



Urban Transport in Sub-Saharan Africa

*Diagnostic Study &
Project Development and Investment Pipeline*



Managing urban areas has become one of the most important developmental challenges of the 21st century...

John Wilmoth
Director Population Division, United Nations

Accessibility and mobility are amongst the most fundamental prerequisites for sustainable urban development...

Infrastructure Consortium
for Africa

Africa is rapidly transforming into a predominantly urban continent. Its urban population is set to grow from 40% to close to 60% by 2050, the fastest rate of increase globally. Numerous African cities are set to double in population size over this period. Properly harnessed, such urban proliferation can drive significant socio-economic growth in cities, countries and regions.

However, African cities are facing critical challenges in supporting this rapid population increase, not least of which in the urban transport space. Improved urban mobility and accessibility are some of the most important contributing factors to sustainable and inclusive urban development, bringing with them major economic, social and environmental benefits.

Moving forward, these must be key considerations for African policy and decision-makers, but most cities are currently ill-equipped to provide adequate transport facilities and opportunities to current and future populations. As concluded in the Africa Transport Policy Program’s (SSATP) *Policies for Sustainable Accessibility and Mobility in Urban Areas of Africa* report, “cities are faced with poor urban planning, inefficient basic service delivery, poor infrastructure provision, inadequate transport services, unregulated traffic, increasing congestion and pollution, and inadequate technical, institutional and financial capacities”.

This *Diagnostic Study and Project Development/Investment Pipeline for Urban Transport in Sub-Saharan Africa* ultimately sought opportunities to support and assist cities in overcoming these urban mobility challenges. It is an exploration and assessment of a number of the fastest growing cities in Africa, with the objective of understanding the current urban transport development landscape, and identifying and characterising tangible opportunities for investment and support in improving sustainable urban transport and accessibility.

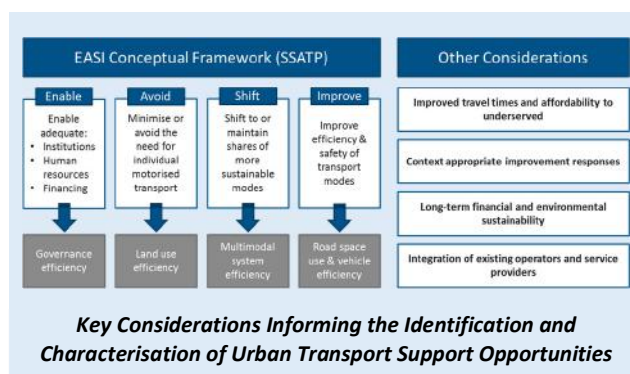
The study was conducted in two stages:

Stage 1 – an assessment of 16 of Africa’s fastest growing cities, and a comparative prioritisation of five cities for more detailed exploration;

Stage 2 – a thorough analysis of the shortlisted cities, including a process of viable project identification and investment characterisation.

The outcomes from Stage 2 informed the development of a project development and investment pipeline of opportunities.

In compiling this portfolio of opportunities, this study built on the key findings and recommendations presented in the SSATP report. In particular, the EASI Conceptual Framework was fundamental to the evaluation of cities and possible investment opportunities.



The EASI (Enable, Avoid, Shift, Improve) Framework provides guidance in developing improved urban transport systems. This study expanded on the EASI Framework to add several other key considerations in identifying and preparing viable and sustainable mobility projects.

ASSESSING THE URBAN MOBILITY STATUS QUO IN 16 OF AFRICA'S FASTEST GROWING CITIES

Stage 1 of this study was a first step in developing a portfolio of viable urban transport projects for investment and development. It conducted a broad evaluation of the urban transport landscape in several cities across west, east and southern Africa.

The evaluation was undertaken utilising a comprehensive framework that determined each city's relative need for, and preparedness to implement, sustainable and high-impact urban transport improvements. Elements scrutinised included:

- Transport status quo, gaps, and needs
- Projects in development
- Institutional capacity and support
- Policy and regulatory environment
- Funding and economic climate

The results from this analysis were used to comparatively rank each city and prioritise five for further study – Dakar, Accra, Lagos, Addis Ababa, and Dar es Salaam. From these five, projects would be selected for inclusion in the development and investment pipeline.

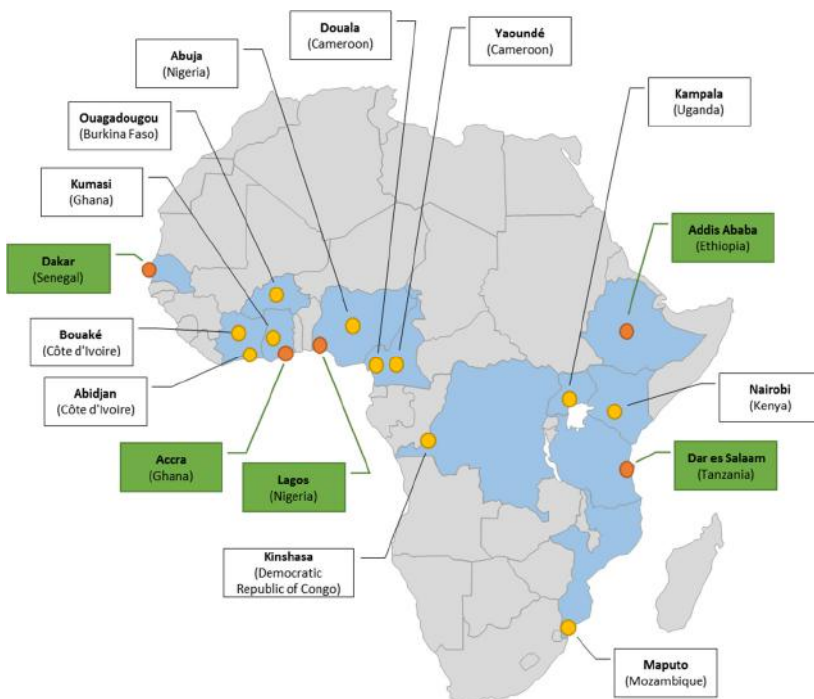
CONSTRUCTING A CONSOLIDATED PORTFOLIO OF VIABLE, SUSTAINABLE AND HIGH-IMPACT URBAN TRANSPORT INVESTMENT OPPORTUNITIES

Under Stage 2 of the study, the five shortlisted cities were subjected to a more in-depth review, to identify, evaluate, and characterise viable financing and investment opportunities for transport improvement.

Site visits and field surveys in each of the cities tested and refined the technical, financial, institutional, legal, organisation and regulatory description around potential projects in order to address some key over-arching questions:

- 1) What does the project look like, and how does it address the identified needs?
- 2) What is the required enabling environment for the project?
- 3) What is the project cost, and how can it be funded?
- 4) What steps are required for preparation to bankability?

The answers to these questions informed the make-up of the final portfolio.



The five cities share many common traits which create substantial urban mobility challenges, including:

- Significant urbanisation and population growth, with most doubling in size over next 15 years
- A majority of motorised transport provided by a large number of small, informal operators
- Close to half of all commutes are non-motorised, predominantly walking (by necessity, not choice)
- Inadequate and aging infrastructure, old and inefficient vehicles, and limited enforcement and management capacity
- Transport becoming a major contributor to harmful emissions

Cities Evaluated in Stage 1, and Those Prioritised for More Detailed Assessment in Stage 2 (in green)

ADDIS ABABA (ETHIOPIA)

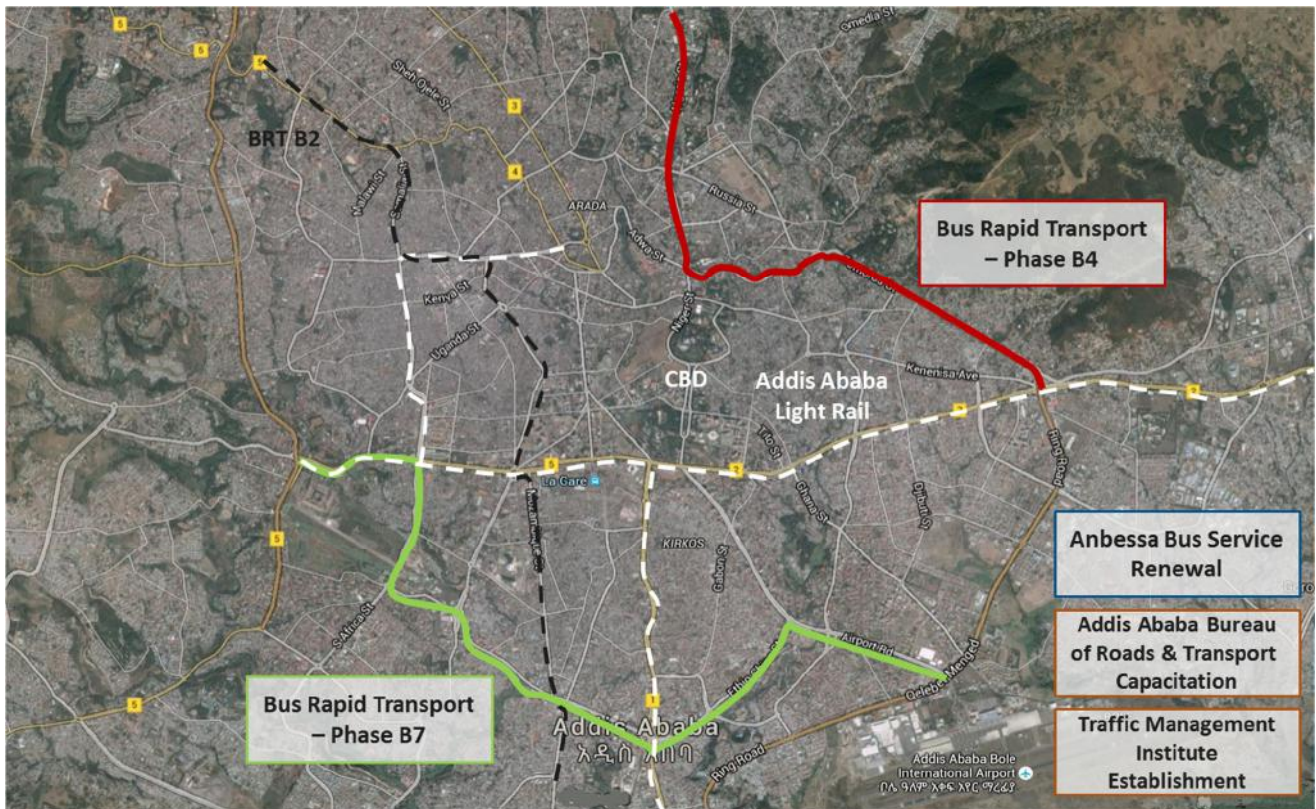
Addis Ababa is the political and commercial centre of Ethiopia, with a rapidly growing urban economy and population. The city has a population of 3.4 million and is expected to reach 6 million by 2030.

Public and non-motorised transport (primarily walking) are the most widely used modes of transport in Addis Ababa, with a share of 35% and 55% respectively. Public transport is predominantly provided by the state-owned Anbessa Bus Company, and a large number of smaller, privately owned buses. These services are overcrowded, operated in congested mixed traffic, and make use of old, unreliable and inefficient vehicles. Many people walk due to a lack of service availability, or an inability to afford alternative means of commuting.

The city has implemented the first phase of the Addis Ababa Light Rail Transport (LRT) network, with operations having commenced in the second half of 2015. The city's first bus rapid transport corridor, B2, is currently in the final planning stages with construction set to commence imminently with support from the *Agence Française de Développement*.

This study determined that Addis Ababa required further investment support and assistance in rolling out additional elements of its integrated public transport network, in improving existing services, and in building institutional capacity to oversee urban transport development.

PORTFOLIO INCLUSIONS
<p>Planning, Design, and Construction of Bus Rapid Transport Corridor Phases B4 and B7 Priority BRT operations servicing high-density suburbs to the north and south of the CBD.</p>
<p>Fleet Renewal and Expansion for Anbessa City Bus Services Acquisition of 700 new buses as part of wider program to modernise and expand systems and infrastructure</p>
<p>Capacity Development and Technical Support to Government Urban Transport Entities Further capacity development at the Addis Ababa Bureau of Roads & Transport, and support to the establishment of the Traffic Management Institute</p>



- Anbessa Bus Service Renewal
- Addis Ababa Bureau of Roads & Transport Capacitation
- Traffic Management Institute Establishment

DAKAR (SENEGAL)

Dakar is the capital and largest city in Senegal, with a population of close to 3.5 million people expected to double over the next 15 years. The larger Dakar urban area is growing fastest in the eastern parts of the peninsula flowing into the mainland, with urbanisation growth rates approaching 10%.

Of the estimated 7.2 million trips currently made by the city's inhabitants daily, only 30% are made via motorised means. Non-motorised transport is predominantly by foot, with affordability constraints, and the availability and quality of motorised options, influencing factors. The majority of motorised transport is in the form of buses (operations provided by a private association, and separately a publicly-owned entity), a large number of small informal taxis, and public rail services.

Congestion is increasingly becoming a serious concern for Dakar, exacerbated by its fast growing eastern suburbs, constrained geography, inadequate land-use, inefficient public transport and aging infrastructure. Smog, of which transport is a major and growing contributor, is also a growing issue.

For these reasons, this study concluded that Dakar required support in expediting implementation of public transport improvement initiatives that addressed key corridors of focus identified in its urban development master plan. These would alleviate congestion, improve accessibility to the central business district and reduce emissions.

PORTFOLIO INCLUSIONS

Construction of the BRT Red Line (Phase 1)

20km priority bus service with dedicated lanes, servicing one of Dakar's busiest commuter corridors connecting CBD with fast-growing outer urban areas

Development of Phase 1 of the Train Express Régional (TER)

A National Flagship Project: an upgrade and extension of existing line to a 55km electric express rail service connecting the CBD to high growth outer urban areas and new airport



DAR ES SALAAM (TANZANIA)

Dar es Salaam, with its location on the east coast of the continent and large deep-water port with access to the Indian Ocean, is a strategic city for the East African region. For the past decade, it has experienced substantial urban population growth, and is projected to reach megacity status (+ 10 million inhabitants) by 2030.

Close to 90% of travel in Dar es Salaam is conducted using motorised public transport and non-motorised transport. The split between the two modes is approximately equal. Motorised services are largely provided by a privately owned bus company, a number of informal *daladala* midibuses, and a growing *bajaji* rickshaw industry.

Most of the city's recent (and projected) urban growth has occurred in an uncontrolled manner, resulting in unstructured, outwards urban sprawl which manifests as snowballing traffic and increasing travel distances to economic hubs located close to the CBD. Growing freight movement to and from the port is also contributing to urban accessibility challenges.

As a result, Dar es Salaam requires support in expediting development of its integrated public transport network,

improving traffic management and developing a coherent strategy for non-motorised transport.

PORTFOLIO INCLUSIONS

Supplementary Support for Phase 3 of the Dar es Salaam Rapid Transit Project

24km rapid bus service with dedicated infrastructure operating along the CBD-airport corridor

Construction of Phases 4, 5, and 6 of the Dar es Salaam Rapid Transit Network

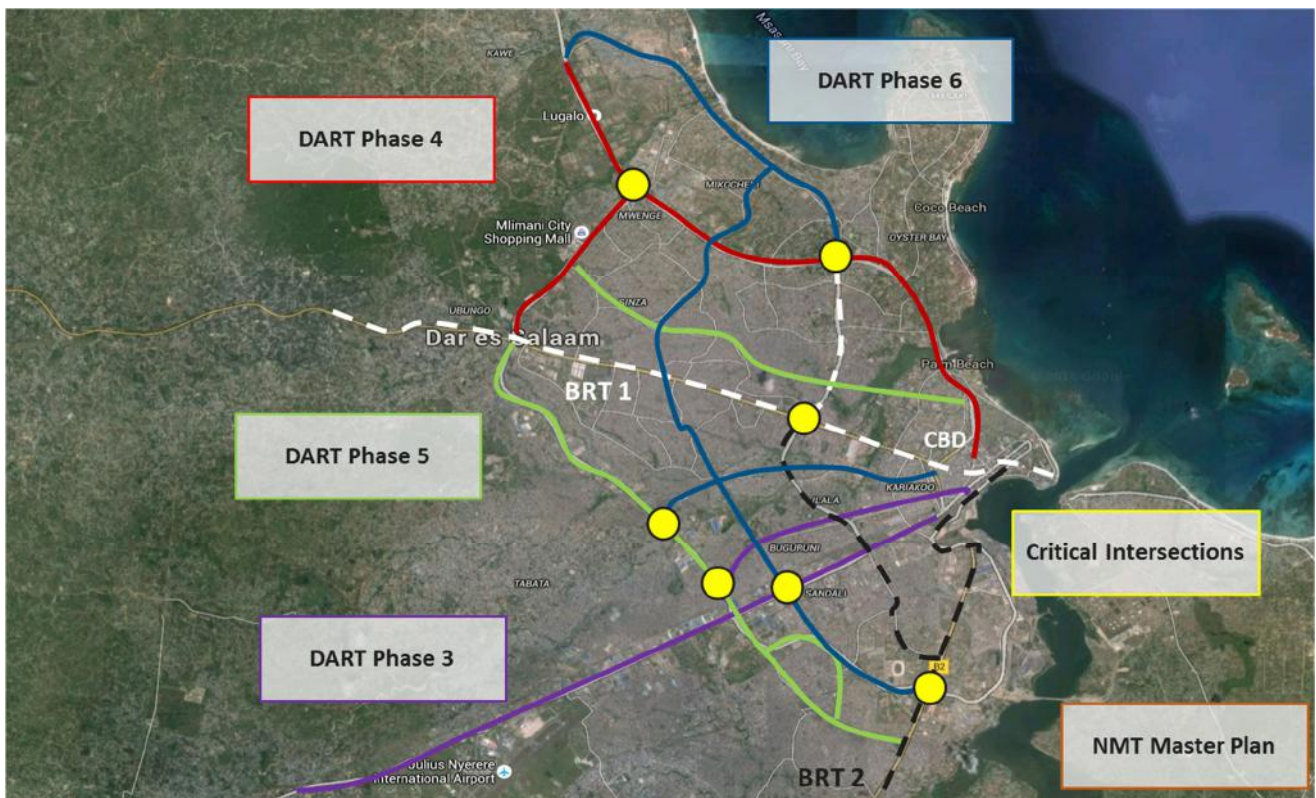
Bus rapid transport corridors that complete the BRT network envisaged in the city's Transport Master Plan

Construction of Seven Intersections Critical to Improved Traffic Management

Upgrade or development of intersections at key transit points, also typically incorporating dedicated BRT lanes, cycle lanes, and pedestrian walkways

Development of a Non-Motorised Transport Plan for Dar es Salaam

To identify and coordinate NMT improvements into city's overall urban mobility strategy



ACCRA (GHANA)

Accra, with a population of close to 4.5 million people (metropolitan area), is the administrative and commercial capital of Ghana and an economic hub in the West African region. It is expected to grow by approximately 50% to 6 million inhabitants by 2030.

The urban transport system in Accra is characterised by the widespread use of public and non-motorised modes, congested arterials, and long travel times and distances. Around one-third of commuter trips are undertaken on foot, whilst the majority (47%) of the remainder are serviced by informal minibus taxis (*trotros*), closely followed by private vehicles (in line with the city's relative economic maturity). A limited number of large bus services are provided by the partially state-owned company Metro Mass Transit (MMT).

Accra has exhibited substantial and largely unstructured outward urban growth, which has contributed to worsening congestion into the central business district with a growing number of small private vehicles, and detrimentally impacts on the still large proportion of the population who cannot afford motorised forms of transport.

Due to these factors, and the critical lack of high quality public transport, this study recommended a focus on assisting the city with the incremental roll-out of its formal public transport systems.

PORTFOLIO INCLUSIONS

Upgrading Operations on the Amasaman Corridor to Full Bus Rapid Transport Services

Convert Type-B operations on priority corridor connecting CBD and NW of city into full BRT services

Provision of High-Quality Bus Services on Adenta Corridor and Upgrade to Full BRT

Construction of infrastructure for Type-B operations on priority 19 km north-south corridor, followed by incremental conversion to full BRT services

Development of Bus Rapid Transport Infrastructure on Kasoa Corridor

Update feasibility studies and implementation of BRT services on busiest corridor – 9km running west to CBD



LAGOS (NIGERIA)

Lagos, with an estimated population of some 21 million people in the metropolitan area, is the largest on the African continent. Growth continues unabated, with some 2,000 new people projected to be arriving in the city every day, joining one of the most populous urban agglomerations globally.

43% of commuter trips in Lagos are undertaken using privately operated, and largely unregulated, minibus vehicles (*danfos*). This is closely followed, at 40%, by non-motorised means. The city has initiated and implemented a number of urban transport improvements over the last decade; however, those that are operating (including a BRT system and improved state-run bus services) still only service a fraction of the overall travel demand which continues to grow rapidly.

Spatially, Lagos is characterised by a central business hub on Lagos Island, served by three bridges linking into arterial access corridors servicing rapidly and outwardly growing urban sprawl. This has placed extreme pressure on existing infrastructure and services, leading to severe congestion and pollution, whilst the number of underserved continues to escalate.

This study proposes that support be directed to accelerating completion of Lagos’ high-capacity light rail network, and the roll-out of alternative, high-impact modes.

PORTFOLIO INCLUSIONS
<p>Completion of Blue Line Phase 3 Construction and Promoting Development of Red and Green Lines Blue Line is a 27km rail route serving high-priority corridor west of the CBD; Red and Green lines envisaged as BOT PPPs serving north and east corridors</p>
<p>Support and Facilitate Development of the Lagos Cable Transit Scheme PPP Three cableways providing over-water connections between Lagos Island and main outlying suburbs</p>
<p>Institutional Support and Medium-Term Implementation of the Ferry Improvement Project Project seeks to increase utilisation of Lagos waterways for formalised urban transport through multi-faceted and multi-step approach</p>





CONCLUSIONS AND WAY FORWARD

Intra-urban mobility and accessibility, the focus of this study, will play a crucial role in Africa’s sustainable development over the coming decades. High-growth urban cities are the foundational nodes underpinning the continent’s growth, and their efficient operation will form the basis of improved regional and continental economic and social connectivity.

As the outcome of this study, the proposed pipeline, or portfolio, of project development and investment opportunities, consists of high-impact projects which will make a substantial contribution to the urban mobility and accessibility landscape in five of Africa’s fastest growing cities. The opportunities show not just a focus on hard infrastructure, but also highlight the importance of planning, preparation, organisation, and capacitation to sustainable and effective improvements. Moreover, several of the interventions offer scope for leveraging currently available resources to harness private sector capital and expertise.

NEXT STEPS AND RECOMMENDATIONS

- Investor conferences, roadshows, and proposals to present and discuss opportunities
- Full due diligence, stakeholder engagement, preparation to bankability, and transaction structuring to take opportunities of interest forward to implementation
- Expansion of study to additional high-growth and strategic cities
- Investigation of innovative, alternative financing instruments that enable and accelerate urban transport developments and improvements
- Exploration of mechanisms to better utilise and incorporate existing private public transport providers into new, integrated systems

CONTACT



Infrastructure Consortium for Africa
CCIA Building, Avenue Jean-Paul II
01 BP 1387, Abidjan 01
Côte d'Ivoire

Tel: +225 20 26 42 80
Email: icasecretariat@afdb.org

Mohamed Hassan
m.hassan@afdb.org

www.icafrica.org



Pegasys Capital
5th Floor, 4 Church Square, Spin Street
Cape Town 8001
South Africa

Tel: +27 21 461 5476
Email: info@pegasyscapital.com

Dr. Constantin von der Heyden
constantin@pegasyscapital.com

www.pegasyscapital.com