

#### Towards A Resilient Commuter Rail System in the Nairobi Metropolitan Area ~Support from the Japan – World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries ~

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#### **Urban Mobility Challenges in Kenya**



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### **Urban Mobility Challenges Impact on Economic Development**



 Traffic congestion resulting in long commuting and substantial economic losses - almost US\$1 billion /year in lost productivity in Nairobi



• 27.8 traffic fatalities/100,000 people equivalent to about US\$3 million/year in Kenya - mostly pedestrians in urban areas



• Air pollution takes 18,000 lives per year, including many children in Kenya - due to vehicle emissions in urban areas



 Urban floods affected 800,000 individuals and disrupted urban mobility in Kenya in 2018 – US\$187million to repair roads

### Urban Mobility Challenges in the Nairobi Metropolitan Area are Rapidly Growing

- Urban Areas in Nairobi Metropolitan Area (NMA) increased from 409 sq. km to 2,188 sq. km between 1995 and 2015: average annual expansion rate 14 percent, between 2005 and 2015 at 19 percent
- 41 percent of households in Nairobi live in slums
- Trip generation in NMA (and to/from NMA) increasing at faster pace than population growth



#### Figure 3.3 Urban expansion Nairobi Metropolitan Area

Source: Katyambo and Ngigi (2017), American Journal of Geographic Information System 2017, 6(2): 64-82

Functional Urban Area<sup>\*</sup> extends beyond Nairobi County

\*population density & travel-to-work flows



#### **Refocus Improving Urban Mobility on Public Transport Improvement**



## **Overview of Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries**



#### **Program Background**

- After the Great East Japan Earthquake and Tsunami in 2011, Japan, one of the founding donors of the Global Facility for Disaster Reduction and Recovery (GFDRR), further strengthened cooperation with the World Bank on resilience
- Following the 2012 "Sendai Report: Managing Disaster Risks for a Resilient Future", prepared by the World Bank and GFDRR, with financial support from the Government of Japan, in 2014, the "Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries" was established through an initial US\$100 million contribution from the Government of Japan (GOJ)
- In April 2018, building on the Program's achievements, the Program was renewed for the 2<sup>nd</sup> phase with an additional US\$100 million contribution from GOJ

#### **Program Objectives**



#### **Country Program Technical Assistance**



- Safer Schools
- Resilient Transport
- Dam Safety
- Infrastructure PPP
- Resilient Water Supply & Sanitation
- Infrastructure Prioritization Framework
- Building Regulation for Resilience
- Integrated Urban Flood Risk Management



- Community Resilience
- Inclusive Resilience
- Cultural Heritage
- Emergency Preparedness
- Resilient Industry
- Hydromet Modernization
- Data & Risk Assessments
- ICT & Early Warning



- Disaster Risk Insurance Policy and Frameworks
- Financial Protection of Public Assets
- DRFI for State owned enterprises

### **Program Support Distribution Across Sectors (FY22)**

Resilient Infrastructure

Risk Identification, Reduction, & Preparedness



### Program Support for a Resilient Commuter Rail System in Nairobi Metropolitan Area under the Proposed Kenya Urban Mobility Improvement Project



#### Planning a Mass Rapid Transit System in NMA is Well Advanced



#### Background of the Program-funded Technical Assistance towards Resilient Commuter Rail System

- As a result of increased climate variability, Nairobi has experienced more frequent and heavy rain events than in the past
- The absence of a standard operating procedure and/or business continuity plan in Kenya Railways results in the unplanned suspension of services
- A distinct warming trend is evident in Kenya

Incorporating disaster risk management and resilience lens into the rehabilitation and upgrading of commuter rail is getting more and more critical

**OBJECTIVE:** To support the GoK in enhancing disaster risk management associated with the proposed rehabilitation and modernization of a commuter railway system and selected railway station areas in the Nairobi Metropolitan Area

### Technical Assistance funded by the Program for a Resilient Commuter Rail System in the Nairobi Metropolitan Area

#### Vulnerability Assessment for Commuter Rail

 Vulnerability Assessment report for Commuter rail

#### **Resilience Principles Development for Resilient Commuter Rail**

- Gender-inclusive assessment report
- Guidance Note on Resilience Principles for rail systems

#### Railway Asset Management System Development

 Options Paper on design and implementation of a Railway Asset Management System

Review Existing Land Use Plans following Transit-Oriented Development Concept with DRM-informed Lens for Selected Railway Stations

- Options paper on enhancing land use plans with DRM- lens for selected railway stations
- Guidelines to enhance land use plans around railway station areas with DRM-lens

Capacity Building and Knowledge Dissemination

Tailored Technical Workshop



# Thank you

