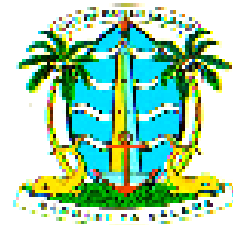


President's Office
Regional Administration and Local Government



Dar es Salaam City Council
(Dar es Salaam Metropolitan Development Project)

Climate Change: Resilience Strategies in Msimbazi Basin

Transforming Msimbazi valley into a land of opportunities

Beautiful green, open space
in the heart of Dar es Salaam City



Dar es Salaam Metropolitan Development Project

Project Development Objective

Improve Urban Services and Institutional Capacity in Dar es Salaam Metropolitan Area and to Facilitate Potential Emergency Response

Key Project Results Indicators

- Increased number of **Direct Project Beneficiaries**
- Increased number of people with **Access to All-Season Roads**
- Increased **Land Area Protected from 10 Year Return Flood Events**
- **Action Plan for Improving Institutional Structure** of the Dar es Salaam Metropolitan Area

Dar es Salaam Metropolitan Development Project

Project Financing

- Original Financing Request: **US\$ 650 million**
- Approved IDA Financing : **US\$ 300 million**

Project Infrastructure Components

Component 1: Priority Infrastructure

- Priority Roads (65.4 km)
- Flood Control & Storm Water Drainage (40.0 km)
- Contingency for Disaster Risk Response

Component 2: Upgrading in Low-Income Communities

- Roads and related infrastructure (144.6 km)
- Environmental related works
- Community related amenities

Dar es Salaam Metropolitan Development Project

Flood Control and Storm Water Drainage

- Sinza River
- Msimbazi River (upstream attributes)
- Yombo River
- Gerezani Creek
- Kizinga River

Why Msimbazi River Basin Project?



Frequent flooding in recent years



YouTube: Global TV Online

Why Msimbazi River Basin Project?

- Loss of at least 20 lives in 2015
- Loss of 15 lives and displacement of more than 2000 families in April 2018
- 7 major floods in past 13 months
- Direct damage to BRT infrastructure and fleets
- Expected Annual Loss of US\$ 47.3 million
- Reconstruction cost is estimated to be around US\$ 5.5 to 6.1 million per event
- Compliment to ongoing flood control and storm water drainage initiatives under DMDP

Why Msimbazi River Basin Project?

beautiful green, open space
in the heart of Dar es Salaam City



Initiatives on Msimbazi

Tanzania Urban Resilience Programme

- Support central and local governments to strengthen the management of climate risk in cities
- Financed by DFID through Trust Fund at the World Bank
- US\$ 20.0 million for Msimbazi River Basin Project
- Preparation of Msimbazi Project

Msimbazi Design Charrette

9 months of collaboration

30 different sessions

59 institutions

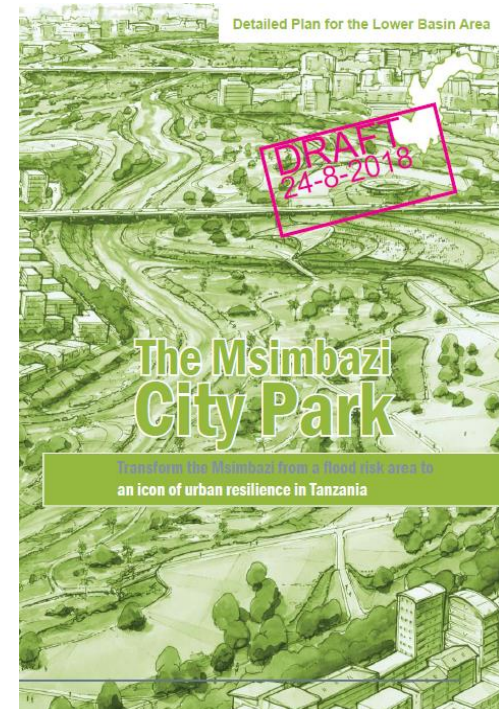
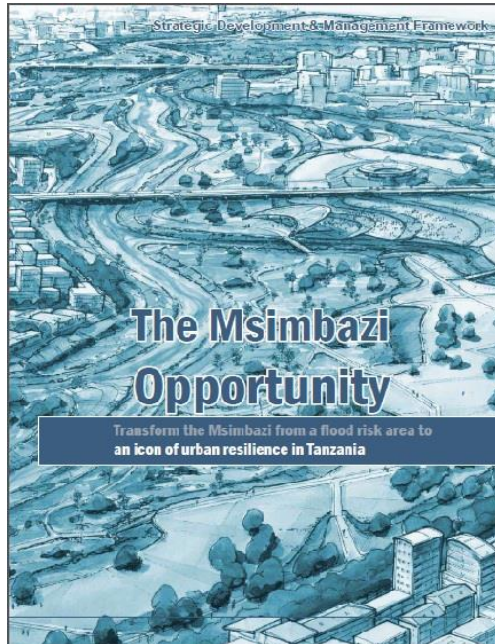
150 representatives

1000's citizens



Msimbazi Design Charrette

Strategy Development and Management Framework for flood protection and environmental rehabilitation in the Wider Msimbazi River Valley



Detailed Plan for the Lower Msimbazi Basin Area

Strategy Development and Management Framework

The central purpose of the MSDMF is: To stop the **uncontrolled** urbanisation process that is making the river valleys and basin **unsafe** and **unhealthy** for human activity; and to replace this by a planned and **coordinated** process of development that will improve: the quality of the **urban development**, **ecosystem** functions, and **living conditions**.

Achieved through 10 strategies:

Strategy № 1: Make room for eco-services and biodiversity

Strategy № 2: Increase rain water retention capacity; and harvest water!

Strategy № 3: Control erosion and sedimentation processes

Strategy № 4: Enhance the water conveyance capacity of the Msimbazi river system

Strategy № 5: Protect against Flood Risks

Strategy № 6: Resettle people and businesses to locations safe from flood risks

Strategy № 7: Stop River Pollution

Strategy № 8: Solid Waste Management

Strategy № 9: Develop a City Park in the Msimbazi lower and lower middle basin areas

Strategy № 10: Coordinate through a Msimbazi Good Governance Framework

Flood Modelling

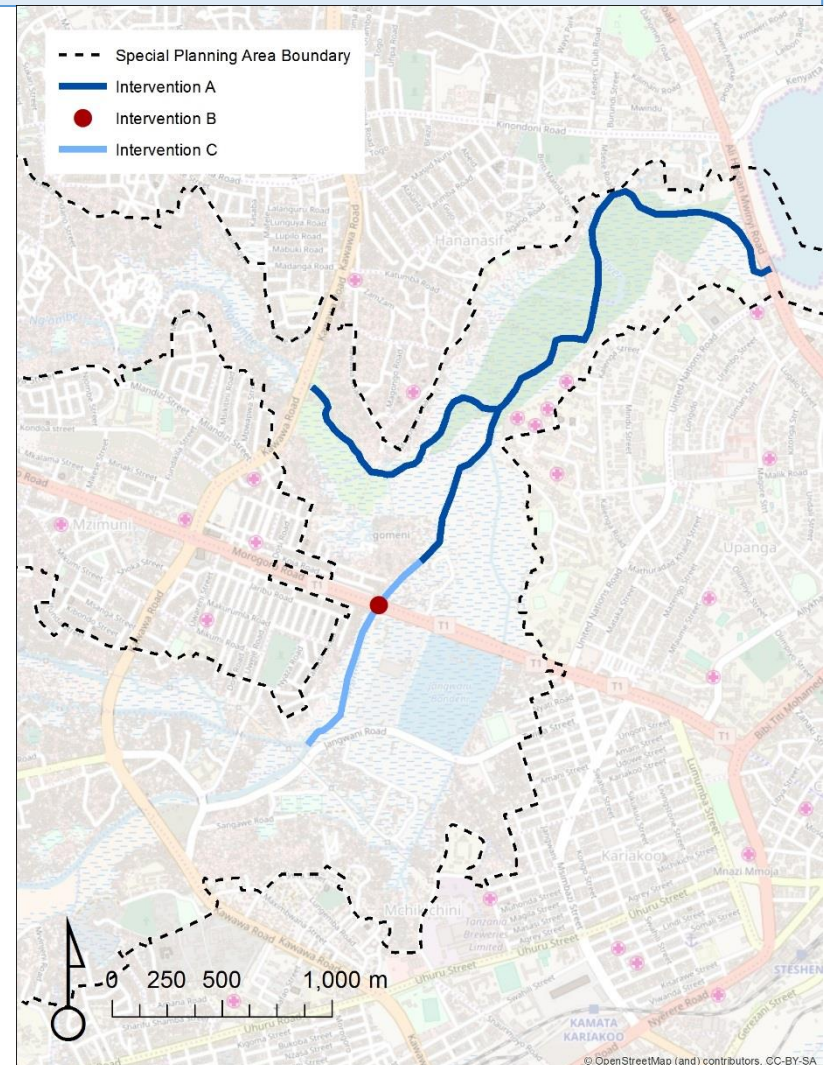
■ Flood Modelling

Measures with Best Results

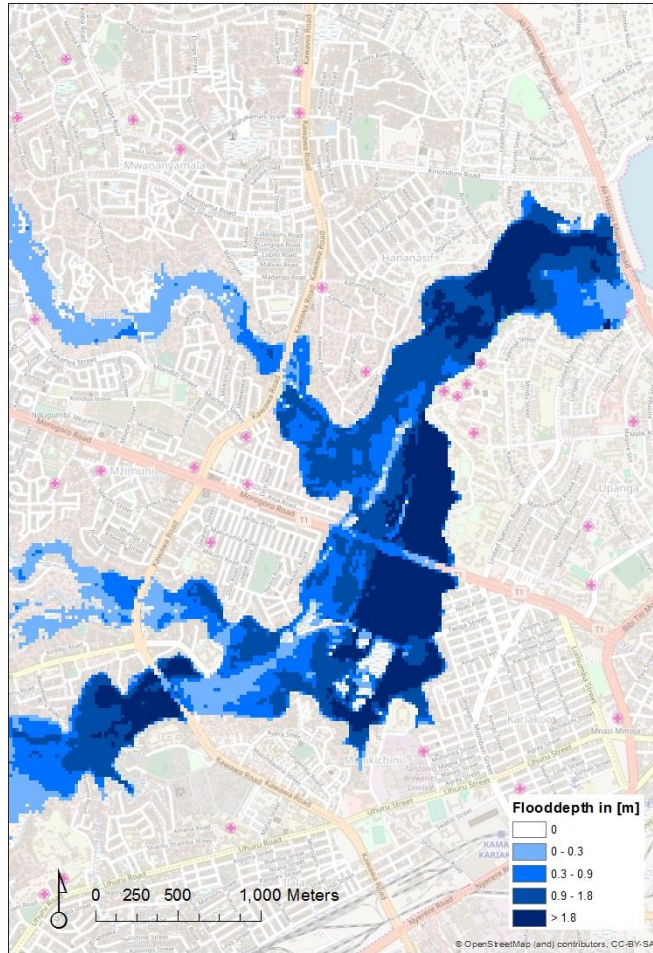
versus the

Base Case:

- A. Dredging from Selander bridge to Jangwani bridge
- B. Raise and widen Jangwani bridge
- C. Widen river from Jangwani bridge to confluence with Kibangu river

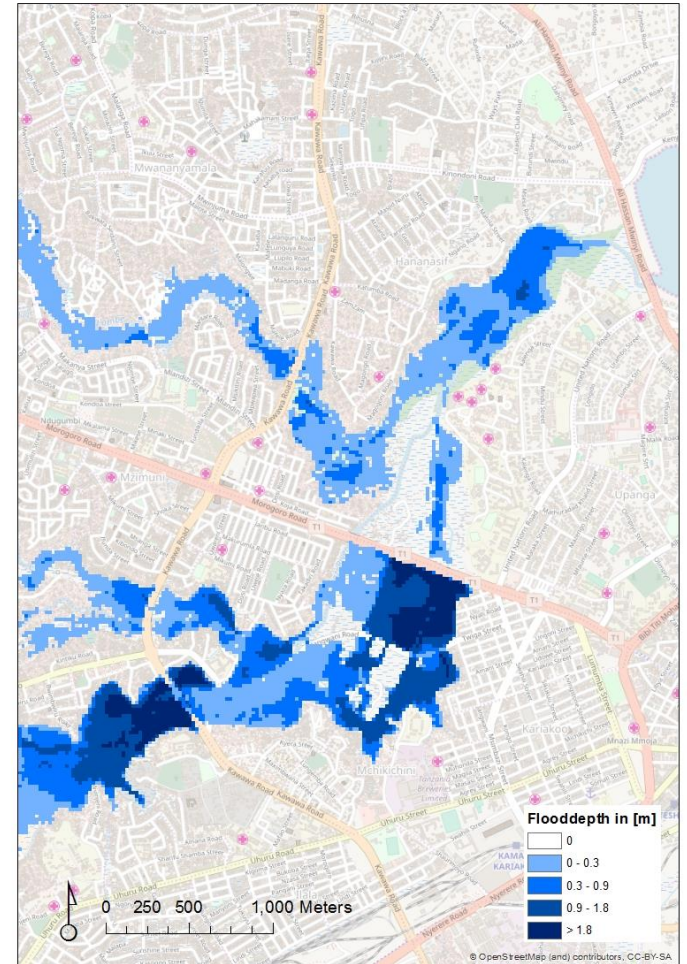


Flood Modelling



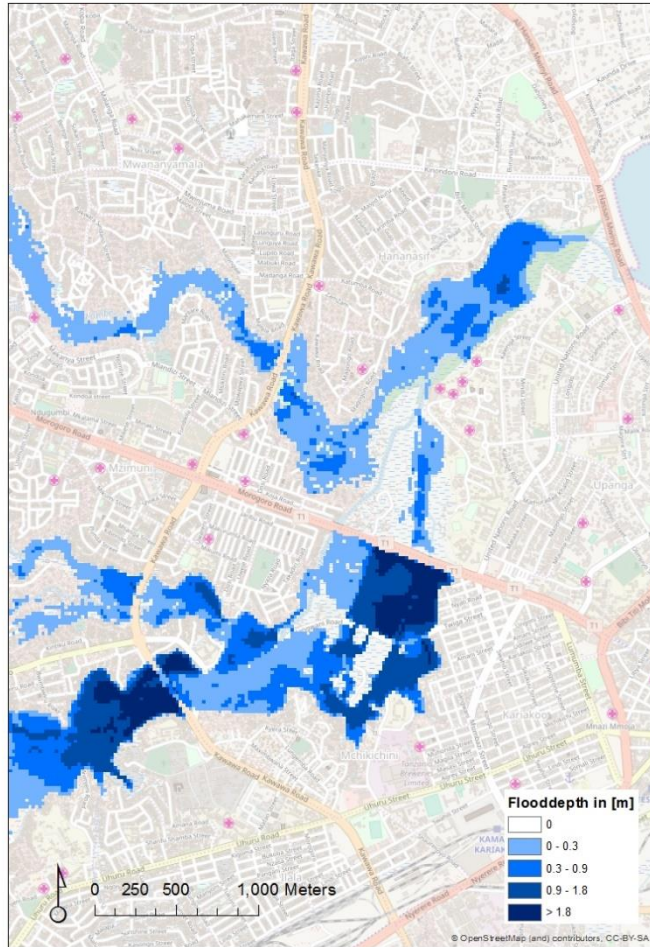
00: Basecase

60 hours
T10



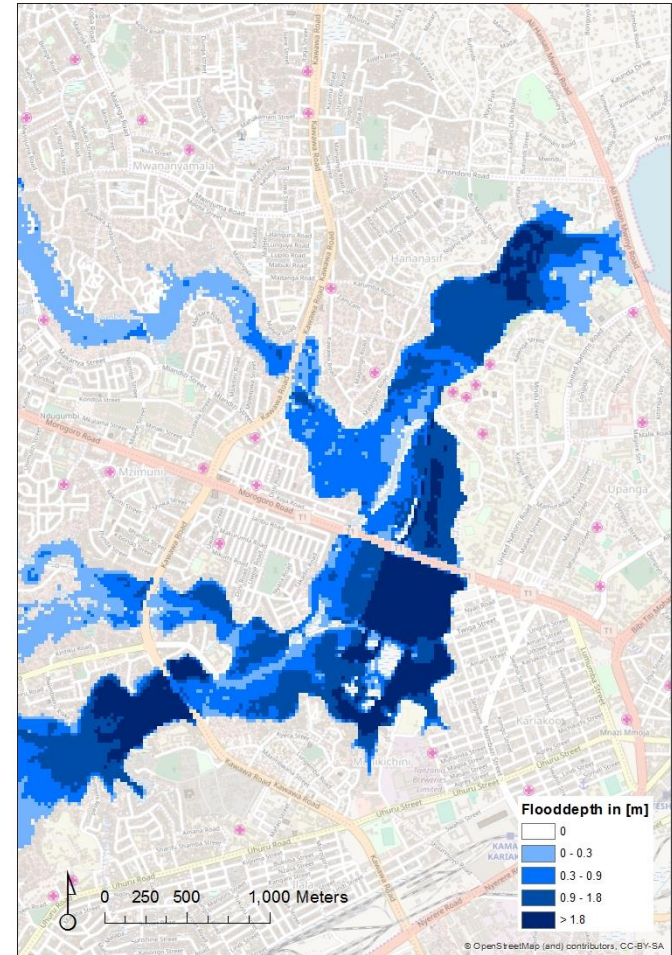
04: Basecase + A + B + C

Flood Modelling



04: Basecase + A + B + C (T10 Years)

60 hours

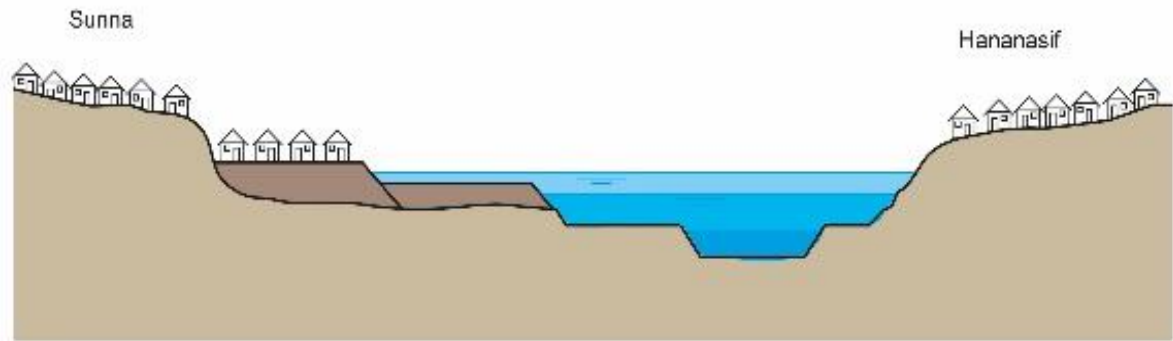


09: Basecase + A + B + C (T100 Years)

Lower Msimbazi Detailed Plan

- Concept of Terraces

Controlling Flood
by
Shaping River
and
Creating Terraces



57.3 ha

Reclaimed land for urban
redevelopment

14,500 units

Apartments

Lower Msimbazi Detailed Plan

Higher safe ground level for new urban development area

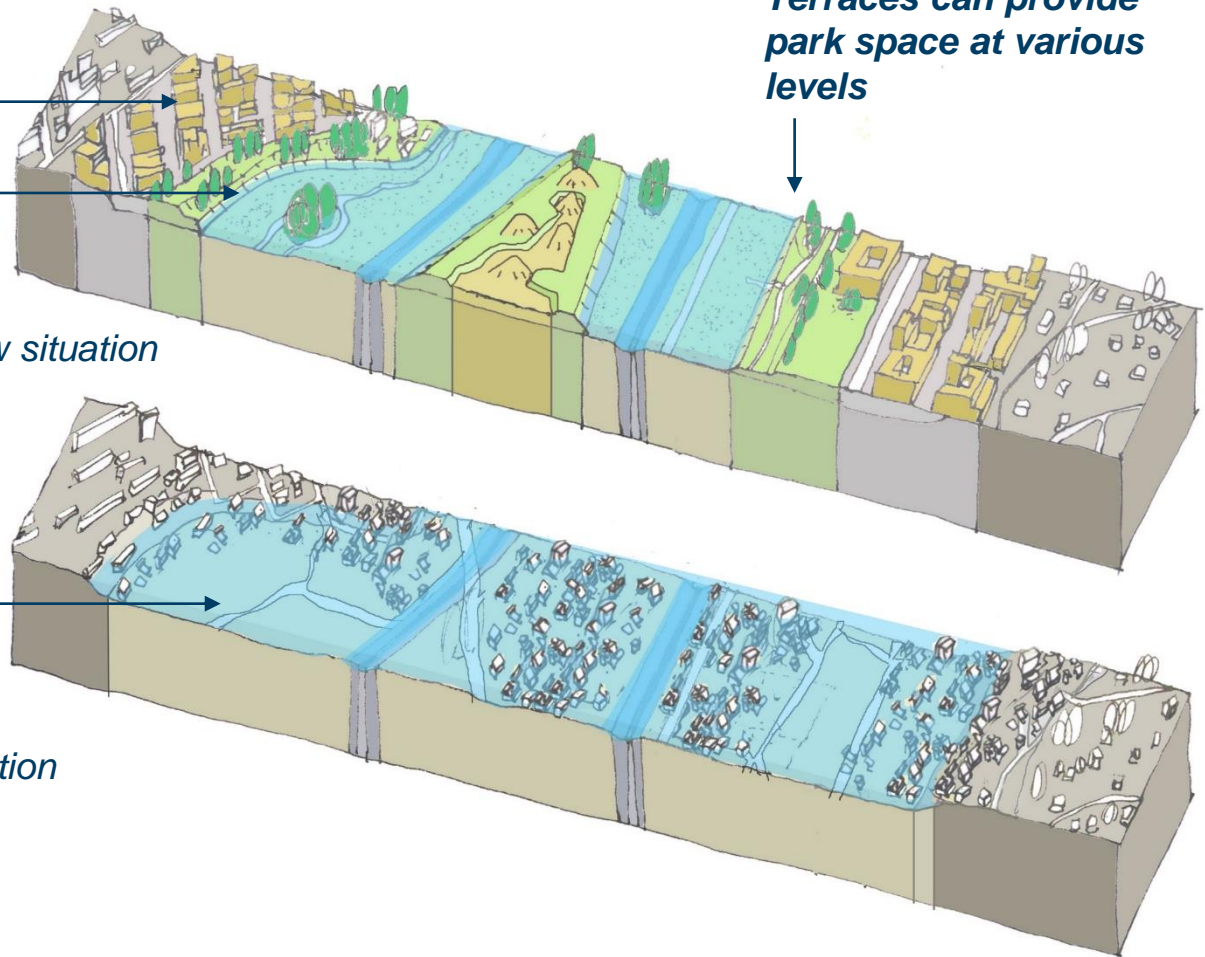
Terraces create controlled flood plain and safe edges

Terraces can provide park space at various levels

Proposed new situation

Current valley is a flat flood plain

Existing situation



Msimbazi Wetlands & City Park

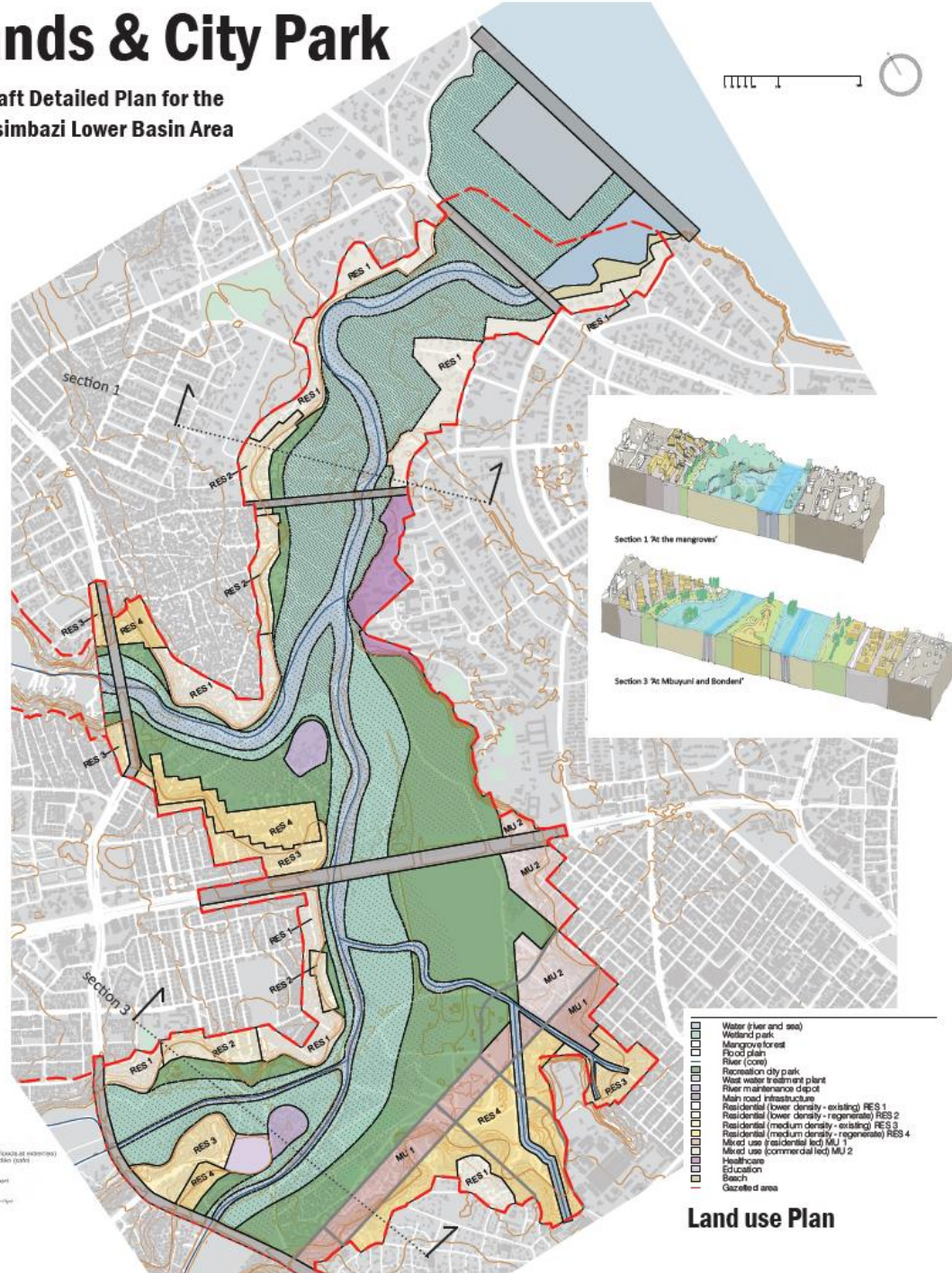
Draft Detailed Plan for the Msimbazi Lower Basin Area



Alternative B (Wetland Park)



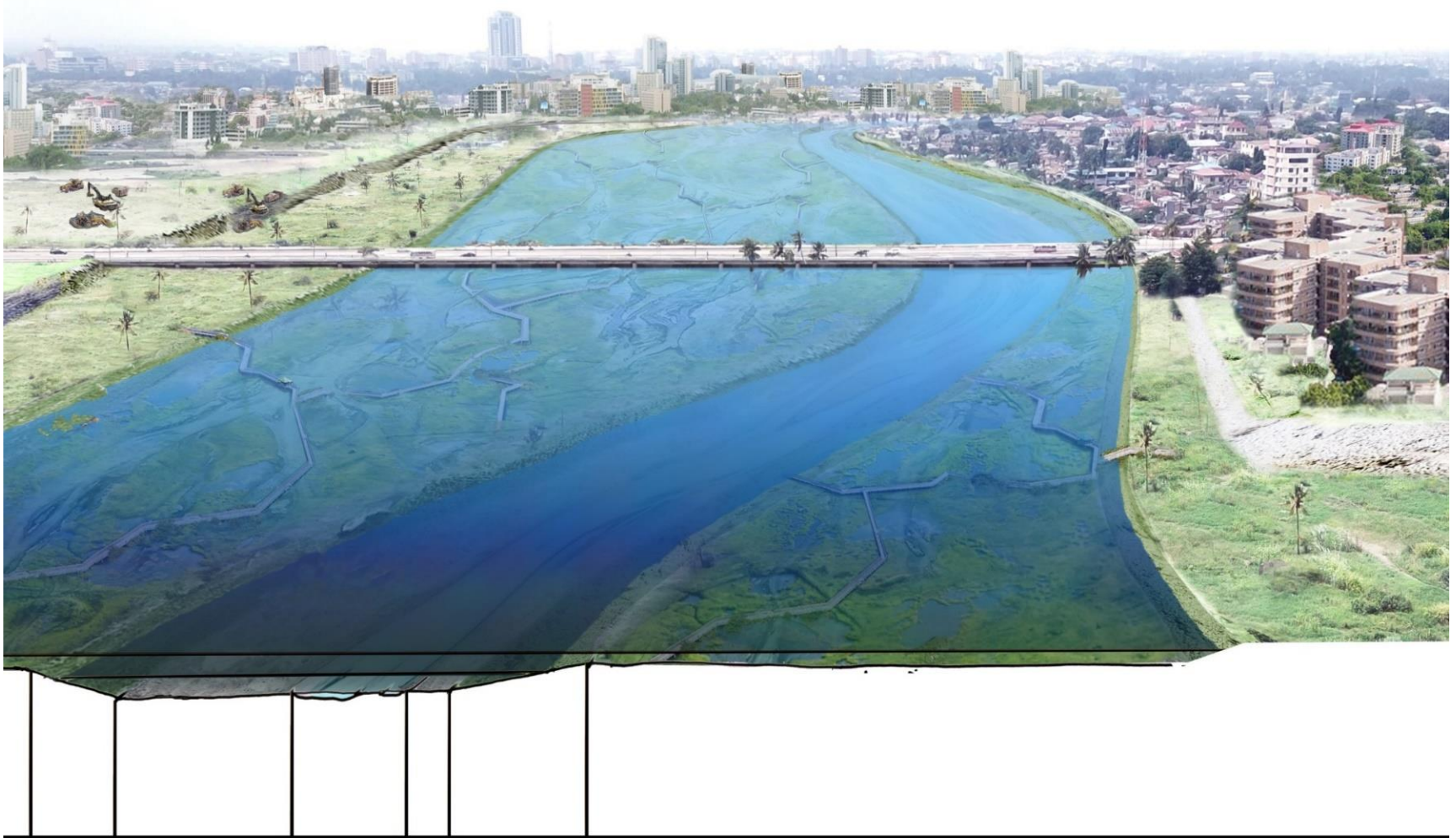
Preferred Alternative



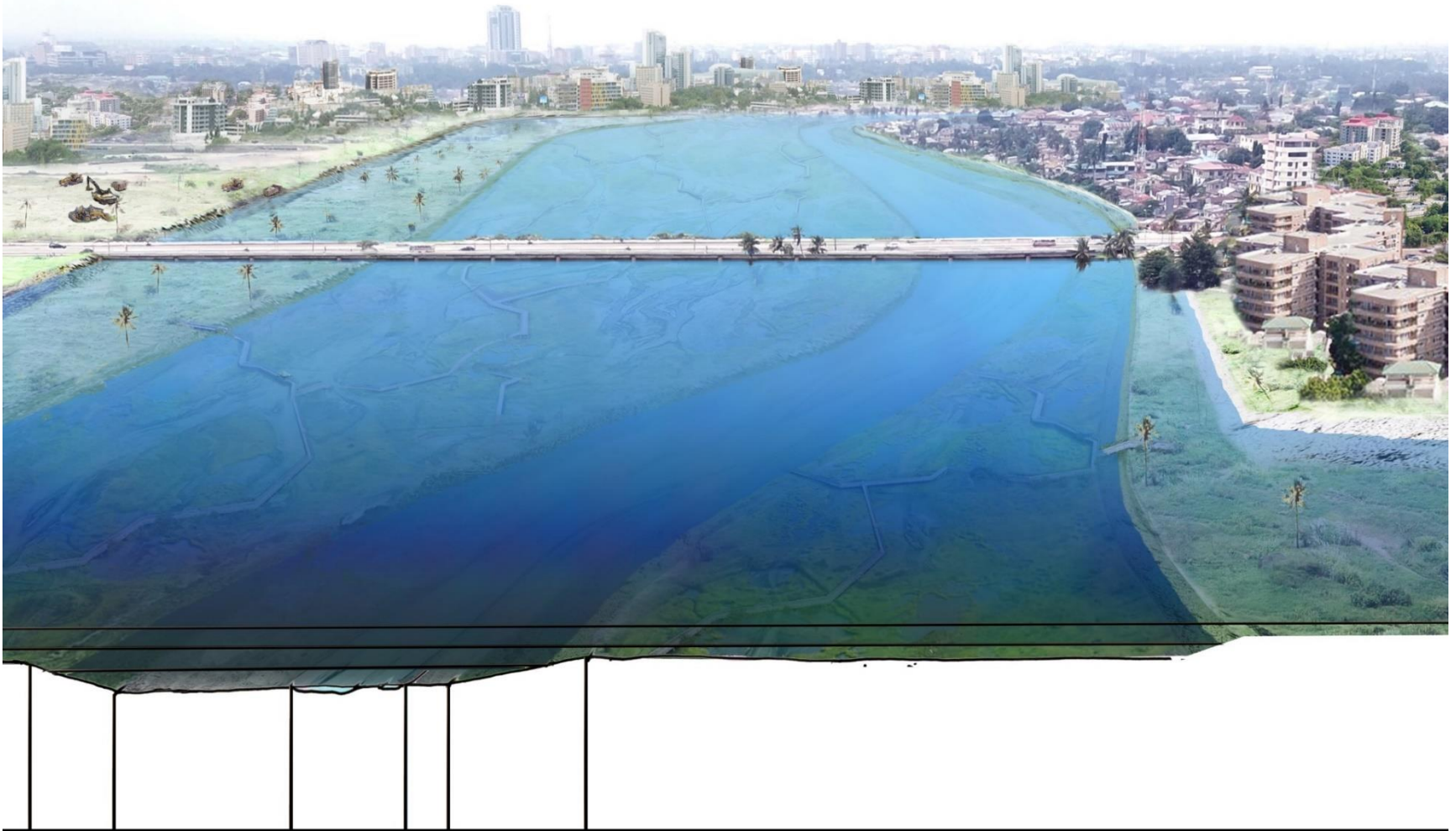
Water level: filled up riverbed



Water level: flood level ($T=10$)



Water level: flood level ($T=100$)



Preliminary Cost Estimates for Initial/Capital Investments

Initial Investments to enable improved hydraulic flow and conveyance of the river includes;

- Widening and deepening Msimbazi River (Selander to Jangwani Bridge)
- Widening and rising Jangwani Bridge
- Widening Msimbazi River above Jangwani Bridge
- Creating terraces for urban redevelopment and recreation purposes
- Installation of sand traps in strategic locations

**US\$ 120.0
million**

- **DFID Grant: US\$ 20.0 million**
- **Requested DMDP Additional Financing: US\$ 100.00 million**

PROJECT COMPONENTS

Dar es Salaam Msimbazi River Valley



Controlling flooding of Msimbazi valley

- Shaping river
- Creating terraces
- Uplifting Bridges



Design and demonstration of bio-climatic building and urban area design:

- Piloting localized solutions in the Msimbazi urban green space
- Capacity building for local practitioners



Public Infrastructure to the claimed land to attract private sector:

- Roads
- Parks/Green Space
- Utility Services



Medium term interventions

- Solid waste management programme
- Erosion and sediments control upstream
- Establishment of Development Authority

Expected Benefits of Msimbazi Project

- ➔ Development of an iconic urban green space for Dar es Salaam
- ➔ Reduced loss of lives
- ➔ Reduced flooding and impact on BRT and major transport arteries
- ➔ Increased property values and revenue for City and central government through urban redevelopment
- ➔ Demonstrate feasibility of local bioclimatic urban design in the Msimbazi valley that can be replicated in other cities
- ➔ Enhance resilience and efficiency of the urban area within the TOD corridor

