level 1) with motorable bridges across Ngong river</li> <li>13.032km sub-arterial (level 2) &amp; 25.747km local distributor (level 3) roads.</li> <li>All with storm water drainage</li> </ul>
To minimize displacement caused by project implementation	<ul style="list-style-type: none"> <li>The adoption of adoptive standards in the implementation of road infrastructure in Mukuru</li> <li>Develop and implement a Resettlement Action Plan (RAP) for the project affected persons</li> </ul>	<ul style="list-style-type: none"> <li>Development of adoptive planning standards for informal settlement under SPAs</li> <li>Preparation and implementation of Relocation Action Plan. (10,000 households)</li> </ul>
To promote walkability and safety of pedestrians in the settlement	<ul style="list-style-type: none"> <li>Develop an integrated NMT infrastructure network with safety focus</li> </ul>	<p>An Integrated NMT infrastructure network Plan</p> <p>Construction of 4km walkways and cycle tracks</p>
To provide for the designated markets and trading spaces in Mukuru	<ul style="list-style-type: none"> <li>Plan, designate and develop spaces for commercial activities (markets and trading spaces)</li> <li>Provide the necessary support infrastructure to the markets and trading spaces</li> </ul>	<ul style="list-style-type: none"> <li>Construction of 2 new markets in Mukuru (1 Kwa Njenga, 1 Kwa Reuben)</li> </ul>
To improve the housing conditions in Mukuru	<ul style="list-style-type: none"> <li>Develop a comprehensive housing plan for Mukuru</li> <li>Develop guidelines for housing development</li> </ul>	<ul style="list-style-type: none"> <li>Develop 10,000 relocation housing units at the Meteorological decanting site</li> <li>Develop 115,000 housing units within Mukuru settlement</li> </ul>



# MOBILITY PROPOSALS

**MAP 6.** PROPOSED  
MOBILITY NETWORK



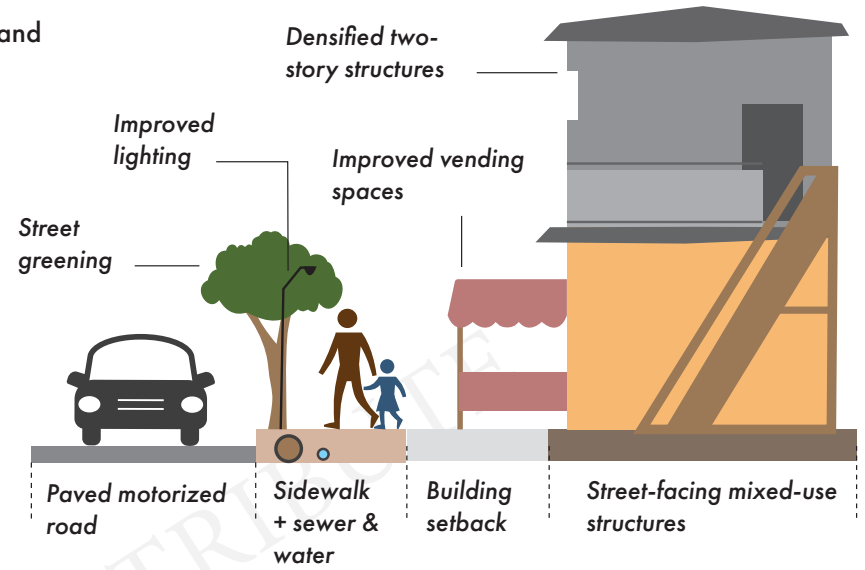
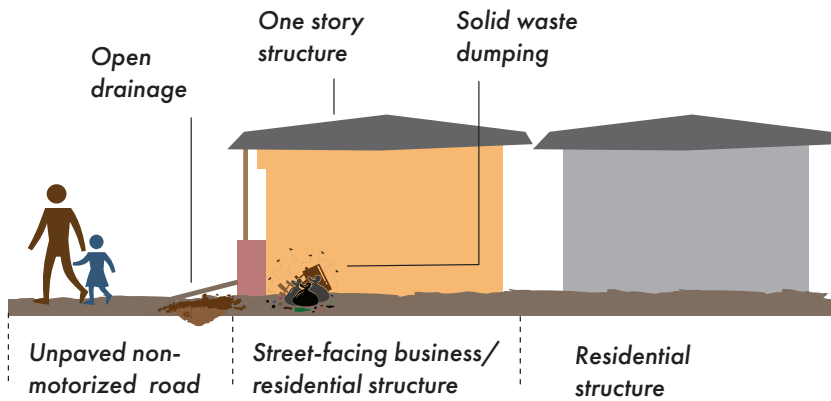
# MOBILITY PROPOSALS

**MAP 7.** PROPOSED ADDITIONAL TRANSIT, SUB-ARTERIAL & NON-MOTORIZED NETWORK



# MUKURU STREET UPGRADING

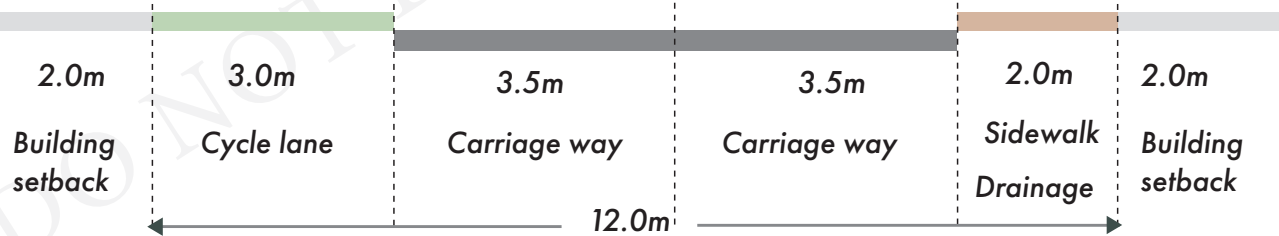
High density mixed-use development and non-motorized transit improvements



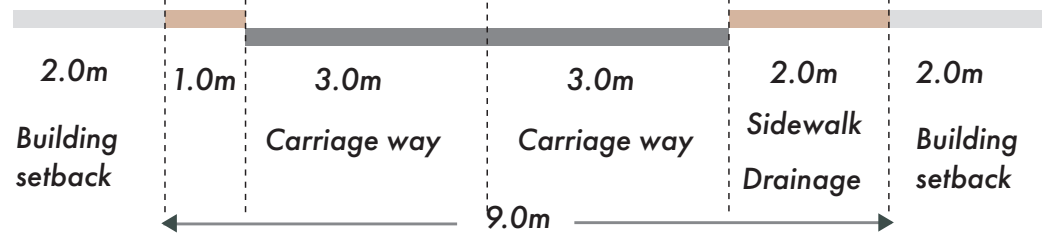
EXISTING STREET LAYOUT

UPGRADED STREET LAYOUT

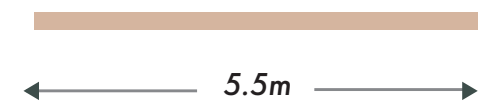
## 1 ARTERIAL



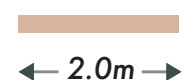
## 2 SUB-ARTERIAL



## 3 COLLECTOR



## 4 LOCAL ACCESS



MOTORIZED ROAD COMPONENTS

The settlement contains a robust informal labor market, hosting a wide range of daily commercial activity as well as contributing to the nearby job sector. The settlement is located 1-2km from the Imara Daima Railway Station which provides an alternative transport mode for the Mukuru residents. The railway network which cuts across the settlement connects the area to different regions of the county.

The proximity of the settlement to the neighbouring industrial zones, middle-income residential zones, and the Nairobi CBD opens up the settlement to a wide range of opportunities. These include a growing local economy and access to diverse services. The City trunk road network surrounding the settlement provides an opportunity for connecting the settlement to the neighbouring areas and the larger region (Nairobi and beyond).

Mukuru S.P.A has 2 designated formal markets. One is Gatoto market, which is adjacent to Gatoto primary, in Kwa Reuben settlement. The other is Sinai/Paradise market, located along part of the railway reserve in Paradise/Sinai settlements. However, Gatoto market is not functional, as it has been encroached over time, with new structures put up to serve as residential/commerce purposes. To complement these existing markets, there is a large base of informal/roadside markets, in some sections conducted at large scale while in some conducted in low scale. The dominant informal market areas within the S.P.A are Muindi Mweusi between Moto Moto and Wape Wape in Mukuru kwa Njenga, and along the railway line in Wesinya, Mukuru kwa Reuben. Mukuru residents mainly rely on the informal markets for purchase of commodities. They are convenient as they are in operation every day, and also sell commodities in small units to the residents, which makes it budget-friendly.





1. Encroached Gatoto market area. Structures Used for business cum residential

2. Commercial activities in the encroached Gatoto market section

3. Roadside vending activities in Muindi Mweusi area

4. Space contestation between vendors, pedestrians and vehicular movement

5. Section of the carriageway utilized as a trading zone. Market is operational on a daily basis and is the major one in Kwa Njenga settlement



# WATER, SANITATION & HYGIENE



## PROPOSAL OVERVIEW

- NCWSC shall install water pipe network along existing roads & connect each structure/household to water network with an internal tap
- Drill at least 10 new boreholes for clean drinking water
- Finance & construct a simplified sewer network that connects to each structure, allowing for private pour-flush toilets
- Scale-up shared water kiosks & toilets using the pay-as-you-go models
- No more than 10 households should share 1 water tap or toilet.
- Identification & 100% water connection to all public schools (6), health facilities (6) within the first year
- 10,000 households served by 100 water points. 100 PPD water points constructed yearly
- Construction of 7.2 km of secondary sewer
- Construction of last mile sewers, chambers & connection
- Install 12 rainwater harvesting facilities for public schools & health facilities
- Greywater recycling from kitchens in public schools & health facilities
- Install Container Based Sanitation & other non-sewered sanitation options for all structures that cannot be served by conventional sewers

## Benefits of Water & Sanitation Upgrading

### Existing Conditions

Poor access to safe water and sanitation



### Proposed Solutions

In-home water connections; community water kiosks; in-home toilets; safer community toilets



### Health & Wellness Benefits

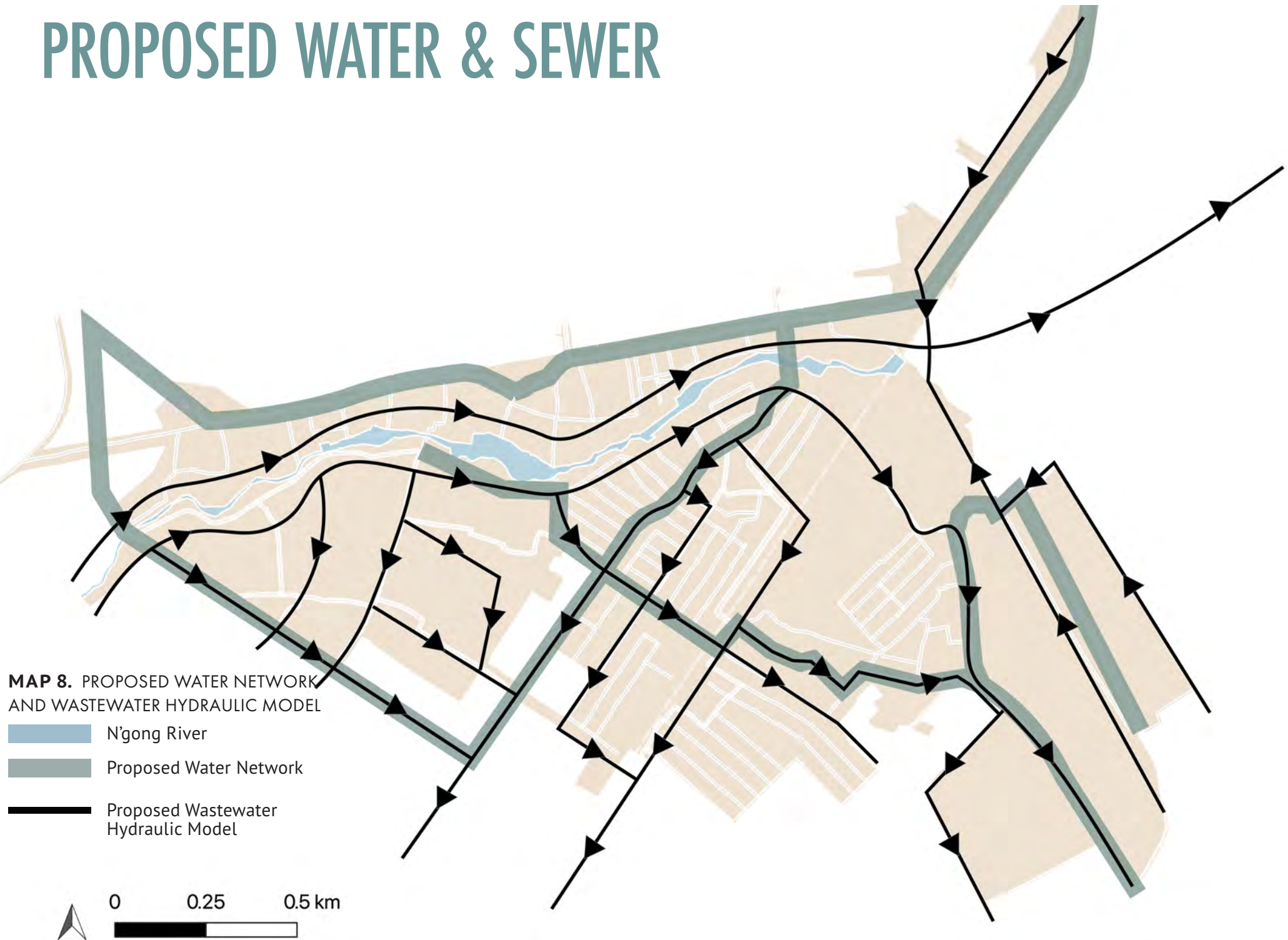
Safety for women; fewer infections; reductions of water-borne illnesses; dignity; fewer missed school days, especially for girls



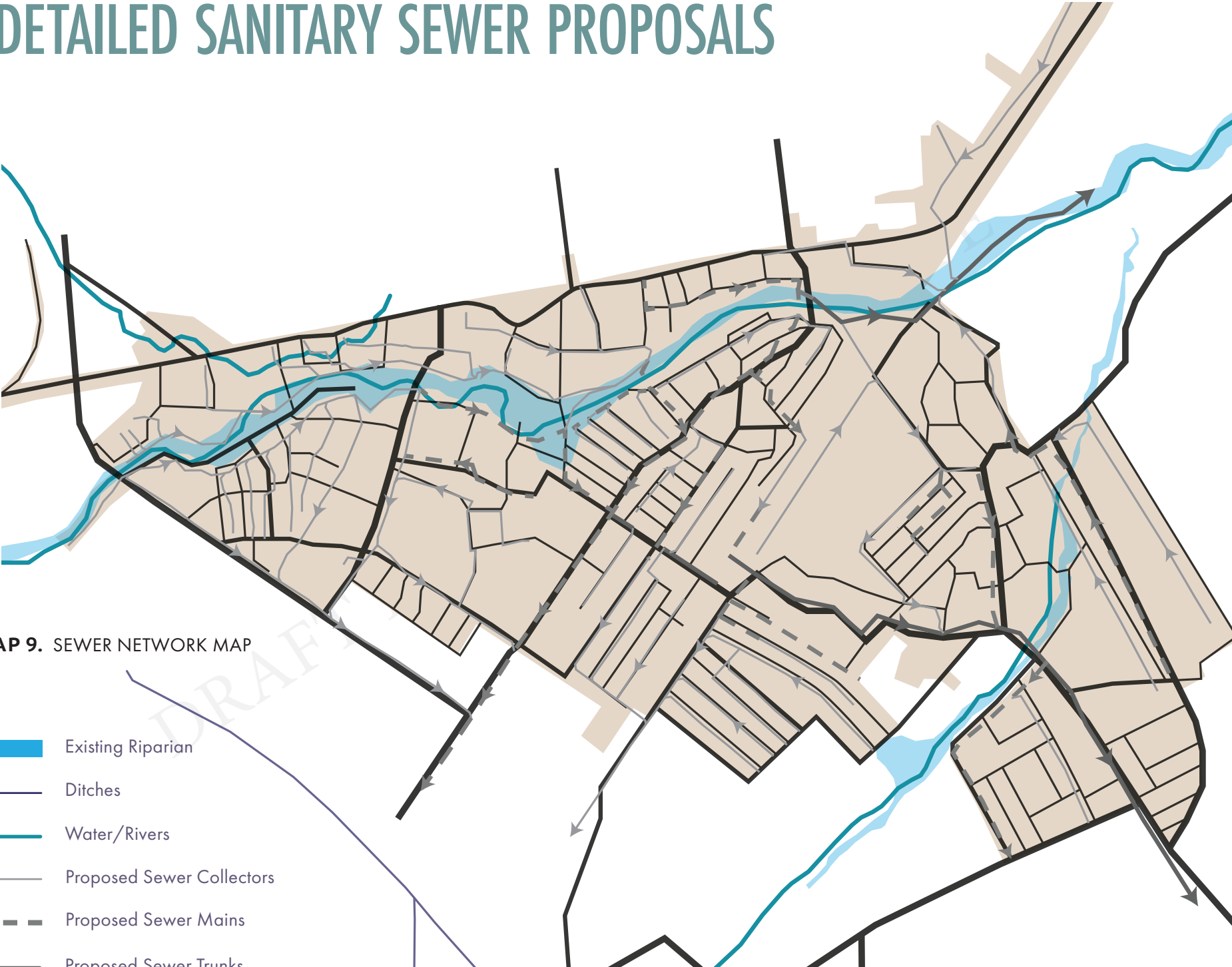
PROBLEM	OBJECTIVE	STRATEGY	OUTPUT
Illegal water connection resulting in unsafe and high cost of water	To ensure residents access safe and affordable supply of water	<ul style="list-style-type: none"> <li>Map out illegal water connections</li> <li>Regularize connections</li> <li>Enforce for compliance</li> <li>Address cross contamination of water supplies</li> </ul>	<ul style="list-style-type: none"> <li>Identification &amp; 100% water connection to all public schools (6), health facilities (6) within the first year</li> <li>Install 12 rainwater harvesting facilities for public schools &amp; health facilities</li> <li>Awareness and sensitization on water preservation and conservation</li> <li>Installation of rainwater harvesting tanks in community centres, schools, and health facilities</li> </ul>
Inadequate water supply	To provide reliable and adequate water to all	<ul style="list-style-type: none"> <li>Supplement conventional supply through drilling of boreholes</li> <li>Promote rainwater harvesting</li> <li>Reduce NRW</li> <li>Demand management to reduce wastage</li> </ul>	<ul style="list-style-type: none"> <li>Construction of 10 boreholes (drilling and management)</li> <li>10,000 households served by 100 water points</li> <li>100 PPD water points constructed yearly</li> </ul>
Inadequate sanitation facilities	Improve access to sanitation services	<ul style="list-style-type: none"> <li>Increase sewer connectivity</li> <li>Increase access to non-sewered/onsite sanitation facilities</li> <li>Simplified sewer systems (SSS) to the first 7,000 households</li> </ul>	<ul style="list-style-type: none"> <li>Construction of 7.2 km of secondary sewer</li> <li>Construction of last mile sewers, chambers &amp; connection</li> <li>Promote &amp; install in 2,000 – 3,000 households per year with Container Based Sanitation &amp; other non-sewered sanitation options in areas that cannot be served by conventional sewers</li> </ul>
Poor management of sludge	To build capacity for safe and environmentally friendly sludge management	<ul style="list-style-type: none"> <li>Map out and tag all pit latrines and onsite sanitation facilities</li> <li>Develop and enforce SOPs</li> <li>Train manual emptier and mechanical operators</li> <li>Allocate additional discharge points</li> <li>Mapping and tagging of all pit latrines to assess safe containment.</li> <li>Development and application of onsite sanitation standard operating procedures</li> </ul>	<ul style="list-style-type: none"> <li>Training of 30 manual and mechanical pit emptiers annually</li> <li>Site identifications and development of 2 sewer discharge points</li> <li>Training of 30 manual and mechanical pit emptiers annually</li> </ul>
Lack of sanitation tariffs	To formulate, introduce and implement sanitation tariff through the regulator	<ul style="list-style-type: none"> <li>Initiate development and approval of tariff</li> <li>Ensure stakeholder engagement and public participation</li> </ul>	<ul style="list-style-type: none"> <li>Regulated and equitable sanitation service costing</li> </ul>



# PROPOSED WATER & SEWER



# DETAILED SANITARY SEWER PROPOSALS



MAP 9. SEWER NETWORK MAP

- Existing Riparian
- Ditches
- Water/Rivers
- Proposed Sewer Collectors
- Proposed Sewer Mains
- Proposed Sewer Trunks

# COVID-19 RESPONSE

Following the first confirmed case of Covid-19, the Kenyan government imposed containment policies to reduce the spread of the virus. These containment policies meant a wide-spread shutdown to minimize the human-to-human transfer of the virus. The shutdown exacerbated the existing issues for Mukuru and similar informal settlements in Kenya. It became difficult for the already vulnerable Mukuru residents to meet their basic needs in this crisis time. The residents experienced massive job losses due to the informal nature of their work. This economic turmoil further aggravated the effect of

covid-19 on the slum dwellers. The densely-populated settlement meant social distancing was difficult if not impossible in Mukuru. Lack of access to safe water for sanitation made it even more challenging to contain the virus.

To alleviate adverse effects of the pandemic on informal settlements, residents and the Kenyan government came forward with initiatives to provide services and upgrade the informal settlement to ensure safe and adequate livelihood for all.



**Roads in city informal settlements set for major facelift**

**NATIONAL HYGIENE PROGRAMME**

**City slums now better places to live in, thanks to Kazi Mtaani**

Each youth earns Sh455 daily while a supervisor takes home Sh505

**NEGLECTED NO MORE**

**Slum upgrading becomes a reality with Mukuru in for drastic change**

**NEWS**

**First four of 24 hospitals newly-built by NMS to be opened**

**State to put up 10,000 houses on repossessed land**

# INITIATIVES & PROGRAMS

## Household Finance & Economy



### 26,000 Jobs for youth in Kenya

The national hygiene program, locally known as 'Kazi minati', was launched as an economic stimulus for the informal settlements, including Mukuru, to cushion the jobless youth during the Covid-19 crisis. The program provided daily-wage jobs for youth between the age of 18-35 years.

Kazi minati is a labor-intensive program. Youth are involved in jobs like garbage collection, disinfection, bush clearance, drain cleaning, and construction of roads and service deliveries.

Phase-1 generated 26,000 jobs in Kenya. The residents of the informal settlements well-received the program. Therefore, the government launched two additional phases. Phase-1B & 2 aims at creating hybrid jobs for skilled and unskilled labor. These involve building and maintaining public spaces and infrastructure such as schools, libraries, toilets, footpaths, painting, and cobblestone road paving.

The program has had a multiplier effect with the economic boost the crime rates have reduced in the informal settlement.



## Infrastructure



### 10,000 Social Housing units

State Department of Housing and Urban Development acquired 56 acres of land from Nairobi's Industrial Area to build 10,000 units of social housing for residents of Mukuru.

## 45 km Road Upgradation

Kenya urban roads authority (kura) has started upgrading roads leading to informal settlements to combat the adverse effects of COVID-19. The initiative aims at connecting informal settlements to essential goods and services. The program aims at upgrading 45km of road connecting Mukuru to the rest of the city.



## 24 Bed Health facility

Nairobi Metropolitan Service (NMS) built a 24-bed hospital in Mukuru in response to rising cases of COVID-19 in Mukuru. The health facilities are in line with the universal health care goals, which ensures easy access to affordable and quality health care. The area was previously served by an eight-bed private hospital, catering to half a million residents.



## Health Care

## Water & Sanitation



Nairobi City Water and Sewerage Company have dug new boreholes for wells and are installing new pipe for water and sanitation in Mukuru. This work complements the community-driven emergency washing stations that were established to ensure all residents had access to safe water during the pandemic.

# APPENDIX

## APPENDIX A. ACKNOWLEDGMENTS

### Consortia Organizations

African Population Health  
Research Center (APHRC)  
Akiba Mashinani Trust  
ARUP  
Caritas Switzerland  
Concern Worldwide  
Daraja Civic Initiatives Forum  
Data Vaults System  
Elimu Yetu Coalition (EYC)  
Franciscan International  
ICChange (Innovative  
Canadians for Change)  
Institute of Economic Affairs  
Katiba Institute  
Kenya Medical Association  
Kenya Red Cross  
Mukuru Slums Development  
Project  
Muungano Wa Wanavijiji  
Oxfam  
Pandya & Poonawala  
Advocate  
Plan International  
Reuben Center  
Sanergy  
SEI - Stockholm Environment  
Institute

### Community Mobilizers

Slum Dwellers International -  
Kenya (SDI-K)  
SPARC India  
Strathmore Energy Centre  
(S.E.R.C.)  
Strathmore University  
Sullivan and Cronwell LLP  
The New School  
TrustLaw  
UC Berkeley Center for Global  
Health Cities  
UC Berkeley Institute of Urban  
& Regional Development  
Umande Trust  
United Nations Environment  
Programme (UNEP)  
University of Nairobi  
Women Educational  
Researchers of Kenya (WERK)



## APPENDIX B. STATUTORY & PLANNING FRAMEWORKS

Since the promulgation of the new constitution in 2010, Kenya has had a devolved regulatory structure related to management of land, housing, and infrastructure as well as many other components of governance. There is considerable autonomy devolved to county governments regarding the management of land, housing, and other urban development matters. However, the planning component remains ambiguous because even though the structure has been devolved, the law guiding planning, especially the Physical Planning Act, has not been amended. Many policies are currently under review to match with the devolved structure of governance. The laws and policies currently regarding housing and urban development are summarized below.

- Sustainable Development Goals
- The Constitution of Kenya 2010
- Kenya Vision 2030
- National land policy, Sessional Paper No. 3 of 2009
- Sessional Paper No. 3 of 2004 on National Housing Policy
- National Slum Upgrading and Prevention Policy (NSUPP)
- Urban Areas and Cities Act 2011
- Physical Planning Act 1996
- County Governments Act 2012
- Physical Planning Handbook 2007
- National Urban Development Policy, 2016
- Kenya National Spatial Plan 2015-2045
- Nairobi Integrated Urban Development Plan (NIUPLAN)
- Nairobi City County Integrated Development Plan (NCCIDP) 2018-2022
- Nairobi County Development Control Guidelines/ Nairobi Zoning ordinances

### National Level Planning Framework

The national government is required to develop both long- and medium-term integrated development plans for the country as a basis for its budgeting process. Kenya is currently operating under a 22-year, long-term development plan dubbed “Vision 2030”, which covers the period 2008 to 2030. Utilising three pillars of economic, social, and political strategies, Vision 2030 is to be implemented in successive 5-year Medium-Term Plans. To fulfil its physical planning mandate, the national government would be required to develop a 20-year National Physical Development Plan, as per the proposed Physical Planning Bill (PPB). Currently, a 30-year National Spatial Plan has been developed, covering the period 2015 to 2045.

The national government is further charged with the duty of coordinating planning by the counties, under Schedule 4 of the Constitution.

### Inter-County Level Planning Framework

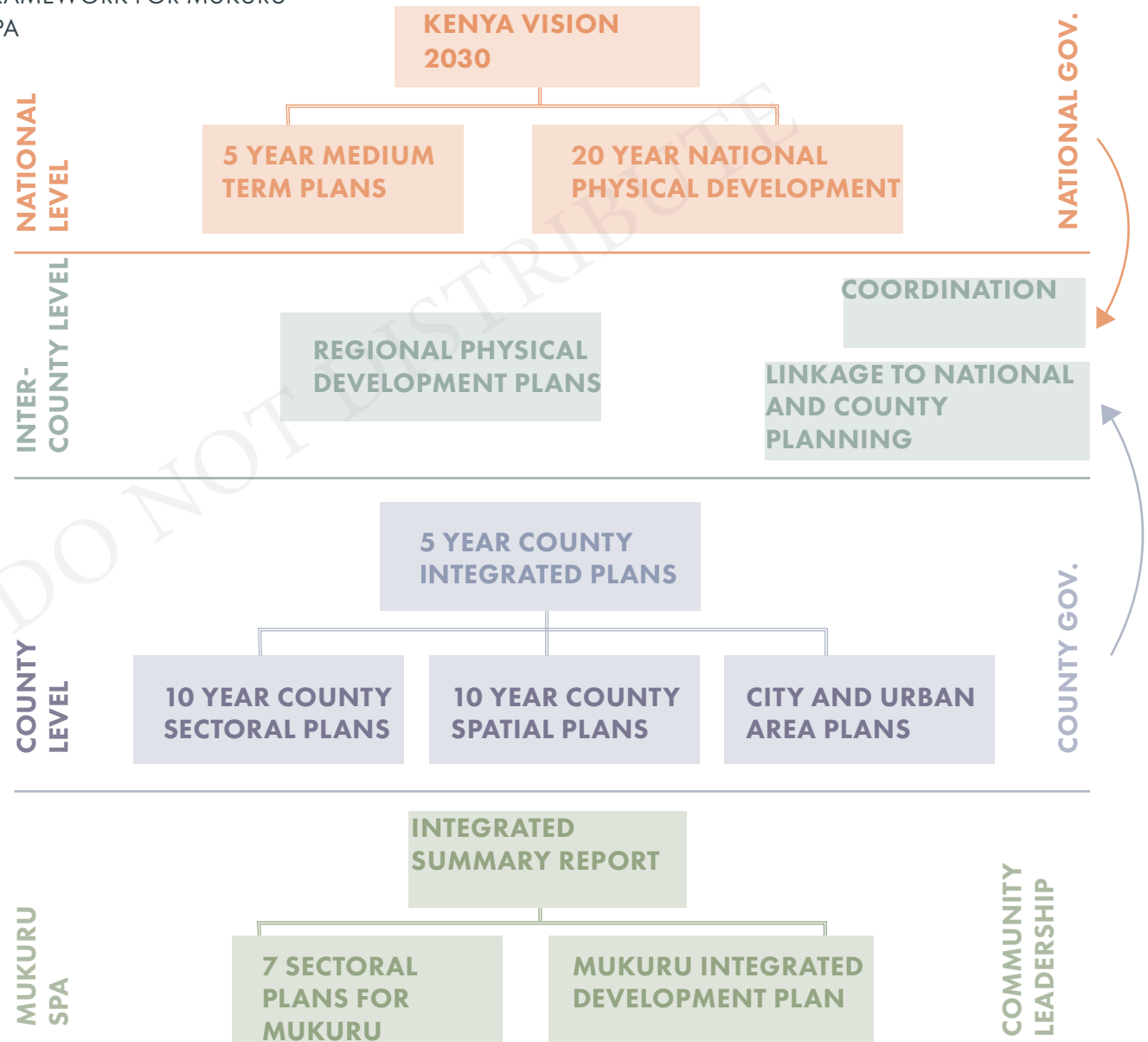
The Physical Planning Act (1996) provides for the preparation of Regional Physical Development Plans (RPDPs). The proposed Physical Development Bill also recognizes the need for regional development plans and provides that RPDPs shall be prepared for an area covering two or more counties. Both the Bill and the Act stipulate that RPDPs may be prepared in reference to government, community, or private land. Key goals of RPDPs include 1) to improve these lands and 2) to support their proper physical development. RPDPs also aim at ensuring 3) the suitable provision of transportation, utilities, and services across counties. Additionally, they play an important role in 4) securing land for commercial, industrial, residential, and recreational purposes. Development plans may provide for 5) the planning, re-planning, or reconstruction of an area. County planning units shall be responsible for ensuring linkages between county plans, the national

planning framework, and national and county government policies.

**County Level Planning Framework**  
Under the County Government Act, all county governments are obligated to plan for their counties. County plans shall be the basis for all budgeting and spending in a county. Counties are, under statute, required to prepare plans to guide, harmonise, and facilitate development within their counties (County Government Act, Section 107), as follows:

- 5-year County Integrated Development Plans
- 10-year County Sectoral Plans as a component of the County Integrated Development Plan, with sectoral plans reviewed every five years and updated annually
- 10-year County Spatial Plans as another component of the County Integrated Development Plan, with spatial plans reviewed every five years and updated annually
- Cities and Urban Area Plans, as provided for under the Cities and Urban Areas Act
- Under Section 36 of the Urban Areas and Cities Act, counties are required to prepare plans for areas with population of over 2,000 people
- Local Physical Development Plans, as required under the Physical Planning Act

**FIGURE 2. PLANNING FRAMEWORK FOR MUKURU SPA**



## APPENDIX C. MUKURU BRIEF BACKGROUND

Mukuru is one of the largest of over 150 informal settlements in Nairobi, Kenya. Mukuru has over 100,500 households and an estimated population of 300,000 people. The Mukuru area includes the settlements of Mukuru Kwa Njenga, Mukuru Kwa Reuben, Viwandani, Mukuru Kayaba, Fuata Nyayo, and Mariguini, which are situated in an industrial zone approximately seven kilometers southeast of Nairobi's central business district.

Despite a previous transfer of land titles to private developers in the 1980s, the land in Mukuru remained undeveloped and was settled upon by migrant families and industrial workers drawn to jobs in the neighboring industrial area and Nairobi's city center. As the settlements began to grow and densify, issues of land tenure and threats of eviction intensified the contestation of land ownership in Mukuru.

The land tenure issues and controversies in Mukuru contributed to the area being largely excluded from county and national planning initiatives as well as investments of formal governance systems and services. This lack of planning and investment contributed to the present-day conditions in Mukuru of rapid, haphazard, often unsafe development with a lack of basic services.

The absence of services such as drainage, sanitation & waste management combine with Mukuru's proximity to industrial activities to pose **cumulative environmental health risks** for residents.

While Mukuru faces many challenges, it has strong community assets such as women-led savings groups, youth leaders, a network of schools and community facilities, and a robust informal labor market that provide opportunities for growth and are already contributing immensely to the economy and social fabric of Nairobi. The ongoing work in Mukuru has engaged these community stakeholders and

utilized settlement profiling, a community-led action research process, to gather and compile information in the following areas: access to land (eviction); access to services (water and sanitation, electricity, health, education, and nutrition); and livelihood opportunities.

### Land

The total land area in Mukuru is 279.12 Ha distributed among different uses such as Residential (41.34%) and Commercial (2.65%), which occupy the greatest percentages alongside other uses such as industrial (1.52), Transportation (9.00%), Recreational Area (0.24%), Public purpose (2.00 %), Education (6.67%), Public Utilities (0.99 %), River and Riverbank (3.54%) and Open spaces and spaces between buildings (32.05%).

### Environment & Health

Mukuru is located adjacent to the Makadara industrial zone, which, at its nearest, is less than 3 kilometers from Nairobi's city center. There are over 1,000 industrial facilities surrounding the informal settlement, and these facilities act as major sources of pollution (Map 2). Industrial activities include a range of processes, from chemical manufacturing to auto repair and battery recycling. Hazardous pollutants are emitted directly from industrial facilities through smoke stacks and effluent pipes or are dumped into the Ngong River and in open areas throughout Mukuru, exposing nearby residents to disease-causing agents and chemicals in the water, air, and soil.

The severity of flooding and associated health risks are particularly concerning in Mukuru. During the two rainy seasons from March - May and October - December, the area experiences a series of flood events that have already caused major building and infrastructure damage, displace people from their homes, caused children to miss school, and prevent employees from working. These flood events contribute to both

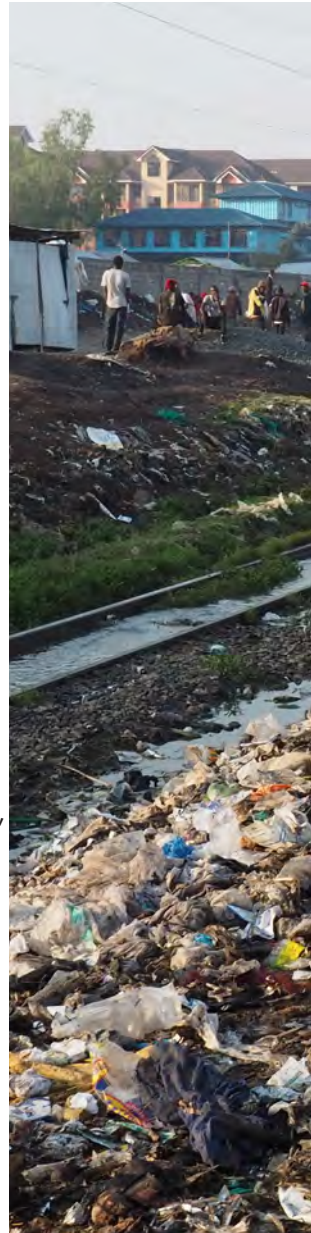
**FIGURE 3. EXISTING CONDITIONS:  
ENVIRONMENTAL & HEALTH RISKS IN  
MUKURU**



health and economic risk for Mukuru residents and all residents of Nairobi.

Severe flooding, combined with industrial waste and poor sanitation infrastructure, expose residents to significant health risks including injuries, illness, and death. Standing floodwater damages structures and can cause them to collapse, while flash floods sometimes wash them away entirely, leaving people displaced or homeless. Flooding makes roads inaccessible, leaving communities stranded, and cutting them off from critical resources including health care and food. School closures due to flooding are also common, which disrupts local students' education.

In Mukuru, exposed sewage and human waste in surface drains and high costs for clean water combine with frequent flooding and unhygienic food preparation w& handling to contaminate food and contribute to nutrition-related illnesses. Measured conditions in Mukuru include parasites, diarrhea, chronic stress, low height for age (stunting), low weight for height (wasting), and poor maternal health outcomes. Poor nutrition can contribute to decreased school performance, reduced work productivity, and gender inequities.



# APPENDIX D. MUKURU SPECIAL PLANNING AREA KEY MILESTONES

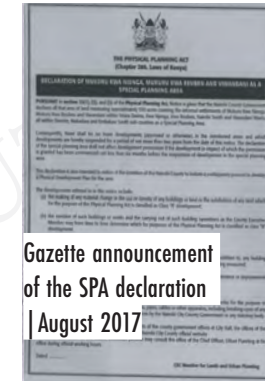
Community Process

Rapid densification of Mukuru leads to forced evictions and protest from the community | 2010

Jubilee Campaign and community mobilization | 2012 - 2013



Kenyan women sue for ownership of Mukuru | 2013



WOMEN & SANITATION CAMPAIGN

MAKING THE INVISIBLE VISIBLE, DATA COLLECTION & MOBILIZATION

SPA DECLARATION

COMMUNITY CONSULTATIONS & SECTOR PLANS

2010 - 2012

2013 - 2014

2015 - 2016

2017

2018 - 2020

Research & Reports

